Strategies to Respond to a VUCA World

A Review of Existing Knowledge

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Abstract

Purpose - The business world today becomes more VUCA than ever. Organizations around the world need to develop and establish strategies to respond to this disruptive environment. This paper aims to explore what strategic responses that organizations could adopt in order to survive and thrive in a VUCA world. The initial research indicates the emphasis on the critical role of organizational development and human resources management in the preparation needed to cope with a VUCA world. Thus, by focusing on theoretical and empirical findings within scholarly literature, this paper aims to describe, synthesize, and analyze the main themes in those suggested solutions for the topic.

Methodology - A literature review is conducted to provide objective findings of existing knowledge in the academic field.

Findings - The literature review reveals the need to prepare both the organization as a whole and the individual to survive and thrive in a VUCA business environment. At the macro-level, organizational structure and culture are found as the two main themes. The *organizational structure is* featured with *entrepreneurial mindsets, resilience, responsiveness,* and *decentralized management.* The *organizational culture* is characterized by *learning organizations, strong engagement, supporting innovation, collaboration,* and *non-linear thinking.* At the micro-level, the focus is on *management and leadership*, which addresses what skills managers should have, how to get managers with the right qualities, and how managers should use their abilities. Besides, how to *prepare the staff* to be VUCA-ready is found as the main theme. Different interactions between staff and leaders and managers are also identified.

Contribution - This paper provides valuable insights into VUCA-related strategies for those who share a similar interest in the topic. By scrutinizing a significant number of scholarly articles, this paper shall bring a better understanding of organizational development as well as human resources management as the strategic approach that leaders and business managers can adopt to cope with a highly turbulent and complex environment. Further, the findings are useful for future researchers since it provides a summary of the existing knowledge in the research literature of this topic.

Keywords - VUCA, volatility, uncertainty, complexity, ambiguity, strategy, organizational development, human resource management.

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1. Problematization

1.1. Introduction

Today's world has become incredibly uncertain and turbulent, with progressive changes happening on a daily basis. From the business press, media, to business executives and scholars worldwide often address this dynamic environment with the acronym VUCA, which stands for volatility, uncertainty, complexity, and ambiguity.

"Disruption is as great as we have ever seen it. We are seeing all aspects of VUCA."

Joe Depinto - 7-Eleven CEO.

"There is no question that we are in a VUCA environment right now."

Bob Leduc - Pratt & Whitney President.

(Source: Forsythe et al., 2018)

In fact, a study by the International Monetary Fund indicates that the world's uncertainty rate has increased dramatically since the 2010s and reaches the all-time highest point of the last 60 years by the end of 2019 (Ahir, Bloom & Furceri, 2020). Some notable events causing global fluctuations in the last 10-years are sovereign debt crisis in Europe, US-China trade tensions, Brexit, growing terrorism threats, cybercriminals, and climate change. Furthermore, the extraordinary year - 2020 can be considered as a representative case of how VUCA the world has evolved. The emergence of the Covid-19 pandemic at the beginning of 2020 leads to several paradigm shifts ranging from individual to organizational, personal to professional across industries (Howe et al., 2020). Later, in the second half of 2020, while the current situation of the pandemic is still complicated, the chaotic 2020 U.S. presidential election adds more fuels to the uncertainty with many concerns about the legitimacy of the result, the ongoing wave of social unrest, as well as the future of American foreign policy towards its allies and enemies.

Additionally, the escalated VUCA world that organizations face nowadays is the consequence of technological development, the globalization process, and the environment (climate change, population growth, migration) (Friedman, 2016). The movement from an industrial to an information economy, along with the emergence of automation, outsourcing, deregulation, personal computing, and the Internet are all identified as drivers behind this dynamic business environment (Deloitte, 2015).

Under the impression that business environments become increasingly more VUCA, it is challenging for both established companies and startups around the world to gain and remain competitive in a highly disruptive context. Nevertheless, a survey by Deloitte (2017) reveals that despite recognizing how highly turbulent and uncertain the current business world has evolved, organizations feel "inadequately prepared" to respond effectively to this dynamic environment. A world characterized by VUCA might bring much confusion and fear; however, leaders are not allowed to stay frozen and passive toward this change as the dynamic also delivers new business opportunities (Johansen & Euchner, 2013). Therefore, with the transition toward the "new normal", leaders and business managers need to transform and develop a strategic approach to a VUCA world to position the organization for success in the long run.

Julia Sloan (2020) describes that the corporate strategy originated in the late nineteenth century is often viewed with a "scientific, technical rational mindset." Under the influence of the two industrial revolutions, strategy formulation is considered as the process of turning resources into outputs with the aim to maximize profits in a systematic and almost mechanical way. Additionally, the power of forming strategic decisions belongs to people at the top of the organization, since they are assumed to have a neutral global view and the ability to predict changes in the business environment (Sloan, 2020).

However, in the modern world, as the business environment becomes increasingly more VUCA due to the fluctuation of the global market and technological disruptions, these approaches to corporate strategy are claimed to be no longer feasible. Sloan (2020) further explains that with the emergence of complexity and chaos theories, the future is unpredictable and long-term preparation for any systems is under suspicion. Thus, the traditional linear approach to strategy formulation loses its advantages.

Organizations, which want to gain and remain competitive in this highly disruptive environment need to have a different approach to strategizing. As Peter Drucker (1980) states in his book many years ago:

"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."

Still, the quote stays relevant in today's business context. Consequently, this paper aims to explore the following question:

Research Question: What sorts of strategies could organizations adopt to respond to a VUCA world?

In order to answer this question, a literature review within the academic realm is conducted to explore suggested strategies for organizations to cope with a business environment characterized by volatility, uncertainty, complexity, and ambiguity. The initial research on the strategic approach to this dynamic circumstance provides us with the knowledge about the significance of preparing companies at both organizational (macro) and individual (micro) levels to embrace the VUCA world actively. According to Forsythe et al. (2018), business leaders from various industries reveal that equipping the company and its people with the capability to respond quickly and effectively is the key to survive and thrive through these dynamic times. Hence, a further investigation from these two aspects is conducted with the aim of revealing the themes in these suggestions from academia.

1.2. Purpose

The purpose of this paper is to explore what strategic responses that organizations could adopt in order to survive and thrive in a VUCA world. The initial research shows that most articles addressing the mentioned problem emphasize the critical role of organizational development and human resources management in the preparation needed to cope with a VUCA world. Thus, by focusing on theoretical and empirical findings within scholarly literature, this paper aims to describe, synthesize, and analyze the main themes in those suggested solutions for the topic.

Eventually, this study's contribution is to provide valuable insights into VUCA-related strategies for those who share a similar interest in the topic. By scrutinizing a significant number of scholarly articles, this paper shall bring a better understanding of organizational development as well as human resources management as the strategic approach that leaders and business managers can adopt to cope with a highly turbulent and complex environment. The findings are also useful for future researchers since it provides a summary of the existing knowledge in the research literature of this topic.

1.3. Research Limitation

Due to time constraints, this paper only explores scholarly articles published before December 2020; newly updated literature after this point is not included in the study. Additionally, the significant number of highly relevant articles regarding strategic responses to

a VUCA world emphasize the role of organizational development and human resources management. Thus, this paper mainly takes into consideration those focusing on the mentioned aspect; in-depth analysis of other perspectives such as instant strategies or risk management will not be covered. Finally, this paper takes a purely qualitative and objective approach toward the problem; no data or new theory is introduced.

2. Background and Theoretical Frame of Reference

The main concepts and general understandings of the context are provided in the section below. The purpose of this chapter is to equip the readers with background information so it will be easier to follow in the later chapter.

2.1. VUCA Definition

Recently, the acronym "VUCA" has become a trendy managerial term in the academic realm and the business world (Bennett & Lemoine, 2014). The term was initially used by the U.S. Army War College in the early 1990s to describe the world's state after the Cold War, where there was no longer an only and direct enemy requiring new strategies to respond to (Whiteman, 1998). Later, as the pace of change in the business becomes more intense than ever, the term gains much popularity as scholars, executives, leaders mention the challenge that companies have to face nowadays – A VUCA world, which is further considered as the "new normal" of the business world (Gandhi, 2017).

In particular, a VUCA world is characterized by four components: Volatility, Uncertainty, Complexity, and Ambiguity. The first element, "Volatility" refers to the unstable and unexpected circumstance in a possibly unspecified duration (Bennett & Lemoine, 2014). Further, a volatile situation does not necessarily imply the lack of knowledge or the complexity in the structure; rather, it mostly indicates continuous fluctuations (Bennett & Lemoine, 2014). The volatility presents itself quite often in the price of stocks, fossil fuels, or in the supply and demand of goods after a shock. Additionally, Rodriguez and Rodriguez (2015) explain that the volatile aspect in the quest for managing *Millennials* is that this generation tends to move to new jobs quite often to catch up with new opportunities; thus, they lack long-term commitments to the employing companies. However, a volatile circumstance by itself should not be mistaken for a VUCA situation, since the complex aspects are missing, and the reasons behind these instabilities are not mysterious as it can be learned from history or be predicted from current existing data.

Next, "Uncertainty" is used to describe the stage, where despite the fact that cause and effect are known, knowledge regarding the significance of the situation is missing (Bennett & Lemoine, 2014). Due to the increase in volatility, the data also changes continuously, which results in a higher rate of uncertainty (Gandhi, 2017). The uncertainty exists in every part of business, especially in the international business environment, where the risk of exposure to

uncertainty is likely to be higher. The source of this feature can possibly be generated from political turmoil (war, revolution); changes in government policy (fiscal policy, trade restrictions, price controls); macroeconomic trends (inflation, foreign exchange rates, interest rates); social issues (riots, terrorists); natural disasters; competitors' behaviors; or disruptive innovation (Miller, 1992).

Additionally, complexity refers to a situation with many interrelated variables and usually difficult to handle due to its magnitude (Bennett & Lemoine, 2014). This element's intricate identity arises because the development of technology makes the communication and flow of information happen more quickly and smoothly. This later results in the interdependent, multi-layered data network, of which unexpected consequences are hard to foresee (Gandhi, 2017). Additionally, globalization contributes significantly to the increase in the level of complexity that organizations have to face. The transition toward a more integrated and interdependent world economy emerges as a result of the decline in trade barriers and technological changes, which create both opportunities and challenges for firms (Hill, 2013). Kostova and Zaheer (1999) propose in their study that the larger the number and variety of countries in which multinational enterprises operate, the more difficulties and challenges for them to maintain legitimacy. This problem arises because firms, especially those operating in international business environments, often reveal themselves to a broader range of problems. The involvement of multiple domains of regulatory, different cultural, social norms, and educational systems leads to greater intricacy that needs to be carefully addressed since these elements, in some cases, can oppose each other.

Finally, the ambiguity is said to be the "unknown-unknown" as a consequence of the lack of knowledge in the event's cause and effect (Bennett & Lemoine, 2014). Since there is no precedent, clarity, agreements, and predictions of what to expect is also limited. Further, the enlargement of volatility, uncertainty, and complexity at the same time makes the ambiguity inevitable (Gandhi, 2017). This aspect is appraised as the extreme degree of the other three since every element, from causes and effects, what to expect or about to occur is unknown. Bennett and Lemoine (2014) further indicate that an ambiguous situation is often observed in launching entirely new products, innovations, or entering immature, emerging markets.

2.1.1. A VUCA World

The section above introduces the VUCA concept with a detailed description of each component. In this part, explanations of the accumulative effects of VUCA are provided.

Social media and its effects can be viewed as the roots and consequences of a VUCA world. According to Rozgonjuk et al. (2020), the effect of social media called *Fear of Missing Out - FOMO* has increased the stress in people's lives and diffuses their attention from work. Additionally, events or incidents, of which the effects would not be noticed until weeks in the past, in today's world with the domination of social media, can spread like wildfire in just minutes. The reliability of information and the relatively negative effect in the case of "fake news" is needed to be considered carefully to develop a sound decision (Peterson, 2019). An example of how social media is used to spread false information, which later results in a grieved consequence, is the genocide in Myanmar (Mozur, 2018). The algorithms behind social media influence what type of information we see every day on the Internet. Hence, there is a doubt that algorithms' abuse will affect how we think and later lead to significant bias in our decisions (Oriel, 2020). Thus, social networks have contributed greatly to how increasingly volatile and uncertain the world has become nowadays.

The British exit from the European Union (Brexit) adds more fuels to the world's volatility, complexity, and uncertainty. The common assumption is that this event's impacts will be global, with the changes in rules and regulations (Macpherson, 2019). However, what impact these decisions will have and how they will affect businesses is a complex problem that companies doing business to and from the U.K. will have to prepare for (Macpherson, 2019). From the British perspective, Baeyens (2016) points out that investors are not fond of the continuous political and regulatory changes, which later results in the increasing volatility in the financial market. Further, it is certain that the U.K. leaves the E.U., but the impact of this decision on different sectors and the effect's size are debatable (Baeyens, 2016). Thus, Brexit, which creates more volatility and uncertainty to the global market, is a complex problem itself and should not be simplified. Also, Baeyens (2016) indicates that this decision for the U.K. and the world can be both bad and right, wrong and good; nothing is certain and known. This assertion shows the ambiguous aspect of Brexit and how it contributes to an increasing VUCA environment.

Furthermore, American president Donald Trump's unpredictable actions on Twitter adds more complexity and uncertainty to the world. This problem creates a complex situation in

which the line between free speech and spreading harmful propaganda should be drawn is questionable (Robison & West, 2020). Looking back at the 2016 U.S. Presidential Election, the allegation of Russian intervention into the election further fuels the global market's uncertainty (Sanger & Kanno-Youngs, 2020).

Moreover, a company that experiences an extreme VUCA circumstance is Huawei. The tech giant is trapped in the US-China trade war, along with issues concerning data security, of which the combination becomes a very complex problem (Burk, 2019). To cope with this situation, Burk (2019) recommends companies like Huawei should develop and maintain resilience in dealing with circumstances where they have very little control.

The year 2020 can be considered as a representative case showing how VUCA the world has evolved. The spread of the Covid-19 pandemic is an example of how the world is hyper-connected and becomes more unpredictable (Stockholm Resilience Center, 2020). Prior to the pandemic, globalization enables fast worldwide exchanges and people traveling easily across borders. However, the Covid-19 pandemic outbreak at the beginning of 2020 leads to several paradigm shifts across the globe, in which the necessity for adaptation to handle this new world is critical (Howe et al., 2020). This situation requires companies to be agile in their production and global logistics to survive and thrive during this extraordinary time (Mazzoni, 2020). The pandemic outbreak also creates much uncertainty and ambiguity in the world's market (Bensley, 2020). Besides the fatality and the increasing pressure on healthcare sectors, the pandemic significantly impacts the economy. It disrupts the global supply chains and traveling. Further, information validity also becomes an issue during the pandemic due to several conflicting information, misleading advice, or false statements (Bensley, 2020).

Working from home or having the option to do so is a new technical disruption that will probably change the way we work in the future as a consequence of the pandemic (Wronsky & Cohen 2020). It also speeds up the digitization process at many organizations, requiring both employers and employees to keep themselves updated on relevant information and technology. The well-being of employees also becomes a vital aspect that needs to be carefully addressed by managers. The Covid-19 leads to the restriction of direct interaction. Thus, managers are under the pressure of developing new working procedures to ensure employee safety without interrupting business operations (Nangia & Mohsin, 2020).

While the pandemic's situation is still complicated, the chaotic U.S. presidential election at the end of 2020 adds more volatility, uncertainty, complexity, and ambiguity to the world. According to Joyner (Reuter, 2020), as the election approached the end, there was an increase in the volatility index (VIX) in the financial market. Further questions regarding the legitimacy of the result add more fuels to the uncertainty of both the US and the global market. An election with both candidates saying that they are the winner creates much uncertainty and ambiguity, which causes distrust and even altercations between the two sets of voters (Spicer, 2020). The unsettled election results lead to much civil unrest within the country, as well as the gloominess in American foreign policy towards its allies and enemies.

VUCA brings not only challenges but also opportunities for companies to grow. Some companies take advantage of technical disruptions and changes in consumers' behaviors to create new business opportunities. The rise of Uber and Airbnb serves as examples of how new business ideas can be nurtured from a VUCA environment. These disruptive innovations compete directly with the traditional hotels and taxi business, creating a new technological disruption changing the landscape, and using a business model with facilitation instead of ownership (Innovation Tactics, 2020).

These are just some traits and effects of a VUCA world. In a turbulent and complex world, constant changes are unavoidable, and companies need to be prepared to cope with this dynamic environment (Burk, 2019).

2.2. The Strategy Concept

2.2.1. Strategy definition

Strategy is defined in the most general terms as the allocation of organizations' resources to achieve certain goals. Organization's strategies often focus on the long-term objective rather than the short-term. It is considered a primary element for the success of any type of organization (Grant, 2016).

There are several perspectives on what strategy means to organizations. In the book *Strategy Safari*, Mintzberg, Ahlstrand, and Lampel (1998) distinguish intended, realized, and emergent strategies. *Intended strategy* views strategy as planning conceived by top management. *Realized strategy* concerns with the actions that organizations execute in reality. When organizations' behaviors in practice become consistent gradually, it is said to become a pattern. Thus, the realized strategy is the pattern in the organization's actions over time. There

are cases where the recognized pattern is not specifically intended by the company from the beginning but is the result of learning and adaptation along the journey. In this case, the strategy is called *emergent strategy*. Under the emergent approach, constant learning and adaptability are identified as crucial elements leading to a successful strategy. (Mintzberg et al., 1998)

2.2.2. Rationalistic, Analytical versus Emergent Perspectives

The debate between strategy as a rational, analytical process and strategy as an emergent process has been around since the 1980s. On the one side, some view strategy development as a result of the rational, analytical planning process. From this perspective, strategy-making is heavily influenced by technical, logical mindsets. Thus, the strategy formulation is a linear process in a hierarchical environment, and it is separated from the executing phase. (Sloan, 2020)

This approach to strategizing is often criticized due to the separation between the planners and the executors. A leading critic of this technical, rational approach is Henry Mintzberg. Under this school of thought, people who design strategies are unconnected to the actual implementation and often unable to catch up with unexpected possibilities. Moreover, the rational, analytical perspective emphasizes forecasting future circumstances, which is vague and contains numerous uncertainties, especially in a VUCA world. (Mintzberg et al., 1998)

On the other side of the debate, strategies are said to be the modifying decisions emerging in the implementation of the intended strategy. The emergent approach further accentuates the role of learning and adaptability in the strategy developing process. The continuous interaction between the formulation and implementation phase is also crucial since it allows the strategy to be revised and adjusted to cope with the changing environment. (Mintzberg et al., 1998)

Later, Mintzberg et al. (1998) conclude that there are many approaches to strategy, and "every strategy process has to combine various aspects of the different schools" (p367). A sound strategy needs to harmonize both perspectives, and the balance between these two largely depends on the external environment's steadiness (Mintzberg et al., 1998; Grant, 2016). Due to the increasingly unstable and unpredictable environment, strategy is less concerned with detailed plans or decisions but more about setting general directions for the organization (Grant, 2016). Further, Sloan (2020) proposes that as the world becomes more complex (or even chaotic), organizations need to develop a responsive, flexible internal process to encourage different perspectives, learning, and creativity. The world becomes more volatile, uncertain,

complex, and ambiguous; thus, it is challenging for organizations to develop a sound strategy to position themselves for future success.

