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Navigating the VUCA Landscape: A Systematic Literature Review of Organizational Coping Strategies

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Abstract

Purpose: In today's business landscape, organizations encounter unparalleled turbulence and uncertainty denoted by the acronym VUCA (Volatility, Uncertainty, Complexity, Ambiguity). To address cross-disciplinary challenges in this eclectic environment, sustainable management is essential. The objective of this paper is to recognize potential coping mechanisms for organizations confronted by a VUCA environment. **Design/methodology/approach:** A systematic literature review (SLR) was conducted to evaluate current scientific approaches depicting a relationship between VUCA and organizational performance indicators to consequently deal with VUCA threats. **Findings:** The SLR identifies proactive strategies covering adaptability in organizational strategy, organizational resilience, agility and organizational ambidexterity for VUCA challenges but criticizes their isolated use, advocating for an eclectic, integrated approach to fully address the complexities of today's business environment. **Research limitations/implications:** Based on the comprehensive SLR a research gap was identified regarding the lack of a mutual interplay of proactive approaches for a management strategy tackling the multifaceted threads of VUCA. Since the development of a proactive coping strategy is crucial for a successful organization this paper represents a valuable area for potential scientific investigation. To facilitate the extensive research volumes and enhance productivity, it is necessary to utilize only AND connectors within the relevant search engines, as well as to limit the AI (artificial intelligence) tools' research results to 30 papers each. Despite these measures, it remains challenging to fully capture the complexity of the fields of research. **Practical implications:** The presented reactive and proactive approaches may be used to overcome individual challenges organizations face in today's business world due to the high practical relevance. **Originality/value:** This paper contributes to the building and evaluation of an eclectic proactive coping strategy for organizations facing threats of a VUCA environment.

Keywords: strategic management, VUCA-environment, coping-strategies, organizational resilience, agile leadership, ambidexterity.

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1 Introduction

The corporate environment of today is more chaotic than ever before. While many advancements in diverse fields over the last few decades ought to have mitigated instability and economic and societal risks, instances like the recent acts of terrorism in Israel or the aggressive conflict in Ukraine have heightened unpredictability for organizations. Unpredictable events, such as global

supply chain issues caused by Houthi rebels attacking cargo vessels in the Red Sea, can disrupt transportation routes and interfere with global trade (Sugiura & Holder, 2024).

Global financial problems such as inflation, political intrigues and pandemic dangers like Covid-19 besides organizations also affect individuals causing uncertainty (Howe et al., 2021). Looking at those dynamics of today's world is considered radical and progressive. Academics and managers have identified a phenomenon called VUCA, which describes the factors that influence the adaptability required for sustainable management within organizations, employees and customers. The acronym VUCA stands for volatility, uncertainty, complexity and ambiguity (Horney et al., 2010).

Studies conducted around the world show that accelerated uncertainty has increased dramatically in recent decades, as shown by the International Monetary Fund's (IMF) World Uncertainty Index study. The latest IMF study from Q4.2023 shows that over the last 60 years the highest uncertainty has been found in the last two decades, peaking in 2020 due to the Covid-19 pandemic (World Uncertainty Index, 2024). While the index peaks in 2020, it is expected to continue to fluctuate and grow as unforeseen events and unstable financial markets cause volatile commodity or energy prices and exchange rates (Dokas et al., 2023).

In the light of the described ascertainments the prevalence of a VUCA environment is widely acknowledged. Therefore, researchers are currently questioning the strategies and approaches used by managers around the world in recent decades and seeking ways to adapt to this dynamic environment (Deepika & Chitranshi, 2020; Du & Chen, 2018; Nikseresht et al., 2022; Rožman et al., 2023). As stated by Nikseresht et al. (2022) well examined basic processes like decision-making are asked to adapt. Within a VUCA environment decisions need to be done faster and have to cover a higher level complexity. AI-supported tools may be a simple but very effective support since the known procedures do not cover the needs and the speed of today's business environment. Further to that the workload of an organization seems to constantly increase in times of a shortage of skilled workers. A reduction of the individual's workload by new software solutions and leaner processes will enhance the company's performance by taking the current challenges of the VUCA environment into consideration (Rožman et al., 2023).

The prevalence of VUCA and its direct link to the daily procedures and processes of an organization underlines a potential relationship between the VUCA environment and influences towards an organization's performance (Abdullah, 2023; Kaya, 2022; Rimita et al., 2019; Rožman et al., 2023; Sharma & Singh, 2020). Especially Abdullah (2023) highlights that during his research a significant effect between agile leadership and the company's performance was identified. Further to that Rimita et al. (2019) outline that existing organizational methods prove inadequate and a certain adjustment to the organization is necessary to prepare the organization and its leaders to the new level of volatile situations, uncertain decisions, complex tasks and ambiguous actions.

Accordingly, this paper conducts a systematic literature review to identify recent scientific approaches dealing with the threats of VUCA and to identify potential coping mechanisms for a proactive management approach. This will allow managers to stronger focus on the necessary adjustments of their organizational fields of action to face the core challenges of today. The research question posed is as follows: What are relevant scientific proactive strategies to cope with the challenges posed by a VUCA world? How do these strategies comprehensively address the concurrence and mutual interplay of the VUCA drivers (volatility, uncertainty, complexity and ambiguity) in the modern business environment and do these strategies impact the organizational performance?

2 Methodology

There are numerous scientific methodologies that can be employed to evaluate the above-mentioned research questions. While a meta-analysis or a bibliometric analysis adheres to a numerical and statistical approach, a content analysis or systematic literature review is better aligned with qualitative research. Due to its rigorous nature, the systematic literature review is an ideal methodology for analyzing broad and more complex topics. Since the VUCA environment and its particular coping strategies are multifaceted, a comprehensive and structured approach that adheres to a strict predefined protocol is necessary to enhance results and reproductivity (Durach et al., 2015; Rojon et al., 2021; Tranfield et al., 2003).

Therefore, this examination applies a systematic literature review to identify potential coping strategies for organizations working in a VUCA environment to perpetuate and advance organizational performance. Within the SLR more than 2,300 recent papers were scanned and the contents of 76 papers stating most recent coping strategies within a VUCA environment were analyzed. The paper furthermore outlines potential implications for further research including a potential research gap of scientific interest which meets the characteristics and requirements of a systematic literature review acc. to Durach et al. (2015). This formal method was chosen to increase the reliability of the literature presented with respect to the pre-defined research question by reducing the distortions caused by multiple biases when searching and allocating literature (Tranfield et al., 2003). Applying the paper location procedure using a term matrix and completing the identification of the most relevant papers through clearly structured inclusion criteria acc. to Durach et al. (2015) and Rojon et al. (2021) allows for efficient data extraction. This follows the goal of answering scientific research questions within a clear and predefined framework.

