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VUCA FACTORS INFLUENCING STAKEHOLDER RELATIONSHIP MANAGEMENT DEVELOPMENT: A SYSTEMATIC LITERATURE REVIEW

BY

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Abstract. The term VUCA (volatility – uncertainty – complexity – ambiguity) accurately describes nowadays' high pace society in which changes reshape organisational management structures and impact stakeholder relationship management networks. As such, the influence of the VUCA phenomenon demands a closer evaluation in some of the industries where it had a high impact.

This paper aims to provide the reader with a systematic literature review on the VUCA aspects which influence the development of stakeholder relationship management in specific industries, as well as provide a list of factors that influence organisational management evolution. The papers in scope for this study were selected if they considered the perceived impact stemming from VUCA factors. For this purpose, over 40 academic studies have been identified and analysed against inclusion and exclusion criteria. The results indicate that engineering education, leadership adaptability and resilience, learning agility, culture of innovation, systemic approaches, and the ability of businesses to drive excellence

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are some of the most highlighted aspects which can weigh a heavy influence on the development of stakeholder relationship management. Moreover, there is further need for further research into how methods and frameworks react to VUCA effects across industries.

Keywords: VUCA, stakeholder relationship management, organisational management, engineering education, leadership, systematic literature review.

1. Introduction

In today's rapidly changing and unpredictable business environment, organizations are confronted with various challenges that require them to adapt and respond effectively to the challenges posed by their environments. One structure that captures the essence of this volatile landscape is VUCA, which stands for volatility, uncertainty, complexity, and ambiguity. VUCA represents the dynamic and unpredictable nature of the business environment and highlights the need for organizations to develop strategies and capabilities to navigate and thrive in such conditions (Bennett and Lemoine, 2014b).

Table 1
Adaptztion of VUCA Event Categories

Predictability (low <-> high)	**Complexity**	**Volatility**
	- contains multiple interconnected parts and variables - displays information which is available or information which can be predicted to a degree - volume or nature of information can be overwhelming	- challenge can be unexpected / unstable - unknown duration - easy to understand - knowledge is often available
	Ambiguity	**Uncertainty**
	- causal connections are completely unclear - lacks precedents - need to deal with “unknown unknowns”	- little information is available - basic cause and effects are known - change is possible, but not guaranteed
	Situational Awareness (low <-> high)	

One critical aspect of organizational success is the management of stakeholder relationships, who play a crucial role in shaping an organization's reputation, performance, as well as its long-term sustainability. Effective stakeholder relationship management enables organizations to understand and

engage with their stakeholders, align their interests, and build mutually beneficial partnerships.

This paper aims to provide the reader with a systematic literature review on the VUCA aspects which influence the development of stakeholder relationship management in specific industries, as well as provide a list of factors that influence organisational management evolution. The papers in scope for this study were selected if they considered the perceived impact stemming from VUCA factors. For this purpose, over 40 academic studies have been identified and analysed against inclusion and exclusion criteria. By using these criteria, papers were gathered from sources such as Emerald Insights, Elsevier, MDPI, De Gruyter, and IEEE in order to perform the literature analysis. Some of the factors that influence stakeholder relationship management include the perceived impact of engineering education, leadership adaptability and resilience, learning agility, a culture of innovation, perceived importance of systemic approaches, perceived ability of businesses to drive excellence, and other factors.

While the method of conducting a systematic literature review can be perceived to be a foundational activity as part of the academic research process and make use of existing practices, this paper's novelty brings to the attention of researchers in the fields of stakeholder relationship management, organisational management, and the related themes, the importance that the VUCA phenomenon still holds in multiple industries and continues to build. By further continuing to research and analyse into the effects of VUCA, organisations can continue to develop so as to better respond to the challenges heading their way, such as those coming from their competition, society pressure to respond to needs and expectations, as well as to react to demand for more sustainable environments.

Understanding how VUCA factors influence stakeholder relationship management is vital for organizations seeking to adapt and succeed in today's complex business landscape. The dynamic nature of VUCA requires organizations to be proactive, flexible, and responsive in their interactions with stakeholders. By examining the influence of VUCA factors on stakeholder relationship management, this research aims to contribute to the existing body of knowledge in this area and provide insights into effective strategies and practices.