3. Methodological Considerations

3.1. Literature Review and Thematic Analysis

In order to provide an understanding of what strategic responses organizations can adopt to survive and thrive in a VUCA world, we decide to conduct a literature review. The aim of employing this method is to assess and provide a synthesis of the key themes and findings from conceptual plus empirical articles published in the academic realm. Further explanation of this method is presented in this chapter.

Additionally, to ensure that the literature review is conducted in a structural and critical way, Saunders et al. (2007) suggest considering the review process as a funnel, containing several steps to guide the process. First, the research should start at the general level to gain some pre-understanding of the topic before narrowing down to specific research questions and objective(s). Next, a brief overview of key concepts and themes should be summarized and compared before the researchers identify and decide the most relevant area to their work. Finally, a detailed report, in which the findings are synthesized and critically analyzed, should be presented cohesively and coherently (Sauder et al., 2007). One noteworthy point from Sauder et al. (2007) is that the findings, along with the arguments, need to be closely related to the research question and objective(s).

Furthermore, Tranfield et al. (2003) suggest that a detailed description of the data collection process should be provided to improve the review's transparency and persuasion. Hence, the determination of search terms, chosen databases, including and excluding criteria, should be planned, recorded, and explained thoroughly.

Following that, a thematic analysis is employed to extract the meaning of the chosen articles. Braun and Clarke (2013) explain that this method is useful for identifying themes, reporting, and interpreting patterns concerning the research question across the dataset. An inductive approach to thematic analysis is adopted, which allows the data to determine the theme of the analysis (Braun & Clarke, 2013). Further, this approach is said to be more appropriate to understand the problem's nature better and provide a more flexible structure that permits changes of research emphasis in the process (Saunders et al., 2007).

3.2. Data Collection

In this section, the data collection and analysis processes are presented in detail.

Table 1: Summary of The Searching Process

Results of The Searching Process			
Search terms	**Databases**	**Limitations**	**Number of results**
VUCA AND Strateg#	EBSCOhost	Scholarly (Peer Reviewed) Journals/ English	25
VUCA AND Strateg#	Scopus	Final Publication/ Article/ English	31
VUCA AND Strategy	Research gate	Articles/ English	70
Total of the first search			**126**
VUCA AND Management	EBSCOhost	Scholarly (Peer Reviewed) Journals/ English	113
VUCA AND Human Resource Management	EBSCOhost	Scholarly (Peer Reviewed) Journals/ English	14
VUCA AND Organizational Development	EBSCOhost	Scholarly (Peer Reviewed) Journals/ English	32
VUCA AND Leadership	EBSCOhost	Scholarly (Peer Reviewed) Journals/ English	78
VUCA AND Management	Scopus	Final Publication/ Article/ English	60
VUCA AND Human Resource Management	Scopus	Final Publication/ Article/ English	42
VUCA AND Organizational Development	Scopus	Final Publication/ Article/ English	14
VUCA AND Leadership	Scopus	Final Publication/ Article/ English	26
VUCA AND Human Resource Management	Research gate	Articles / English	27
VUCA AND Management	Research gate	Articles / English	11
VUCA AND Leader AND Management	Research gate	Articles / English	6
VUCA +management	Academia	Basic Search Paper titles / English	2
VUCA +leader(s)	Academia	Basic Search Paper titles / English	2
Total of the second search			**427**
Total of both search			**553**
Relevant articles: 47			

Several databases were chosen to gain access to the greatest possible amount of scholarly literature to find the answer to our research question. The chosen databases to conduct this review included EBSCOhost, Scopus, ResearchGate, and academia due to their trustworthiness' reputation and worldwide recognition. Further, to ensure the quality of literature, the search is limited to scholarly (peer-reviewed) articles. Other included criteria are that the chosen articles must be written in English and at final publication.

Since our original approach to the problem was strategic responses to VUCA, the first search included strategy (and strateg# to get both spellings) as the search term, which provided us with 126 results. After scanning through the abstracts of these articles, only 13 articles were determined to be relevant. We decided that this number is too small to do a meaningful review. Further, there was hardly any mention of business strategy, such as Michael Porter's generic strategies to gain competitive advantages; instead, these articles focused on the management and human resources aspect when dealing with VUCA. Thus, we decided to adjust the search terms to VUCA AND Management/ Human Resources Management to get access to more articles.

After scanning the results with the new terms, we further observed a clear focus in these articles towards building a strong organization instead of business strategies. The majority of the literature indicated the importance of organizational development and management solutions, including HR-management and leadership strategies. Hence, we combined VUCA with these new keywords and got more results in our searches, further backing up the management perspective.

The latter attempt generated 427 results, and in combination with the first search, we got 553 results in total. Then, the selection process began with the removal of duplicates (articles found in more than one search). By scanning through the abstracts, we also removed articles with a low correlation to VUCA. Further, articles involved teaching practices for VUCA, training for future medical students in handling VUCA, and how spirituality gets affected in VUCA are also excluded. After this step, the number of articles is narrowed down to 170 articles, of which the summaries were examined carefully.

Further, we detected that in some cases, the abstract did not have a strong connection with the paper title; for example, the title mentioned VUCA Management but the content regarded vaccination of pets. These articles are also eliminated from the selected. After scrutinizing these

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articles' summaries, 68 articles were concluded to have an obvious connection with strategic responses to a VUCA business world. The chosen materials were then divided between us to be examined thoroughly. The full articles were studied thoughtfully and summarized to get the main findings. At this point, we decided to keep an open frame of mind and did not discard any articles as long as they contained any feature to develop a strategy to handle VUCA environments, no matter what the angle was.

After reading the content of 68 articles, the final selection was performed. The elimination included the 4 articles that the full version could not be accessed. The exclusion also covered another 17 articles, which did not contain a meaningful discussion or in-depth analysis of VUCA or ended up addressing other non-VUCA matters. In the end, 47 articles were concluded to be eligible and served as the base for our research.

In the total of the 47 articles, there were 101 authors involved; one constellation of authors had two articles in these 47, which means we had 46 articles from different writers or constellations. The articles came from 43 different research journals, with the highest number being three articles from the same journal.

3.3. Data Analysis

The selected 47 articles were divided between the two authors to be examined in depth. These articles' key findings were summarized and synthesized, which later revealed that preparing the organization with the necessary capabilities was mainly suggested as the solution to cope with a VUCA environment. The preparation needs to be at both individual (micro) and organizational (macro) levels. The five main themes in the preparation were identified from the dataset: the micro-level included *management and leadership oriented, manager-employee interaction,* and *staff perspectives*; the macro-level included *organizational structure* and *culture*.

By employing an inductive approach to thematic analysis, these categories were not predetermined, but the outcomes after we scrutinized the dataset. A matrix based on these four focus areas were developed. A detailed description of 47 articles was provided with the classification by each category. The matrix contained information about the title, the author(s), year of publication, journal name, research design, and key findings (*see appendix 1*). The articles were further ranked according to their relevance to the question. The articles' relevance

was determined based on their analysis's quality and their relation to the research question. The purpose of this step was to decide which aspects should be highlighted in the review.

After sorting the articles according to the four main categories and their relevance, the literature was further examined to ensure that the critical meaning was extracted. This resulted in subcategories within each of the four main themes. Finally, the findings from the literature are presented in detail in chapter 4.

3.4. Research Quality

According to Palmatier et al. (2018), a literature review can be assessed and evaluated using three criteria: depth and rigor, replicability, and usability.

The first element – depth and rigor refer to the ability to demonstrate a strategy for selecting articles, identifying, and critically analyzing data (Palmatier et al., 2018). Therefore, this element aims to be achieved with a detailed description of the data collection and analysis process provided in the research.

One obstacle we encountered when collecting data was the limited number of relevant articles in the first search. The combination of VUCA AND Strategy yielded only 13 relevant articles, mainly discussing human resource and management perspectives instead of business strategies. As the number of articles was inadequate to do a meaningful review, the decision to adjust the search terms (integrating VUCA with human resource and management) was made to gain access to more literature. This adjustment later generated nearly 500 results, which was a sufficient number to carry out the review. Besides, there were some articles, of which the VUCA connection to the business world was too weak (such as teaching practices or the pet vaccination), or the analysis was too narrow. After being carefully examined and discussed by the two authors, these articles were decided to be excluded to ensure the review's quality.

Additionally, the replicability concerns the explanation of the employed method for the review so external readers could follow and reach a similar conclusion (Palmatier et al., 2018). To satisfy this criterion, the methodology adopted for this research, how the data is collected, synthesized, and critically analyzed are specified comprehensively in this chapter.

Finally, the review must be able to generate a meaningful and useful result (Palmatier et al., 2018). Regarding this component, this review is beneficial and timesaving for both scholars and practitioners as it provides a synthetic understanding of strategic response to a VUCA world
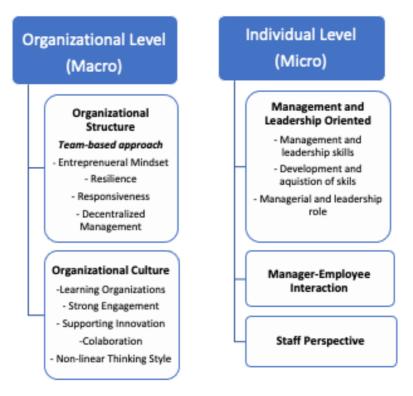
suggested in academia. Further, our review indicates the significance of organizational development and human resources management perspectives as strategies to respond to the VUCA environment.

4. Findings

In this chapter findings from the articles reviews are described according to the mentioned categorization in previous chapters to make it more apprehensible.

Illustration 1*: Themes in the VUCA-related literature*

(Source: Authors' own illustration)

When scrutinizing academic articles on strategic responses to VUCA, we found that different organization levels were discussed. In summary, some articles focused mainly on one aspect, but most mention multiple angles in preparing for a VUCA environment. Findings from the literature review reveal the focus of the preparation is on both the organizational and the individual levels.

At the organizational or macro-level, organizational structure and culture are found as the two main themes. The *organizational structure is* featured with *entrepreneurial mindsets, resilience, responsiveness,* and *decentralized management.* The *organizational culture* is characterized by *learning organizations, strong engagement, supporting innovation, collaboration,* and *non-linear thinking.*

At the individual or micro-level, the locus is on *management and leadership*, which addresses what skills managers should have, how to get managers with the right qualities, and how managers should use their abilities. Besides, how to *prepare the staff* to be VUCA-ready is found as the main theme. These articles also concentrate on the different interactions between staff and leaders, and managers.

Besides, we found that many articles address the VUCA problem at a general level. Several of the collected articles are purely conceptual papers and viewpoints. They rarely explore the VUCA-related strategies in any specific context or industry. Thus, we want to add a warning flag that the findings are broad in scope. Any attempts to transfer the concepts and ideas to other cases should be thoroughly deliberated.

However, it is noteworthy that half of the collected literature is presented with empirical evidence (in the form of quantitative and qualitative research). There are also some case studies, which investigate the problem in a specific setting with more in-depth analysis. Hence, these studies might bring a more practical approach to a VUCA world to the findings.

These findings are presented in detail in the following section.

4.1. Organizational Level

4.1.1. Organizational Structure

In general, the team-based organizational structure emerges as a featured theme in VUCA-related literature (Sharma & Sharma, 2016; Xing et al., 2020; Millar et al., 2018). Millar et al. (2018) stated that strategies should be formed at a unit-level rather than at the full company level, like the traditional approach. Since established companies, especially those with hierarchical structures, have different stakeholders and conflicting objectives, they are less flexible and slower to respond to a fast-changing market than startups (Evans & Bahrami, 2020). Thus, a smaller and concentrated group of employees or the team-based approach is considered a more appropriate structure to a dynamic world.

Structuring organizations into teams, especially with high resilience, are found to be more productive, agile, and innovative in VUCA times (Sharma & Sharma, 2016). It is noteworthy that the team should be well managed and have a strong group norm followed by its members. Sharma and Sharma (2020) indicate in their work that collective efficacy, which is the group's shared belief in its ability to organize and execute actions comprehensively, acts as a

motivational mechanism under challenging situations that help individuals to respond to the crisis more positively and effectively. The same idea of creating small teams operating inside a large enterprise is supported by Cook (2016) in his work addressing VUCA situations, since "big ideas come from small teams."

Particularly, establishing teams with an *entrepreneurial mindset, resilience, responsiveness*, and *decentralized management* is identified as the keys to survive and thrive in turbulent times. In the following section, specific characteristics of the team-based approach to cope with a VUCA context shall be discussed more in-depth.

a. Entrepreneurial mindset

In their introduction for the special section for VUCA, Millar et al. (2018) assert that the entrepreneurial mindset usually found in startups is one of the effective approaches for organizations to navigate in a VUCA climate.

In the case of multinational companies, this concept's utility is examined comprehensively in the case study of Haier Group by Frynas et al. (2018). The authors discover that by creating entrepreneurial units, which operate as small quasi-independent firms within the group's boundaries, Haier Group establishes an innovative management system that is highly responsive to a dynamic context. In detail, the owner-CEO of the sub-unit has absolute autonomous decision-making power, from contracting, budgeting to recruitment decisions. The unit's performance is measured against a combination of financial key performance indicators (KPI) and user value-added. They also stress the importance of building a structure that allows experimentation, plus a remuneration system tied to performance (Frynas et al., 2018). Besides, the combination of exploring radical innovations plus market opportunities of entrepreneurial mindsets and exploiting current capabilities constructs an ambidextrous organization (Rao & Thakur, 2019). An ambidextrous organization is argued to be a useful approach to stay proactive toward a fast-changing market. The appropriate degree of exploration and exploitation the organization should hold in its structure largely depends on its vision, strategy, and culture (Rao & Thakur, 2019).

Furthermore, entrepreneurial teams are said to have several linkages with strategic agility. By doing a literature review on these two subjects, Xing et al. (2020) propose that entrepreneurial teams diversified in culture and composition can enhance their propensity of strategic sensitivity in complex situations. This also enables firms to have the speed and ability

to make effective decisions in a context of high uncertainty (Xing et al., 2020). The authors also discuss that teams, primarily when recruiting new members, need to ensure that the entrepreneurial spirit is enforced. As new talents enter the team, they will carry with them their viewpoints, which is an advantage since it enriches teams' resources. However, this is likewise a disadvantage because this new viewpoint might complicate the relationship between members; thus, weaken the team's effectiveness (Xing et al., 2020).

b. Resilience

The quest to develop and ensure resilience within teams is emphasized as a crucial aspect of managing VUCA circumstances (Millar et al., 2018; Cook, 2016). A resilient team can be more agile and adjusts better with the varying demands of the market. Sharma and Sharma (2020) explain that resilient teams are characterized by social factors such as concerned relationships and effective teamwork. These factors originate through cohesion, trust, resourcefulness, collective efficacy, and relational schemas. The authors later conclude that high resilience teams positively impact organizational effectiveness in terms of adaptability, productivity, and flexibility. By establishing resilience within teams, a sustainable competitive advantage is also created in the long run (Sharma & Sharma, 2020). The authors later recommend organizations to put efforts into planning bonding, connecting, and bridging activities to develop teams with high resilience.

Besides, flexibility is noticed as a notable aspect of resilient teams. In the study of how Fabrinet – a manufacturing firm handles the flooding disaster in Thailand, Evans and Bahrami (2020) conclude that the key for handling a VUCA situation is super-flexibility, which is the ability to leverage different capabilities and respond at the right time. Besides, the task of structuring a flexible workforce so they can cope with the fluctuating customer demands is also detected as one of the most crucial among top strategy executives (Rimita et al., 2020). In a case study of how Lenovo manages to stay ahead of VUCA and to be able to grow during turbulent times, having flexibility in the implementation of the strategies phase is figured out as a principal trait (Das & Ara, 2014). Acknowledging that they are operating in a VUCA environment, Lenovo takes the approach that all strategies are executed globally. However, every region is empowered to decide on what and how they adapt the strategy. By giving the local management the authority, Lenovo entitles them to have the flexibility needed to achieve greater efficiency (Das & Ara, 2014).

c. Responsiveness

In this fast-changing and highly complex world, having speed and effective decisions, or in short "responsiveness" are necessitated to survive and thrive (Xing et al., 2020). This means that firms with embedded teams should have the capability of identifying changes in the external environment and quickly but adequately commit internal resources to respond to those demands (Xing et al., 2020). Horney et al. (2010) indicate in their study that anticipating thoroughly to be able to act quickly to the volatile demand is crucial for firms to survive. Additionally, in their interview with top strategy executives, Rimita et al. (2020) reveal that the foremost competence to prepare for a VUCA world is the ability to respond and adapt quickly as markets change.

Being agile is identified as a predominant criterion to handle VUCA, and to achieve business agility, responsiveness can be an adequate strategy for organizations (Horney et al., 2010; Cook, 2016; Millar et al., 2018). The capabilities of making quick decisions are also highlighted by many scholars as compulsory when facing VUCA, such as Evans and Bahrami (2020) in their case study of how Fabrinet handles the crisis, and Horney et al. (2010) in their suggestion for leaders to develop agility within organizations.

d. Decentralized Management

Under VUCA conditions, the team-based approach requires management's focus to shift from traditional command and control, to the capabilities-based mode focusing on emergent, spontaneous and self-organized coordination of work (Michel et al., 2018). The decentralized approach provides the necessary speed, as well as enables proactive and flexible actions that can lead to robust outcomes. Additionally, permitting delegation at the team level enables frontliners to make decisions and take the initiative is found to be highly practical in a VUCA situation in the study of a VUCA circumstance by Evans and Bahrami (2020). The delegation in the executing phase is also mentioned as one of the highlighted features in Lenovo's case by Das and Ara (2014). To achieve sustainable growth in this dynamic world, Lenovo adopts the policy "Globally connected but fully localized." They hire local talent to operate the business and entitle them with autonomous control over how strategies should be enacted. A proper degree of delegation is also determined as the key to achieving business agility by Horney et al. (2010). The authors further suggest training workshops and other bonding activities should be

arranged to ensure that negative effects of delegation, such as losing employee commitment, can be minimized.

