ISSN: 2029-4913 / eISSN: 2029-4921

VILNIUS TECH
Vilnius Gediminas Technical University

TECHNOLOGICAL and ECONOMIC DEVELOPMENT of ECONOMY

2025
Volume 31
Issue 2
Pages 639–662
https://doi.org/10.3846/tede.2024.22058

*Review*

# ADAPTIVE STRATEGIES AND SUSTAINABLE INVESTMENTS: NAVIGATING ORGANIZATIONS THROUGH A VUCA ENVIRONMENT IN AND AFTER COVID-19

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**Article History:**
- received 14 September 2023
- accepted 25 June 2024
- first published online 10 September 2024

**Abstract.** This study delves into the resilience and adaptability of employees within the volatile, uncertain, complex, and ambiguous (VUCA) business environment, examining their readiness to manage effectively and the organizational agility in navigating change, alongside the impact of sustainable investment practices. Employing quantitative methods, a survey was conducted among employees at two pivotal moments: during and after the COVID-19 pandemic restrictions. Factorial analysis revealed a strong preference for participatory work styles and highlighted the critical need for employee involvement in significant decision-making processes. Although the value of sustainable investments was recognized, a noticeable gap was found in employees' understanding and adaptability towards these investments. The use of the Wilcoxon test illuminated the significant impact of external disruptions, such as the pandemic, on organizational operations and preparedness. The findings underscore the imperative for organizations to champion continuous learning and training, enabling strategic and innovative responses to the challenges unique to the VUCA world. By aligning adaptive interventions with the demands of the VUCA environment, organizations can define a clear trajectory towards sustainable growth and enhance their proactive stance against sudden shifts in the business landscape.

**Keywords:** VUCA, sustainable investments, organizational strategy, participatory decision-making, external disruptions, COVID-19.

**JEL Classification:** G11, H12, M12, Q01.

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## 1. Introduction

In an evolving business environment marked by unpredictability and constant change, organizations today grapple with challenges accentuated by various crises. To encapsulate these events, which either cause upheaval or offer unique opportunities, the business world has adopted the term VUCA (volatility, uncertainty, complexity, and ambiguity) (Kaivo-oja & Lauraeus, 2018). Such VUCA challenges have led to internal reconfigurations within organizational structures and necessitated the updating of key employee competencies (Nowacka & Rzemieniak, 2022).

Uncertainty and ambiguity dominate decision-making processes (Gu et al., 2018). In a rapidly changing global market where digitization increasingly plays a pivotal role in deliver-

ing superior client services, our current milieu starkly contrasts with the past (Krawczyńska-Zaucha, 2019). While global connectivity and the internet have unlocked unprecedented opportunities, they simultaneously present challenges emblematic of the VUCA world.

Adapting to these changes, companies have frequently revamped their strategies, emphasizing continuous learning and the cultivation of new skill sets, particularly among managers. These managers are transitioning into robust leaders equipped to discern employee needs, foster cohesive teams, and spearhead successful projects even amidst generational differences within their ranks (Nowacka & Rzemieniak, 2022; Deepika & Chitranshi, 2020; Lawrence, 2013).

The academic literature approaches various leadership styles, notably agile leadership, esteemed for its flexibility and change-centric approach. This style has been shown to enhance career trajectories and employee success (Breakspear, 2017). Agile managers swiftly acclimatize to the opportunities and challenges posed by the VUCA business environment, underscoring the imperative for perpetual learning and skill enhancement. Future employees must develop a set of skills and dispositions that allow them to discern and prioritize external information, linking it with their existing knowledge to make sense of complexity (Bayart et al., 2013).

As the VUCA world evolves, the focus on corporate transformation intensifies, with an emphasis on sustainable organizations. This sustainability encompasses not just financial outcomes but also environmental, social, and governance (ESG) results (Worley & Jules, 2020). The SARS-CoV-2 pandemic has fundamentally changed the business perspective, with the consequence of modifying organisational processes in order to maintain activity continuity in a context of daily procedural changes (He & Harris, 2020; Dwivedi et al., 2020).

The coronavirus pandemic has rapidly modified market conditions, leading to the need to update governance standards and norms to respond to new conditions (Frankowska et al., 2023). Furthermore, the COVID-19 pandemic catalyzed heightened global environmental awareness (Peng et al., 2023). Consequently, efficient VUCA world management will prioritize sustainable investment projects, emphasizing environmental conservation. While profit generation once dominated corporate priorities, today's volatile business environment stresses mitigating negative environmental and community impacts. This eco-consciousness has stimulated innovative managerial strategies in supply chain and production operations (Keshavarz Ghorabaee et al., 2017).

Amid the challenges of the VUCA world, characterized by instability and unpredictability, this study introduces a novel perspective on how organizations can navigate unexpected events. Leveraging specialized literature, it explores employee perceptions and competencies in managing VUCA-related changes. Additionally, this research assesses the extent and impact of sustainable investment projects and organizational responses to pandemic and post-pandemic conditions. The article unfolds in four main sections: a literature review on the VUCA world, its managerial implications, and its interplay with sustainable investments and COVID-19; a detailed description of the methods and techniques employed; a presentation of findings from quantitative research conducted with Romanian employees during December 2021 – January 2022 and from January to April 2023; and conclusions. This research stands out for its innovative approach, probing the interconnections between the VUCA world, sustainable investment, and the coronavirus pandemic's impact on organizational operations.

## 2. Literature review

### 2.1. VUCA world components and their influence on managerial systems

Origin and Emergence in Managerial Context: The acronym VUCA, delineating Volatility, Uncertainty, Complexity, and Ambiguity, was initially used by the U.S. military towards the end of the Cold War era. This paradigm shift reflected a transition from conventional Cold War military confrontations to asymmetric warfare, characterized by agile, dispersed adversaries operating outside traditionally understood rules and motivations (Kaivo-oja & Lauraeus, 2018).

Notably, the VUCA concept transitioned to the business domain, particularly post the 2008–2009 financial crisis. Today's world (VUCA world) in which business operates presents a major challenge for organisations in predicting the future because procedures and models of action developed in the past are no longer performing well, as the certain constants of this environment remain unpredictability and instability (Grzybowska & Tubis, 2022). Enterprises and organizations globally encountered conditions reminiscent of the basic principles of VUCA in their socio-economic environments (Schick et al., 2017; Bennett & Lemoine, 2014; Doheny et al., 2012) (Figure 1).