Both authors are highly reputed for their structured methodological work and have shaped the way systematic literature reviews are conducted today. The chosen structure also promotes the highly relevant reduction of certain biases in systematic literature reviews (Almeida & Goulart, 2017). Therefore, compared to narrative reviews or meta-analyses, this methodological approach supports the overall scientific value of this review (Petticrew, 2001).

2.1 Locating Papers

In a first methodological step databases with pertinent literature were determined to locate the relevant literature on coping strategies for organizations in a VUCA environment. Since the academic field of economic science features multiple focus areas three database were selected that call attention towards scientific management approaches with a practical orientation. Based on that requirements EBSCO, Google Scholar and Scopus database as industry leading engines (Carter & Easton, 2011) were chosen as a primary source for research. These databases serve as a starting point for the research according to the defined key words (see paper selection and evaluation for further details). Due to the innovative software-based achievements of the past months in artificial intelligence-supported (AI) research engines, additional AI-tools were used to identify the pertinent literature to answer the relevant research question (elicit.org; researchrabbit.ai; semanticscholar.org; typeset.io). Contrary to the common and more conservative research engines the AI tools were fed with the research question as a hypothesis for search. This multi-method approach aims to strike a balance between the relevance of the sources (contents) and the scope of the sources (reach) to reduce selection bias, information bias, confounding bias and partly language bias (Almeida & Goulart, 2017). Only peer-reviewed papers published within the past 10 years were considered within the SLR to ensure profound high-quality research.

2.2 Paper Selection and Evaluation

For the selection of the relevant papers an objective and clear definition of keywords is necessary. Here the block-building method acc. to Guba (2008) and Tranfield et al. (2003) was used dividing the research question in relevant blocks of terms of equal ranking. To organize those themed blocks and search terms in a systematic way based on the research question a matrix was created. The main aim of this term matrix is to identify a wide range of synonyms for the sub-terms and evaluate further keywords to ensure a broad but relevant range of papers for the analysis. A well-formulated research question is very helpful in identifying relevant search terms. Including keywords from highly relevant articles also helps to formulate effective keywords (De Carvalho et al., 2020).

Table 1. Definition of Research Terms

Term Matrix

Superior Term / Research Question:
Coping Strategies in Management Approaches for Organizations in a VUCA Environment

	Block 1	Block 2	Block 3
Synonyms	Management	Coping Strategies	Performance
Related Terms	Corporate Social Responsibility (CSR)	Adaptation	Effectiveness
	Human Resource Management (HRM)	Resilience	Efficiency
	Supply Chain Management (SCM)	Problem-Solving	Employee Satisfaction
	Environment, Social and Governance (ESG) criteria	Recovery	Productivity
Broader Terms	Corporate Sustainability	Strategic Management Approaches	Corporate Performance Management
	Corporate Governance	Coping Mechanisms	Benchmarking

Source: Own representation based on research question

Only papers written in English or German language were considered. Despite potential concerns regarding language bias, Almeida & Goulart (2017) argue that it can be considered negligible in this context, as a significant majority of pertinent economic literature is disseminated in English. To ensure a rigorous selection of literature from search engines, the initial approach involved combining the primary term "VUCA" with each of the four related terms from all three categories using an AND-operation. Subsequently, "VUCA" was paired with the two identified broader terms in a second phase of the search strategy. This methodology yielded a total of 2,219 potential articles from EBSCO, Google Scholar, and Scopus that satisfied the broadly defined criteria.

This research is limited to the AND-connector only to ensure that all research terms are equally represented in the search results. This limits the results to those with the highest relevance to the research question. It also ensures the comprehensiveness of the results for the complex and multidisciplinary research question. In addition, the AND-connector helps to manage the extensive volume of research results, because, driven by digitized research engines and AI tools, the potential volume of findings exceeds the number of papers that can be properly examined and studied in detail (Davies, 2019).

Furthermore, AI tools were employed by entering the research question of this study. The incorporation of AI tools into the conventional research methodology served to augment the number of pertinent findings. The utilization of automated searching and screening tools facilitates enhanced efficiency. Moreover, the accuracy of the results can be enhanced by reducing the potential for bias introduced by human involvement. In contrast to the conventional term search of traditional search engines, inputting the research question opens up new horizons in scientific research, as the AI tools continuously improve their search algorithms through machine learning and adaptation to the researcher's input (Fabiano et al., 2024; Sami et al., 2024).

Given that these tools produce results sorted by relevance, only the top 30 articles from each search engine were selected for further analysis. All criterial incl. peer-review process, year of publication and the selected languages were applied. This resulted in 120 papers. At this stage of the research process, duplication is inevitable, leading to the identification of a total of 2,339 potentially relevant papers.

Table 2. Source-Based Overview of Potential Research

Research Results				
Engine & Keywords		Block 1	Block 2	Block 3
EBSCO, Google Scholar, SCOPUS	Related Terms	479	398	262
	Broader Terms	595	262	223
elicit.org	Research Question		30	
reserachrabbit.ai	Research Question		30	
sementicscholar.org	Research Question		30	
typeset.io	Research Question		30	
	Total:		2339	

Source: Own representation

Not only studies that refer to VUCA (holistic approach) but also those that identify individual VUCA components without explicitly stating the VUCA phenomenon (non-holistic approach) were included. To ensure the overall credibility and validity of the research, inclusion and exclusion criteria were established to focus on the relevant papers to deduct the core findings. The inclusion criteria specify the distinct characteristics and prerequisites necessary for studies or papers to be considered for inclusion (Fisch & Block, 2018). By adhering to well-defined inclusion criteria, researchers can maintain focus and consistency throughout the review process, effectively addressing their research objectives and answering their research questions. Importantly, clear inclusion criteria also help to minimize potential bias or subjectivity during the study selection process, resulting in a comprehensive and well-defined sample of the existing literature on the topic (Almeida & Goulart, 2017; Lockwood et al., 2015).