The development of technology makes the transfer of information, remote working, and distant communications possible at low costs, which is a significant advantage for decentralization (Michel et al., 2018). Moreover, embracing technology is beneficial for this process and helps managers govern human resources more productively under VUCA scenarios. A study by Reddy et al. (2019) reveals that the implementation of new technology such as analytic tools and A.I. into the management helps provide insights into employees' behaviors, which can be used to improve their productivity and plan for rewards plus retention. In addition, Anitha and Aruan (2014), in their review about integrating information systems into human resource management, specify that the adoption of innovative and hi-tech practices increases both the organization's efficiency and the effectiveness of management tasks.

4.1.2. Organizational Culture

In a VUCA world, organizational culture plays a vital role in establishing an encouraging environment for the employees to equip with the necessary skills and attitudes to cope with this fast-changing market. It is noteworthy that due to the nature of a VUCA world, different national cultures can affect corporate culture significantly; therefore, the management should carefully examine and take regional culture into consideration when transforming the organizational culture (Geysi et al., 2019). Still, there are some fundamental aspects of organizational culture, namely *Learning Organizations, Strong Engagement, Supporting Innovation, Collaboration, and Non-linear Thinking Styles*, which are favorable for operating in a world characterized by volatility, uncertainty, complexity, and ambiguity. These constituents will be reviewed thoroughly in the below sections.

a. Learning organizations

Establishing a learning culture is frequently observed as a valuable solution to cope with a fast-changing VUCA environment (Srivastava et al., 2016; Millar et al., 2018; Castillo & Trinh, 2019). Under this dynamic condition, adaptability, which can be acquired through continuous learning, is required for organizations to survive and thrive. Particularly, Vaidya et al. (2020) narrate in their study that a learning culture can equip employees with the capacity to learn better, quicker, and more efficiently. Consequently, this helps transform the organization into a so-called "adaptive firm", which is able to move faster in the evolutionary process and have an

advantage compared to their competitors in terms of speed and efficiency in decision making in a VUCA business world. Gandhi (2017) also supports the proposition by stressing that constant learning can facilitate employees with the capability to adapt to a fast-changing market and disruptive environment.

The importance of becoming a learning enterprise for organizations to overcome the VUCA challenge is further explained by Cook (2016). The author argues that the crucial preparation to cope with a fast-changing market is the ability of continuous learning. This capability should materialize both at the generative level (underlying behaviors) and transformational level (fundamental change in mindset) for organizations to maintain their business excellence. Additionally, Srivastava et al. (2016) supports the similar idea of establishing a learning organization with a recommendation of implementing *Flexible Capability Development*, which serves as a useful, robust framework to leverage employees' learning capability.

Another noteworthy point from Cook's work is the diversification in learning sources, from colleagues, customers, and even competitors. Sarkar (2016), April and Chimenya (2019) also indicate in their study that learning different views on the problem from co-workers, mentors, or industry experts is beneficial to deal with the complexity of VUCA. This approach is referred to as creative swiping, which is considered a more reliable strategy for enterprises to sustain in the long run (Cook, 2016).

b. Strong Engagement

The establishment of an engaging culture is another aspect that has received much attention from scholars. Employee engagement is defined as the level of commitment toward the organization, willingness to contribute more than required efforts, and the will to go further from employees (Royal & Agnew, 2011 cited in Bywater & Lewis, 2017). This ability is discovered to be driven by traits such as *hope, efficacy, resilience, and optimism*, which portray not only at the individual level but also the organizational level (Bywater & Lewis, 2017). Castillo and Trinh (2019) and Moccia et al. (2019) then suggest that the increase in employee engagement is beneficial for the development of fundamental capacities, such as having diverse perspectives, sensemaking, slack in the decision making as well as being open to change, humility, and feedback to sustain in a VUCA context. The presence of these capacities at the organizational level depends on its emergence at the individual level; hence, putting effort into

building an organizational culture that can engage employees is indispensable (Castillo et al., 2019).

Indeed, in VUCA times, the ability to be agile to the market's demand depends largely on employees; therefore, they should be considered as critical organizational resources rather than merely mechanical tools (Hepner, 2019). A study by Nangia and Mohsin (2020) found that under the impact of the Covid-19 pandemic, I.T. companies' talent managers that witness growth in their performance put much effort into employee engagement activities, retention, and development practices. These practices include creative employee engagement strategies, creating a central for employee management, organizing all sorts of virtual events to ensure the physical and mental wellbeing of employees as well as the increase in internal efficiencies during difficult times.

The positive correlation between employee engagement practices and their commitment to the organization is also detected in a quantitative study by Singh et al. (2020). Through investing in human resources practices, such as organizing development activities (skill training, workshops, bonding schemes) along with having an objective performance assessment system, appraisals, and a clear communication channel, the behaviors of staffs working at the shop floor level are found to be more active and positive (Singh et al., 2020). Moreover, Srivastava et al. (2016) suggests that in order to keep employees focused on goals and stay motivated at work under the volatility of the industry, several innovative human resources management systems should be encouraged in practice. These suggestions include Flexible Recognition and Appreciation, Flexible Performance Management and Reward System, which help to modify goals at regular intervals.

Notwithstanding, the initiation of employee engagement at the workplace has some association with leaders' attitudes. An interview with crucial strategy executives depicts that designing a working culture that empowers employees and leverages their reasons on a regular basis is the key to a fast and effective responding system for a VUCA market (Rimita et al., 2020). This view is also shared by Sarkar (2016) as well as April and Chimenya (2019) in their research. Hepner (2019) further suggests that employee empowerment can be encouraged by implementing intelligent rewarding systems like self-structuring working hours in a predefined manner, or profit-linking innovation projects.

Villajos et al. (2019) further find that having personalized agreements with employers for their mutual benefits is perceived by employees as their opinions are attentively considered, which generates a great sense of belonging as well as a strong commitment to the organization from employees' point of view. This leads to the enhancement in the welfare of employees, not only materialistic but also mental aspect, and later, the increase in their creativity and performance (Villajos et al., 2019). When employees are innovative and actively seeking better working methods, they can be a valuable source of competitive advantage for firms in a VUCA-driven context.

c. Supporting Innovation

Developing the attitude of "Thinking outside the box" is said to be essential to the sustainability of the company during VUCA times (Sarkar, 2016; Hepner, 2019). Additionally, innovation is indispensable for organizations to succeed in a volatile and ambiguous market; hence, building an organizational culture allowing changes, experimentation, creativity, and innovative mindset is salient for managers (Gandhi, 2017; April & Chimenya, 2019; Burk, 2019). As Rao and Thakur (2019) suggest in their study, organizational culture is explained to keep a moderator or enabler role in establishing organizational ambidexterity, which can lead to better business performance and sustainable growth in this dynamic world. The authors later stress the importance of providing a culture promoting creative thinking and allowing autonomy in decision-making for employees to perform both contradictory activities of organizational ambidexterity (exploration and exploitation).

In fact, Mohammed and Viswanath (2019) found that organizational culture is closely correlated with employee innovation. It is stated in their work that organizational innovation not only adds value to businesses and allows adaptation to new challenges, but also promises sustainable growth in the face of continuously changing market demands, growing environmental and economic pressures. Therefore, companies must build an innovation-supporting culture that leverages the creative potential of employees, who are invaluable assets directly impacting their performance (Mohammed & Viswanath, 2019).

A culture supporting innovation can be a fruitful source of competitive advantage for companies in the long run. Especially in a VUCA world, much pressure is placed on the company's evolutionary advantage over time. Moccia et al. (2019) propose that companies should be equipped with 'dynamic capabilities', which is the ability to integrate, reconfigure

organizational internal and external resources with functional competencies to be able to cope with a changing environment. These capabilities should be formed and viewed as a fundamental aspect of its culture. The authors further explain that these capabilities are characterized by three main pillars: sensing change, seize opportunities, and transform the firm. The sensing change component largely depends on the workforce's innovative capabilities; hence, it is essential for corporates to anticipate a working environment, which allows creativity, explorative minds along with the appreciation of diverse opinions to take place (Sarkar, 2016; Moccia et al., 2019).

d. Collaboration

An organizational culture supporting collaboration and continuous dialogue among its employees is highly relevant in VUCA times by scholars and top managers (Sarkar, 2016; Castillo et al., 2019; Rimita et al., 2020). Rao and Thakur (2019) argue that performing exploration and exploitation activities simultaneously is crucial to cope with a fast-changing market and solve complicated problems. The authors further suggest organizations to promote coordination and interaction amongst the top management team, senior leaders, and other professional employees (such as financial, human resource development, R&D staff, auditors) to achieve both of these skills.

Nevertheless, in the case study of Lenovo, the authors find that one principal element for their success is leadership, which is the collaboration of a group, not just an individual (Das & Ara, 2014). The members of leadership teams need to be courageous, honest, and direct with each other to handle tough decisions to move forward. Because effective working within the team is prioritized, the conservative, bureaucratic thinking, and the arrogant, critical way for communication must be replaced with an open, collaborative, willing to share attitudes (Das & Ara, 2014). The proposal of engaging collaboration continuously between managers and employees is also supported by Sarkar (2016) and Vaidya et al. (2020). This form of working with the emphasis on effective interaction is said to provide leaders with the improvement in vision, thinking, and understanding of the situation, therefore, being able to respond accurately and speedily to an increasingly VUCA context.

Moreover, Sharma and Sharma (2020) conclude that teams with a strong shared belief in their ability to organize and execute actions successfully are supposed to be more resilient; thus, they have the ability to respond to fluctuating demands of the market positively and effectively.

Hence, the authors emphasize the need for organizing all sorts of bonding, connecting, and bridging activities within the company to strengthen the collaborative spirit within teams and individuals. This is aligned with suggestions on increasing human interactions both internally and externally by Moccia et al. (2018) as a method to develop organizations' dynamic capabilities to cope with VUCA.

e. Non-linear Thinking Style

One preparation that organizations should have to tackle complex and challenging circumstances is applying critical thinking, which focuses on "how to think" rather than "what to think" to make "well-thought-through" decisions (Raghuramapatruni & Kosuri, 2017). Millar et al. (2018) later, in their introduction for the VUCA-focused section, offer that various new styles of thinking concentrated on the integrative, cyclical characteristic of problems such as design, foresight, and system thinking need to be supported to cope with high levels of complexity.

In a disruptive VUCA environment, the implementation of design thinking within the organization can act as an underlying element to foster organizational learning and facilitate employees' absorptive capacity (Cousins, 2018, Castillo & Trinh, 2019). Design thinking is a user-focused, cognitive process that includes components of abductive reasoning and integrative thinking. Abductive reasoning is about gaining throughout understanding to generate ideas and possible solutions. Integrative thinking refers to identifying the most critical aspects of the problem and its relationship within the entirety. By conducting a qualitative study, Cousins (2018) figures out that design thinking functions as a catalyst for the exploratory, experimental attitude, and design thinkers portray to be more tolerant of ambiguity than others. This study further recommends companies operating in the VUCA environment to focus on integrating design thinking into their culture to promote co-creative and proactive learning.

Besides design thinking, system thinking is another approach to cope with an increasingly complex world. Rimita et al. (2020) highlight that system thinking is system-focused and studies the problem from a holistic, interrelationship, interdependent point of view. Unlike solution-oriented design thinking, system thinking is problem-oriented and emphasizes developing a nuanced understanding of the problem. This style of thinking is suggested to provide a more thorough observation of the situation and thus, helping leaders to make better decisions, especially in a VUCA context (Rimita et al., 2020).

4.2. Individual Level

Our research reveals that there were many key aspects that approached the employees and leaders as a direct point of entry, at a group or individual level, which differs from the more overall approach of changing the organizational culture or structure. We decided to make a distinction between the leadership or manager approach and the staff approach.

The managers' skills and abilities are addressed in the management and leadership-oriented part. Then, we decided to put a separate section about the interactions between managers and staff as a bridge since it is an important aspect. Finally, the staff perspective is presented.

4.2.1. Management and leadership oriented

In the literature discussing how companies equip themselves with competencies to handle a VUCA world, the role of management and leadership are detected as one of the dominant themes. From the management perspective, several key features are identified: *manager and leadership skills, development and acquisition of skills, managerial and leadership roles.*

a. Manager and leadership skills

The importance of leadership and management qualifications and skills is nothing that has become relevant just because of VUCA. Nevertheless, we have seen the vital role of managers and leaders in creating the right conditions for employees to cope better with a VUCA environment. With the increased demand for a resilient, agile, and learning workforce, there is also an increased demand for leaders having the right qualities to facilitate this transformation instead of being an obstacle in a VUCA context. Command and control leadership is being replaced by a more open approach.

In the VUCA-related articles, it is noticeable that different necessary skills that create an excellent leader benefiting both employees and the company are addressed frequently. Further, there are several discussions on which leadership styles are feasible for a VUCA business environment.

Initially, in the normative leadership theories discussed by Sarkar (2016), there are four kinds of leadership styles: *transactional leadership*, where the leaders assume they can shape and control the staff; *transformational leadership*, where the leaders work in a more inspiratory capacity; *servant leadership*, which puts emphasis on the leader empowering the employee and thereby putting the focus is on the follower; and *authentic leadership*, which is based on self-

awareness, open to opposing thought, high moral values, and sincerity when dealing with others.

In regards to dealing with VUCA contexts, the *authentic leadership* theory is brought up by Krawczyńska-Zaucha (2019), who promotes the importance of authenticity in leadership, along with the openness in management to help to see VUCA as possibilities instead of threats. Further research on authentic leadership is done by Mohammed and Viswanathan (2019), as they examine the relationship between authentic leadership and innovation in the pharmaceutical industry. The authors later conclude that authentic leadership has a positive impact on creating an innovative environment.

Additionally, *responsible leadership* is a further development of several leadership styles mentioned earlier, being a combination of authentic, transformational, and servant leadership (Sarkar, 2016). According to the author, this leadership style has a strong superior-subordinate connection and a big emphasis on sharing knowledge. Responsible leadership takes the prominent aspects of the three previous styles to make it into an even more refined leadership style, which is considered more appropriate to handle a VUCA world (Sarkar, 2016).

The importance of managers' self-awareness is highlighted with the idea of virtues leaders by Ko and Rea (2016). The authors suggest a 360-model for managers to get a full picture of themselves from people working around. Ko and Rea (2016) also present seven virtues: *wisdom, temperance, courage, hope, trust, justice, and compassion* to help managers develop their self-awareness further. The writers mean that acknowledging their weaknesses is crucial for a manager, but they should also focus on building on one or two strengths to make more outstanding contributions to the firm. Thus, Ko and Rea (2016) advocate 3-stages of development, starting with being aware of your attributes, then focusing on finding strengths, and finally implementing those virtues into the organization through action and habits. Cook (2016) also points out that getting multiple inputs is critical in this process. He means that creating a sweeping environment for collecting information from a wide variety of sources is beneficial for the manager to perfect themselves.

As mentioned earlier, when discussing dynamic capabilities required to respond to a disruptive business environment, Mocca et al. (2019) describe three pillars: sensing change, seizing opportunity, and changing the firm. In order to improve these pillars, leaders should be able to develop six disciplines: anticipating, challenging, interpreting, deciding, aligning, and

learning (Moccia et al., 2019). Schoemaker et al. (2018) share the same view but uses the words clusters instead of pillars. The authors develop it further by dividing the critical attributes into *cognitive* (challenge, anticipate, interpret), *social and emotional intelligence* (decide and align), and the combination of all three (learning) (Schoemaker et al., 2018).

Moreover, Rose et al. (2019) identify 12 key competencies that future leaders need to have to navigate the organization in a VUCA business environment, which are *strategic thinking, communication skills, technical skills, coaching & mentoring, risk-taking, business acumen, interpersonal skills, adaptability, creativity, networking, authoritative,* and *dependability*. From a different perspective, Zaidi and Bellak (2019) depict the sweet spot of leadership qualities, where *people, change, and vision* meet the leader's mindset in a turbulent and uncertain world. Without people, there are no relationships (Zaidi & Bellak, 2019).

Furthermore, Gandhi (2017) proposes that managers should be equipped with a *curious, creative, and innovative* mindset, as well as possess the ability to create new ways to handle VUCA circumstances. Also, according to Cook (2016), emotional intelligence is a key factor in creating resilience. He means that the traditional approach often relies much on Intelligence Quotient (I.Q.), which is insufficient for handling human interactions; thus, Emotional Quotient (E.Q.) is considered a much-desired quality. Mohanty and Saringi (2019) also adds that there is too much focus on I.Q., whereas the contribution between I.Q. and E.Q. is 20 vs 80% respectively, which means E.Q. should be prioritized.

A critical step for leaders to guide and navigate a team or an organization through a VUCA environment is staying engaged. According to Bywater and Lewis (2017), the traits and drivers behind leaders' engagement in a high-change environment are *hope, efficiency, resilience, and optimism* (HERO), which refers to 'Psychological Capital'. They also point out that these traits help create and safeguard both leaders and organizations' engagement levels. Further, the HERO is beneficial for the establishment of the entrepreneurial mindset and risk propensity at the workplace (Bywater & Lewis, 2017).

b. Development and acquisition of skills

Equipping employees with the right skills is crucial for the company in VUCA times, and the literature presents different ways to achieve this. According to Hall and Rowland (2016), MBA students are usually not ready to make a contribution immediately after graduation, and further training from the company needs to be provided. Since the "old ways" still mostly

dominate in the school's curriculum, the managerial capabilities gained from schools is often not sufficient for junior-level managers to cope with the reality of VUCA (Hall & Rowland, 2016).

Moreover, Das and Aras (2014), in their Lenovo's case study, point out that talent development within the company is important to handle VUCA, and the key to thriving in this context is staying *balanced, centered, and engaged*. To promote accountability and delivery among its leaders and employees, Lenovo designs and implements '5P' values consisting of *planning, performance, prioritization, practice, and pioneering*. This model aims to ensure the alignment between talent development and corporate values and visions (Das & Aras, 2014).