Through a systematic literature review, this paper will synthesize and analyze relevant academic research to explore the relationship between VUCA factors and stakeholder relationship management. By examining the existing literature, the paper will identify key themes, gaps, and trends in the understanding of how VUCA factors impact stakeholder relationships. Furthermore, it will propose avenues for further research and highlight potential implications for practitioners seeking to enhance their stakeholder engagement strategies in VUCA environments.

2. Methodological approaches

For the preparation of this paper, a systematic literature review has been carried out, split in phases as described in Figure 1. A method similar to that of (Barbu *et al*., 2022) has been used for conducting the research. The first step consisted of preparing the plan for the scientific research, by defining and setting the research objectives and capturing them in the paper's title. The second step implied defining the conceptual boundaries. These boundaries consist mainly of VUCA factors influencing the stakeholder relationship management development. In the third phase, inclusion and exclusion criteria were applied, as identified in papers carrying out similar literature reviews.

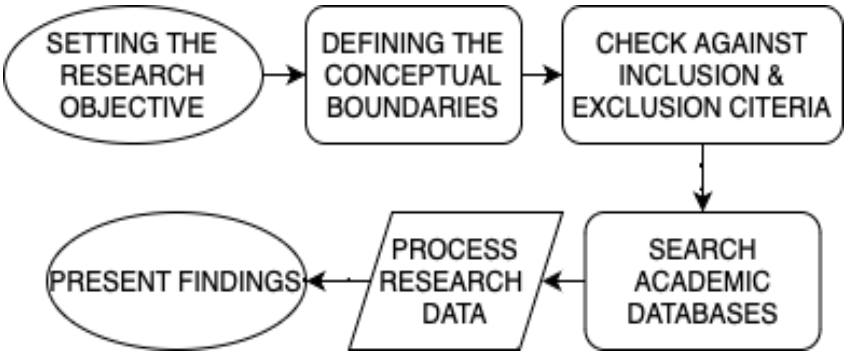


Fig. 1 – Systematic literature review research phases.

The collection of keywords used for identifying the relevant papers in available electronic academic databases such as Emerald Insights, Elsevier, MDPI, De Gruyter, and IEEE can be found in Fig. 2 below.



Fig. 2 – Systematic literature review research keywords.

While the initial search result identified well over 200 results, after reviewing them against the relevant inclusion and exclusion criteria from Table 2, only 42 were further considered for analysis (Barbu *et al*., 2022). The remaining papers were evaluated to check if they approached the topic of VUCA influence in the stakeholder relationship management area. The remaining publications were analysed in-depth, and the findings consolidated into 6 main categories described in the results section of this paper.

Table 2
Applied methodological selection criteria

Criterion number	Criterion	*Possible output*
#1	"Is the research question well stated?"	Yes/No
#2	"Are the inclusion/exclusion criteria described and appropriate?"	Yes/No / Not applicable
#3	"If applicable, is the participation rate reported and appropriate?"	Yes/No / Not applicable
#4	"Are the variables important, well measured, valid, and reliable?"	Yes/No / Not applicable
#5	"Is the outcome defined and measurable?"	Yes/No
#6	"Is the statistical analysis appropriate?"	Yes/No or Not applicable

3. Findings and discussions

In order to better understand the impact of VUCA on the development of the stakeholder relationship management, the results of the literature review were considered only if they matched the criteria from Table 2. The results of the research have been classified into one or more of the following 6 group categories as follows:

1. engineering education
2. leadership adaptability and resilience
3. learning agility
4. culture of innovation
5. importance of systemic approaches
6. ability of businesses to drive excellence

Next, each group of factors will be presented individually, along with the selected papers from each group.

3.1. Engineering education

For this section, a total of 7 studies have been identified as meeting the criteria for this paper and further considered for review. The full list of articles can be found in Fig. 3.1. While the idea of a learning organisation is not a new

concept (Pedler and Burgoyne, 2017), its utility may soon come into the attention of the organisations that intend to keep up with the demanding changes required by VUCA factors. This demand is also supported by recent events such as the CoVid-19 pandemic, which saw educational activities move from on-site to online-only overnight, thus creating the need for agile adaptation to the new ways of learning (Ciolacu, 2022).