Volatility: Often linked with situations inducing frequent organizational fluctuations compared to earlier times (Bennett & Lemoine, 2014), volatility refers to the unpredictable nature, volume, speed, and impact of changes (Kaivo-oja & Lauraeus, 2018; Lawrence, 2013; Sullivan, 2012). This environment is further complicated as organizations are frequently confronted with novel information or ideas, the credibility of which remains uncertain due to limited examination or evidence (Nowacka & Rzemieniak, 2022). Analogizing the volatile VUCA world with a hurricane, Krawczyńska-Zaucha (2019) suggests that despite increasing knowledge about the conditions for its escalation, predicting its magnitude and consequences remains elusive. Thus, the first component, volatility, highlights the need for organisations to be flexible so that they can act proactively, adjusting their initial plans and strategies according to the changes and turbulence that have occurred. In volatile scenarios, vision is the best answer, with leaders necessitating adept communication and guiding teams towards novel paradigms (Kaivo-oja & Lauraeus, 2018). Furthermore, both leaders and team members need to be aware of the expected end results of the project that will be implemented, based on the organisation's vision, so that they can better respond to volatile changes in the environment (economic downturn, new competitors, etc.) (Lawrence, 2013).

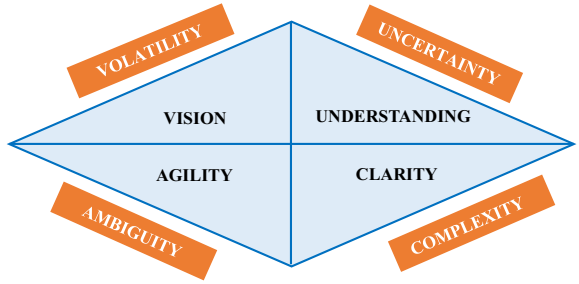


**Figure 1.** The response to the four components of the VUCA world (source: adapted from Kaivo-oja & Lauraeus, 2018)

Uncertainty: Often rooted in the incapability to grasp present realities, uncertainty is characterized by an organization's cluelessness regarding impending events and their implications (Deepika & Chitranshi, 2020; Bennett & Lemoine, 2014). This prevailing uncertainty inhibits its leaders from leveraging past experiences, rendering them ineffective for contemporary challenges (Kaivo-oja & Lauraeus, 2018; Lawrence, 2013; Sullivan, 2012). Such environments escalate the inherent risks of investment projects (Mohagheghi et al., 2019). In an uncertain environment, managers need to effectively coordinate the work team for the proper implementation of investment projects by encouraging a culture of collaboration in order to face all challenging times and take advantage of every opportunity. Adopting optimal decisions under uncertain and potentially detrimental circumstances becomes challenging due to the unknown parameters at decision time (Pranevičius & Šutiene, 2008). Addressing uncertainty requires understanding. Leaders must be proactive in eliciting insights from both their teams and clients to comprehend their needs, aspirations, and concerns effectively (Kaivo-oja & Lauraeus, 2018). Embracing change and fostering an open mindset across organizational levels is essential in this uncertain landscape, encouraging the exploration of new concepts and continuous adaptation based on feedback.

Complexity: Complexity investigates the complicated network within systems influenced by a multitude of interacting factors (Hadar et al., 2020). Such intricacies can turn into unforeseen trajectories, inducing chaos and stress within organizations. Considering increasingly sophisticated systems and the activity of organizations with a growing emphasis on sustainable investments, managers must also analyse their socio-political and economic dimensions (Schick et al., 2017). In the VUCA world there are many reasons why an event has occurred, often the causes and effects are unclear (Baltaci & Balci, 2017), the complexity and multiplex nature of the problems being infinitely long (Cottong, 2020). Addressing such intricate scenarios demands clarity, respectively, creating procedures and process descriptions that are easy for employees to understand, so that everyone is aware of how to act, regardless of the confusion, turbulence that may arise in the external environment (Nowacka & Rzemieniak, 2022). In a complex business environment determined by the multitude and variety of influencing factors, managers need to move beyond conventional approaches and adopt a wide perspective that allows them to adjust their investment projects in real time, even in turbulent times such as during the coronavirus epidemic.

Ambiguity: This denotes the haziness surrounding event interpretation due to contradictory, imprecise, or incomplete data (Bennett & Lemoine, 2014). Regarded as VUCA's most abstract component, ambiguity is interwoven with misinterpretations stemming from mixed situational cues (Schick et al., 2017). Given the lack of analogous situations, organizational managers struggle to pinpoint specific opportunities or threats, potentially undermining overall operations (Kaivo-oja & Lauraeus, 2018; Lawrence, 2013; Kail, 2010). Navigating ambiguity requires agility, a trait indispensable for all managerial personnel. Agile managers deploy intuition and experimentation to address ambiguous scenarios, rapidly prototyping and adjusting to evolving situations (Nowacka & Rzemieniak, 2022). Additionally, these managers employ varied strategies, including collective decision-making and promoting robust communication. This ensures organizational alignment and facilitates adaptability in a perpetually changing environment (Akkaya et al., 2022). Thus, the rapid transformations that characterise

the VUCA business environment require organisations to turn their attention to responsible business options, by constructing sustainable investment portfolios adapted to unpredictable and sudden changes.

## 2.2. VUCA environment and sustainable investment initiatives

Operating within a Volatile, Uncertain, Complex, and Ambiguous (VUCA) business milieu presents formidable challenges to organizations, accentuating the pressing need for discerning investment endeavours – specifically, those rooted in sustainability. Investment projects are pivotal to economic growth, wielding significant influence over the environment and broader society (Saunila et al., 2018). Marcelino-Sabada et al. (2015) argue that project management serves as a strong mechanism to integrate sustainability considerations seamlessly across all facets and levels of organizational processes. All these reorientations are the result of a new approach, of a new way of thinking through awareness of the social and ecological consequences (Sakalauskas, 2010).

The complex interaction of unpredictable elements, augmented by transformative events (such as health crises, climate anomalies, geopolitical disturbances, and changes in consumer preferences), underscores a paradigmatic shift towards innovative, resilient strategies. Such adaptive strategies equip firms to navigate the multifarious challenges inherent to the VUCA world. In parallel, the intensified global emphasis on environmental stewardship necessitates a swifter incorporation of sustainability strategies within organizations, reflected in the three aspects of economic, social and environmental responsibility (De Magalhães et al., 2019; Garcia et al., 2016).