Additionally, Castillo and Trinh (2019) point out in their research the importance of diversity as a way of creating an absorptive capacity when operating in VUCA conditions, also mentioned earlier. They also find that companies with a diversity of sex, age, ethnicity, etc., have a better ability to absorb the external environment's complexity. This is due to the fact that mirroring the outside world's composition from different viewpoints might bring a better and comprehensive understanding of the business context (Castillo & Trinh, 2019). They also highlight that this diversity is beneficial both at the board members' level of corporate social performance as well as organizational productivity. Another vital factor pointed out by Castillo and Trinh (2019) is to involve specialists and generalists together in the decision-making process. The authors also share the view that the failure in diversifying can lead to the inadequate judgment of the operational context.

Other authors who also accentuate the importance of diversity are Aycan and Shelia (2019). They highlight a problem of management development: there are groups within the companies (women, and ethnical minorities to mention a few) who in some cases see management as scary, and something they do not aspire for (Aycan & Shelia, 2019). This aspect aligned with Castillo and Trinh (2019), in pointing out the importance of diversity at all levels of the company to better handle complexity and uncertainty in a VUCA world. Aycan and Shelia (2019) highlight the importance of supporting the right mix of personnel to become managers for diversity and to do that emphasize on supporting HR-function is crucial. Popova and Shynkarenko (2016) also further back up the advantages and importance of diversity in management in their research, which highlights the aspect even more.

c. Managerial and leadership role

According to Rimita et al. (2020), integrating system thinking, collaboration, and partnership in management are critical for managers when dealing with VUCA. The authors further indicate the importance of shared leadership by empowering and engaging employees for faster decision-making. The purpose-driven leadership that leverages employees' reasons for existence and uses their purpose to drive the organization is also useful in VUCA times (Rimita et al., 2020). Moreover, Minciu et al. (2020) propose that getting many people involved and using their intuitive ability instead of analysis provides rationality and speed in the decision-making process.

In their research, Choain and Malzy (2016) point out that many managers believe in the usefulness of spreading knowledge. Instead of spreading old knowledge of how things have been in the past, it is important for the organization to promote new knowledge acquired when dealing with problems in the present. Since we live in a constantly changing VUCA-world, this perspective is important to consider. They also highlight the aspect of modern research in their paper. It can be vital to oppose what other authors suggest, but this action should be done differently from how it has been done in the past. In a VUCA world, research has to be in real time, from first-hand experiences, and in depth in the way of, or in connection with academics.

In addition, according to Codreanu (2016), managers' abilities required to address VUCA environments are having *visions, understanding, clarity, agility*, along with the ability to use their gut feeling to make quick decisions. The author also points out the importance of managers' and leaders' accountability for mistakes and failure, and spreading this to the rest of the organization is an essential factor for further development within the company.

The managers' role in promoting sensemaking for the whole organization is highlighted in the study by April & Chimenya (2019). The technique aims to study the problem in-depth to see whether it is *complicated*, which can be solved by a step by step process, or *complex*, which requires a move innovative approach, and to get the whole organization under the same understanding. They also point out the critical role of leaders and managers in developing an organization with a focus on *agility, information, restructuring,* and *experimentation* to be competent to VUCA business environments.

It is essential for leaders to make continuous changes in *personnel, processes, technology,* and *structure* in order to enable flexibility and speed in decision-making (Vaidya, 2020). According to the author, adaptability, which can improve a leader's speed and effectiveness,

also keeps a vital competence for leaders during this disruptive time. The best future leaders are characterized by a *clear vision, clarity in thinking, understanding of the situation, and agility* (Vaidya, 2020). This requires leaders to collaborate and actively engage with the workers within their company to establish effective teamwork and collaboration skills. Besides, leaders need to have mental and emotional competencies to make faster decisions when dealing with complicated (even complex) problems and conflicts (Vaidya, 2020).

Castillo and Trinh (2019) divide the companies into three categories in which leadership plays a big part in enabling changes spreading from micro level to the macro level. As mentioned in the organizational culture part, these categories include: (1) Absorptive capacity means encouraging *diversity, sensemaking, and slack*; (2) Adaptive capacity includes openness to *change, humility, and feedback*; (3) Generative capacity is about *design thinking, abduction, and effectuation*.

From a manager perspective, the adaptive capacity would be of a practical endeavor by creating a group with many perspectives (diversity), making everyone on the same page (sensemaking), and enabling enough resources and time (slack) to foster innovation. The adaptive capacity would be leading by example and embracing change instead of treating it with hostility. At the same time, being open to feedback and not being afraid to stand up for mistakes and humility are also crucial. The generative aspect adds further to the previous two. The manager creates a ground for out-of-the-box thinking to create ideas and handle complex problems, encouraging an innovative and non-linear approach.

4.2.2. Manager-employee interaction

When finding alternatives to adapt to the VUCA world, having *vision, understanding, clarity,* and *agility* are the keys to tackling the different aspects of the VUCA world (Johansen & Euchner, 2013; Codreanu, 2016; Raghuramapatruni & Kosuri, 2017). These are vital aspects for the managers and leaders and need to be spread to staff and employees working under the same premises (Raghuramapatruni & Kosuri, 2017). Codreanu (2016) further proposes that leaders need to act by example and allow both themselves and the staff to make mistakes as a part of the learning process, but still holding accountability as a virtue. The importance of having both managers and employees working in the same direction is also accentuated in the Lenovo case (Das & Ara, 2014).

Two things that are obstacles in tackling VUCA are the restriction in risk-taking and adopting new technology in the banking business, according to Mohanty and Saringi (2019). As Sharma (2017) points out, another barrier that creates many problems is black swans, which tend to stem from internal conflicts within the company. In combating black swans and conflicts in general, managers need to appreciate everyone's voice and encourage a collaborative working culture (Sharma, 2017).

April and Chimenya (2019) emphasize the importance of sensemaking in dealing with intricate problems for leaders. The authors also indicate that leaders need to have the ability to inspire the staff to believe and follow the same direction. They mean by carefully examining the nature of the problem, whether complex, complicated, simple, or chaotic, and unifying the understanding, the manager can ensure that everyone works in the same direction.

Burk (2019) points out another important aspect, storytelling. Managers and leaders have critical roles in reinforcing and steering company culture through change, spreading information, and motivation. He further suggests that storytelling plays a big role in this process, and it is recommended that the recruitment of the right personnel in these positions is key.

4.2.3. Staff perspective

A VUCA world creates challenges for all levels of the organization. Many approaches in handling this challenge are made by structural changes or focus on managers and leaders to show the way. Moreover, getting the staff more involved by delegating or making them take more responsibility creates more agility for the company, and by that, respond quicker to change. One very straightforward way to prepare the front line employees to get the best conditions to cope with a VUCA world is to pinpoint the workforce directly. This preparation can be done as part of the other adaptation but also can be addressed on its own as a separate entity. The following section is going to focus on this aspect.

Cross-training, which enables staff to be flexible in work duties, and creating a mindset of constant learning emerged as critical components in our findings (Horney et al., 2010; Popova & Shynkarenko, 2016). Cross-training is the ability for personnel to do work duties that differ from their original role at the company. For example, a production worker is trained to take other duties such as driving trucks to assist the logistics when needed. Instilling a constantly changing mindset is important (Burk, 2019). Employees also need to keep being adaptable since

it facilitates a smoother transition into a highly disruptive world for both the employee and the company (Popova & Shynkarenko, 2016).

Besides cross-training to create the ability for staff to handle VUCA, Singh et al. (2020) highlight the importance of training and improvement of current skills and organize workshops on a regular basis for employees to increase their motivation and also their intrinsic value. Singh et al. (2020) also found that measuring employee activity and giving feedback also created a more VUCA resilient workforce.

Looking at a longer perspective, Villajos et al. (2019) study how deals that benefit both the company and the employee, i-deals, increase motivation and creativity. These can be flexible working hours, fewer working hours, or working out during office hours. They suggest that these i-deals have a chain of beneficial effects. An increase in motivation can positively correlate to creativity in a longer perspective. They believe that just by facilitating employer benefits, results can further down the line, improving many other beneficial aspects as well (Villajos et al., 2019).

Delegation can make the staff more resilient to VUCA as it encourages employees' involvement, which creates agility for the company (Horney et al., 2010). This both serves as a motivation for personnel and to be beneficial for the company. Also, by introducing the staff to design thinking, which is a solution based non-linear way of addressing complex problems (Cousins, 2018), and complex thinking, the ability to interconnect different dimensions of reality, (Popova & Shynkarenko, 2016), resilience can be further increased. There is also a point made by putting the employees in charge of their own development. Doing this creates an immense self-awareness, which makes the staff better equipped to handle the VUCA world (Raghuramapatruni & Kosuri, 2017).

Composing a diverse workgroup is also a key when building a resilient workforce with having different ways of thinking through background and experience. Aycan and Sheila (2019) highlight the importance of HR-support to have this diversity extend up into management, as we mentioned in the management section.

There are also suggestions on developing the personal on both the vertical and horizontal planes on the more complex spectrum, as Raghuramapatruni & Kosuri (2017) suggested. Horizontal is the most common one, with developing skills and thoughts further within a

limiting perspective. Vertical development includes reaching new stages of awareness, creating whole new ways of thinking and aspects previously not realized (Stålne, 2017).

5. Analysis and Discussion

In this chapter we are going to analyze and discuss the findings from chapter 4, with our own reflections and thoughts from authors outside the study added. There is also a part where we discuss ideas that we after reading the articles think should have been more emphasised.

5.1. Analysis

By studying a substantial amount of literature within the academic realm, investing in organizational development and human resources management is the primary approach to respond strategically toward a VUCA world.

5.1.1. Organizational Development

Organizational development is a professional field of social actions and scientific inquiry, which has existed since the 1950s (Marshak, 2006). Due to the dynamism and diversity in approaches, beliefs, and value systems, it is complicated to accurately define the field (Marshak, 2006; Jamieson & Worley, 2006 cited in Karakas, 2009).

One of the earliest attempts to explain this field of study French (1969) work, in which organizational development is defined as long-term efforts to improve an organization's problem-solving capabilities and its ability to cope with changes in the external environment. Another recently broadened explanation of this subject by Burke and Bradford (2005) also received much attention. According to the authors,

> "*based on (1) a set of values, mostly humanistic; (2) application of the behavioral sciences; and (3) open system theory, organization development is a systemwide process of planned change aimed toward improving overall organization effectiveness by way of enhanced congruence of such key organizational dimensions as external environment, mission, strategy, leadership, culture, structure, information and reward systems, and work policies and procedures*" (Burke & Bradford, 2005).

Later, Cummings and Worley (2009, p.1-2) summarize some of the most popular approaches and deliver a succinct definition of organizational development as "a systemwide application and transfer of behavioral science knowledge to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organization effectiveness". Despite a wide span of definitions and different activities involved

in the process, all viewpoints indicate that the scope of improvement focuses on the entire system, and organizational development takes a holistic perspective toward change.

Nevertheless, some critical aspects of organizational development that are spotted frequently in our findings are organizational structure and culture. Mintzberg (1980), in his study *Structure in 5's*, describes *organization structure* as a framework in which employees are divided into a number of distinct tasks coordinating with each other to achieve goals in a unified way. One controversy within this field is whether the authority and decision-making power toward the organization should be centralized or decentralized. *Centralization* is the concentration of decision-making power at the top level of a firm, whereas *decentralization* focuses on distributing power and authority among several subunits or divisions (Bloisi et al., 2007).

Besides, *organizational culture* is defined by Denison (1990) as a collection of underlying values, beliefs, and principles established to serve as a foundation for management systems to inform and guide employees' perceptions, behaviors, and understanding. Additionally, organizational culture keeps a significant role in promoting innovation and influencing the effectiveness of a company (Denison & Mishra, 1995).

a. Structuring organisations

Our findings suggest that the team-based approach to structuring organization is said to be more appropriate to respond effectively to a fast-changing market (Sharma & Sharma, 2016; Xing et al., 2020; Millar et al., 2018). It further shows that teams equipped with an *entrepreneurial mindset, resiliency, responsiveness*, along with a *decentralized management* can improve organizational performance (Frynas et al., 2018, Cook, 2016, Sharma & Sharma, 2020, Rimita et al., 2020, Michel et al., 2018). Hence, the speed and flexibility in operation and decision-making emerges as crucial elements for companies in order to thrive and survive in a VUCA context.

A similar approach, which has received much attention, to the mentioned suggestion is the adhocracy. According to Mintzberg (1980), the central focus of the adhocracy is on employees, which uses mutual adjustments as means of communication and a selective pattern of decentralization. This approach is beneficial for organizations as it also promotes innovation and provides a rapid adaptability to changing environments (Mintzberg, 1980).

Indeed, McKinsey & Company (2020) suggests that organizations should move into a flatter, non-hierarchical structure and enable the delegation in the decision-making process. These approaches are demonstrated to help create a "dynamic network of agile teams" across the enterprise and speed up the internal systems to cope with emerging challenges and opportunities in a disruptive world (McKinsey & Company, 2020). Moreover, decentralized management appears as one of the important aspects of the reimagination organizational structure for a VUCA context (Michel et al., 2018, Evans & Bahrami, 2020). The decentralization is particularly advantageous for organizations prioritizing responsiveness in operation as it provides the immediacy in time and place for making decisions.

On the contrary, in the case which organizations desire to have the reliability, efficiency or perennity in its strategic priorities in a less disruptive environment, a centralized system is said to be more suitable than the decentralization (Vantrappen & Wirtz, 2017). Therefore, given that organizations operate in an increasingly volatile, uncertain, complex, and ambiguous world, a decentralization is considered a better tactic that allows responsiveness and resilience to nurture within the system.

b. Fostering culture

Organizational culture keeps a vital position in the strategic preparation for a VUCA world. Results of the literature review show that creating, shaping an organizational culture that *supports learning, strong engagement, innovation, collaboration* and *non-linear thinking styles* are essential for business executives to adapt to the new normal (Cook, 2016; Sarkar, 2016; Raghuramapatruni & Kosuri, 2017; Millar et al., 2018; Castillo & Trinh, 2019).

In fact, business executives from different industries harmonize that a corporate culture can become responsive to the emerging external risk and opportunities by establishing a learning enterprise (Forsythe et al., 2018). They further explain that a learning culture can be facilitated through experimentation and learning-from-experience among employees.

Innovation through experimentation is considered as an important component for organizations to overcome the ambiguity of a VUCA business world (Bennett & Lemoine, 2014). A context characterized by turbulence and ambiguity requires companies to be constantly innovative to be able to cope with external changes. Thus, creating room for experimentation and learning from these trials, even in the case of failure, helps organizations to improve and discover new opportunities for innovation in the future. The knowledge gaining

from this process can be a valuable source of asset and later, transform into competitive advantages of companies in the long run.

5.1.2. Human Resource Management

In the handbook of Human Resource Management (HRM) practice by Michael Armstrong (2006), HRM is explained as a strategic approach regarding managing people, who are working and collectively or individually contributing to achieving an organization's objectives. HRM can also be described as a set of policies that interrelate with an ideological and philosophical underpinning (Storey, 1989 cited in Armstrong, 2006).

Additionally, the overall purpose of HRM is to enhance organization effectiveness by recruiting, developing talents, providing necessary training activities, as well as building a reasonable reward and compensation system within the company (Armstrong, 2006). Besides, through the established policies and practices at the workplace, it aims to guide employees' behaviors, improve productivity, harmonize relationships with co-workers, and balance their interests with the employers. A critical characteristic of HRM is that despite the diversification in its features, this field's attention lies on the individual and its integration with the organization in comparison with a collective, holistic approach of organizational development (Armstrong, 2006).

HRM is said to have a significant influence on the performance of organizations (Becker & Gerhart, 1996; Delaney & Huselid, 1996). Particularly, HRM practices concerning employee skills and motivation, such as training and development, incentive compensation, also reward, are found to have a positive correlation with organizational performance (Delaney & Huselid, 1996; Harter, Schmidt, & Hayes, 2002; Purcell & Kinnie, 2007). Furthermore, as organizational performance depends significantly on its people's skills, attitudes, and behaviors, Katou (2006) recommends that the development of HRM policies should concentrate on improving these aspects.

The findings presented in chapter 4 highlight the importance of managing the employee effectively and developing manager self-awareness to improve their competencies in a VUCA environment. Thus, HRM plays a vital role in organizations' strategic response to this dynamic world.

a. The employee factor

When dealing with the readiness for VUCA, how to increase the value of employees below the manager's level for the company is highlighted. The front line staff are critical to having a successful company, and as CEO Richard Branson puts it very well in two quotes:

> "*I have always believed that the way you treat your employees is the way they will treat your customers..*" - Tribal Worldwide London (2019).

> "*Train people well enough so they can leave. Treat them well enough so they don't want to.*" - Hyacinth (2020).

Investing in individuals within the company is essential to meet the demands of a dynamic world. Business executives reveal that the ability of organizations to adapt to a VUCA market depends largely on the capability of their employees and leaders (Forsythe et al., 2018; Rimita et al., 2020). The combination of each individual's contribution serves as the foundation for companies to transform at the macro level to excel in a VUCA world. Therefore, the assurance of an engaging culture that empowers employees is indispensable.

The ability to train staff is important from the cross training perspective (Horney et al., 2010; Popova & Shynkarenko, 2016). Training, in general, creates better motivation and resilience within the staff (Singh et al. 2020). To further motivate employees, i-deals (Villajos et al., 2019) and involvement in decision making have a huge impact (Horney et al., 2010).

Diversity in workgroups also increases the ability to think differently and resilience to change (Aycan and Sheila, 2019). Also, complex thinking and design thinking work as a method of strengthening resilience in group work (Cousins, 2018; Popova & Shynkarenko, 2016).

b. Management self-awareness

In the articles regarding the management, there are many different discussions on abilities and traits that make a good manager or leader. These abilities are good guidelines for H.R. to look into when hiring personnel. From the findings, the competencies for a VUCA business world that managers require are *complex thinking*, to be able to see a problem for what it is, *ability to handle change and uncertainty*, and of course *self awareness* along with *interpersonal skills*. These abilities are clearly related to the authentic and responsible manager styles (Sarkar, 2016), with the ability to build trust and to encourage innovation.