Research conducted in recent years has revealed that the field of engineering education is constantly looking to adopt and adapt new ways of delivering content aligned with the demand of the market through development of organisational learning frameworks (Antonacopoulou *et al*., 2019; Antonacopoulou *et al*., 2020), learning paths for future managerial stakeholders (Clegg *et al*., 2019), embedding more creative methods such as Design Thinking into the educational exercise (Krawchuk, 2018). An interesting approach on addressing VUCA challenges in education comes from a study conducted across three European universities during the CoVid-19 pandemic which analyses delivery of Industry 4.0 skills through online learning. The study revealed a need to switch the teaching and learning approach from a "push" principle to a "pull" principle, giving as examples the move from focus on content to focus on context, from delivering requirements to co-creation of requirements, and from attention to training to attention of business impact (Ciolacu *et al*., 2022). Moreover, both Ciolacu *et al*. and Antonacopoulou *et al*.'s studies indicate a tendency to focus and embed agile concepts in the education frameworks, as outlines in Table 3 below:

Table 3

Side-by-side view of Antonacopoulou et al.'s 8As and Ciolacu et al.' Industry 4.0 skills

8As	*Industry 4.0 skills*
Attentiveness	Agile mindset
Alertness	Curiosity
Awareness	Reflection (in/on) action
Appreciation	Innovation
Anticipation	Creativity
Alignment	Leadership
Activation	Technology knowledge Artificial Intelligence methods
Agility	AI-supported decision making

Closely tied to agility are also the concepts of innovation and entrepreneurship. With educational opportunities becoming more accessible through online learning platforms (Latha, 2020), engineering students have wider possibilities to gain entrepreneurial skills by working on real-life software engineering projects (Fernandes and Afonso, 2021), thus becoming more future-ready to manage stakeholder expectations in VUCA-driven environments (Krawchuk, 2018).

While student engineering education is seen as a pillar for future-ready skills, the same is applicable to academic faculty training. The analysed studies showed that in order to enhance stakeholder relationship management, skills such as adaptability, agility, and teamwork need to become part of the teaching activity. This can be addressed by developing programs for faculty members to acquire these skillsets (Clegg *et al*., 2019; Latha, 2020).

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	Fostering Engineering Education 4.0 Paradigm Facing the Pandemic and VUCA World	Ciolacu MI et al.	Elsevier	2022	2
2	VUCA in Engineering Education: Enhancement of Faculty Competency For Capacity Building	Latha S et al.	Elsevier	2020	23
3	Engineering education in a context of VUCA	Fernandes JM et al.	IEEE	2021	4
4	The new learning organisation: PART I–institutional reflexivity, high agility organising and learning leadership	Antonacopoulou EP et al.	Emerald	2019	38
5	The new learning organisation: II - Lessons from the Royal Norwegian Air Force Academy	Antonacopoulou EP et al.	Emerald	2020	12
6	Design thinking: How to thrive in a VUCA world	Krawchuk FT	Emerald	2018	10
7	Can VUCA help us generate new theory within international business?	Clegg LJ et al.	Emerald	2019	15

* Note: Google Scholar search as of 20-Apr-2023

Fig. 3.1 – Articles containing “Engineering education” factors.

3.2. Leadership adaptability and resilience

VUCA factors influence not only academic education, but also the leadership of public and private organisations. For organisations, having the ability to react fast or even anticipate changes which are expected to impact its structures can weigh heavily on an organisation’s success. Recent events such as the pandemic or advancements in Artificial Intelligence (AI) use have led organisations to put more emphasis on agility as an area of prioritisation for their organisational development, on top of existing projects (Moccia *et al*., 2020) (Troise *et al*., 2022). The presence of these kind of events grows the need for organisational leadership to increase their resilience, thus putting pressure on management education entities to adapt their educational curricula. Such actions in turn are expected to lead to an increase in the way in which stakeholder relationship management is conducted in environments impacted by VUCA (Hall and Rowland, 2016; Clegg *et al*., 2019). This tendency is also visible in the high number of articles addressing VUCA impact on leadership adaptability and resilience from Fig. 3.2.