Table 3. Inclusion Criteria

Inclusion Criteria	Rationale
Demonstrates (single components of) the phenomena VUCA as a driving force for considerations	This research is restricted to any papers with VUCA (holistic) or VUCA related (non-holistic = stating at least one VUCA component) papers as a research subject
Relationship between VUCA and organizational performance can be found	Focus of this SLR is set to identify coping strategies
Clear indication of dimensions and constructs used for further deduction of results	This paper functions as a basis for further research and consequently the operationalization of the examined constructs plays a vital role

Source: Own representation

Next to the above-mentioned criteria covering publishing date, peer-review process and language the basis for the evaluation of the relevant papers was the abstract of the particular papers. After a thorough review of the potential papers, a total of 76 papers were identified meeting the defined inclusion criteria and extracted from the databases for detailed research. The extracted papers were collected in a literature management program called Zotero. Within this program all papers were clustered by assigning certain items for a brief overview of all papers for a later stage of research.

2.3 Analysis and Synthesis of Papers

To extract the key findings from the existing literature, the selected papers were reviewed in detail and systematically edited in a tabularly overview (see Appendix). Therefore, the main characteristics of each paper were identified and short summaries were written. In addition to identifying coping strategies and mechanisms for dealing with a VUCA environment, the papers were examined to determine if a relationship between VUCA and organizational performance could be established.

Since the phenomena of VUCA can be divided into four different dimensions according to the acronym (volatility, uncertainty, complexity and ambiguity), potentially one or more dimensions of VUCA can be covered by a single paper. Thus, the holistic consideration of all four aspects is not essential since the coverage of individual aspects of VUCA can already lead to important partial aspects of the research question. Within the total of 76 relevant papers 45 papers show a direct link towards VUCA. Additional 31 papers only refer to at least one single component of VUCA. Based on this procedure the papers were read, the information needed to be deducted to answer the research question were extracted and the expected quality within a peer-review process of the publications was checked.

3 Results

3.1 Understanding the Dynamics and Impacts of VUCA on Organizations

The systematic literature review (see Appendix for a tabularly overview of the results of the papers reviewed) reveals a variety of different approaches preparing an organization to manage the threats of a VUCA environment by deducting strategies and mechanisms to cope with the challenges posed by a VUCA world. These papers and considerations can be categorized into two different clusters. On the one hand literature following a holistic approach has been identified that clearly

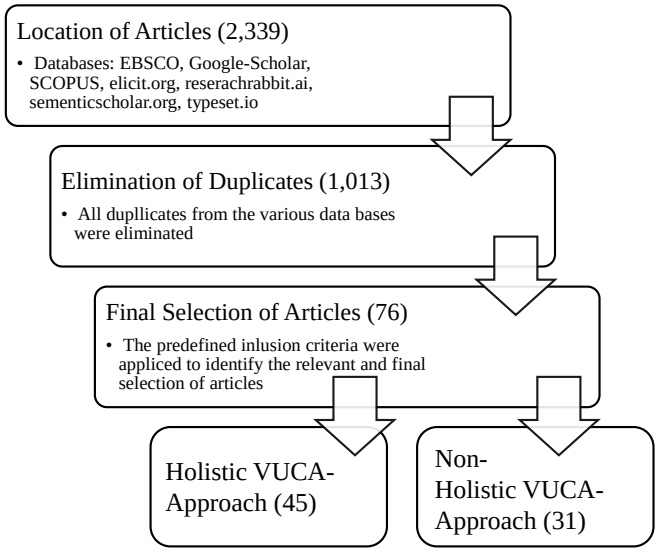

Figure 1. Flow Chart: Paper Selection Process and Analysis
Source: Own representation acc. to Durach et al. (2015)

identifies VUCA phenomena as key driver for research due to a certain impact on organizational performance. On the other hand, there were also findings with significant contents that also met the defined inclusion criteria but took a non-holistic approach describing individual confounding factors of a VUCA environment without specifically mentioning the VUCA phenomena. This literature was also considered to be an important part of the literature review, even though it does not clearly state the VUCA phenomena, but essentially meets the characteristics of the phenomena that need to be identified and considered for a holistic review of the existing literature.

3.2 Adaptability and Resilience Lessons from External Shocks

Recent papers show a strong connection to the Covid-19 pandemic as a starting point for considerations on VUCA or related external shocks for organizations worldwide, although the phenomenon itself dates back to the 1980s (Warren & Nanus, 1985). During the years of restrictions due to the pandemic, supply chains in particular were externally disrupted as reported by several researchers from different fields of economics (Ajmal et al., 2021; Alexander et al., 2022; Bechtsis et al., 2022; Cui et al., 2023; Klymenko & Lillebrygfjeld Halse, 2021; Křenková et al., 2023; Liu et al., 2023; Staves, 2022). The key finding was that external events that disrupt daily business processes, such as Covid, can lead to major delays within supply chains, resulting in reduced organizational performance (Liu et al., 2023). It may be important to actively engage the organization in learning and adaptation processes such as knowledge sharing, information exchange and continuous improvement to be prepared for such challenges (Liu et al., 2023). A dedicated learning management system that offers courses on emerging technologies, market trends or new methodologies could be established. This internal institution could share internal knowledge and enhance existing knowledge by scheduling workshops with external experts to foster knowledge sharing.

Adaptability can be seen as one of the major characteristics helping to deal with complex situations (Widodo & Suwarno, 2022). These adaptation approaches can also build supply chain resilience, which covers specific areas of risk management and dynamic capabilities to adapt

to aforesaid external threads (Jantapoon & Saenchaiyathon, 2023; Tan Sui Hong et al., 2021; Tukamuhabwa et al., 2015). Resilience can empower organizations in a VUCA environment to not only withstand but also flourish amid unforeseeable and demanding circumstances.

Hence, Liang & Cao (2021) highlight the link between employee resilience based on ambidextrous leaders (see: *Ambidexterity and Leadership in Navigating through Uncertainty*) and organizational resilience. They explore how coping mechanisms and leadership resilience promote both individual and organizational resilience in the face of VUCA challenges and disruptions.

The need for effective strategies to thrive in uncertain and disruptive market situations also requires process-oriented methods of risk and change management to foster sustainability and resilience (Lechner & Schlüter, 2023; Niehaus et al., 2023). As a result of the highly relevant risk management and assessment, leaders in VUCA worlds should create supportive and encouraging organizational cultures to foster risk-taking, forward-looking experimentation and learning to better address challenges by scanning the external environment, identifying emerging opportunities and adapting organizational capabilities accordingly. The development of comprehensive risk management strategies can be supported by the conduction of periodic risk assessment workshops where key stakeholders identify potential threads and develop mitigation plans. This stakeholders may also be a part of an established crisis management team equipped with predefined action plans for different types of emergencies (Schoemaker et al., 2018).