The 2030 Agenda for Sustainable Development, adopted by United Nations member states, outlines 17 ambitious goals aimed at addressing critical issues of sustainable development. These goals are designed to promote prosperity for people and the planet, both now and in the future (Minciu et al., 2021; United Nations, 2021). According to the European Sustainable Investment Forum (Eurosif), "socially responsible investment", synonymously termed as sustainable or responsible investment, broadly characterizes any investment approach that harmoniously marries financial imperatives of investors with social, environmental, and governance (ESG) criteria (Munoz et al., 2021). Vitor (2019), delineates those sustainable investments, alternatively conceptualized as socially responsible or ethical investments, seamlessly combine financial objectives with a gamut of non-financial metrics (Renneboog et al., 2008). These cover the domains of environmental governance (encompassing environmental protocols, emission metrics, climate indicators, and waste management systems), social dynamics (covering human rights and labour), and overarching governance structures (reflecting ethical code adherence and governance best practices). Sustainable investing combines fundamental analysis and evaluation of ESG factors in order to achieve the best long-term returns for investors and bring society a range of benefits by influencing company behaviour (Biekša et al., 2021; Sustainable Investment Forum Europe, 2021). While encapsulating sustainability's trajectory in mathematical terms is challenging, there's a scholarly consensus that it is intrinsically twined with dual pillars: human and ecological dynamics (Rutkauskas & Stasytytė, 2011). In this context the main challenge for organizations is to decide what

are the best initiatives and actions to respond to sustainability requirements (Silvestre et al., 2018). Measuring sustainability across social, economic, and environmental domains presents significant challenges, particularly due to the complexities in assessing whether organizational impacts are positive or negative (Recker & Michelfelder, 2017; Jay & Gerard, 2015; Hahn et al., 2014). This complexity is compounded by the range of factors involved, from economic performance specifics to environmental and community impact indicators like carbon emissions, waste production, and working conditions. Given the high level of uncertainty faced by organizations in today's business environment, established best practices for sustainability measurement – such as the Global Reporting Initiative, Triple Bottom Line, and Corporate Sustainability Reports – become invaluable, especially within mature organizations (Recker & Michelfelder, 2017; Milne & Gray, 2013). Focusing on economic aspects, an increasing number of organizations are adapting their Balanced Scorecards to incorporate a Sustainability Balanced Scorecard approach (Hansen & Schaltegger, 2016). Cost-Benefit Analysis continues to be widely utilized for policy and project assessment (Gasparatos et al., 2008). In the realm of socially responsible investment, Galema et al. (2008) observed an influence on stock returns by lowering the price/market value ratio without generating positive alphas (Latinovic & Obradovic, 2013). Moreover, socially responsible investment funds tend to outperform conventional funds during crises but underperform in normal conditions (Nofsinger & Varma, 2014; Latinovic & Obradovic, 2013). Sustainability promulgates a community-centric vision, promoting prudent use of resources. This approach ensures contemporary generations achieve commendable economic stability while preserving the ecological sanctity and systemic harmony (Armenia et al., 2019; Elkington, 1997). Embedding sustainability principles within investment initiatives can bolster long-term investment viability, potentially amplifying competitiveness through avenues such as cost efficiencies, risk abatement, consumer alignment, resource optimization, and fiscal incentives (Kim & Lee, 2018). In this way, organisations that embrace sustainable investment can better manage the unpredictable changes of the VUCA world by finding innovative solutions to the problems they experience in their projects or by discovering new business opportunities. Additionally, it can curtail the risk of stranded assets, as a result of all the regulations established (Kudratova et al., 2018; Tan et al., 2015). An ensemble of research accentuates a tangible nexus between sustainable investments and financial yields, suggesting that sustainability-centric investments can potentially amplify financial outcomes (Kim & Lee, 2018; Henderson, 2015).

VUCA phenomena are intensifying, manifesting with unparalleled prominence across diverse sectors: from cybersecurity vulnerabilities and natural calamities to price volatilities, terrorism acts, pandemics, and technological setbacks (Ocicka et al., 2022). As such, organizations aiming to bolster or even maintain their profitability trajectory in this VUCA-dominated era must cultivate a prescient understanding of evolving societal requisites. This foresight facilitates the design and execution of investment projects that generate a beneficial environmental and societal footprint. Moreover, the coronavirus pandemic crisis has accelerated the transition to the VUCA world and the need to adapt to new levels of complexity highlighting the importance of sustainable investments to successfully navigate through new economic and social realities.

## 2.3. The VUCA world in the wake of the SARS-CoV-2 pandemic

The SARS-CoV-2 pandemic dramatically underscored the attributes of a VUCA world, heightening awareness of pervasive uncertainties. It is, of course also well known that the SARS-CoV-2 pandemic has caused a crisis of unprecedented scale and economic, social and environmental impact (Bienkowska & Tworek, 2022; Boiral et al., 2021). The effects of the COVID-19 pandemic were manifested mainly in the form of an economic reduction in the activity of organisations because of the social restrictions that affected people's purchasing power (Shodrokova et al., 2023). Quantifying the economic shock of the SARS-CoV-2 pandemic is difficult (Liu et al., 2022). This paradigm shift catalysed a significant academic inclination towards analysing complex and critical events capable of obstructing organizational trajectories. As they ventured into the terra incognita of the COVID-19 era, organizations found themselves addressing a host of unparalleled challenges. These spanned from transitioning to remote work ecosystems, to fortifying operational capabilities amidst recurrent supply chain disruptions, and making daunting decisions related to employment stability (Worley & Jules, 2020). The COVID-19 outbreak has introduced unprecedented volatility across all sectors, leading to rapid fluctuations in responses and a heightened state of ambiguity. In this VUCA (volatile, uncertain, complex, ambiguous) scenario, organizational managers have been compelled to make swift decisions during the crisis. This pandemic has underscored the necessity not only for adaptability to the tumultuous environment but also for learning agility to implement new business models or technologies efficiently.

In the pandemic context, forging problem-solving teams focused on common goals has become crucial. These teams must work accurately and swiftly to maintain the organization's market position, reflecting the importance of agility and collaboration in overcoming challenges posed by the pandemic (Minciu et al., 2020; Wen et al., 2020; Rudolph, 2017).