Studies conducted in modern industries, such as automotive and telecommunications, have shown that a possible starting point for increasing

adaptability and resilience of organisations is by assessing the dynamic capabilities, both from a high-level approach (strategy and implementation directions), as well as by domain (non-technological and technological) within VUCA contexts starting from existing frameworks (Dasi *et al*., 2019; Hoeft, 2021). Another study looked at leadership VUCA challenges from a generational change. Recognizing that current organisational structures do not address the incoming Gen Z in the workplace, Chitranshi J proposes a framework to help integrate this generation. Their study shows that the Z generation possesses the capabilities required to work in the VUCA environment, despite the complexity of a modern business environment (Chitranshi, 2021). Given the readiness of the Z generation, it becomes even more imperative for the same resiliency skills to be developed by leadership as well (Breen, 2017).

While transition to a more adaptable and resilient leadership style require commitment in terms of time and effort, a series of systems have been identified in the academic literature, which can support with this challenge. The identified systems have been consolidated in Table 4. As the descriptions show, each system can be used to address VUCA factors at different levels of the organisations. Examples of such systems can also support to maintain agreements where there is risk of turbulence during collaboration involving multiple stakeholders (Ungureanu *et al*., 2018).

Table 4
Systems for leadership development

Framework	*Description*
Virtuous Leadership Development Process	Composed of 3 successive steps (awareness – focus – action) aimed at managing the three main challenges commonly faced by multinational organisations (Ko and Rea, 2016)
BEVUCA	Business excellence in a VUCA environment, framework useful for quality management and risk management for critical success factors identification (Saleh and Watson, 2017)
Leadership toolkit	Series of activities intended for leaders to become more conscious and resilient (Breen, 2017)
Backcasting	Aimed at improving leaders identify and align organisations within the strategy activities (Thorén and Vendel, 2019)

Another challenge which is increasing under VUCA influence is that of toxic leadership. During uncertain and ambiguous conditions, there can be a negative impact associated with the leadership activities which could lead to multiple side-effects within organizations, such as: attrition, cost increases, productivity slow-down, etc. (Watt *et al*., 2016). Studies identified have indicated that such behaviours can be prevented or managed by creating a philosophy of positivity within the teams, starting from the leadership team (Rodriguez and Rodriguez, 2015; Elkington, 2017; Luthans and Broad, 2020), creating leadership

styles which inspire authenticity (Sarkar, 2016). Another approach identified is that of identifying and nurturing foundational capabilities based on which organisational cultures can be built (Castillo and Trinh, 2019).

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	Metaphors for today's leadership: VUCA world, millennial and "Cloud Leaders"	Rodriguez A et al.	Emerald	2015	188
2	Leadership development for managers in turbulent times	Hall RD et al.	Emerald	2016	100
3	Positive psychological capital to help combat the mental health fallout from the pandemic and VUCA environment	Luthans F et al.	Elsevier	2022	34
4	How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era	Troise C et al.	Elsevier	2022	120
5	Backcasting as a strategic management tool for meeting VUCA challenges	Thoren K et al.	Emerald	2019	34
6	Ethical Leadership at the Speed of VUCA	Elkington R	Emerald	2017	7
7	Leading with virtue in the VUCA world	Ko I et al.	Emerald	2016	18
8	Catalyzing capacity: absorptive, adaptive, and generative leadership	Castillo EA et al.	Emerald	2019	37
9	Innovation, dynamic capabilities, leadership, and action plan	Moccia S et al.	Emerald	2020	18
10	Assessing dynamic capabilities of incumbents in the face of unprecedented industry transformation: the case of the automotive industry	Hoeft F	Emerald	2021	4
11	Leadership resilience in a VUCA world	Breen JM	Emerald	2017	25
12	VUCA and the future of the global mobile telco industry	Dasi A et al.	Emerald	2019	3
13	Leader readiness of Gen Z in VUCA business environment	Chitranshi J	Emerald	2021	14
14	Brokers or platforms? A longitudinal study of how hybrid interorganizational partnerships for regional innovation deal with VUCA environments	Ungureanu P	Emerald	2018	25
15	Business excellence in a volatile, uncertain, complex and ambiguous environment (BEVUCA)	Saleh A et al.	Emerald	2017	105
16	Can VUCA help us generate new theory within international business?	Clegg LJ et al.	Emerald	2019	15
17	Increasing darkness: combining toxic leadership and volatility, uncertainty, complexity, and ambiguity (VUCA)	Watt SR et al.	Emerald	2016	13
18	We live in a VUCA World: the importance of responsible leadership	Sarkar A	Emerald	2016	118

* Note: Google Scholar search as of 20-Apr-2023

Fig. 3.2 – Articles containing "Leadership adaptability and resilience" factors.