In addition to these risk-focused activities, change management will be important to enable organizational adaptation to external changes. Sadeghi et al. (2020) examine the relationship between absorptive capacity, disaster immunity and the mediating role of both information quality and change management capability in organizations threatened by uncertainty. They explored how organizations can effectively absorb and utilize external knowledge, information and other resources. The study highlights that absorptive capacity, the ability to acquire, assimilate, transform and exploit external knowledge positively influences disaster immunity and resilience.

3.3 Embracing Agility with Strategic Frameworks for VUCA Challenges

In addition to resilience, agility may also be beneficial in the current post-pandemic *new normal*, as the organizational environment is still characterized by unprecedented challenges and uncertainties (Alexander et al., 2022). But above ideas for initiating coping mechanisms are not unique to logistics in times of pandemic. Those approaches need to be illustrated, elaborated, explained and clarified in more detail to understand their impact on organizational performance within a VUCA environment. In addition to supply chains, which are mainly associated with the logistics activities of multinational operating companies, almost all industries were affected by events such as Covid, including the healthcare or tourism industry. When the Covid-19 pandemic started in first quarter of 2020 organizations were required to start a process of visionary thinking, adaptability and effective decision-making when faced with the threats of a VUCA world (Ho et al., 2022; Mollah et al., 2023; Sindila et al., 2023; Soloviy & Dubovich, 2020; Von Eiff et al., 2021). Therefore, several different frameworks have been established to help face the VUCA threats.

The acronym VUCA can be interpreted as a set of guiding principles as this is mentioned for several different industries as a framework to face these challenges. These frameworks for managing VUCA conditions include vision, understanding, clarity and a focus on agility to cover the above needs in a manageable way (Bundtzen & Hinrichs, 2021; Johansen & Euchner, 2013; Wang et al., 2022). Considering different frameworks and their suitability for business, contract theory also plays an important role in succeeding in a VUCA environment. As mentioned by Santibáñez & Mastrolia (2019), contract theory needs to be applied and adapted to meet the dynamic challenges posed by VUCA. The authors suggest that traditional contracts are inadequate as they assume

stability and predictability. To conquer these challenges they propose more flexible and adaptable contracts that respond to changing circumstances supporting the external dynamics by agility (Santibáñez & Mastrolia, 2019). Variants of the Cynefin framework (Snowden & Boone, 2007) can also play a role in addressing potential challenges to improve leadership and decision-making in times of crisis. E.g., the variant of the Cynefin framework created by Lane et al. (2021) provides a practical tool that can help healthcare professionals effectively navigate complex and uncertain situations. Backcasting may also be an appropriate approach when considering frameworks and structures to improve strategic management to address the challenges of a VUCA environment. Thorén & Vendel (2018) highlight that traditional forecasting approaches may not be sufficient to effectively navigate a VUCA world. Therefore, backcasting enables organizations to plan and adapt their strategies, systems and processes to meet VUCA challenges and achieve long-term sustainability by agility. Due to higher uncertainty, management requires more discipline in back- and forecasting actions to cover unforeseen threats, as continuous monitoring of the market, potential developments, technologies and understanding the potential impact on the industry requires early identification of opportunities and agility to face situations characterized by specific challenges to be successful (Kaivo-oja & Lauraeus, 2018; Peschl, 2022).

Bourne (2021) suggests that organizations need to adopt a more dynamic and flexible approach to management in general but also to performance measurement that considers both financial and non-financial factors. Traditional approaches are not sufficient to effectively manage and navigate the challenges posed by a VUCA environment. He proposes an agile culture of learning and adaptation within organizations to effectively manage performance in a VUCA world. In particular, the ability to learn appears to be an important characteristic for organizations and individuals, as curiosity is cited as a key attribute for success in a VUCA environment since it promotes agile operation of daily processes (Horstmeyer, 2018). According to Horstmeyer (2018) cultivating curiosity through various strategies such as encouraging questioning, promoting experimentation and facilitating interdisciplinary collaboration will be supportive. This agile approaches also allow employees, managers and organizations to anticipate decisions, respond to changes, mitigate risks and identify opportunities to positively impact organizational performance (Fergnani, 2022). To enhance the overall performance of an organization, these attributes can be summarized with the term agility, which is characterized by flexibility, adaptability and open communication (Setiawati, 2021). To benefit from these agile approaches, an additional framework with five dimensions of learning agility has been deduced as another potential mechanism to cope with VUCA challenges as an essential basis for organizations to thrive in an accelerating world (Peterson, 2021).

3.4 Navigating VUCA through Digital Transformation

Navigating the challenges posed by VUCA requires not only developing an agile and robust strategy for rapid disruptive response, but also leveraging digital technology (Aftab et al., 2022; Alexander et al., 2022). The adoption of digital technologies such as e-commerce, automation, AI and data analytics can help empower employees by increasing visibility, optimizing inventory or generally improving areas such as supply chain steering (Ajmal et al., 2021). As technology advances, managers will face a two-sided challenge in navigating today's VUCA world. On the one hand, AI enhancements will reduce employee workload and improve organizational performance in a VUCA environment. This will happen by offloading repetitive and time-consuming tasks to AI technologies, allowing employees to focus on higher-value activities, leading to increased productivity and efficiency (Billiones, 2019). Furthermore, the positive impact of reduced employee workload on overall company performance can be seen through increased employee satisfaction (Rožman et al., 2023) and an optimization in the use and consumption of resources (Yang et

al., 2022). Considering sustainability and resource allocation and emerging technologies such as the Internet of Things (IoT) those approaches can further improve decision-making and overall organizational performance (Jinil Persis et al., 2021). Supporting those approaches including sustainable management practices can be allocated to a modern management style and leadership (see chapter 3.5: *Nurturing Ambidexterity and Agility with Leadership and HR Strategies for VUCA Challenges*) supported by young professionals embodied by Generation Z (Wolanin, 2022). Pradoto et al. (2022) took those principles of modern management as a basis and examined the impact of work stress and organizational climate on employee performance due to external factors. He suggested the creation of a supportive organizational climate to anticipate progress characterized by change due to e.g. IT-driven innovations such as remote work. The management and utilization of digital knowledge have become crucial in enhancing operational efficiency, facilitating decision-making and ensuring business continuity in the era of digital technologies (Gupta et al., 2022; Huang et al., 2023). Therefore, digital leaders who consider IT capabilities and organizational learning as a symbiosis can be viewed as drivers for accelerated performance (Mollah et al., 2023). On the other hand, improved technical applications will leverage the above-mentioned approaches illustrating organizational agility through data-driven rudiments to enhance security, resilience and sustainability towards a data-driven decision-making process of optimization and also improve data sharing and transparency (Bechtsis et al., 2022). These effects could be interpolated when considering AI tools that contribute to the resilience of organizations in times of disruption (Cui et al., 2023; Křenková et al., 2023) through machine learning, computer vision and robotics that improve efficiency, accuracy and flexibility in production, logistics and management (Manimuthu et al., 2022; Nikseresht et al., 2022). The corresponding technologies are complemented by approaches of Blockchain Technology (BCT), which can enhance the *visiceability* (neologism from: visibility, traceability, mapping) of supply chains as outlined by Shujaat Mubarik et al. (2023). In the context of production inefficiencies, improved forecasting, flexible production techniques and innovative marketing approaches can help improve performance (Abdullah, 2023). In addition to improving performance, coping mechanisms can also include approaches such as diversifying product offerings and implementing cost reduction mechanisms to expand existing successors and build resilience (Fubah & Moos, 2022).