According to Biron et al. (2020), while VUCA environments can potentially harbour transformative opportunities for organizations, they equally encapsulate formidable threats that demand innovative and adaptive problem-solving strategies, especially in contexts which are not just unforeseen but historically unique. The COVID-19 pandemic illustrated a multidimensional disruption, not confined to healthcare, but extending its tremors into the economic and labour landscapes (Karmaker et al., 2021).

In the ante-pandemic phase, many organizations leaned heavily on just-in-time risk management systems, often overlooking the vital utility of VUCA-preparative strategic planning tools (Worley & Jules, 2020). However, the pandemic heralded an inflection point, emphasizing the urgency for avant-garde organizational strategies. The initial paucity of comprehensive data about the virus fostered a labyrinthine scenario of interconnected challenges. Wide-scale institutional closures, necessitated by pandemic mitigation efforts, catalysed a contraction in both consumption and investments, thereby impinging upon aggregate demand and supply dynamics (Seetharaman, 2020). The pandemic's onset underscored the imperative of adaptability and foresight for organizations, as fluctuating and often scant information about the virus exacerbated global economic unpredictability.

In light of the evolving complexities of the VUCA world, the urgency of sustainable investment projects, and the multifaceted challenges introduced by the COVID-19 pandemic, organizations stand at a crossroads, necessitating innovative, sustainable, and adaptive strategies to ensure both resilience and prosperity in uncertain times.

## 3. Methodology

To gain insights into the VUCA world and its ties to sustainable investment projects amidst the COVID-19 pandemic, a methodical approach was adopted.

### 3.1. Literature review: conceptual delimitations

Initially, an exhaustive review was conducted, analysing peer-reviewed articles and specialized research sourced from esteemed economic and managerial journals. In order to collect data on the VUCA world and its link to sustainable investment projects and the coronavirus pandemic in the first phase, it was conducted a review of articles and research available in reputable business and management journals and remarkable databases (Web of Science, Scopus etc.). Subsequently, only articles that were in English and had significant results for the domain were studied in detail. This analysis delved into:

- The defining components of the VUCA environment.
- The repercussions of VUCA on management systems and daily employee functions.
- The essential competencies and knowledge spectrum employees need to both acclimate to the VUCA dynamics and steer sustainable investment projects in their organizations.
- The ramifications of the coronavirus pandemic on organizations navigating the VUCA world.

Thus, after a thorough review of the literature, we proceeded to apply the theoretical insights in conducting new quantitative research.

### 3.2. Quantitative research

Building on the theoretical foundation established through the literature review, a comprehensive quantitative study was embarked upon. Drawing from the findings of the initial December 2021–2022 research (Minciu, 2023) – a period when Romania grappled with COVID-19 constraints – the study reconvened in 2023, broadening the data acquisition phase to span from January to April.

For both research periods, the same questionnaire was applied. Administered via Google Forms, this online tool comprised 22 closed-ended questions, which further delineated into 33 distinct variables. The target audience spanned employees from diverse sectors, including but not limited to management consultancy, marketing, healthcare, education, finance, banking, and human resources. While the 2021–2022 timeframe yielded 130 responses, the more extensive 2023 phase saw participation skyrocket to 797, facilitating a nuanced comparative analysis between the two pivotal timeframes. Given the sample sizes analysed, this quantitative research offers nuanced insights into the variances, dynamics, and interactions among variables within the VUCA environment. In the initial survey, the gender distribution was nearly balanced, with 72 females (predominantly aged between 24–30 and 31–40 years) and 58 males (mostly within the 31–40 age bracket). The second survey, comprising 797 participants, presented a different demographic: 543 females (majority aged 31–40 years) and 254 males (primarily aged 31–40 years). This demographic, particularly those aged 31–40, is critical to the study's precision. Having encountered numerous VUCA-specific challenges

in their professional lives, these participants offer invaluable perspectives on organizational responses to an unpredictable business environment, including impacts of the coronavirus pandemic and the integration of sustainable investment projects.

## 3.3. Data analysis

Data analysis was rigorously conducted using SPSS software. The primary goal of this quantitative analysis was to explore the relationships among the variables through factor analysis and the Wilcoxon test. Given the turbulent and complex nature of the VUCA environment, factor analysis helped identify key factors and their interrelations, enriching our understanding of the dynamic changes and risks within the VUCA context, especially regarding sustainable investments and the coronavirus pandemic. Factorial analysis elucidated the intricate relationships between variables, distilling them into six core components reflective of the VUCA framework. The Wilcoxon test then highlighted significant differences across the two periods studied, contrasting organizational adaptation dynamics amidst the pandemic's high uncertainty with the post-restriction phase's shift towards normalcy. Employing the Wilcoxon test to assess temporal variations offered insights into the significant data differences, illustrating the abrupt and complex changes characteristic of the VUCA world.

The posited hypotheses for the study were:

**H1:** *A proactive participative work environment, adept change management, and a focus on sustainable investments foster superior VUCA adaptability – verified via factorial analysis.*

**H2:** *Notable disparities are present between the 2021–2022 and 2023 research phases concerning the pandemic's adverse impact on organizational dynamics – assessed through the Wilcoxon test.*

**H3:** *There's a perceptual shift between the two study periods in terms of employee competencies and skills necessary to adapt to the VUCA external shifts – gauged via the Wilcoxon test.*

**H4:** *A tangible difference exists in respondents' preliminary and subsequent understanding of sustainable investments, especially post major VUCA – induced organizational upheavals – ascertained using the Wilcoxon test.*

## 3.4. Conclusion of methodology

This methodological approach facilitates a comprehensive exploration of the VUCA context, its impact on sustainable investments, and the challenges presented by the COVID-19 pandemic, aligning with the objectives of our study as outlined in the document.

Delving into the results and interpretations derived from this rigorous methodology in the subsequent section, it's imperative to acknowledge the limitations inherent to our analytical methods: factor analysis and the Wilcoxon test. Despite their strengths, factor analysis may oversimplify complex interrelations and overlook nuanced details, while the Wilcoxon test is optimal for comparing two related samples but might not fully capture broader trends or variations beyond the tested conditions. These constraints hint that while invaluable for our

study's goals, these methods may not fully encapsulate all subject implications or allow for the generalization of results across diverse contexts.

However, it's crucial to underscore that these methodologies were meticulously selected for their robustness in achieving our study's specific aims, providing a solid foundation for understanding the intricate dynamics within the VUCA environment, sustainable investments, and the organizational shifts induced by the pandemic.