One very interesting angle is the 360 evaluation, where the manager or leader gets feedback on their leadership and strength from all directions (Ko & Rea, 2016). Being a leader instead of

a manager increases the importance of leading everyone. Using your strength and being aware of your weaknesses should be a more widely spread phenomenon. The managers are an important part of employer contribution in both coming up with new ideas, as well as taking responsibility.

There is also a responsibility from managers and leaders to help guide the company through changes, where they have an important part to play in storytelling (Burk, 2019) and by leading by example (Codreanu, 2016).

5.1.3. New ways of thinking

The concept of non-linear thinking often appears as an advanced ability that businesses should adopt to handle a complex condition. This ability is recommended to be widely introduced across the organization, for both managers and employees. VUCA-related literatures suggest two types of integrative thinking; *design thinking* focusing on the solution and *system thinking* focusing on the problem (Cousin, 2018, Rimita et al., 2020).

Besides these two approaches, the ability to think strategically also receive much attention in the business field as a solution to survive in a highly complex environment. According to Julia Sloan (2020), strategic thinking is a critical theory-base, problem-focused, and intent-driven approach to strategy. The author explains further that the development of this ability is based on several cognitive functions such as polarity, divergent, non-linear, reflective, critical, a-rational, creative, etc. Furthermore, learning to think strategically is emphasized as an informal process by Sloan (2020), which occurs both intentionally and incidentally. Iterative thinking can originate and benefit from all kinds of informal learning within the organization, like mentoring, coaching, networking, learning from experience, critical reflection. As an iterative, messy process, strategic thinking enables ultimate creativity and is useful for strategists to explore different perspectives for sound decision making. One noteworthy point from Sloan (2020) is the significance of creating a climate where critical dialogue is part of the decision-making process. This aligns with findings above as for building an organizational culture that encourages collaboration, continuous dialogue among leaders and employees becomes indispensable in VUCA times (Sarkar, 2016, Castillo et al., 2019, Rimita et al., 2020).

5.1.4. Other aspects

In addition, some articles are suggesting alternative models to cope with a dynamic business environment, such as action strategy and action knowledge, which refers to the ability to

formulate real-time, instant strategies responding to this disrupting context using the sensemaking skill (Motemedi, 2020). Kim et al. (2018) also propose another approach to strategic planning that is based on customer experience instead of traditionally product- or technology-focused to cope with a turbulent, uncertain world. Further, putting efforts into risk management using scenarios planning or the 'backcasting' technique, that address the long-term goals by looking back toward the present to prepare for the predicted future are discussed as tools for strategizing (Carpenter, 2017; Thorén & Vendel, 2019). However, these approaches are limited due to the fact that the strategic formulation depends on a certain vision and an assumed future. Besides, the proposed models often lack extensive testing in practice and discussion in the academic realm hence, their reliability is still questionable and difficult to generalize and transfer to other contexts.

Continuous changes and the increasing intricacy of the market might trouble business executives when predicting the future. Still, the involvement of the ambiguous and the uncertain into the nature of the business context make it nearly impossible to make any prognostications. Still, it is possible for organizations to act proactively and thrive in this dynamic world by shifting the focus from the unknown external domain to the internal element, to what is known. Indeed, Bob Johansen – a master in long-term forecasting proposes that since the external risk is high, acknowledging that the business environment becomes more VUCA and activating the "readiness" mindset within your internal system is a strategy to this "new normal" state of the world (Johansen & Euchner, 2013). He further indicates that the presentation of this attitude, especially at the management level, can help flipping the dilemma into business opportunities for growth in the long run.

Moreover, Forsythe et al. (2018) in their interview series with leaders of top corporations from various industries also reach similar conclusions to this problem. They mention that the six executives simultaneously specify that shaping organization culture to be more responsive to fast-paced changes, establishing a learning enterprise, investing in the development of leaders and employees is critical to equip their organizations at both macro and micro level with necessary competencies to respond to this disruptive environment.

5.2. Discussions

As the section above concludes, there are many red threads of thought, combining the views on dealing with VUCA, and many of them are addressed and mentioned frequently in the field.

There are also other aspects that are perhaps more narrow and not widely discussed in the academic realm. In the following part, we are going to combine these thoughts further and provide critical discussions.

5.2.1. Different kinds of intelligence

When creating a corporate strategy to deal with a VUCA world, our findings indicate the significance of establishing an agile, flexible, and resilient workforce. This finding puts much focus on the role of employees and their mindsets. Dealing with complex problems requires a different way of thinking and the ability to make fast decisions from the employee's side. One way to look at this area is to integrate many viewpoints resulting from different kinds of intelligence, as our review and the literature that we read in connection with writing the paper suggest. So we decided that this is a relevant perspective that we want to handle.

As presented in the previous chapter, I.Q. is seen as having more impact on the recruitment process while E.Q. has more influence on the company's regular interaction and operation. Here, there are some flaws in the generalization. I.Q. might perhaps be the quality that can be decisive when applying for a college based on grades, but the debate around I.Q. and E.Q. in the workplace has been going on for many years. In 2010, Katzenbach and Khan brought this problem up for discussion. If a company is still focusing too much on I.Q. in the recruitment process, in the place of E.Q., it is a somewhat outdated view for HRM.

As Cook (2016) also points it out, the shift has gone from I.Q., which has been a sought after quality, to E.Q., which refers to managing people and social interaction. Katzenbach and Khan (2010) have an interesting angle, which is not mentioned in the articles we selected. They suggest using a combination of the two views to generate Organizational Quotient (O.Q.), which is seen as a new feature. O.Q. is the integration of the ability to know when to use I.Q. to solve problems and when to use E.Q. to manage people.

When comparing I.Q. and E.Q., our findings indicate that E.Q. is more important, but to have people who are both logically smart, socially smart, and know when to use which is even better quality (Katzenbach and Khan, 2010). As a leader in a VUCA world, flexibility is good quality, so having more abilities and knowing when to use I.Q. or E.Q. is beneficial. Moreover, we find it aligns with the ability to know when to use gut feeling and when to use analytic mindsets. Using the right ability at the suitable time is a good character. This feature can be

further developed, and perhaps something should replace the outdated one in the curriculum (Hall & Rowland, 2016).

The use of O.Q. is further described by Katzenbach and Khan (2010) as IQ is still an important aspect when dealing with forming strategies and dealing with processes, structures, and metrics. However, since the importance of conveying this information relies on E.Q., the ability to draw on the right ability at the right time creates a possibility for the highest performance. For this, the expression of O.Q. is utilized (Katzenbach & Khan, 2010). The equilibrium in using these two abilities is beneficial in the VUCA world. It highlights not approaching all problems in the same way but recognizing when to use gut feel or analytic approach. The sense of knowing when to solve a problem quickly by yourself or if it is better to get much input from others is also critical to VUCA circumstances.

Furthermore, the way to juggle fast and slow thinking, gut feel and analytic approach, is indicated as a critical factor, according to Kahneman (2011). Fast-thinking depends on the ability to use gut feeling and this skill is deeply rooted in human evolution, where it has been advantageous to our survival. However, in today's world, it can also be hazardous. Kahneman (2011) points out that relying too much on your gut feeling might create a false state of invisibility, which can lead to losing your self-awareness. Thus, this would make one unable to see their shortcomings or bad mistakes and get even more confident in the already skew of self-image. For a gut feeling to be best implemented, three requirements need to be met: *regular order* (as in chess), *much practice*, and *immediate feedback* (Kahneman, 2011), which in a VUCA world are hard to obtain.

In contrast to rational thinking, the gut is brought up a lot in the aspect of dealing with quick decisions in a VUCA world. This aspect contradicts Kahneman's (2010) idea since he highlights the special requirement for a gut feeling-based decision to come to its rights. This in some aspects, does not resonate with the whole VUCA environment. We are moving away from a world with regular order, and the world becoming more VUCA than ever. It is hard to get practice since every situation is unique. Though solving many different complicated problems will possibly provide a better ground for solving brand-new problems. But also the benefits of slow, or rational thinking, should be seen for its benefits under the right conditions.

Nevertheless, the problem of relying too much on one's abilities could backfire. Immediate feedback to a complex problem also has its difficulties. In many cases (Covid-19 pandemic's

responses, for example), the long-term results may differ largely from the immediate results. Here we have explicit situations of different views. Based on the findings presented in the previous chapter, the gut is useful for making quick decisions that are needed in a VUCA world. However, according to Kahneman (2011), there needs to be a regular order for fast thinking to be effectively implemented, which is sometimes not the case in a VUCA world.

Also, in a recruiting situation, bias or prejudice could be a big problem when relying on the gut feeling too much. The gut feeling can have a part to play, but a large dose of self-awareness must always accompany that way of thinking for making a more sound decision.

Dweck (2006) has a different perspective, which is relevant in this discussion. She talks about a fixed or growth mindset. A *fixed mindset* focuses on the individual qualities at the moment. In contrast, the *growth mindset* views setbacks and difficulties as learning opportunities and room for improvement while developing the mind simultaneously. Instilling a growth mindset culture is very beneficial for both individuals and the company as a whole. Employees should not be afraid to try new things but also be accountable for their own mistakes. Even though this practice was highlighted many years ago, its VUCA world's relevance becomes even more apparent.

Setbacks in a changing world and learning to cope with difficulties where the courage to make mistakes become a huge part of a VUCA world. These criteria are also seen as a thread throughout the articles suggesting the message "do not be afraid to try and fail". As Dweck (2006) explains, dealing with and overcoming setbacks now, is beneficial for the future.

In our view, a growth mindset is something particularly relevant in dealing with VUCA. Since the external environment continually is disrupted while making decisions, it will be impossible for the leader not to make any mistakes. With this in mind, organizations can shift their approach to VUCA to be more optimistic by promoting growth mindsets, allowing mistakes, and seeing VUCA challenges as opportunities instead of problems.

Dweck (2006) also points out that we can have different mindsets for different circumstances in our lives. We can have one kind of mindset for tasks requiring I.Q. or logical thinking; for E.Q. or social interaction, we can apply another approach. For excellence in job performance, we can have a third kind. The conclusion is that a fixed mindset can restrict us from obtaining and adopting new aspects to be more beneficial in our lives. The solution is to expose ourselves to new and different situations to encounter various obstacles we have to

overcome. By exposing ourselves to new challenges, our mindset is trained to shift perspective continuously. We believe this case is valid for O.Q. as well. Putting oneself in a new environment where they have to challenge their habitual ways of thinking along with a growth mindset will also improve the performance.

All these ideas combined with the Cynefin network (Snowden, 2010), puts us in a complex environment where we have to deal with complex issues. When to use guts feeling, which can be both good and bad depending on the situation, and when to use rational thinking, need to be carefully considered to achieve a delicate balance between the two. The important factor is to be aware of one's own biases and how they can affect the judgment. This self-awareness, combined with taking other peoples' input as in critical dialogue to get various perspectives, helps generate a thorough decision. In a VUCA world, a fast but inadequate decision is not completely bad and still better than not making any decision at all. It can be rewarding from a learning perspective as knowledge acquiring from this process helps to make more thoughtful decisions in the future.

5.2.2. Value-driven Organizations

Values that drive the organizations can have significant impacts on how they handle VUCA. Acknowledging how to handle an issue based on values can give much freedom in decision-making as long as its line with the values. It is noteworthy that these values are still relevant and not just the formal way of doing things. However, making fast gut-based decisions are helped by knowing what aspect to prioritize. Katzenbach and Khan (2010, p.88) point out how McKinsey has the "What would Marvin do?" to rely on when dealing with difficult problems. They also use *The Gentle Giant* movers as a great example in how their core values: *skilled athleticism, teamwork and personal customer caring* are built as a foundation of how things are done, which brings pride in the work but is also easy to take in for new employees.

Values and culture are fundamental aspects, which help to make better and faster decisions. In a VUCA world, it is important to have values and culture that align with how the company works and wants its decisions to be made. One big problem isolated is companies having values that do not correspond with how things are done, which can be counterproductive. Using the values that are already in place and letting customers reinforce them, strengthens the values as Katzenbach and Khan (2010) address in their writing. They also suggest that having values in place sounds good, but if nobody follows them and knows what they mean, can create

dangerous interpretations and results. An example with Enron compared to Reliant is brought up, with both being in very similar situations. However, Reliant made their values less ambiguous and more comfortable to follow. On the other hand, Enron had a big gap between the formal and the informal, being just a "values-displayed organization" with values being just words on a paper (Katzenbach & Khan, 2010, p.88). If only a small group of the staff understands what the values mean, then it's poorly formulated. Corporate values should be straightforward and understandable so that every member of the organization can follow them, which is of extra importance in a VUCA world that is already ambiguous and uncertain, and hard to understand on its own.

When discussing corporate values, Katzenbach and Khan (2010) also use the word *homophily* to describe that small groups within companies tend to think alike and attract people of the same way of thinking. They mean this becomes an essential factor in spreading value. Reaching out to all groups and making the right values spread is facilitated by finding the informal leaders and key people and use in cementing the company's values are important in a VUCA world based on our findings, and further backed by Katzenbach and Khan (2010). They also mention that informal aspects can lead to better performance and reverse. Hence, a good way to improve both these aspects is to set group performance goals. This enhancement should be done to improve collaboration and make the goals meaningful, so employees can enjoy pride when completing them. They also suggest applying value to solve the most challenging problems. This approach can increase the group's motivation to work hard to overcome the hardships in the journey of achieving the goals. And resilience has a huge part to play in dealing with VUCA.

Having a culture that is relatable and aligns with the company's interests is essential. Having a strong culture but not supporting the company's values and objectives can hold the company back. Shaping organizational culture cannot be achieved in a blink of an eye but needs time to be anchored in the whole company. Looking down from the top of the corporate and giving commands to adjust the culture is not the right way to go. There should be one formal culture concerning how employees should work and how senior management wants the work to be done. However, it also needs an informal culture that promotes positive norms and behaviors to guide how things are being done in reality, so that these two can complement each other. Having these aspects in line also creates resilience, and makes it easier to be agile, when everyone knows in which direction the boat is heading.

5.2.3. Formal and informal leadership

Katzenbach and Khan (2010) propose that both formal and informal leading aspects both have an important part in leadership. According to the authors, formal leading refers to what is taught in a regular management curriculum. This aspect focuses on hierarchical leading and easily measured aspects, such as cutting costs by cutting staff or saving money by making processes more efficient. Besides, they point out that informal leaders' importance in implementing changes is often overlooked. Katzenbach and Khan (2010) further suggest that informal leaders can be a good way to spread change to the frontline, which is often hard to do from the traditional top-down approach. Also, as the hierarchical way of working has its limitations, there are advantages of employing the informal viewpoint. The informal allows front staff to hold other staff accountable when accidents occur, which might be troublesome in hierarchical leading due to middle management's slow-moving (Katzenbach & Khan 2010).

To juggle the informal relationship, Katzenbach and Khan (2010) further point out O.Q.'s importance and the ability to know when to focus on which aspect. Handling changes, especially in a more VUCA world, would put higher demands on coordinating both formal and informal aspects. O.Q. is a helpful method to understand the importance of informal leading and determine the contribution of combining both aspects. Katzenbach and Khan (2010) further point out the ineffectiveness of doing everything in a hierarchical order and recommend the best procedure is when the formal and informal make a synchronized leap. Good O.Q. also enables people to modify rules that work in the wrong way, remove barriers, and have people learn from others how to combine formal and informal leading.

5.2.4. Drivers and motivation

The best drivers are not always of the extrinsic type, but as we pointed out in our review, intrinsic rewards sometimes are a better offer. Intrinsic rewards can also be closely related to the informal, which has its own ways of rewarding people, according to Katzenbach and Khan (2010). The writers also highlight that career promotion is usually considered a better reward for the people who focus more on the formal. In contrast, the informal give rewards by pride in work. This is one reason informal leaders might be overlooked when it comes to career advancements (Katzenbach and Khan, 2010).

Finding out what drives people is required to get everyone to work in the right direction. In our opinion, it is at least as important as planning the changes. There are examples of giving

extrinsic rewards that can have the opposite effect, such as when the enjoyment factor of achieving something is taken away as the primary driver (Katzenbach & Khan, 2010). This is a very interesting factor when motivating personnel; intrinsic rewards can have much better effects than extrinsic rewards in certain areas. It further shows the difference between getting and buying allegiance. Getting people to feel that their contribution is important for the organization creates a strong bond and could be a decisive factor in making everyone working in the same direction.

One factor that needs to be addressed is that different people need different motivations. Katzenbach and Khan (2010) discuss the role of managers who keep a motivator position in their writing. As there are different kinds of drivers, being a "good" manager focusing on the processes or targeting social well-being alone is not sufficient. The manager should also motivate people to do their best by giving them pride, challenges, and appropriate support. Therefore, it is most beneficial to balance these two approaches.

Delegations and involving personnel in the procedures are critical factors in reaction to change and the VUCA environment. Moreover, working from the bottom up has shown to have better results than management expecting changes from the top-level (Katzenbach & Khan, 2010). It should be noted that the mistake of not involving enough people and integrating diversity when bringing about change, can have setbacks.

There are some common traits and differences in the management perspective. For example, doing the talk and doing the walk (Katzenbach & Khan, 2010) from the manager's side is common through all our reviewing. Showing that leaders can listen and act on the information they get from the personnel, as well as living up to the standards that are expected from the rest of the workforce. These actions seem very logical and easy to apply, but their significance might not be fully realized.

In practice, in response to the Covid-19 pandemic, the government has made recommendations to the public; however, these politicians have not been seen as acting as a role model for people to follow (Sveriges Radio, 2021). This can be seen as a double-standard and has created outrage within the general population. This example would be very relatable to the business industry. Katzenbach and Khan (2010) have an example where the company policy with no outside visitors is allowed during work hours. However, management makes

exceptions, which gives the staff a hard time and leads to long going consequences for the manager involved.

One other important aspect that is brought up and that again emphasizes E.Q., or O.Q., is visibility among staff. There is an importance of managers showing themselves among the front line workers, but it has to be done with the right implementation. Katzenbach and Khan (2010) point out the benefits of senior management showing themselves on the front line, but there were examples of management instead of being seen as motivating, are being seen as something scary, and having the reverse effect. It can be challenging to do it in a beneficial way, sending the right vibes and signals, but this is a skill of the personal interaction kind.