3.5 Nurturing Ambidexterity and Agility with Leadership and HR Strategies for VUCA Challenges

Implementing organizational ambidexterity to balance exploration and exploitation in a VUCA environment successfully supports facing external threats. Du & Chen's (2018) study presents evidence that companies effectively implementing organizational ambidexterity better navigate VUCA challenges by simultaneously exploring new opportunities and exploiting existing resources. This approach was also examined by Dean (2022) in the context of team development and leadership in unpredictable environments. Dean suggests a framework that centers on the team to cultivate and guide an ambidextrous team. This idea empowers organizations to simultaneously explore potential opportunities and take advantage of existing resources to enable success in volatile environments. Especially in managerial roles, where leading a team is required, ambidextrous leaders inspire and motivate employees to express their ideas, concerns and suggestions. According to Ouyang et al. (2022) an ambidextrous leader helps to create a supportive work environment that encourages open communication, psychological safety and diverse perspectives to tackle the challenges of a VUCA world. Especially for Generation Z leaders in the dynamic VUCA environment the promotion of modern management techniques will be a key influencing factor. Generation Z leaders are assumed to have skills that contribute to leadership readiness for challenges, including

adaptability, digital literacy, a collaborative mindset and openness for continuous learning (Deepika & Chitranshi, 2020; Hameed & Sharma, 2020). This need for leaders to develop specific skills and competencies has been identified in an additional VUCA action framework that depicts vision, understanding, clarity, and agility as a strategy for dealing with VUCA (Codreanu, 2016). Emphasizing the need for leaders to have visionary thinking, adaptability and effective decision-making skills can also help to address the threats of VUCA (Ho et al., 2022). Sindila et al. (2023) stress the importance for organizations and their members to cultivate an adaptive mindset and seize change and uncertainty as avenues for advancement. This employee engagement and culture of continuous improvement serves as a metaphor for valuable insights and guidance for employees and leaders in navigating a VUCA world (Rodriguez & Rodriguez, 2015; Saleh & Watson, 2017). Effective leadership practices such as fostering a learning culture, empowering employees and facilitating cross-functional cultures can also be expected to contribute to organizational agility (Ramadan et al., 2023). In addition, leadership practices and specific future-proof skills in particular possess a growth mindset, embrace diverse perspectives and apply critical thinking to navigate today's complexities and uncertainties (Ningthoujam, 2019).

Strategic human resource management (SHRM) can be supportive at this point since it requires organizations to adopt practices such as talent management, employee development and flexible work arrangements to the adjusted needs of their employees in turbulent times. This realignment conflicts with conservative management principles in order to build a resilient workforce that is able to adapt to change and conquer threats of uncertainty (Gandhi, 2017; Yu et al., 2022). Since responsible leadership ensures the long-term sustainability and success of an organization (Sarkar, 2016) SHRM practices have to be extended by a specific knowledge management and organizational learning to face complexity and external challenges with a holistic approach of knowledge sharing (Schick et al., 2017). Thus, organizations with higher levels of knowledge complexity, such as advanced technologies or specialized knowledge, are more likely to see improved performance due to their capability to manage knowledge (Audretsch & Belitski, 2021). These potential dynamic capabilities of organizations supported by modern management techniques could be seen as an additional key to a coping strategy in times of uncertainty, as they enable organizations to quickly adapt their strategies, innovate and collaborate with multiple stakeholders (Olarewaju & Ajeyalemi, 2023). This managerial focus on greater turbulence also identifies the need for organizations to adapt and develop strategies to address challenges (Schoemaker & Day, 2021).

3.6 Sustainability Strategies for Future Readiness

In recent literature, the sustainability approach embracing the so called triple-bottom-line of economic, ecological and social responsibility is used to develop coping strategies to navigate in the VUCA environment (Worley & Jules, 2020; Xu et al., 2015). The call for sustainability science and sustainable management practices necessitates responsible operations by organizations. This encompasses not only economically responsible management approaches but also ecologically and socially responsible actions. These considerations should be applied when making investment decisions (Minciu et al., 2021; Sempiga & Van Liedekerke, 2023), developing and producing goods and services (El Hathat et al., 2023; Kovács et al., 2023; Selvan & Nivasini, 2022) and making single decisions in daily business within organizations to control or influence a positive impact on sustainability (Aimar & Smith, 2021). Taking those approaches into account the management reduces potential negative effects of a VUCA environment (Jamil & Humphries-Kil, 2017).

3.7 Synthesizing VUCA Insights and Summarizing Key Discoveries

The systematic literature review has unveiled a multi-faceted exploration into how organizations navigate the Volatility, Uncertainty, Complexity and Ambiguity (VUCA) of modern environments. Central to the findings is the delineation of literature into holistic approaches directly addressing VUCA phenomena and their impact on organizational performance, and non-holistic approaches focusing on individual VUCA factors without explicit identification. This dual perspective underscores the importance of recognizing both direct and indirect influences of VUCA conditions on organizational strategies.

A crucial discovery pertains to the adaptability and resilience necessitated by external shocks, exemplified by the COVID-19 pandemic's impact on global supply chains. The pandemic has accentuated the need for organizations to engage in continuous learning, knowledge sharing and dynamic risk management to build resilience. Such adaptability not only enables organizations to withstand disruptions but also to flourish amidst them, highlighting the essential role of ambidextrous leadership in fostering organizational and individual resilience.

Further analysis reveals the indispensable role of agility in confronting VUCA challenges. Agility, facilitated by strategic frameworks and practices such as contract theory adaptation and the Cynefin framework, emerges as a pivotal attribute for organizational success in unpredictable environments. This agility is further amplified by digital transformation, where advancements in technologies like AI, e-commerce, and data analytics enhance organizational responsiveness and performance.