3.3. Learning agility

In the context of this paper, learning agility refers to the capacity of leaders and organisations to show flexibility and ability to adapt to their behaviours in situations which are complex, dynamic, and uncertain (De Meuse *et al*., 2010). The papers identified for this section have been captured in detail in Fig. 3.3.

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	How VUCA is changing the learning landscape – and how curiosity can help	Horstmeyer A	Emerald	2018	18
2	Leadership development for managers in turbulent times	Hall RD et al.	Emerald	2016	100
3	Strategic people management in contemporary highly dynamic VUCA contexts: A knowledge worker perspective	Zhang-Zhang YY et al.	Elsevier	2022	7
4	How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era	Troise C et al.	Elsevier	2022	120
5	Ethical Leadership at the Speed of VUCA	Elkington R	Emerald	2017	7
6	The new learning organisation: PART I–institutional reflexivity, high agility organising and learning leadership	Antonacopoulou EP et al.	Emerald	2019	38
7	Catalyzing capacity: absorptive, adaptive, and generative leadership	Castillo EA et al	Emerald	2019	37
8	The new learning organisation: II - Lessons from the Royal Norwegian Air Force Academy	Antonacopoulou EP et al.	Emerald	2020	12
9	Collaboration in a VUCA environment	Krawchuk FT	Emerald	2017	3
10	Brokers or platforms? A longitudinal study of how hybrid interorganizational partnerships for regional innovation deal with VUCA environments	Ungureanu P	Emerald	2018	25
11	Business excellence in a volatile, uncertain, complex and ambiguous environment (BEVUCA)	Saleh A et al.	Emerald	2017	105
12	Clarifying the conceptual map of VUCA: a systematic review	Taskan B et al.	Emerald	2022	7
13	Increasing darkness: combining toxic leadership and volatility, uncertainty, complexity, and ambiguity (VUCA)	Watt SR et al.	Emerald	2016	13
14	The generative role of curiosity in soft skills development for contemporary VUCA environments	Horstmeyer A	Emerald	2020	20

*Note: Google Scholar search as of 20-Apr-2023

Fig. 3.3 – Articles containing "Learning agility" factors.

One aspect which came across in the analysed literature was the demand for investment in providing organisational staff with adequate learning resources, delivered in a modern context (Horstmeyer, 2018; Horstmeyer, 2020; Zhang-Zhang *et al*., 2022). The data collection identified that employees perceive current learning material as being outdated, and thus are reluctant to take action and make time for investment in learning and development activities that will enable them to be more prepared when confronted with VUCA factors (Horstmeyer, 2018; Elkington, 2017). It can be argued here that there is more focus required from leadership in order to motivate employees to invest in their development (Zhang-Zhang *et al*., 2022), although previous surveys indicated that management is concerned and focus on providing priority to their employees' learning (Horstmeyer, 2018). The focus on learning agility should become even more important in the context of disruptive events generated by VUCA (Hall and Rowland, 2016; Troise *et al*., 2022). By focusing on fundamental capabilities such as information absorption, adaptability, generative behaviour, there is the expectation that organisations will be better prepared to address learning agility

and prevent development of toxic leadership behaviour (Watt *et al*., 2016; Castillo and Trinh, 2019).

This type of context provides both opportunities and pressure for better management education (Antonacopoulou *et al*., 2019; Antonacopoulou *et al*., 2020; Taskan *et al*., 2022). As indicated in Table 4 above, academia provides a variety of systems on the topic of leadership development, which spans over multiple levels and address both technical and non-technical development (Krawchuk, 2017; Saleh and Watson, 2017; Ungureanu *et al*., 2018; Taskan *et al*., 2022). Moreover, research showed that there is a wide variety of industries and sectors which are already pursuing to increase their agility in learning to better address VUCA events (Ungureanu *et al*., 2018; Antonacopoulou *et al*., 2019; Antonacopoulou *et al*., 2020).