In a VUCA world, a very sought out quality is mentioned by Katzenbach and Khan (2010), which they call *fast zebras*. This trait they use to describe staff who are quick to change, and know the best ways to find quick ways to maneuver in a changing fast pace. They mean that this ability helps to hit the road running and quickly get acquainted with the job, as well as combining the formal with the informal, is a perfect fit in a VUCA world. They also mean that creating the right shortcuts and finding the right people to work through can create an agility to bypass a hierarchical structure in a VUCA environment in many cases.

5.2.5. I-deals and win-wins

Many articles focus on involving the staff more in decision making. The idea of delegation can help to motivate the employee further and also enable agility within the company. Some of the articles focused on creating the intrinsic value to get the staff motivated by their contribution. As in the Lenovo case, there was a focus on developing personal and simultaneously benefiting the company (Das & Ara, 2014). There is also some discussion about salary and finding the right employees. However, in the example with i-deals, an increase in salary is not said to be beneficial for both parties (Villajos et al., 2019). Perhaps, the focus on personal development and the flexibility in working hours can bridge gaps that salaries could not?

Research has shown that intrinsic value, in some cases, can be more persuasive than an extrinsic one (Katzenbach & Khan, 2010). The intrinsic value helps determine behaviors that cannot be affected by extrinsic rewards, such as behavior towards organizations' overall well-being (Singh et al., 2020). There are perhaps a certain number of employees for whom money is the primary driver, but for others, intrinsic motivation and perhaps other benefits are more

important. This problem is something that companies should dedicate time and money to investigate, instead of just focusing on the salary issue.

5.2.6. Complex problems and sensemaking

One finding that has been overlooked in some cases is determining the nature of the problem that companies encounter. The Cynefin Framework suggested by Swowdens (2010) is being used to aid decision-making by identifying the context, whether simple, complicated, complex, or chaotic. Good leaders need to see what type of problem their organizations are dealing with and get everyone else to see what they are as well. Katzenbach and Khan (2010) emphasize the ability to see that a complex problem differentiates from a complicated one; therefore, it needs a different approach. The whole idea is to give more loose reins when dealing with complex problems and make adjustments according to what happens along the way instead of having a set plan from the beginning. Much knowledge and insights can be learned from the employee's own intervention when dealing with the problem.

To create knowledge about complex problems is important. Knowing that the right manager is in the right position within the company and able to deal with the complex problems they are faced with is also critical. Stålne (2017) points out that not all managers are equally equipped to deal with complexity. Having the wrong person in the management when dealing with complex problems might cause massive troubles by treating them as complicated problems and, thus, not being able to handle them effectively.

5.2.7. Diversity in dealing with VUCA

Diversity has been brought up as advantageous in handling VUCA since it provides different perspectives when dealing with complex problems. Implementing diversity by adding groups of separate individuals within the company, or especially from existing teams, can sometimes create problems due to the differences in the group's norms (Ernst & Chrobot-Mason, 2011). Further, with increased globalization, integrating different cultures and nationalities become more important. Not paying proper attention to this aspect might lead to several negative effects such as miscommunication and interpersonal conflicts due to cultural differences. It also hinders the company from understanding a broader picture and seeing problems from new and different angles.

Ernst and Chrobot-Mason (2011) point out five boundaries that have to broken: Horizontal (interdepartmental collaboration), vertical (management and workers), global boundaries,

stakeholder (consumer, investor, etc.), and demographic boundaries (age, sex). They mention many mergers that have not worked because of the lack of consideration for these factors. They highlight that just bringing groups together is not enough, and the management might build rifts that can be counterproductive. They point out that an interdependent relationship can bring better results than the different sides produce separately. For this purpose, the Nexus method is introduced.

The Nexus method (Ernst & Chrobot-Mason, 2011) consists of six steps within three tiers to work with spanning leadership: *Buffering/ Reflection (Manage boundaries), Connecting/ Mobilizing (Forge Common Ground), Weaving/ Transforming (Discover New Frontiers).*

Buffering enables groups to be heard and seen, as some groups can be overlooked or not taken into consideration when making corporate decisions. It is important to realize that there are other interests besides the majority, such as gender, race, culture, and age. The assumption that everyone is on board because decisions favor the general workforce might create internal conflicts. Reflection enables groups to see the common ground but also accept each other's differences.

Forging the common ground is the next step in the Nexus Method. Here, groups build trust through connecting. By mobilization, new intergroup relationships are being formed, and new temporary groups can be utilized.

Weaving is about keeping group distinctions and their unique way of working as a network that works well together. The final step is transforming where the whole company functions and works over boundaries and uses the advantages many perspectives can give.

Some problems and complications can arise when working across boundaries due to different diversities and levels. Nevertheless, when using the differences as strengths, a new level of development for the company can be reached (Ernst & Chrobot-Mason, 2011).

The mentioned model is not addressed in the article we found. The articles address the organization's problem at a more simple level and do not discuss this aspect that we find essential. Removing the silos, diversity, and working in temporary teams was accentuated thoroughly. However, the traps and dangers that can occur might be neglected.

5.2.8. Cross training and being responsible for your own development

A fascinating factor, especially in relation to a VUCA situation, is cross-training. Horney et al. (2010) and Popova and Shynkarenko (2016) point out the importance of employees being able to switch work duties to create a more agile company. Evans and Bahrami (2020) make a good example of how people use new skill sets or skill sets not previously used by the company to tackle a disaster. According to Burk (2019), installing a mindset about constant change facilitates cross-training. During the Covid-19 pandemic, there have been numerous accounts of both companies changing production to help combat the spread of the virus and hospitals using students of both medicine and microbiology to help take the burden of medical personnel (Rydén, 2021). These examples are considered as agile responses to a VUCA world.

Besides cross-training, the employee's responsibility for development is brought forward by Raghuramapatruni and Kosuri (2017). Their idea is to put the employee more responsible for their own development. Making employees in charge of their training helps create bigger self-awareness and be better equipped to handle a VUCA world. This suggestion goes hand in hand with the ideas mentioned earlier in the paper: delegation and giving more responsibility to employees will increase motivation from the intrinsic rewards more than the extrinsic. Thus, delegating and giving the employees the responsibility also work as an intrinsic reward and increase motivation.

Perhaps the challenge is finding ways that work for everyone and just not for specific groups. Treating employees as rational beings will make them act more responsible instead of treating them as machines with no autonomy and thinking.

5.3. Gaps in the literature

Our findings in the previous chapter suggest different perspectives on how companies could respond to VUCA with several interesting aspects. However, some aspects, which might be useful for organizations to cope with a VUCA environment, appear to lack attention. One of those aspects is the informal structure, which we have found has a significant bearing in spreading new ways of working throughout the organization. Moreover, some features are only mentioned briefly with little thorough analysis, such as the limitations of the effects of cross-training and a more in-depth interpretation of the phenomena. Thus, we are going to discuss these perspectives in the following part.

5.3.1 Informal structures in a VUCA world

From what we have found, many articles focus on the formal structures of management. There are examples of informal structures in some cases, but it is not emphasized. Katzenbach and Khan (2010) write about finding the balance between informal and formal structures in a company and balancing the two. They also mentioned how a small startup tends to favor the informal, and there should be a shift to involve the formal to work in practice, especially as the company grows. In more prominent companies, the lack of informal and autonomous in decision making is a significant disadvantage. Transforming the organization from top to bottom requires the involvement of the informal aspects.

The concentration on the formal and the missing of the informal is seen in our data as there is no real balance between the two. Perhaps the formal is easier to understand and evaluate, making it more convenient to analyze. As Nangia and Mohsin (2020) suggest, there are examples regarding having web meetings where the person working from home shows their house and talks about their families naturally. However, as discussed in the article, the option of working-from-home enables this change, and it is not viewed as part of the culture before the Covid-19 pandemic.

5.3.2 In-depth Analysis and Problems regarding Cross-training

Cross-training emerged as one solution for a VUCA world in our findings (Horney et al., 2010; Popova & Shynkarenko, 2016). However, we found that the whole concept was discussed very briefly. With much emphasis on small teams and decentralized management, employees are expected to take more responsibility. In combination with the importance of intrinsic values, rewards, and delegation, it is better for companies to embrace a holistic approach. Having niche teams in skill sets and knowledge could significantly impact the companies as it might create boundaries between the teams, which is not beneficial to build a responsive and agile workforce. Therefore, cross-training should have a more prominent place in the research. For that reason, we will discuss and make a more thorough analysis of cross-training in the following section.

To further develop the cross-training idea, Epstein (2019) highlights the benefits of employing a generalist perspective and not getting too narrow-minded or stuck in the same way of thinking. He points out that being a specialist and devoting thousands of hours to perfecting one particular skill can be beneficial in some situations. However, this should only be an exception rather than a regular habit in a turbulent, uncertain world. Being a generalist by

practicing different abilities makes it easier to learn new skills and thus, develop a high adaptability. Spending time on one niche might guide to a leading position in the short term. In an environment that usually does not have a steady order or structure, this strategy will not keep organizations ahead for long. The wiser approach is to not specialize in just one area, but making a stronger case for cross-training in many disciplines. For example, Epstein (2019) mentions that the Nobel-prize winners usually have other areas or hobbies that they are skilled at besides their expertise field.

Furthermore, imagine a scenario in which a company has to quickly change manufacturing due to a sudden change in demand or outside factors affecting the supply of critical resources. In this case, companies with employees capable of quick learning, high adaptability, and multiskills would be more comfortable to transform to meet the new requirements. As a contrast, a company could also have employees who have been doing one thing their whole life, and these could very well have positioned themselves as informal leaders. This could become a problem, since according to Epstein's reasoning, this type of employee would have a harder time learning new skills and different approaches. And having inflexible informal leaders, could affect the whole company being less adaptable to change.

Also, the "sunk cost", which in this case is time putting in a particular task as an investment, could be hard to let go of (Kahneman, 2011). In a VUCA world, realizing that you are using stone while everyone else uses iron should be a wake-up call that the old ways could be in the past. Having many strings on the bow instead of only one should align with previous reasonings of the author, making this transition and new learning easier. Having an adapting mindset and getting used to the fluctuation is the only constant in this disruptive environment (Burk, 2019), it should make it easier to accept changes in how things are done.

When it comes to mindset hindering us, Dweck (2006) suggests that reaching quick conclusions instead of struggling and learning during the process can be detrimental. She points out that having a simple start in certain aspects of life creates a self-image that can be hard to stray away from when the rest of the world catches up. It is easier for someone who is not seen as a prodigy or expert to change their way of thinking than someone trapped in the self-image of perfection. She also means that it is beneficial to evolve continuously to remain competitive and keep leading in the long run.

All these conclusions link us to the *red queen effect*. This effect implies that in order to maintain the leading position in the competition, one must develop and change regularly. We see this as something translatable into a business context. Development and finding new areas of improvement from the staff perspective make both the company and the employer more robust. By that, it also increases motivation, self-worth, and intrinsic self rewards.

There are also other issues that are not mentioned when highlighting cross-training. Cross-training is a possibility to keep good employees within the company when meeting new challenges in the external environment. This could be used to motivate employees that do not have the will to climb the corporate ladders, or for whom there are no available slots to promote. In a VUCA world, the employees are important assets, and renewing their key competencies is vital for the company's survival. There is also a possibility that employees with cross-training may develop into informal leaders in bigger groups. This will also serve as a base of intrinsic knowledge within the company to complement the new knowledge being created. Having too much new knowledge from too many sources could sometimes be a problem, and it is good to have some common pillars as a foundation.

Moreover, cross-training can decrease employees' fears of becoming obsolete due to a lack of skills by instilling a growth mindset. From a staff and company perspective, cross-training will prepare workers for bumps and changes further down the line, instead of suddenly forcing change when the event should happen. For the employees, choosing to stick with the company since they can be happier and better workers, is better than being forced to stay due to their lack of skills to move to another job. This suggestion could be interesting for further research. It relates very much to the idea that a growth mindset and cross-training are two things that are very important for personal development. And making an active choice instead of being forced to make the same choice might have a huge difference. Instead of offering the employees the *Hobson choice*, which is not really a choice but to take it or leave it, it is better for the company to offer the employees the option to develop and grow.

One crucial issue that is not dealt with in our articles is the fact that by employing cross-training and forming new groups, the old groups' dynamic would change. There could be friction between members of newly formed groups. As Katzenbach and Khan (2010) explain, just putting groups in contact with new groups will not always work. There are many dynamics to consider, and it could bring more problems to the table that are not there before. Hence, the

mentioned factor is essential to take into account, not only for cross-training but also for forming new units or temporary groups.

On the other side of the cross-training spectrum, Katzenbach and Khan (2010) present an example of the *!Kung tribe*, where the members have a few specialties, but their way of making new constellations for the task at hand works very well. Acknowledging the individual's contributions and having everyone work together toward the same goal makes the groups' constant changing constellations come naturally. Perhaps, this something we could adopt to develop a more harmonious and productive group, which leads to better performance. When the world becomes more VUCA, there is a need to evolve our methods of thinking and working together.

Cross-training and learning new skills are especially important for people who might not be able to find their first fixed-job. Specialties have their place, and in some conditions, they are preferred. However, the ability to look from another perspective should not be taken lightly. Still, there are some issues about composing new groups, such as combining experts and generalists, which might be problematic for them to work together (Katzenbach & Khan, 2010). It also brings the best know-how. Perhaps the ideal group is neither specialists nor generalists. There is a dynamic group aspect to consider for a VUCA environment, which we did not observe in the articles.

6. Conclusions, and suggestions for future research

6.1. Conclusion

In this paper, we have explored the strategic responses to VUCA recommended in the literature in academia. We can already see the shift regarding strategy and organization. The focus turns towards internal factors such as organizational development, which is easier to monitor than the outer changing world. This is similar to training an athlete for an Olympics, in which the discipline of where you will compete is unknown.

We have found a concentration on the team-based approach, where traditional hierarchical structures are seen as an obstacle in creating the agility needed to adapt to a more VUCA world. This becomes more relevant than ever since there are no signs of less VUCA-ness but a movement towards an increase.

There is a clear idea that vision, values, and culture are important drivers in creating a business environment, which is adaptable to VUCA. The consensus is that having these in place is not enough, but they have to be aligned with: *the way things are done, the way we want things done, and how we think things are done*. The alignment between the easier applicable and formal and the harder to grasp and informal is essential to take into consideration. There can also be a considerable gap between the formal leaders and managers and the informal leaders. If changes want to be done and the front line workers want to be reached, the best way is to reach out to the small groups of staff's informal leaders and get them on board for the best result. The informal structures are the support beams of a high rise building during an earthquake, which is the VUCA world.

Establishing a learning culture is important, where knowledge is shared, and new knowledge is created to help the organization as a whole to grow. Also, the importance of having a culture that is supportive of experimentation is critical. In this culture, employees are allowed to make mistakes, for which they are accountable, since by learning from these and overcoming obstacles facilitates a growth mindset. Also, the idea of finding the fastest answer seems to lose its advantages in a complex environment. The new way of thinking, such as design thinking, supports finding new approaches and ideas that are not considered when just looking for the fastest solution.

In this learning culture, having a growth mindset is vital for personal development plans, which translates into company development. It suggests that one should not entirely rely on the pre-existing knowledge and experience but instead focus on the possible better results and knowledge they can create. Thus, this translates further into cross-training and diversity, which are keywords in the staff context, primarily trying not to get stuck in old ways that perhaps used to work in the past. Bringing in a mix of people with different previous experiences is both beneficial for the company as a whole, but also for the individual development. This view relates both to diversity and cross-training. Bringing in people who have a blank canvas can create new perspectives that are based on experiences acquired in their life, and not limited by the old perspectives of the company. Not everything gets better if more time is spent, according to Epstein (2019).

For personal development and keeping core staff within the company, cross-training is an option for horizontal career advancements. What has to be taken into account are the changes in dynamics with new groups of employees and harmonizing them. To let everything have its flow might create problems that increase with time, so carefully monitoring small fires is essential.

To have a functioning corporation, management and leadership are an important factor in keeping every small part together, understanding and spreading the corporate values and visions, and motivating staff. Trust is built by being virtuous, authentic, and honest. Leading the way by doing the walk and doing the talk, being a role model are important factors. There are a number of qualities that are beneficial for a manager or leader to handle a VUCA world. However, a lot boils down to knowing what they are good at and having an excellent self-awareness to improve themselves continually. To lead a group tackling complex problems requires the leadership to understand complexity by using complex thinking to create sensemaking for themselves and others. This involves handling a problem or a task according to its complexity level and trying not to make quick but inadequate solutions by treating all problems with simple interpretation. There are also benefits from the management side to be able to use their gut feeling, as well as involve multiple inputs from people in making decisions. But there has to be a strong self-awareness, for gut feeling not to turn into something dangerous. Also by increasing the involvement and spreading the responsibility among the staff, the company gets increased motivation within its system and creates a more agile workforce for the future at the same time.

With the employees being the company's backbone, much weight also needs to be put into having a motivated workforce. Everyone feels that their opinions are influential and respected. Wages are just one part of what makes people come to work. Knowing that everyone is different, there is also a better way to work with the employees to give them the best conditions to do their job. In most cases, this is a win-win for the company and the employees. Being part of something, contributing, and feeling a stronger reason for existing can create bigger values linking to the intrinsic kind that extrinsic rewards could never bring up.

In general, human resource development plays a huge part. For a company to deal with a changing and VUCA business environment, much emphasis is put on the inner structures. H.R. should be responsible for employing people with the right competencies, giving them the required training and support, and not being afraid to make management changes along the way. The responsibility of making an inventory of what skills are available within the company, including developing talents and advancement of the right mix of employees and what needs to be recruited, falls on H.R.. Conflicts need to be handled with respect; everyone should be heard and learn how to work for a resolution together. Managers need to be trained in handling them, controlling and taking actions on time to prevent conflicts from growing. Inner conflicts can be the reason behind problems that also affect the outside world.

With the metaphor of the Olympian, H.R. is the manager who brings the right trainers and people surrounding the athletes, marks up the path to follow, and creates the best environment for development and approaching the task ahead. This will create a resilient and agile company, which serves as good conditions to thrive in a VUCA world.

From reading our articles, there were no clear distinctions, how to deal with VUCA depending on what type of enterprise, but the line was more of the general sort. The suggestions of leadership and management, both on a micro level and on a macro level were more similar than different. Along with the idea that generalists have an advantage over specialists (Epstein, 2019) even in their own field, in most cases, perhaps the right people, are the right people no matter what enterprise. Being a leader in a locally routed SME (Small and medium-sized enterprises) might be the same profile as a leader in a multinational computer company? Perhaps VUCA is changing the playing field, not relying on one competence alone is what is becoming more and more important, but the ability to be agile, multifaceted, and adaptable to change, both as a company and as employees, which are very much the same.