The synthesis also emphasizes the significance of nurturing ambidexterity within leadership and human resource strategies. The ability to balance exploration and exploitation, a hallmark of ambidextrous organizations, is critical for navigating uncertainty. This balance is supported by strategic human resource management practices that align with the demands of a VUCA world, fostering a workforce capable of adaptability and innovation.

Additionally, the exploration into digital transformation elucidates the transformative impact of digital technologies on organizational strategies. The adoption of digital tools not only streamlines operations but also propels organizations towards a more agile, informed decision-making process, crucial for VUCA management.

The systematic literature review illuminates the intricate interdependencies between the VUCA (volatility, uncertainty, complexity, ambiguity) concept, ambidexterity, decision-making processes and innovation management. Considering the VUCA conditions that prevail in the contemporary business environment, it is imperative to adopt a holistic approach to enhance organizational resilience and adaptability, particularly in the context of disruptive events such as the global pandemic caused by Covid-19 (Liu et al., 2023). The practice of ambidextrous leadership, which entails balancing exploration and exploitation, has been demonstrated to foster resilience and innovation (Liang & Cao, 2021). Strategic frameworks such as the Cynefin model are vital for enhancing decision-making and agility (Snowden & Boone, 2007). The application of digital technologies, including artificial intelligence (AI) and the Internet of Things (IoT), has been demonstrated to enhance decision-making processes and operational efficiency, thereby reinforcing organizational agility and resilience (Ajmal et al., 2021). Furthermore, strategic human resource management is an effective method for developing a resilient workforce capable of adapting to the uncertainties inherent in a VUCA environment (Gandhi, 2017; Yu et al., 2022). It is incumbent upon leaders to cultivate a culture of learning, adaptability, and strategic foresight to ensure sustained performance amidst the challenges inherent to a VUCA environment.

In conclusion, the key findings from this comprehensive review illustrate the imperative for organizations to cultivate adaptability, resilience, agility and ambidexterity as foundational

strategies for thriving in a VUCA world. These strategies, underlined by effective leadership and innovative human resource practices, provide a robust framework for organizations seeking to navigate the complexities of modern business environments with confidence and foresight. The insights garnered not only shed light on the current landscape but also pave the way for future research and practical applications in VUCA management.

4 Conclusion & Future Research

4.1 Presence of Singular Proactive Components Without an Eclectic Strategy

The investigation into the corporate environment's response to the Volatility, Uncertainty, Complexity and Ambiguity (VUCA) reveals a landscape marked by significant challenges and proactive endeavors. This SLR, motivated by the escalating unpredictability from geopolitical tensions, global financial crises and unforeseen events disrupting global trade, aims to identify strategies that organizations employ to navigate this tumultuous environment. The recent acts of terrorism, conflicts and supply chain disruptions exemplify the acute unpredictability that characterizes today's corporate world, demanding a reevaluation of traditional management approaches.

In response to the research question regarding the identification of relevant scientific proactive strategies to cope with VUCA challenges, this systematic literature review has uncovered a spectrum of approaches focusing on adaptability, resilience, agility and ambidexterity. These strategies, while indicative of an organizational shift towards more dynamic and responsive management practices, reveal a nuanced understanding of VUCA. However, despite these insights, the review identifies a critical gap in the literature. Albeit the approaches identified do partially act proactively to conquer the threads of a VUCA environment, the absence of an integrated, proactive coping strategy that addresses the concurrence and mutual interplay of all VUCA drivers in their entirety needs to be emphasized. While individual strategies offer valuable mechanisms for (proactively) dealing with specific aspects of VUCA, they collectively fall short of providing a comprehensive and eclectic strategy for navigating the complexities of the contemporary business environment. This shortfall points to a need for further research and development of an eclectic management strategy that not only reacts to but also anticipates and mitigates the impacts of VUCA on organizational performance.

4.2 Future Research

As a consequence, future research should focus on the synthesis of adaptability, resilience, agility and ambidexterity into a cohesive strategy that can proactively address the volatility, uncertainty, complexity and ambiguity inherent in the global business environment.

Working hypotheses for future research could be as follows:

- **Adaptability in Organizational Strategy:** Organizations that integrate adaptability into their strategic planning process proactively, rather than as a response to external shocks, will experience greater long-term sustainability and competitive advantage in a VUCA environment.
- **Resilience as a Predictive Indicator for Organizational Performance:** The degree of resilience embedded within organizational culture and practices serves as a predictive indicator for organizational performance and effectiveness in navigating VUCA challenges.
- **Agility in Response to Rapid Technological Changes:** Organizations that proactively adopt agility in their operations and decision-making processes, especially in

response to rapid technological changes, will achieve higher innovation rates and market responsiveness.

- **Ambidexterity and Future-Oriented Leadership:** Leaders who cultivate organizational ambidexterity, balancing exploitation of existing resources with the exploration of new opportunities, will more successfully steer their organizations through VUCA conditions, fostering a culture of proactive change and innovation.
- **Mutual Dependencies of VUCA Constructs as a Strategic Framework:** The strategic interplay and mutual dependencies among adaptability, resilience, agility and ambidexterity within organizations act as a comprehensive framework for navigating VUCA challenges. By recognizing and leveraging these interconnections, organizations can foster a more resilient, agile and innovative culture, enhancing their ability to proactively address the dynamic complexities of the business environment.
- **Synergistic Integration of VUCA Constructs for Enhanced Organizational Strategy:** Organizations that effectively integrate the synergies between adaptability, resilience, agility and ambidexterity into their strategic planning are more likely to achieve superior performance and competitive advantage in a VUCA environment. This approach posits that a proactive, rather than reactive, orchestration of these constructs can drive successful management and innovation.

These hypotheses aim to pave the way for pioneering research that not only deepens the understanding of VUCA management but also equips organizations with the strategic foresight needed to thrive in an increasingly unpredictable world.

4.3 Limitations

It is necessary to consider certain methodical limitations of this SLR when presenting above mentioned coping strategies. Due to the popularity of this field of research the number of results found by the search engines was high and could only be handled by strict inclusion criteria. A wider range with less specific inclusion criteria in combination with enlarged use of additional research tools could have increased the number of relevant findings. Further to that potential results of the used engines could have been enlarged by using the OR-connector next to the applied AND-connector. In addition, the extraction of data was conducted by a single scientist only. To assure more objective research, the selection of papers, the definition of inclusion criteria and the extraction of information could have been reviewed or performed by a second researcher. With respect to the contents ideally this review should only include literature that follows the holistic VUCA approach. An exclusion of non-holistic approaches that focus on at least one relevant component of VUCA do not adequately fit with the aim of performing a cohesive literature review. Therefore, due to the high relevance of other existing coping strategies, an integral literature review can only be guaranteed by incorporating all relevant findings, even if they only address at least one VUCA component.