## 4. Results and discussion

Before delving into hypothesis testing – using factorial analysis and the Wilcoxon test – the acquired data were rigorously assessed to ensure the reliability and validity of the evaluation instrument implemented during the 2021–2022 and 2023 periods. This scrutiny extended to the corresponding measurement scales employed. To this end, the Cronbach Alpha test was conducted independently for the datasets corresponding to each timeframe, focusing specifically on 25 paramount ordinal variables from the total 33 incorporated in the research.

Literary benchmarks do not present an unequivocal standard for the Cronbach alpha coefficient's requisite value to denote satisfactory reliability. However, Kline exceptional (2014) suggests a tiered understanding: coefficients around 0.70 are considered adequate, near 0.80 as very good, and those around 0.90 are esteemed as exceptional. Our findings, detailed in the subsequent table, reveal a 2021–2022 Cronbach Alpha value of 0.609, whereas data from 2023 reflected a higher value of 0.761. These figures vouch for the aptness of the selected measurement scales, facilitating rigorous data analysis tailored to our previously posited hypotheses. Notably, the enhanced Cronbach Alpha value for 2023 signifies an improved internal consistency of the scale, hinting at a more robust inter-item relationship.

A perusal of Table 1 reveals a data filtration process: one response from the 130 collated in 2021–2022 and nine from the 797 amassed in 2023 were excluded. This was undertaken to rectify specific anomalies identified by the SPSS software, ensuring the utmost precision, accuracy, and validity in our analytical measures.

With the bolstered confidence in our data – underpinned by the Cronbach Alpha values – the primary hypothesis was subsequently interrogated via factorial analysis. The intent behind this methodological choice was data simplification by clustering them into primary, less-dimensioned factors. This would ostensibly bring to light latent correlations among the explored variables. For this factorial analysis, we prioritized 19 pivotal variables from the initially assessed set of 25 across both studied periods. For a rigorous appraisal of data appropriateness for factorial analysis, the KMO (Kaiser-Meyer-Olkin) and Bartlett's tests were deployed. While the KMO test gauges the robustness of the variables' partial correlations, it also discerns how well shared factors can elucidate these variables. Notably, a KMO value exceeding 0.60, coupled with a Bartlett's test p-value below 0.01, is emblematic of data aptitude for principal components analysis (Özata & Birol, 2018; Büyüköztürk, 2010).

Further insights from Table 2 reveal that both 2021–2022 and 2023 datasets generated a KMO value above 0.7. This underscores the data's innate suitability for factorial analysis, forecasting a high potential to yield salient results. In response to this, the Bartlett's test out-

**Table 1.** Cronbach's Alpha test for the periods 2021–2022 and 2023
(source: author's own contribution – processed export from the SPSS program)

| Period | 2021–2022 | 2023 |
|---|---|---|
| Valid | 129 | 788 |
| Excluded | 1 | 9 |
| Total | 130 | 797 |
| Number of items | 25 | 25 |
| Cronbach's Alpha | 0.609 | 0.761 |

**Table 2.** KMO and BartletT test for the periods 2021–2022 and 2023
(source: author's own contribution – processed export from the SPSS program)

| Period | | 2021–2022 | 2023 |
|---|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | 0.707 | 0.896 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 855.112 | 5375.236 |
| | df | 171 | 171 |
| | Sig | 0.000 | 0.000 |

comes (Table 2) for both periods (sig = .000) affirm that all variable correlations are distinctly non-zero. This evinces a pronounced interconnectedness among the analysed variables, cementing the rationale behind our factorial analysis choice.

Upon assessing data suitability, we proceeded to examine communalities across the two research periods under study. These communalities signify the proportion of variable variance that can be attributed to the common factors identified, giving an indication of a variable's relevance to the determined factors. For the 2021–2022 phase, with the exception of the "VUCA change management" variable, all other variables showcased values exceeding the 0.5 threshold. A high communality value, nearing 1, is indicative of pronounced associations, with such variables offering substantial contributions towards the formation of the principal factors. In the 2021–2022 timeframe, salient values were noted for the age (0.840), experience (0.799), immediate action (0.771), and personal sustainable investment information (0.762) variables. Conversely, in the 2023 research period, peak values emerged for the experience (0.737), course participation (0.734), age (0.734), and image enhancement (0.726) variables. As for the values below the 0.5 marker during the latter research, notable troughs were evident in decision-making (0.439) and VUCA change management (0.418) variables.

Table 3 details the variances of the extracted principal components, constrained to Eigenvalues of 1 or above. From the insights of the 2021 study, six factors conformed to the previously stated criterion. Collectively, these factors elucidated a substantial 68.043% of the data's variance. The foremost factor alone accounted for an impressive 22.128% of the total variance, underscoring its paramount significance. The subsequent factor explained 12.415% of the variance, trailed by the third at 11.737%. While the variance delineated by the fourth factor (8.424%) and the ones that follow was relatively attenuated, they remain pivotal in offering insights into specific facets of the data under analysis.

For the second phase of research, as illustrated in Table 4, only five factors met the Eigenvalue criterion of being equal to or greater than 1. The decomposition of the variance for these factors is as follows: the first factor accounted for 31.144% of the total variance, the second 9.036%, the third 8.802%, the fourth 7.413%, and the fifth 6.387%. These data suggest a pronounced focus on the primary factor, which seemingly captures the most salient attributes of interest for the respondents. Cumulatively, the variance explained by these five components reaches 62.782%, reinforcing the representational significance of the extracted factors in understanding the data's inherent structure (see Table 4).

To provide a comprehensive representation of the factors and to clearly delineate the variable associations for each factor, the Varimax rotation with Kaiser normalization was employed. Table 5 offers insights into the variables that characterize the six main factors identified during the 2021–2022 research period.