3.4. Culture of innovation

The literature references for this section have been captured in Fig. 3.4 below. In the analysed articles, a close link has been noticed between education and innovation. While the initial expectation during the research was to find correlations mainly in the engineering industry, in-depth analysis showed that VUCA events are forcing multiple industries and sectors to adapt, such as: healthcare (Shimizu and Graber, 2022), media (Laurin, 2018), defence (Antonacopoulou *et al*., 2019; Antonacopoulou *et al*., 2020), tourism and hospitality (Lubowiecki-Vikuk *et al*., 2022), and trade (Popova *et al*., 2018). The responses found by these industries was to foster a culture of innovation. From case to case, the solutions include designing a conceptual map for researchers to better understand VUCA factors (Taskan *et al*., 2022), frameworks which focus on practical ways to collaborate in VUCA environments (Krawchuk, 2017; Saleh and Watson, 2017), structures for leadership representatives to help them foster and drive a culture of innovation (Castillo and Trinh, 2019; Baran and Woznyj, 2020). All these ideas have shown to provide setups which can support organisational agility, so as to better adapt to unexpected events and changes coming from external factors (Troise *et al*., 2022). Innovation has also shown to be a mitigating VUCA element in cases where organisations from multiple sectors worked together (Ungureanu *et al*., 2018; Clegg *et al*., 2019).

As a result, it can be seen from the above examples that in cases where organisations embrace a culture of innovation, the entities and their stakeholders are better equipped to respond to uncertainty in their areas of operations.

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	Managing VUCA: The human dynamics of agility	Baran BE et al.	Elsevier	2020	120
2	How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era	Troise C et al.	Elsevier	2022	120
3	Enterprise management in VUCA conditions	Popova N et al.	CEEOL	2018	29
4	Catalyzing capacity: absorptive, adaptive, and generative leadership	Castillo EA et al.	Emerald	2019	37
5	Organizing for Sales in VUCA Contexts: The Transformation Process from Products to Solution Sales	Laurin E	Emerald	2018	0
6	How insight contributes to diagnostic excellence	Shimizu T et al.	De Gruyter	2022	2
7	Collaboration in a VUCA environment	Krawchuk FT	Emerald	2017	3
8	Brokers or platforms? A longitudinal study of how hybrid interorganizational partnerships for regional innovation deal with VUCA environments	Ungureanu P	Emerald	2018	25
9	Business excellence in a volatile, uncertain, complex and ambiguous environment (BEVUCA)	Saleh A et al.	Emerald	2017	105
10	Clarifying the conceptual map of VUCA: a systematic review	Taskan B et al.	Emerald	2022	7
11	Can VUCA help us generate new theory within international business?	Clegg LJ et al.	Emerald	2019	15
12	Critical reflection on VUCA in tourism and hospitality marketing activities	Lubowiecki-Vikuk A et al.	Emerald	2023	0

* Note: Google Scholar search as of 20-Apr-2023

Fig. 3.4 – Articles containing "Culture of innovation" factors.

3.5. Importance of systemic approaches

One common point present in all the analysed papers is that the traditional and linear problem-solving methods present in literature are often insufficient in navigating the intricacies and interconnectedness of VUCA contexts (Bennett and Lemoine, 2014a; Horstmeyer, 2020). Systemic approaches, such as systems thinking and design thinking methods, offer a broader perspective that considers the interconnectedness of various elements and their dynamic interactions (Ungureanu *et al.*, 2018). By embracing systemic thinking, organizations and individuals can better understand the underlying causes of complex issues, identify unforeseen consequences, and develop agile strategies to navigate the ever-changing landscape of VUCA environments.

Manufacturing industries are faced with an increasing demand for systemic approaches to tackle the complexities and uncertainties they face (Hoeft, 2021; Nowacka and Rzemieniak, 2022; Datta et Joshi, 2023). By embracing systemic thinking, these industries are able to gain a comprehensive understanding of their supply chains (Lechler *et al.*, 2019; Grzybowska and Tubis, 2022), operational processes (Sharif and Irani, 2017; Laurin, 2018), and interdependencies across the organization. By adopting systemic approaches, they can proactively identify potential risks, optimize workflows, and implement agile strategies that enable them to thrive amidst constant changes and disruptions in their competitive landscapes.