4.4 Resumé

In conclusion, while advancements in diverse fields have introduced new tools and frameworks to counteract the instability of a VUCA environment, the persistent rise in global unpredictability necessitates a reimagined approach to corporate management. The findings from this review illuminate the path forward but also underline the imperative for an eclectic, proactive strategy that fully embraces the VUCA world's challenges, ensuring sustainable management and organizational resilience in an era of continuous change.

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Disclosure any use of artificial intelligence assisted technologies: In the interest of full transparency, this study discloses the use of AI-assisted technologies. Specifically, AI-driven literature research engines such as elicit.org, reserachrabbit.ai, sementicscholar.org and typeset.io were used to complement the literature research based on the traditional search engines. Full details are provided in the Methods section.

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6 Appendix

Abbreviations

AI Artificial Intelligence

BCT - Block Cain Technology

CSR Corporate Social Responsibility

ESG Environment, Social and Governance

IoT Internet of Things

IMF International Monetary Fund

NPD New Product Development

SCM Supply Chain Management

SHRM Strategic Human Resource Management

SLR Systematic Literature Review

VUCA Volatility, Uncertainty, Complexity and Ambiguity

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Abdullah, 2023	VUCA Prime impact on performance automotive industry in Indonesia	×	×		×	×	×
Aftab et al., 2022	Role of agile leadership in managing inter-role conflicts for a satisfying job and life during COVID-19 in a VUCA world	×	×		×	×	×
Aimar & Smith, 2021	VUCA: A Management Tool for Dealing with Challenges in Changing Environments	×	×		×	×	
Ajmal et al., 2021	Socio-economic and technological new normal in supply chain management: lessons from COVID-19 pandemic	×		×	×	×	×
Alexander et al., 2022	"Managing the "new normal": The future of operations and supply chain management in unprecedented times"	×		×	×	×	
Audretsch & Belitski, 2021	Knowledge complexity and firm performance: evidence from the European SMEs	×		×	×	×	×
Bechtsis et al., 2022	Data-driven secure, resilient and sustainable supply chains: gaps, opportunities, and a new generalised data sharing and data monetisation framework	×		×	×	×	
Billiones, 2019	Thriving (and not just surviving) in a VUCA healthcare industry	×	×		×	×	×
Bourne, 2021	Performance measurement and management in a VUCA world	×	×		×	×	×
Bundtzen & Hinrichs, 2021	The Link Between Organizational Agility And VUCA – An Agile Assessment Model	×	×		×	×	×
Codreanu, 2016	A VUCA Action Framework for a VUCA Environment: Leadership Challenges and Solutions	×	×		×	×	×
Cui et al., 2023	Investigating the relationship between digital technologies, supply chain integration and firm resilience in the context of COVID-19	×		×	×	×	×
Dean, 2022	Developing and Leading Ambidextrous Teams: A Team-Centric Framework of Ambidexterity in Volatile Environments	×		×	×	×	
Deepika & Chitranshi, 2020	Leader readiness of Gen Z in VUCA business environment	×	×		×	×	×

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Du & Chen, 2018	Applying Organizational Ambidexterity in strategic management under a "VUCA" environment: Evidence from high tech companies in China	×		×	×	×	×
El Hathat et al., 2023	Analyzing the greenhouse gas emissions in the palm oil supply chain in the VUCA world: A blockchain initiative	×	×			×	
Fergnani, 2022	Corporate Foresight: A New Frontier for Strategy and Management	×		×	×	×	×
Fubah & Moos, 2022	Exploring COVID-19 Challenges and Coping Mechanisms for SMEs in the South African Entrepreneurial Ecosystem	×		×	×	×	×
Gandhi, 2017	Human Resource Challenges in VUCA and SMAC Business Environment	×	×		×	×	×
Gupta et al., 2022	Managing digital knowledge for ensuring business efficiency and continuity	×		×	×	×	×
Hameed & Sharma, 2020	A study on leadership competencies of the generation Z in a VUCA world	×	×		×	×	×
Ho et al., 2022	Conceptual framework of strategic leadership and organizational resilience for the hospitality and tourism industry for coping with environmental uncertainty	×		×	×	×	
Horstmeyer, 2018	How VUCA is changing the learning landscape – and how curiosity can help	×	×		×	×	
Huang et al., 2023	Fuzzy Front-End Vertical External Involvement, Corporate Social Responsibility and Firms' New Product Development Performance in the VUCA Age: From an Organizational Learning Perspective	×	×		×	×	×
Jamil & Humphries-Kil, 2017	Living and Leading in a VUCA World: Response-Ability and People of Faith	×	×			×	×
Jantapoon & Saenchai-yathon, 2023	Supply chain strategy under VUCA world for Sustainable of the Tea Entrepreneur in Thailand	×	×		×	×	×
Jinil Persis et al., 2021	Modelling and analysing the impact of Circular Economy; Internet of Things and ethical business practices in the VUCA world: Evidence from the food processing industry	×	×		×	×	×

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Kaivo-Oja & Lauraeus, 2018	The VUCA approach as a solution concept to corporate foresight challenges and global technological disruption	×	×		×	×	
Klymenko & Lillebryg-fjeld Halse, 2021	Sustainability practices during COVID-19: an institutional perspective	×		×	×	×	
Kovács et al., 2023	Sustainable Public Transportation in a Volatile, Uncertain, Complex, and Ambiguous (VUCA) Age	×	×			×	
Křenková et al., 2023	Enhancing supply chains agility – The development of logistics capabilities by automotive producers in Central and Eastern Europe following Russia's invasion of Ukraine	×		×	×	×	
Lane et al., 2021	Creating a healthcare variant CYNEFIN framework to improve leadership and urgent decision-making in times of crisis	×		×	×	×	×
Lechner & Schlüter, 2023	Sustainable and Resilient System Development in a VUCA-World: An Empirical Study to Develop a Process Orientated Method of Risk and Technical Change Management in Automotive Industry	×	×		×	×	×
Liang & Cao, 2021	Linking Employee Resilience with Organizational Resilience: The Roles of Coping Mechanism and Managerial Resilience	×		×	×	×	×
Liu et al., 2023	Unleashing the power of supply chain learning: An empirical investigation	×		×	×	×	×
Manimuthu et al., 2022	Modelling and analysis of artificial intelligence for commercial vehicle assembly process in VUCA world: A case study	×	×		×	×	×
Minciu et al., 2021	The Challenges of the VUCA World in the Development of Sustainable Investment Projects	×	×	-	×	×	-
Mollah et al., 2023	Exploring a Pathway to Sustainable Organizational Performance of South Korea in the Digital Age: The Effect of Digital Leadership on IT Capabilities and Organizational Learning	×		×	×	×	×