**Table 3.** Total variance explained for the 2021–2022 survey
(source: author's own contribution – processed export from the SPSS program)

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.204 | 22.128 | 22.128 | 4.204 | 22.128 | 22.128 | 3.543 | 18.649 | 18.649 |
| 2 | 2.359 | 12.415 | 34.544 | 2.359 | 12.415 | 34.544 | 2.863 | 15.069 | 33.718 |
| 3 | 2.230 | 11.737 | 46.281 | 2.230 | 11.737 | 46.281 | 1.912 | 10.063 | 43.781 |
| 4 | 1.601 | 8.424 | 54.706 | 1.601 | 8.424 | 54.706 | 1.756 | 9.241 | 53.021 |
| 5 | 1.472 | 7.749 | 62.454 | 1.472 | 7.749 | 62.454 | 1.616 | 8.504 | 61.525 |
| 6 | 1.062 | 5.589 | 68.043 | 1.062 | 5.589 | 68.043 | 1.238 | 6.518 | 68.043 |
| Extraction Method: Principal Component Analysis. | | | | | | | | | |

**Table 4.** Total variance explained for the 2023 survey
(source: author's own contribution – processed export from the SPSS program)

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.917 | 31.144 | 31.144 | 5.917 | 31.144 | 31.144 | 4.359 | 22.941 | 22.941 |
| 2 | 1.717 | 9.036 | 40.180 | 1.717 | 9.036 | 40.180 | 3.023 | 15.911 | 38.853 |
| 3 | 1.672 | 8.802 | 48.982 | 1.672 | 8.802 | 48.982 | 1.661 | 8.743 | 47.596 |
| 4 | 1.408 | 7.413 | 56.394 | 1.408 | 7.413 | 56.394 | 1.503 | 7.911 | 55.506 |
| 5 | 1.214 | 6.387 | 62.782 | 1.214 | 6.387 | 62.782 | 1.382 | 7.275 | 62.782 |
| Extraction Method: Principal Component Analysis. | | | | | | | | | |

Our methodology optimally adjusts the structure of the principal components. This optimization ensures that variables exhibit pronounced factorial loads on a designated factor (either positive or negative) while maintaining closeness to zero on others. Adhering to this criterion, only items with values surpassing 0.50 were retained. As a result, the "VUCA change management" component found no place within any principal component.

The primary principal component consists of six pivotal variables: participatory work style (0.776), achievement in performance (0.772), objectives (0.811), handling of critical situations (0.711), application of managerial techniques and tools (0.677), and the facilitation of idea exchange (0.688). This component elucidates 18.65% of the total variance and is designated as the "Participatory and High-Performance Work Environment." It suggests that many employees prioritize the efficiency of organizational structures and processes, valuing environments that stimulate collaborative interactions and consistently achieve objectives.

The second principal component, contributing to 15.07% of the total variance, encompasses: course participation (0.725), VUCA-aligned employee performance (0.786), reputation enhancement (0.816), and organizational efficacy (0.828). Termed "Organizational Success Factors in the VUCA Context," this component emphasizes the criticality of adaptability in

**Table 5.** Rotated Component Matrix for research from 2021–2022
(source: author's own contribution – processed export from the SPSS program)

| Variables | Components | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Age | | | | 0.903 | | |
| Experience | | | | 0.884 | | |
| Participatory work style | 0.776 | | | | | |
| Achievement in performance | 0.772 | | | | | |
| Objectives | 0.811 | | | | | |
| Handling of critical situations | 0.711 | | | | | |
| Application of managerial techniques and tools | 0.677 | | | | | |
| Decision-making | | | | | 0.578 | |
| The facilitation of idea exchange | 0.688 | | | | | |
| External environmental proficiency | | | | | 0.844 | |
| Immediate action | | | | | | 0.828 |
| Risk awareness | | | 0.688 | | | |
| Sustainable investment literacy | | | 0.851 | | | |
| Knowledge of investment projects | | | –0.753 | | | |
| Managing VUCA changes | | | | | | |
| Course participation | | 0.725 | | | | |
| VUCA-aligned employee performance | | 0.786 | | | | |
| Reputation enhancement | | 0.816 | | | | |
| Organizational efficacy | | 0.828 | | | | |
| Extraction Method: Principal Component Analysis;<br>Rotation Method: Varimax with Kaiser Normalization[a]. | | | | | | |
| [a]Rotation converged in 6 iterations. | | | | | | |

the dynamic VUCA business environment. The data indicates that continuous professional growth and a harmonious workplace can reduce conflicts and elevate performance levels. Furthermore, organizations fostering sustainability through strategic investments can better cater to an eco-conscious clientele, positioning themselves advantageously in the economic landscape.

The third component, responsible for 10.07% of the total variance, amalgamates: risk awareness (0.688), sustainable investment literacy (0.851), and knowledge of investment projects (–0.753). Named "Proficiency in VUCA and Sustainable Investments," this component aids in evaluating the respondents' grasp over the intricacies of the VUCA environment, its inherent risks, and the sustainable investment domain, underscoring the need for strategic investments.

Further components provide nuanced insights but bear lesser weight in the dataset. The fourth component, "Expertise Level," explains 9.24% of the variance and correlates age (0.903) with experience (0.884). This relationship suggests that longer tenures in organizational environments often lead to greater exposure to VUCA challenges.

The fifth component, labelled "Strategic Adaptability and Decision-making Acumen," accounts for 8.50% of the variance. Comprising decision-making (0.578) and external environmental proficiency (0.844), it underscores the significance of agility in decision-making amidst VUCA challenges. The final component, anchored by immediate action (0.828), comprises 6.52% of the variance. Its limited contribution suggests that while immediate risk response is integral, its essence is reverberated in the other principal components.

In alignment with the Varimax rotation with Kaiser normalization, the 2023 study, as delineated in Table 6, unveils five predominant factors.

From the provided data table, we discern variations in the distribution and composition of principal components across specific scenarios. The premier component captures 22.94% of the total data variance, embracing seven salient variables: participatory work style (0.780), achievement of performance (0.779), objectives (0.752), critical situations (0.785), managerial techniques and tools (0.724), decision-making (0.645), and idea exchange (0.715). The factor loadings, oscillating between 0.645 and 0.785, corroborate a robust association with this principal component.

Preliminary investigations spanning 2021 to 2023 identified diminished values for the three concluding principal components. Thus, variables associated with pivotal decision-making impacting organizational endeavours better align with this component, aptly termed "Organizational Efficiency and Climate."

The elevated values underscore a proactive workplace, emphasizing open dialogues, wherein leadership transparently addresses imminent challenges during investment project phases.

Herein, the judicious employment of managerial techniques and real-time decision-making becomes paramount, underlining the indispensability of crystal-clear objectives for all employees.

The subsequent principal component, constituting 15.91% of the overarching data variance, encompasses variables such as course participation (0.795), employee performance within a VUCA context (0.781), reputation enhancement (0.822), and corporate efficiency (0.809).