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	Strategic people management in contemporary highly dynamic VUCA contexts: A knowledge worker perspective	Zhang-Zhang YY et al.	Elsevier	2022	7
2	Managing VUCA: The human dynamics of agility	Baran BE et al.	Elsevier	2020	120
3	How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era	Troise C et al.	Elsevier	2022	120
4	What a difference a word makes: Understanding threats to performance in a VUCA world	Bennett N et al.	Elsevier	2014	1251
5	Backcasting as a strategic management tool for meeting VUCA challenges	Thoren K et al.	Emerald	2019	34
6	The Impact of the VUCA Environment on the Digital Competences of Managers in the Power Industry	Nowacka A et al.	MDPI	2022	16
7	Supply Chain Resilience in Reality VUCA—An International Delphi Study	Grzybowska K et al.	MDPI	2022	2
8	Enterprise management in VUCA conditions	Popova N et al.	CEEOL	2018	29
9	Institutional schisms in Argentina: The impact of intergovernmental organizations on country institutional environments	Moore E et al.	Emerald	2019	8
10	Real-time data processing in supply chain management: revealing the uncertainty dilemma	Lechler S et al.	Emerald	2019	50
11	Assessing dynamic capabilities of incumbents in the face of unprecedented industry transformation: the case of the automotive industry	Hoeft F	Emerald	2021	4
12	Organizing for Sales in VUCA Contexts: The Transformation Process from Products to Solution Sales	Laurin E	Emerald	2018	0
13	Strategic foresight of entrepreneurial firms in energy transition	Datta D et al.	Emerald	2023	0
14	Policy making for global food security in a volatile, uncertain, complex and ambiguous (VUCA) world	Sharif AM et al.	Emerald	2017	22
15	Brokers or platforms? A longitudinal study of how hybrid interorganizational partnerships for regional innovation deal with VUCA environments	Ungureanu P	Emerald	2018	25
16	The VUCA approach as a solution concept to corporate foresight challenges and global technological disruption	Kaivo-oja JRL et al.	Emerald	2018	114
17	Business excellence in a volatile, uncertain, complex and ambiguous environment (BEVUCA)	Saleh A et al.	Emerald	2017	105
18	The generative role of curiosity in soft skills development for contemporary VUCA environments	Horstmeyer A.	Emerald	2020	20

* Note: Google Scholar search as of 20-Apr-2023

Fig. 3.5 – Articles containing "Importance of systemic approaches" factors.

As VUCA environments lead to workforce adjustments and restructuring (Zhang-Zhang *et al*., 2022), there is an augmented demand for soft skills among employees. In this context, communication, adaptability, emotional intelligence, and collaboration become crucial for maintaining team cohesion, fostering resilience, and navigating uncertainties (Popova *et al*., 2018; Thorén and Vendel, 2019; Troise *et al*., 2022). Investing in soft skills development enables individuals to effectively handle change, work collaboratively in diverse teams, and contribute to creative problem-solving, which are essential attributes for navigating the challenges of VUCA environments while ensuring continued success and growth.

Technological disruptions are a prevalent challenge, which makes

VUCA management a vital solution for organizations seeking to remain competitive. By adopting a VUCA-oriented approach, organizations can better anticipate and respond to technological changes, incorporating agility and flexibility into their structures (Saleh and Watson, 2017; Kaivo-oja and Lauraeus, 2018; Moore *et al*., 2019; Baran and Woznyj, 2020). The literature references for this section have been captured in Figure 3.5 above.

3.6. Ability of businesses to drive excellence

Literature analysis has shown an increasing demand for organizations to set collaboration goals, establish improved governance systems, and foster better institutional partnerships. By setting clear collaboration objectives, organizations can bring diverse stakeholders together, encouraging the exchange of ideas, knowledge, and resources to address complex challenges collectively (Popova *et al*., 2018). Additionally, forging strong institutional partnerships fosters resilience by pooling expertise and resources, enhancing innovation, and expanding the collective capacity to navigate VUCA environments (Thorén and Vendel, 2019; Zhang-Zhang *et al*., 2022).