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Niehaus et al., 2023	Unraveling Successful Company Organizations: A Research Design to Explore Strategies for Thriving Amid Market Turbulence	×		×	×	×	-
Nikseresht et al., 2022	Using artificial intelligence to make sustainable development decisions considering VUCA: a systematic literature review and bibliometric analysis	×	×		×	×	×
Ningthoujam, 2019	The VUCA Learner: Future-proof Your Relevance	×	×		×	×	
Olarewaju & Ajeyale-mi, 2023	COVID-19 uncertainties, dynamic capabilities and the strategic response of multinational enterprises	×		×	×	×	
Ouyang et al., 2022	Ambidextrous Leadership and Employee Voice Behavior: The Role of Work Motivation and Ambidextrous Culture	×		×	×	×	
Peschl, 2022	Learning from the future as a novel paradigm for integrating organizational learning and innovation	×		×	×	×	×
Peterson, 2021	The DNA of VUCA: A Framework for Building Learning Agility in an Accelerating World	×	×		×	×	×
Pradoto et al., 2022	The role of work stress, organizational climate, and improving employee performance in the implementation of work from home	×		×	×	×	
Ramadan et al., 2023	Toward Digital Transformation and Business Model Innovation: The Nexus between Leadership, Organizational Agility, and Knowledge Transfer	×		×	×	×	×
Rimita et al., 2019	Leader Readiness in a Volatile, Uncertain, Complex, and Ambiguous Business Environment.	×	×		×	×	×
Rodriguez & Rodriguez, 2015	Metaphors for today's leadership: VUCA world, millennial and "Cloud Leaders"	×	×		×	×	
Rožman et al., 2023	Artificial-Intelligence-Supported Reduction of Employees' Workload to Increase the Company's Performance in Today's VUCA Environment	×	×		×	×	×

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Sadeghi et al., 2020	Absorptive capacity and disaster immunity: The mediating role of information quality and change management capability	×		×		×	×
Saleh & Watson, 2017	Business excellence in a volatile, uncertain, complex and ambiguous environment (BEVUCA)	×	×		×	×	
Santibáñez & Mastrolia, 2019	Contract Theory in a VUCA World	×	×		×	×	×
Sarkar, 2016	We live in a VUCA World: the importance of responsible leadership	×	×		×	×	×
Schick et al., 2017	Conservation and sustainable development in a VUCA world: the need for a systemic and ecosystem-based approach	×	×		×	×	
Schoemaker & Day, 2021	Preparing Organizations for Greater Turbulence	×		×	×	×	
Schoemaker et al., 2018	Innovation, Dynamic Capabilities, and Leadership	×		×	×	×	
Selvan & Nivasini, 2022	Perceived Ease of Use, Perceived Usefulness and Usage of Social Media to Promote Sustainability in a VUCA World	×	×			×	
Sempiga & Van Liedekerke, 2023	Investing in Sustainable Development Goals: Opportunities for Private and Public Institutions to Solve Wicked Problems that Characterize a VUCA World	×	×		×	×	
Setiawati, 2021	The Effect of Agile Leadership and Work Environment to Employees' Performance in a VUCA World	×	×		×	×	×
Shujaat Mubarik et al., 2023	Supply chain sustainability in VUCA: role of BCT-driven SC mapping and 'Visiceability'	×	×		×	×	×
Sindila et al., 2023	Building Resilience for Surviving and Thriving in a VUCA Context	×	×		×	×	×
Soloviy & Dubovich, 2020	Urban Governance and Decision-making under Climate Change: a Critical Review of Frameworks, Methods and Tools from the Perspectives of Ecological Economics and Sustainability Science	×		×		×	

Author(s) & Year	Title	Peer reviewed	Point of Departure		Causal Relationship VUCA and Org. Output	Coping Approach	
			Holistic VUCA approach	Non-holistic VUCA approach		Need for Coping Strategy identified	Coping Strategy deducted
Staves, 2022	People sustainability and Covid-19: challenges, lessons learnt and the future of health, safety & wellbeing in a VUCA world. A L'Oréal case study	×	×		×	×	
Tan Sui Hong et al., 2021	Executing Strategic Risks Mitigation Plan Amidst VUCA Situation: A Lesson from COVID-19	×	×		×	×	×
Taskan et al., 2022	Clarifying the conceptual map of VUCA: A systematic review	×	×		×	×	
Thorén & Vendel, 2018	Backcasting as a strategic management tool for meeting VUCA challenges	×	×	-	×	×	×
Tukamuhabwa et al., 2015	Supply chain resilience: definition, review and theoretical foundations for further study	×		×	×	×	
Von Eiff et al., 2021	Value-based leadership in turbulent times: Lessons from the Corona crisis and recommendations for post-pandemic management in the health sector	×		×	×	×	×
Wang et al., 2022	Ideas and methods of lean and agile startup in the VUCA Era	×	×		×	×	×
Widodo & Suwarno, 2022	Indonesia's Strategy in Facing the Vuca Threat in South China Sea	×	×		×	×	×
Wolanin, 2022	Competencies of top management, and the needs of 21st century enterprises in a VUCA world	×	×			×	×
Worley & Jules, 2020	COVID-19's Uncomfortable Revelations About Agile and Sustainable Organizations in a VUCA World	×	×		×	×	×
Xu et al., 2015	Resilience thinking: A renewed Aystem Approach for Sustainability Science	×	-	×	×	×	×
Yang et al., 2022	What Does Not Kill You Makes You Stronger: Supply Chain Resilience and Corporate Sustainability Through Emerging IT Capability	×	×	-	×	×	×
Yu et al., 2022	A Study of the Impact of Strategic Human Resource Management on Organizational Resilience	×	-	×	×	×	×

Biographies

Mike Weiß. Mike Weiß holds a Bachelor's degree in Business Administration and a Master's degree in Supply Chain Management & Logistics. With professional experience in international category management at a renowned German retailer, he currently focuses on optimizing procurement strategies and supplier relationships. Mike Weiß is also pursuing a Ph.D. at the University of Sopron, focusing on the dynamic challenges faced by organizations in a VUCA environment. His research centers on the critical success factors involved in implementing a balanced strategy of the levers of organizational structure and innovation culture in organizations, exploring how companies can navigate complexity and uncertainty within their transformation efforts.

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