**Table 6.** Rotated Component Matrix for research from 2023
(source: author's own contribution – processed export from the SPSS program)

| Variables | Components | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Age | | | | 0.851 | |
| Experience | | | | 0.854 | |
| Participatory work style | 0.780 | | | | |
| Achievement in performance | 0.779 | | | | |
| Objectives | 0.752 | | | | |
| Handling of critical situations | 0.785 | | | | |
| Application of managerial techniques and tools | 0.724 | | | | |
| Decision-making | 0.645 | | | | |
| The facilitation of idea exchange | 0.715 | | | | |
| External environmental proficiency | | | | | 0.732 |
| Immediate action | | | | | 0.754 |
| Risk awareness | | | 0.698 | | |
| Sustainable investment literacy | | | 0.785 | | |
| Knowledge of investment projects | | | –0.625 | | |
| Managing VUCA changes | | | | | |
| Course participation | | 0.795 | | | |
| VUCA-aligned employee performance | | 0.781 | | | |
| Reputation enhancement | | 0.822 | | | |
| Organizational efficacy | | 0.809 | | | |
| Extraction Method: Principal Component Analysis;<br>Rotation Method: Varimax with Kaiser Normalization[a]. | | | | | |
| [a]Rotation converged in 6 iterations. | | | | | |

This component's influence and its constituent variables align closely with findings from the 2021–2022 research phase.

While the primary research identified a subdued influence of the ensuing three components on the total data variance, the third principal component, contributing 8.74% to the data variability, amalgamates variables like risk acumen (0.698), sustainable investment insights (0.785), and investment project familiarity (–0.625).

Despite a slight dip in percentage compared to previous research (8.74% < 10.07%), the underlying variables resonate with the imperatives of the VUCA business landscape, underscoring the pivotal role of sustainable investments and employees' aptitude in navigating high-risk terrains.

The following component, representing 7.91% of the data variance, pivots on the age (0.647) and experience (0.685) axes. Both variables, with noteworthy positive loadings, indicate the profound influence of the aggregated wisdom, skills, and expertise of seasoned employees.

The concluding component, with external environment proficiency (0.648) and prompt action (0.691), signifies 7.26% of the data variance. Termed "Adaptability and Risk-Response

Acumen," this component delineates the agility and resilience of organizational personnel in adapting to continual operational fluxes. Moreover, the salience of swift responses in high-risk scenarios underlines their strategic importance in navigating external environment perturbations.

A holistic examination of the principal components posits that both research phases substantiate Hypothesis H1: an unequivocal nexus is evident between the VUCA paradigm and organizations championing sustainable investments within a synergistic work milieu, where continual competency enhancement of employees is prioritized.

The coronavirus pandemic emerged as a defining juncture for myriad organizations. To gauge the repercussions of the pandemic-induced organizational shifts across two distinct temporal cohorts, the Wilcoxon test was invoked (Table 7).

**Table 7.** COVID 19 – Wilcoxon test
(source: author's own contribution – processed export from the SPSS program)

| Related-Samples Wilcoxon Signed Rank Test Summary | |
|---|---|
| Total N | 130 |
| Test Statistic | 1934.500 |
| Standard Error | 178.356 |
| Standardized Test Statistic | 2.644 |
| Asymptotic Sig. (2-sided test) | 0.008 |
| Positive Ranks | 49 |
| Negative Ranks | 27 |
| Ties | 54 |

The study executed between December 2021 and January 2022 occurred amidst anticipations of transitioning back to a "new normal". In Romania, March 2022 marked a pivotal shift with eased restrictions, enabling businesses to predominantly operate in-person at their designated headquarters.

The subsequent months leading to summer saw the gradual rollback of social distancing norms across industrial sectors.

The 2023 survey epoch delineates a juncture when businesses had predominantly reverted to traditional operations, thereby encountering a heightened competitive landscape rife with challenges.

The deployment of the Wilcoxon test provided compelling evidence to reject the null hypothesis, corroborating Hypothesis H2. A p-value of 0.008, which is below the conventional 0.05 benchmark, underscores the adverse ramifications that environmental shifts, notably those instigated by the pandemic, imposed on organizations during both studied intervals.

During the 2021–2022 phase, businesses were ensnared within the pandemic's grip, conforming to prevalent restrictions amidst an atmosphere of protracted uncertainty.

Despite 2023 marking a post-containment epoch, the pandemic's lingering effects remained discernible, with pronounced disparities observed between the two periods under scrutiny.

Post the alleviation of constraints, the pandemic's economic aftermath persisted in influencing organizational efficacy and profitability. This can be attributed to a confluence of factors: evolved consumer behaviours, redefined operational paradigms, diminished appetite for specific products and services, and an overarching financial caution among investors.

Pertinently, the Test Statistic value of 1934.500 and a Standardized Test Statistic of 2.644 accentuate the statistical significance of the disparities noted between the two assessments.

A nuanced breakdown revealed 49 positive differentials, signifying an accentuated pandemic-induced impact during the subsequent survey, contrasted by 24 negative cases and 54 instances where no notable variation was documented.

Assessing the adaptability prowess of employees to rapidly evolving and often nebulous external stimuli (typical of the VUCA paradigm), the Wilcoxon test spotlighted a discernible chasm between the two temporal benchmarks (Table 8).

**Table 8.** The adaptability of employees – Wilcoxon test
(source: author's own contribution – processed export from the SPSS program)

| Related-Samples Wilcoxon Signed Rank Test Summary | |
|---|---|
| Total N | 130 |
| Test Statistic | 966.500 |
| Standard Error | 295.227 |
| Standardized Test Statistic | –5.797 |
| Asymptotic Sig. (2-sided test) | 0.000 |
| Positive Ranks | 22 |
| Negative Ranks | 81 |
| Ties | 27 |

With a p-value of 0.000, decisively below the 0.05 standard, the observed differential attained statistical prominence, bolstering Hypothesis H3. The Test Statistic of 966.500, coupled with a negative Standardized Test Statistic of –5.797, indicates that the majority of scores leaned negatively.

This data impinges upon the broader narrative of adaptability: evolving external dynamics and intrinsic challenges have ostensibly dented employee confidence. Many increasingly perceive a dearth in requisite acumen to adeptly navigate the capricious terrain typified by the VUCA milieu.

Positioning this within the study's chronological framework, various explanatory vectors emerge. The pandemic, characterized by turbulent phases punctuated by profound socio-economic recalibrations, adversely reverberated through organizational operations. Furthermore, the mutable labour landscape, marked by unemployment spikes and shifting skill requisites, coupled with technological accelerations and fluctuating national and international economic and political climates, necessitate the augmentation of adaptive competencies.