The ability to drive excellence in VUCA environments also requires for soft skills to be seen as a critical success factor. Individuals with strong soft skills, such as adaptability, communication, emotional intelligence, and problem-solving, are better equipped to respond to dynamic situations. By emphasizing the development of soft skills, organizations and their workforce become better equipped with the agility and adaptability needed to thrive in VUCA environments and emerge stronger from challenges and disruptions (Ungureanu *et al*., 2018; Horstmeyer, 2020). The literature references for this section have been captured in Fig. 3.6 below.

Item number	Paper Title	Authors	Academic Database	Publication Year	Number of Citations*
1	Strategic people management in contemporary highly dynamic VUCA contexts: A knowledge worker perspective	Zhang-Zhang YY et al.	Elsevier	2022	7
2	Backcasting as a strategic management tool for meeting VUCA challenges	Thoren K et al.	Emerald	2019	34
3	Enterprise management in VUCA conditions	Popova N et al.	CCEOL	2018	29
4	Brokers or platforms? A longitudinal study of how hybrid interorganizational partnerships for regional innovation deal with VUCA environments	Ungureanu P	Emerald	2018	25
5	The generative role of curiosity in soft skills development for contemporary VUCA environments	Horstmeyer A	Emerald	2020	20

* Note: Google Scholar search as of 20-Apr-2023

Fig. 3.6 – Articles containing "Ability of businesses to drive excellence" factors.

4. Conclusions

The influence of VUCA factors on stakeholder relationship management development is a topic of interest across multiple industries, prompting the need

for targeted strategies relevant to each industry or use case. Emphasizing soft skills, integrating ethical practices, and developing collaborative frameworks will be instrumental in thriving amidst uncertainty and driving success in VUCA environments. Proactive actions (such as framework design) can help reduce the negative effects of VUCA across the industrial landscape. Organisations, both from the public and private sectors, must continuously scan their environments with the purpose of anticipating potential disruptions, and prepare swift responses to effectively manage stakeholder's evolving expectations and demands. Overall, stakeholders across industries are proactively adopting strategies to cope with VUCA's challenges, promoting innovation, fostering a resilient and adaptive approach in stakeholder relationship management.

The insights presented in this paper provide a contemporary reflection of practical methods used to counteract or manage VUCA effects across industries. The main research areas of this paper were engineering education, leadership adaptability and resilience, learning agility, culture of innovation, importance of systemic approaches, ability of businesses to drive excellence. While these six were mainly focused in this paper, the applicability and impact of VUCA is far wider. Starting from this paper, future research can consider topics such as:

1) The efficacy of soft skills training in enhancing stakeholder relationship management in VUCA environments in the post-pandemic period,

2) Case studies cross industries and sectors into challenges and achievements with implementing frameworks that provide guidance for ethical management in dynamic environments, and

3) Example of methods and frameworks applied cross industries to mitigate and manage VUCA effects.

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FACTORI VUCA CARE INFLUENȚEAZĂ DEZVOLTAREA MANAGEMENTULUI RELAȚIILOR CU STAKEHOLDERII: O REVIZUIRE SISTEMATICĂ A LITERATURII DE SPECIALITATE

(Rezumat)

Termenul VUCA (tradus din limba engleză volatilitate – incertitudine – complexitate – ambiguitate) descrie cu acuratețe ritmul accelerat în care au loc schimbările care redefinesc structurile de management ale organizațiilor și care impactează rețelele de management ale părților interesate. În acest context, influența fenomenului VUCA necesită o evaluare mai atentă în unele dintre industriile unde impactul este semnificativ.

Scopul acestei lucrări este să ofere cititorului o revizuire sistematică a literaturii de specialitate cu privire la factorii VUCA care influențează dezvoltarea managementului relațiilor dintre părțile interesate în diverse industrii, precum și furnizarea unei liste de factori care influențează evoluția managementului organizațional. Studiile selectate pentru această lucrare au fost selectate dacă au luat în considerare perceperea impactului determinat de factorii VUCA. Ca urmare, au fost identificate și analizate peste 40 de studii academie conform criteriilor de includere și excludere selectate.