6.2. Suggestions for further research

A lot of innovative ideas for strategic responses to a VUCA world appear in this paper, and for future research, it would be very interesting to examine the correlation between these and their ability to deal with VUCA in practice. Researchers can look into one interesting angle: does vertical development improve our way of handling VUCA? And should it be included as a part of senior management training? We also indicate the significance of informal learning in companies' culture, so perhaps more studies concerning informal strengths and its ability to handle VUCA can be done. The question about the functionality of the team-based approach to a VUCA world can also be an exciting aspect to investigate. Other approaches to structuring organizations, such as adhocracy, can be further examined to see if they are more useful for organizations under VUCA situations.

Another aspect is whether the lack of diversity affects companies more significantly in VUCA circumstances? How companies succeed in integrating diversity, and what are the pitfalls?

A third aspect could be: How does staff training work in companies where a lot of the responsibility is put on the individual instead of on H.R. or management? Is this suitable for just a particular kind of employee, or it could be adopted on a broader scope? With many personnel developments, does this lead to more people using these new skills to stay in the company or for easier movement to other jobs?

Last but not least, the aspect of i-deals can be a consideration. Is this actually the most reasonable way to have a happy and motivated workforce?

References

Ahir, H., Bloom, N. & Furceri, D. (2020). 60 Years of Uncertainty: Our New Index Provides Novel Insights into An Amorphous Concept, *Finance & Development*, 57(1), pp. 58–60.

Anitha, J. & Aruna, M. (2014). Adoption of Human Resource Information System in Organisations, *Journal of Contemporary Research in Management,* 9(4), pp. 63–74.

April, K. & Chimenya, G. (2019). Leader Sensemaking in Times of Crises, *Effective Executive*, 22(3), pp. 14-41 [Accessed 27 November 2020]

Armstrong, M. (2006). A Handbook of Human Resource Management Practice, London and Philadelphia: Kogan Page.

Aycan, Z. & Shelia, S. (2019). "Leadership? No, Thanks!" A New Construct: Worries About Leadership, *European Management Review*, 16(1), pp. 21–35. doi: 10.1111/emre.12322.

Baeyens, J.P. (2016). BREXIT: a New Example of VUCA, *Prof Baeyens,* Available at: https://profbaeyens.com/2016/07/03/brexit-a-new-example-of-vuca/ [Accessed 21 November 2020]

Becker, B., & Gerhart, B. (1996). The Impact of Human Resource Management on Organizational Performance: Progress and Prospects, *The Academy of Management Journal*, 39(4), 779-801.

Bennett, N. & Lemoine, G. J. (2014). What a difference a word makes: Understanding threats to performance in a VUCA world, *Business Horizons*, 57(3), pp. 311–317. doi:10.1016/j.bushor.2014.01.001.

Bensley, J. (2020). COVID-19: A Salutary Experience of VUCA, *International Center For Complex Project Management ICCPM,* Available at: https://bit.ly/3nCv6wl [Accessed 29 November 2020]

Bloisi, W., Cook, C.W., & Hunsaker, P.L. (2007). Management & organizational Behaviour, Second edition, Maidenhead: McGraw-Hill.

Braun, V. & Clarke, V. (2013). Successful Qualitative Research: A practical guide for beginners, [e-book], London: Sage.

Burk, J. E. (2019). The Only Constant is Change: Developing a Compelling Story to Enable Organizational Transformation, *International Journal of Knowledge*, *Culture & Change in*

Organizations: Annual Review, 19(1), pp. 1–6, doi:10.18848/1447-9524/CGP/v19i01/1-6 [Accessed 30 November 2020]

Burke, W. & Bradford, D. (2005). The Crisis in OD, in Bradford, D. & Burke, W. (eds), *Reinventing Organization Development*, San Francisco: John Wiley & Sons, pp:1–14.

Bywater, J. & Lewis, J. (2017). Leadership: What does it Take To Remain Engaged As A Leader in a VUCA World?, *Assessment & Development Matters*, 9(4), pp. 20–25.

Carpenter, M. T. (2017). Ease Client Fear and Anxiety with These 2 Methods, *Journal of Financial Planning*, 30(12), pp. 20–21.

Castillo, E.A. & Trinh, M.P. (2019). Catalyzing Capacity: Absorptive, Adaptive, And Generative Leadership, *Journal of Organizational Change Management*, 32 (3), pp. 356-376 [Accessed 28 November 2020]

Choain, L. & Malzy, T. (2017). Research by Professionals: From a Knowledge-intensive to a Research-intensive PSF, *International Journal of Human Resource Management*, 28(2), pp. 276–282. doi: 10.1080/09585192.2016.1244896.

Codreanu, A. (2016). A VUCA Action Framework for a VUCA Environment. Leadership Challenges and Solutions, *Journal of Defense Resources Management*, 7(2), pp. 31–38.

Cook, P. J. (2016). Leading Innovation, Creativity and Enterprise, *Industrial & Commercial Training*, 48(6), pp. 294–299. doi:10.1108/ICT-01-2016-0006 [Accessed 28 November 2020]

Cousins, B. (2018). Design Thinking: Organizational Learning in VUCA Environments, *Academy of Strategic Management Journal*, 17 (2), 18 p.

Cummings, T.G. & Worley, C.G. (2009). Organization Development & Change, Nineth edition, Canada: South-Western, a part of Cengage Learning.

Das, K.K. & Ara, A. (2014). Leadership in VUCA World: A Case of Lenovo, *International Journal of Current Research,* 6(4), pp. 6410-6419, Available at: https://www.journalcra.com/sites/default/files/issue-pdf/5281.pdf[Accessed 28 November 2020]

Delaney, J., & Huselid, M. (1996). The Impact of Human Resource Management Practices on Perceptions of Organizational Performance, *The Academy of Management Journal*, 39(4), 949-969.

Deloitte. (2015). Disrupt, Available at: https://www2.deloitte.com/content/dam/Deloitte/us/Documents/risk/us-risk-deloitte-on-disruption-interior-101714.pdf [Accessed 20 December 2020]

Deloitte. (2017). Overcoming the Threats and Uncertainty: Third-party Governance and Risk Management (TPGRM) Extended Enterprise Risk Management Global Survey 2017, Available at: https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Risk/gx-gra-eerm-survey-report-2017.pdf[Accessed 20 December 2020]

Denison, D.R. (1990). Corporate Culture and Organizational Effectiveness, New York: John Wiley and Sons.

Denison, D.R. & Mishra, A.K. (1995). Toward a Theory of Organizational Culture and Effectiveness, *Organization Science*, 6(2), pp. 204–223, Available at: https://www.jstor.org/stable/pdf/2635122.pdf?casa_token=7Tdyg5hP9lYAAAAA:KWgnx-c8kZc-k1R1ypvMtIQVcikyF3fPxNQOwoX42jH3XIuZ2-uW7iXWTXEW3T9jumNjOHpOE-e4BBlRMfpy39nSpZlden0IWj8M0MNTHnn6PkSily5IYA [Accessed: 2- December 2020]

Drucker, P. F. (1980) Managing in turbulent times. Harper & Row.

Ernst, C. & Chrobot-Mason, D. (2011). Boundary Spanning Leadership, USA: McGraw-Hill.

Dweck, C.S. (2006). Mindset - the new psychology of success: Random House.

Evans, S. & Bahrami, H. (2020). Super-Flexibility in Practice: Insights from a Crisis, *Global Journal of Flexible Systems Management*, 21(3), pp. 207–214. doi:10.1007/s40171-020-00246-6 [Accessed 28 November 2020]

Epstein, D. (2019). Range, London: Macmillan

Forsythe, G., Kuhla, K. & Rice, D. (2018). Excelling in a VUCA Environment Requires a Learning Mindset: A 6-Part Series of Articles by Chief Executive In Partnership With TDLG, *Chief Executive,* Available Online: https://www.thayerleadership.com/assets/images/files/6-Part_VUCA_Booklet.pdf [Accessed 20 December 2020]

French, W. (1969). Organization Development: Objectives, Assumptions, and Strategies, *California Management Review*, 12(2), pp: 23–34.

Friedman, T. L. (2016). Thank You for Being Late: An Optimist's Guide to Thriving In The Age Of Accelerations, First edition, New York: Farrar, Straus and Giroux.

Frynas, J. G., Mol, M. J. & Mellahi, K. (2018). Management Innovation Made in China: Haier's Rendanheyi, *California Management Review*, 61(1), pp. 71–93. doi:10.1177/0008125618790244 [Accessed 28 November 2020]

Gandhi, L. (2017). Human Resource Challenges in VUCA and SMAC Business Environment, *ASBM Journal of Management*, 10(1), pp. 1–5.

Geysi, N., Türkel, S. & Uzunoğlu, E. (2019). Unveiling Corporate Values in a Crisis-Prone World: A Cross-Cultural Study, *Corporate Communications: An International Journal,* 25(1), pp. 67–86, doi: 10.1108/CCIJ-07-2019-0077 [Accessed 28 November 2020]

Grant, R. M. (2016). Contemporary Strategy Analysis, 9. ed., text ed, Wiley.

Hall, R. D. & Rowland, C.A. (2016). Leadership Development for Managers in Turbulent Times, *Journal of Management Development*, 35(8), pp. 942–955. doi:10.1108/JMD-09-2015-0121.

Harter, J.K., Schmidt, F.L., & Hayes T.L. (2002). Business-unit-level Relationship Between Employee Satisfaction, Employee Engagement, and Business Outcomes: A Meta-analysis, *Journal of Applied Psychology*, 87, 268-279.

Hepner, L. (2019). Innovative Reward as a Strategical Culture Designer, *Strategic HR Review*, 18(1), pp. 13–16. doi:10.1108/SHR-10-2018-0086 [Accessed 9 November 2020]

Hill, C. W. L. (2013). International Business: Competing in The Global Marketplace. 9., [rev. and updated] ed., Global ed. McGraw-Hill.

Horney, N., Pasmore, B. & O'Shea, T. (2010). Leadership Agility: A Business Imperative for a VUCA World, People & Strategy, 33(4), pp. 32–38.

Howe, D. C., Chauhan, R.S., Soderberg, A.T. & Buckley, M.R. (2020). Paradigm Shifts Caused by The COVID-19 Pandemic, *Organizational Dynamics*, doi:10.1016/j.orgdyn.2020.100804

Hyacinth, B. (2020). Train people well enough so they can leave. Treat them well enough so they don't want to. -Richard Branson, *Thrive Global*, Available at:

https://thriveglobal.com/stories/train-people-well-enough-so-they-can-leave-treat-them-well-enough-so-they-dont-want-to-richard-branson/ [Accessed 7 Januari 2021]

Innovation Tactics. (n.d.). Sharing Platform Business Model: Innovate like Uber and Airbnb, Available at: https://innovationtactics.com/sharing-platform-business-model-uber-airbnb/ [Accessed 21 November 2020]

Johansen, B. & Euchner, J. (2013). Navigating the VUCA World: An Interview with Bob Johansen, *Research Technology Management*, 56(1), pp. 10–15.

Joyner, A. (2020). 2016 All Over Again? Investors Ready for Big Market Moves as U.S. Election Nears*, Reuters,* Available at: https://www.reuters.com/article/us-usa-stocks-volatility-analysis/2016-all-over-again-investors-ready-for-big-market-moves-as-u-s-election-nears-idUSKBN25V1EW [Accessed 4 December 2020]

Kahneman, D. (2011). Thinking fast and slow : Farrar, Straus and Giroux.

Karakas, F. (2009). New Paradigms in Organizational Development in the 21st Century: Positivity, Spirituality, and Complexity, *Organization Development Journal*, vol. 27, no. 1.

Katou, A. A. (2008). Measuring the Impact of HRM on Organizational Performance, *Journal of Industrial Engineering and Management (JIEM)*, 1(2), pp. 119-142, doi:10.3926/jiem.v1n2.p119-142.

Katzenbach, J.R., & Khan, Z. (2010). Leading Outside the Lines, San Francisco: Jossey-Bass.

Kim, E., Beckman, S. L. & Agogino, A. (2018). Design Roadmapping in an Uncertain World: Implementing a Customer-Experience-Focused Strategy, *California Management Review,* 61(1), pp. 43–70. doi:10.1177/0008125618796489.

Ko, I. & Rea, P. (2016). Leading with Virtue in the VUCA World, *Advances in Global Leadership*, 9, pp. 375-397, Available at: https://www-emerald-com.ludwig.lub.lu.se/insight/content/doi/10.1108/S1535-120320160000009011/full/pdf?title=leading-with-virtue-in-the-vuca-world [Accessed 9 November 2020]

Kostova, T. & Zaheer, S. (1999). Organizational Legitimacy under Conditions of Complexity: The Case of the Multinational Enterprise, *The Academy of Management Review*, 24(1), pp. 64–81.

Krawczyńska-zaucha, T. (2019). A New Paradigm of Management and Leadership In The VUCA World, *Scientific Papers of Silesian University of Technology, Organization and Management,* no. 141, doi:10.29119/1641-3466.2019.141.16 [Accessed 28 November 2020]

Macpherson, C. (n.d.). Leading in a Post-Brexit VUCA World, *Change and Strategy,* Available at: https://www.changeandstrategy.com/leading-in-a-post-brexit-vuca-world/ [Accessed 4 December 2020]

Marshak, R. J. (2006). Organizational Development as a Professional and a Field, in Brazzel, M. & Jones, B.B., *The NTL Handbook of Organization Development and Change*, San Francisco: Pfieffer/Jossey-Bass.

Mazzoni, M. (2020). 15 Companies Retooling Their Operations to Fight COVID-19, *Triple Pundit,* Available at: https://www.triplepundit.com/story/2020/companies-retooling-operations-covid-19/88921 [Accessed 29 November 2020]

McKinsey & Company. (2020). What now? Decisive Actions to Emerge Stronger in the Next Normal, Available at: https://www.mckinsey.com/~/media/mckinsey/business%20functions/strategy%20and%20corporate%20finance/our%20insights/what%20now%20decisive%20actions%20to%20emerge%20stronger%20in%20the%20next%20normal/what-now-decisive-actions-to-emerge-stronger-in-the-next-normal.pdf [Accessed 14 December 2020]

Michel, L., Anzengruber, J., Wölfle, M. & Hixson, N. (2018). Under What Conditions Do Rules-Based And Capability-Based Management Modes Dominate?, *Risks*, 6(2), p. 32. doi: 10.3390/risks6020032 [Accessed 28 November 2020]

Millar, C. C. J. M., Groth, O. & Mahon, J. F. (2018). Management Innovation in a VUCA World: Challenges and Recommendations, *California Management Review*, 61(1), pp. 5–14. doi:10.1177/0008125618805111 [Accessed 28 November 2020]

Miller, K. D. (1992). A Framework for Integrated Risk Management in International Business, *Journal of International Business Studies*, 23(2), pp. 311–331. doi: 10.1057/palgrave.jibs.8490270.

Minciu, M., Berar, F. & Dobrea, R.C. (2020). New Decision Systems in the VUCA World, *Management şi Marketing*, 15(2), pp. 236–254. doi: 10.2478/mmcks-2020-0015.

Mintzberg, H. (1980). Structure in 5's: A Synthesis of the Research on Organization Design, *Management Science*, 26(3), pp. 322–341. Available at: https://www.jstor.org/stable/pdf/2630506.pdf?casa_token=bjUYMnddiLwAAAAA:o7qw68XFB2iGgaa1flBhK4geDwC184cGMme1ZaBOrG2En1TdFOwJKvyY3RVDUTzCauxsrQYi0HxYtvTg4cAinxDtU0-6z5GzpPL8arhUlBbfu9ZnzCGEJQ [Accessed 20 December 2020]

Mintzberg, H., Ahlstrand, B. W. & Lampel, J. (1998). Strategy Safari: A Guided Tour Through the Wilds of Strategic Management, Free Press.

Moccia, S., Zhao, S. & Flanagan, P. (2019). Innovation, Dynamic Capabilities, Leadership, and Action Plan, *Journal of Enterprising Communities*, 14 (1), pp. 113-127, Available at: https://www-emerald-com.ludwig.lub.lu.se/insight/content/doi/10.1108/jec-10-2019-0108/full/pdf [Accessed 9 November 2020]

Mohammed, M. & Viswanathan, R. (2019). Relationship of Authentic Leadership and Organisational Culture with Organisational Innovation in Pharmaceutical Industry, *International Journal of Recent Technology and Engineering,*8(4), pp. 637-641, Available at: https://www.ijrte.org/wp-content/uploads/papers/v8i2S4/B11270782S419.pdf [Accessed 28 November 2020]

Mohanty, A. & Sarangi, P. (2019). Role of Emotional Intelligence in Organisational Metamorphosis for Innovation, *IAHRW International Journal of Social Sciences Review*, 7(3), pp. 479–483.

Motamedi, K. (2020). Action Strategy and Action Knowledge, *Organization Development Journal*, 38(1), pp. 65–73.

Motamedi, K. (2020). Action Strategy and Action Knowledge, *Organization Development Journal*, 38(1), pp. 65–73. Available at: https://search-ebscohost-com.ludwig.lub.lu.se/login.aspx?direct=true&AuthType=ip,uid&db=bth&AN=143070661&site=ehost-live [Accessed 23 October 2020]

Mozur, P. (2018). A Genocide Incited on Facebook, With Posts From Myanmar's Military, *The New York Times:,* Available at: https://www.nytimes.com/2018/10/15/technology/myanmar-facebook-genocide.html [Accessed 21 November 2020]

Nangia, M. & Mohsin, F. (2020). Revisiting Talent Management Practices in a Pandemic Driven VUCA Environment - A Qualitative Investigation in the Indian IT Industry, *Journal of Critical Reviews*, 7 (7), pp. 937-942.

Oriel, O. (2020). Unraveling the Side-effects of Algorithm, *Analytics Insight,* Available at: https://www.analyticsinsight.net/unraveling-side-effects-algorithm/ [Accessed 21 November 2020]

Palmatier, R. W., Houston, M. B. & Hulland, J. (2018) Review Articles: Purpose, Process, And Structure, *Journal of the Academy of Marketing Science,* 46(1), pp. 1–5. doi: 10.1007/s11747-017-0563-4.