Lastly, the concluding hypothesis, which centred on the participants' awareness of sustainable investments, did not find empirical validation through the Wilcoxon test (as elaborated in Table 9).

**Table 9.** Sustainable investment – Wilcoxon test
(source: author's own contribution – processed export from the SPSS program)

| Related-Samples Wilcoxon Signed Rank Test Summary | |
|---|---|
| Total N | 130 |
| Test Statistic | 2685.500 |
| Standard Error | 254.922 |
| Standardized Test Statistic | 1.777 |
| Asymptotic Sig.(2-sided test) | 0.076 |
| Positive Ranks | 53 |
| Negative Ranks | 41 |
| Ties | 36 |

There was an evident increase in the instances related to sustainable investment comprehension, surging to 53 between the comparative timeframes. However, the p-value of 0.076, exceeding the conventional significance level of 0.05, denotes that the difference might be ascribed to stochastic fluctuations rather than a genuine shift. This results in the non-confirmation of Hypothesis H4.

This outcome can be understood when we delve into the respondents' operational context. The priority of amassing insights in sustainable investment seems secondary, especially considering the inherent characteristics of their organizational tasks and the impositions of the VUCA environment which necessitates an alternative order of actions. Embedded within the multifaceted, swift, and volatile milieu of the VUCA paradigm, some respondents could indeed feel somewhat "overburdened." Such overwhelming sentiments could potentially deter them from exploring novel methodologies or strategies, including the enhancement of their prowess in sustainable investments.

Throughout this "Results and Discussion" section, we've navigated the intricate waters of organizational responses to external changes, notably within the context of the VUCA world. Several hypotheses were explored, and the findings rendered a mosaic of reactions and adaptabilities, with sustainable investments knowledge emerging as a particular area of interest. The non-confirmation of Hypothesis H4 underscores the exigency of setting clear priorities in tumultuous times, while also hinting at the potential areas of capacity-building that organizations might wish to delve into, as they sail forward. As we transition to subsequent sections, the insights garnered here not only provide a robust foundation for the analytical facets but also impel us to ponder on strategic imperatives that could shape organizational success in an increasingly complex world.

## 5. Conclusions

The ever-evolving landscape of today's business environment, characterized by Volatile, Uncertain, Complex, and Ambiguous (VUCA) elements, necessitates a rethinking of organizational strategies and employee competencies. Drawing from the foundational literature, organizations have long recognized the imperative of agility, foresight, and adaptability, particularly in unpredictable climates.

This current research underscores the growing relevance of these theories in real-world contexts, presenting employees' perspectives regarding the VUCA world and its implications at two particularly challenging periods of time (during the coronavirus epidemic and after the pandemic), as well as the need to approach sustainable investments from organisations.

This study's originality lies in its empirical validation of theoretical models through the lens of employee experiences, specifically during the unprecedented COVID-19 pandemic. It moves beyond traditional discussions of VUCA by integrating sustainable investment strategies as a vital component of organizational resilience. Our research enriches academic discourse by providing concrete evidence on the effectiveness of participatory decision-making and sustainable investments in enhancing organizational adaptability. This empirical evidence, drawn from two critical periods, offers a nuanced understanding of organizational dynamics in crisis versus recovery phases.

Given its methodological rigor and focus on universally applicable themes like VUCA, sustainable investments, and pandemic response, this study offers a blueprint for replication in other countries. Such cross-cultural research could further validate our findings and extend their applicability.

Our factorial analysis provides empirical weight to the literature's emphasis on participatory work styles in a VUCA world. Consistent with previous studies, employees within VUCA-driven environments gravitate towards a more inclusive decision-making process. The active involvement of employees in strategic decisions not only promotes a sense of ownership but also harnesses diverse perspectives that are crucial for navigating VUCA challenges. In the VUCA world, the capacity of employees to react to changes of the business environment is especially important, so involving employees in decision-making processes and promoting a harmonious working environment can contribute to the development of an organisational culture based on trust and effectiveness.

Moreover, sustainable investments, a topic extensively debated in contemporary literature, emerged as a predominant theme in our study. Organizations stand to gain significantly by directing their strategies towards sustainable investments. By aligning their objectives with social, economic, and environmental stewardship, as the literature suggests, organizations can mitigate potential risks, optimize resource utilization, and carve a reputable niche in the market.

Interestingly, while the importance of sustainable investments was recognized and highlighted in our results, a noticeable gap in the knowledge and adaptability of employees was observed. This resonates with studies in our literature review that stress the importance of continuous learning and development in VUCA environments. The Wilcoxon test further highlighted a crucial concern: the continued impact of external disruptions, such as the coronavirus pandemic, on the activities of organisations and hence the projects they develop, as well as the preparedness of employees. Drawing parallels with the literature, it becomes evident that while organizations might be aware of the challenges posed by VUCA dynamics, the actual preparedness and capacity to navigate such challenges remain inconsistent. In this regard, as the literature study revealed, sustainable investments are more successful in times of crisis, so organizations could develop continuous training programs about sustainable investments that would provide employees a deeper understanding of the concepts as well as their link to the VUCA world.

In terms of relevance and contribution of the research as well as differentiation from other studies from the field the inclusion of employees from diverse areas of activity and who have a certain amount of experience in their field provides a much clearer and transparent image regarding the need for organisations to adapt to the changing VUCA business environment. The fact that the research was conducted at two key periods of time both during the coronavirus pandemic and after the epidemic, allows an assessment of the impact that these extremely vulnerable situations had on employees suggesting how organisations need to adapt and permanently progress in the VUCA world. So, the value of this study is twofold: it deepens the conceptual framework of VUCA within the realm of organizational behaviour and sustainability, and it illuminates the practical implications for managing through crises. This dual focus bridges a crucial gap in existing literature.

Conducting this study in Romania, adds a layer of depth to our findings, given that Romania's unique socio-economic landscape provides valuable insights into the challenges and opportunities of navigating VUCA environments within transitional economies.

In summation, this research reinforces the literature's stance on the imperativeness of adaptive strategies, participatory decision-making, and sustainable investments in a VUCA world. It underscores the need for organizations to foster a culture of continuous learning, encourage innovative ideation, and prioritize strategic foresight. As the business environment continues to evolve, so must the strategies and competencies that organizations employ.

## Funding

This work was partially supported by The Bucharest University of Economic Studies.

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