Peterson, M. (2020). A High-speed World with Fake News: Brand Managers Take Warning, *Journal of Product and Brand Management,* 29(2), pp. 234-245.

Popova, N. & Shynkarenko, V. (2016). Personnel Development at Enterprises with regard to Adaptation to the VUCA world, *Economics and Management of Enterprises*, 158(1-2), pp. 88-91, doi :10.21003/ea.V156-0020.

Purcell, J., & Kinnie, N. (2007). Human Resource Management and Business Performance, in Boxall, P., Purcell, J. & Wright, P. (eds), *The Oxford Handbook of Human Resource Management*, Oxford: Oxford University Press.

Raghuramapatruni, R. & Kosuri, S. R. (2017). The Straits of Success in a VUCA World, *IOSR Journal of Business and Management*, pp 16-22, Available at: http://www.iosrjournals.org/iosr-jbm/papers/Conf.17016-2017/Volume%201/3.%2016-22.pdf [Accessed 28 November 2020]

Rao, I. & Thakur, P. (2019). Knowledge Workers, Organizational Ambidexterity and Sustainability: A Conceptual Framework, *International Journal of Business Excellence*, 19 (3), pp. 415-428 [Accessed 28 November 2020]

Reddy, A.J.M., Rani, R. & Chaudhary, V. (2019). Technology For Sustainable HRM: An Empirical Research Of Health Care Sector, *International Journal of Innovative Technology and Exploring Engineering*, 9(1), pp. 2919-2924, Available at: https://www.ijitee.org/wp-content/uploads/papers/v9i1/A9108119119.pdf [Accessed 23 October 2020]

Rimita, K., Hoon, S. N. & Levasseur, R. (2020). Leader Readiness in a Volatile, Uncertain, Complex, and Ambiguous Business Environment, *Journal of Social Change*, 12(1), pp. 10–18, doi: 10.5590/JOSC.2020.12.1.02 [Accessed 28 November 2020]

Robison, M. & West, D.M. (2020). How Should Facebook and Twitter Handle Trump After He Leaves Office?, *Brookings,* Available at: https://www.brookings.edu/blog/techtank/2020/12/02/how-should-facebook-and-twitter-handle-trump-after-he-leaves-office/ [Accessed 4 December 2020]

Rodriguez, A. & Rodriguez, Y. (2015). Metaphors for today's leadership: VUCA world, millennial and "Cloud Leaders", *Journal of Management Development*, 34(7), pp. 854–866. doi: 10.1108/JMD-09-2013-0110.

Rose, R.M., Hong, T.T., Munap, R., Ahmad, S.N.B., Azudin, N., Akhir, R.M., Hamid, R.A. & Cayzer, R. (2019). Leadership Competencies in Driving Organizational Performance in VUCA Environment: Malaysian Perspective, *International Journal of Innovation*, *Creativity and Change*, 6(4), pp. 387-394, Available at: https://www.ijicc.net/images/Vol6Iss4/6423_Rose_2019_TD_R.pdf [Accessed 30 November 2020]

Rozgonjukab, D., Sindermanna, C., Elhaic, J.D. & Montaga, C. (2020). Fear of Missing Out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat Use Disorders mediate that association?, *Addictive Behaviors,* Volume 110, 106487:

Rydén, D. (2021). Nytt, Snabbt och Säkert Covidtest Har Revolutionerat Arbetet, *Sydsvenskan,* Available at: https://www.sydsvenskan.se/2021-01-09/nytt-snabbt-och-sakert-covidtest-har-revolutionerat-arbetet [Accessed 10 January 2021]

Sanger, D. E. & Kanno-Youngs, Z. (2020). The Russian Trolls Have a Simpler Job Today. Quote Trump*, The New York Times,* Available at: https://www.nytimes.com/2020/09/22/us/politics/russia-disinformation-election-trump.html[Accessed 21 November 2020]

Sarkar, A. (2016). We Live in A VUCA World: The Importance of Responsible Leadership, *Development and Learning in Organizations: An International Journal*, 30(3), pp. 9–12, doi:10.1108/DLO-07-2015-0062 [Accessed 27 October 2020]

Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods for business students. Fourth edition. Harlow: Financial Times Prentice Hall.

Schoemaker, P. J. H., Heaton, S. & Teece, D. (2018). Innovation, Dynamic Capabilities, and Leadership, *California Management Review*, 61(1), pp. 15–42. doi:10.1177/0008125618790246.

Sharma, R. (2017). Conflict Management in VUCA Environment, *International Journal of Research in Economics and Social Sciences (IJRESS)*, 7(8), pp. 401-404, Available at: http://euroasiapub.org/wp-content/uploads/2017/09/40ESSAug-5417-1.pdf [Accessed 20 November 2020]

Sharma, S. & Sharma, S. K. (2016). Team Resilience: Scale Development and Validation, *Vision* (09722629), 20(1), pp. 37–53. doi: 10.1177/0972262916628952 [Accessed 28 November 2020]

Sharma, S. & Sharma, S. K. (2020). Probing the Links Between Team Resilience, Competitive Advantage, and Organizational Effectiveness: Evidence from Information Technology Industry, *Business Perspectives & Research*, 8(2), pp. 289–307. doi:10.1177/2278533719887458 [Accessed 28 November 2020]

Singh, J.P., Chand, P.K., Mittal, A. & Aggarwal, A. (2020). High-Performance Work System and Organizational Citizenship Behaviour at the Shop Floor, *Benchmarking*, 27 (4), pp. 1369-1398, Available at: https://www-emerald-com.ludwig.lub.lu.se/insight/content/doi/10.1108/bij-07-2019-0339/full/pdf [Accessed 10 November 2020]

Sloan, J. (2020). Learning to think strategically. Fourth edition. Routledge.

Snowden, D. (2010). The Cynefin Framework, Available at: https://www.youtube.com/watch?v=N7oz366X0-8 [Accessed 4 December 2020]

Spicer, A. (2020). Election Ambiguity May be Beneficial in the Short Term, but in the Long Term it's Corrosive, *The Conversation,* Available at: https://theconversation.com/election-ambiguity-may-be-beneficial-in-the-short-term-but-in-the-long-term-its-corrosive-149479 [Accessed 4 December 2020]

Srivastava, A.R., Singh, A.K. & Kumar, P. (2016). Creating A More Predictable HR Function, *International Journal of Economic Research*, 13 (5), pp. 2349-2360 [Accessed 28 November 2020]

Stålne, K. (2017). Vuxen Men Inte Färdig, Strömsund: Fabricius Resurs.

Stockholm Resilience Center. (2020). Why Covid-19 and Systemic Risks are Part of the Hyper-connected World We Live In, Available at: https://www.stockholmresilience.org/research/research-news/2020-05-29-why-covid-19-and-systemic-risks-are-part-of-the-hyper-connected-world-we-live-in.html [Accessed 7 January 2021]

Sveriges Radio. (2021). Confidence in MSB Chief Eliasson Falls After Holiday Trip, Available online: https://sverigesradio.se/artikel/7639881 [Accessed 6 Januari 2021]

Thorén, K. & Vendel, M. (2019). Backcasting as a strategic management tool for meeting VUCA challenges, *Journal of Strategy and Management*, 12 (2), pp. 298-312.

Tranfield, D., Denyer, D. & Smart, P. (2003). Towards a Methodology for Developing Evidence- Informed Management Knowledge by Means of Systematic Review, *British Journal of Management*, vol. 14, no. 3, pp.207–222.

Tribal Worldwide London. (2019). It's What's on the Inside That Counts: From EX to CX, Available at: https://medium.com/@TribalWorldwide/its-what-s-on-the-inside-that-counts-from-ex-to-cx-dc6707f458ba [Accessed 7 January 2021]

Vaidya, R.W., Prasad, K. & Mangipudi, M.R. (2020). Mental and Emotional Competencies of Leader's Dealing with Disruptive Business Environments - A Conceptual Review, *International Journal of Management*, 11 (5), pp. 366-375 [Accessed 28 October 2020]

Vantrappen, H. & Wirtz, F. (2017). When to Decentralize Decision Making, and When Not To, *Harvard Business Review Digital Articles*, pp. 2–5. Available at: https://search-ebscohost-com.ludwig.lub.lu.se/login.aspx?direct=true&db=bth&AN=127078869&site=eds-live&scope=site [Accessed 14 December 2020]

Villajos, E., Tordera, N. & Peiró, J. M. (2019). Human Resource Practices, Eudaimonic Well-Being, and Creative Performance: The Mediating Role of Idiosyncratic Deals for Sustainable Human Resource Management, *Sustainability(2071-1050),* 11(24), p. 6933.

Whiteman, W.E. (1998). Training and Educating Army Officers For The 21st Century: Implications For The United States Military Academy, USAWC Strategy Research Project, U.S. Pennsylvania: Army War College, Available at: https://apps.dtic.mil/dtic/tr/fulltext/u2/a345812.pdf [Accessed 20 December 2020]

Wronsky, L. & Cohen, J. (2020). Op-ed: The Next Silicon Valley Exodus — Over 25% of Tech Sector Wants Permanent Work from Home, *CNBC,* Available at: https://www.cnbc.com/2020/05/19/how-silicon-valley-work-from-home-forever-will-hit-every-worker.html [Accessed 5 January 2021]

Xing, Y., Liu, Y. Boojihawon (Roshan), D.K. & Tarba, S. (2020). Entrepreneurial team and strategic agility: A conceptual framework and research agenda, *Human Resource Management Review*, 30(1), doi:10.1016/j.hrmr.2019.100696 [Accessed 28 November 2020]

Zaidi, I. & Bellak, B. (2019). Leadership Development for International Crises Management: The Whole Person Approach, *Journal of Peacebuilding & Development*, 14(3), pp. 256–271.

Appendix

Title	Author	Year	Journal Name	Research Design	Relevans, *1 is highest*			
					Culture	Structure	Manager	Staff
A high-speed world with fake news: brand managers take warning	Peterson, M.	2019	Journal of Product and Brand Management	Conceptual papaer (Deductive)			5	1
A new paradigm of managment and leadership in the VUCA world	Tatiana Krawczyńska-Zaucha	2019	Scientific papers of silesian University of Technololgy	Conceptual paper (Theoretical study)			2	1
A VUCA action framework for a VUCA environment. Leadership challanges and solutions	Aura Codreanu	2016	Reseachgate	Conceptual paper		5	2	5
Adoption of Human Resource Information System in Organisations	Anitha, J. & Aruna, M.	2014	Journal of Comtemporary Research in Management	Literature Review		4		2
Catalyzing capacity: absorptive, adaptive, and generative leadership	Castillo, E.A. & Trinh, M.P.	2019	Journal of Organizational Change Management	Conceptual paper	2		1	1
Conflict Management in VUCA Environment	Ritu, Sharma (Dr)	2017	International Journal of Research in Economics and Social Sciences (IJRESS)	Viewpoint (Theoretical study)			4	3
Design thinking: Organizational learning in VUCA environments	Cousins, B.	2018	Academy of Strategic Management Journal	Qualitative: Case studies	1		1	5
Developing leaders in a VUCA Environment	Camilo Baquero - ZAUCHA	2019	Academia	Theoretical study	5		5	4
Entrepreneurial team and strategic agility: A conceptual framework and research agenda	Xing, Y.J., Liu, Y.P., Boojihawon, D.K. & Tarba, S.	2020	Human Resource Management Review	Literature Review		1		2
Flexible HR to Cater to VUCA Times	Srivastava, P.	2016	Global Journal of Flexible Systems Management	Viewpoint	3			2
High-performance work system and organizational citizenship behaviour at the shop floor	Singh, J.P., Chand, P.K., Mittal, A., Aggarwal, A.	2020	Benchmarking	Quantitative	1			2

Title	Author	Year	Journal	Method				
Human Resource Challenges in VUCA and SMAC Business Environment	Gandhi, L.	2017	ASBM Journal of Management	Viewpoint	3		2	4
Human resource practices, eudaimonic well-being, and creative performance: The mediating role of idiosyncratic deals for sustainable human resource management	Villajos, E., Tordera, N. & Peiró, J.M.	2019	Sustainability	Quantitative	1			5
Innovation, dynamic capabilities, and leadership	Schoemaker, P.J.H.a, Heaton, S.b,c, Teece, D.c,d	2018	California Management Review	Conceptual paper (Deductive)	3	5	2	5
Innovation, dynamic capabilities, leadership, and action plan	Moccia, S., Zhao, S. & Flanagan, P.	2019	Journal of Enterprising Communities	Conceptual paper	5		1	2
Innovative reward as a strategical culture designer	Hepner, L.	2019	Strategic HR Review	Viewpoint	2			4
Knowledge workers, organisational ambidexterity and sustainability: A conceptual framework	Rao, I. & Thakur, P.	2019	International Journal of Business Excellence	Conceptual paper	3	2	1	2
Leader Readiness in a Volatile, Uncertain, Complex, and Ambiguous Business Environment	Rimita, K., Hoon, S. N. & Levasseur, R.	2020	Journal of Social Change	Qualitative: Interviews	1	1	2	5
Leader Sensemaking in a VUCA World	Kurt April, Gerald Chimenya	2019	Effective Executive	Qualitive research	2	5	2	5
Leadership competencies in driving organizational performance in vuca environment: Malaysian perspective	Rose, R.M., Hong, T.T., Munap, R., Ahmad, S.N.B., Azudin, N., Akhir, R.M., Hamid, R.A. & Cayzer, R.	2019	International Journal of Innovation, Creativity and Change	Qualitative			2	5
Leadership Development for International Crises Management: The Whole Person Approach	Zaidi, I.a, Bellak, B.b	2019	Journal of Peacebuilding and Development	Deductive, Viewpoint			2	5
Leadership development for managers in turbulent times	Hall, R.D.a, Rowland, C.A.b	2016	Journal of Management Development	Empirical research includes case studies and analysis of management syllabuses(Deductive)	5	5	2	5

Title	Authors	Year	Journal	Methodology				
Leadership in Vuca World: A case of Lenovo	K.K. Das, A.Ara	2014	International Journal of curren research	Case study, Quantitative research	1	2	2	5
Leadership: What does it take to remain engaged as a leader in a VUCA world?	Bywater, J. & Lewis, J.	2017	Assessment & Development Matters	Quantitative and Qualitative	2		1	5
Leading Innovation, creativity and enterprise	Cook, P. J.	2016	Industrial and Commercial Training	Case studies	1	3	2	
Leading with virtue in the VUCA world	Ko, I. & Rea, P.	2016	Advances in Global Leadership	Literature Review	5		2	
Leadership Agility: A business imperative for a vuca world	Nick Horney, Bill Pasmore, Tom O'Shea,	2010	Agility consulting web page	Conceptual study, but also case study		4	1	3
"Leadership? No, Thanks!" A New Construct: Worries About Leadership	Aycan, Z.a, Shelia, S.b	2019	European Management Review	Quantitive research			3	2
Management Innovation in a VUCA World: Challenges and Recommendations	Millar, C. C. J. M., Groth, O. & Mahon, J. F.	2018	California Management Review	Conceptual paper	2	1		
Management Innovation Made in China: Haier's Rendanheyi	Frynas, J. G., Mol, M. J. & Mellahi, K.	2018	California Management Review	Qualitative: Case studies		1	2	
Mental and emotional competencies of leader's dealing with disruptive business environments - A conceptual review	Vaidya, R.W., Prasad, K. & Mangipudi, M.R.	2020	International Journal of Management	Literature Review	3		2	
Metaphors for today's leadership: VUCA world, millennial and "Cloud Leaders	Rodriguez, A. & Rodriguez, Y.	2015	Journal of Management Development	Conceptual paper			3	
New decision systems in the VUCA world	Minciu, M, Berar, F.-A., Dobrea, R.C.	2020	Management and Marketing	Quantitive research		5	3	
Personnel development at enterprises with regard to adaptation to the VUCA world	Popova, N.a, Shynkarenko, V.b	2016	Economic Annals-XXI	Quantitive research		5	2	
Probing the Links Between Team Resilience, Competitive Advantage, and Organizational Effectiveness: Evidence from Information Technology Industry	Sharma, S. and Sharma, S. K.	2020	Business Perspectives & Research	Quantitative	1	1		

Title	Authors	Year	Journal	Method				
Relationship of authentic leadership and organisational culture with organisational innovation in pharmaceutical industry	Mohammed, M. & Viswanathan, R.	2019	International Journal of Recent Technology and Engineering	Quantitative	1		2	1
Research by professionals: from a knowledge-intensive to a research-intensive PSF	Laurent Choain, Tyra Malzy	2016	International Journal of Human Resource Management	Conceptual paper (Deductive)			2	
Revisiting talent management practices in a pandemic driven VUCA environment - A qualitative investigation in the Indian IT industry	Nangia, M. & Mohsin, F.	2020	Journal of Critical Reviews	Qualitative	4		3	
Role of emotional intelligence in organisational metamorphosis for innovation	Mohanty, A. & Sarangi, P.	2019	International Journal of Social Sciences Review	Quantitative			4	
Super-Flexibility in Practice: Insights from a Crisis	Stuart Evans & Homa Bahrami	2020	Global Journal of Flexible Systems Management	Case study	5	2	2	
Team Resilience: Scale Development and Validation	Sharma, S. and Sharma, S. K.	2016	Vision	Conceptual and Quantitative		1		
Technology for sustainable HRM: An empirical research of health care sector	Reddy, A.J.M., Rani, R. & Chaudhary, V.	2019	Int. Journal of Innovative Technology and Exploring Engineering	Quantitative		4		
The only constant is change: Developing a compelling story to enable organizational transformation	Burk, J.E.	2019	Int. Journal of Knowledge, Culture and Change Management	Conceptual study (Theoretical study)	2		3	
The Straits of Success in a VUCA World	R. Raghuramapatruni, S. rao Kosuri	2017	IOSR Journal of Business and Management	Conceptual paper	3	4	2	
Under what conditions do rules-based and capability-based management modes dominate?	Michel, L., Anzengruber, J., Wölfle, M. & Hixson, N.	2018	Risks	Conceptual and Quantitative		1		
Unveiling corporate values in a crisis-prone world: a cross-cultural study	Geysi, N.a, Türkel, S.b, Uzunoğlu, E.	2019	Corporate Communications	Quantitive research	3	5		

We live in a VUCA world: the importance of responsible leadership	Sarkar, A.	2016	Development and Learning in Organizations	Conceptual paper	3		1	