Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

10/12/.



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH & REVIEWS

journal homepage: www.ijmrr.online/index.php/home

LEADERSHIP DECISION- MAKING IN VUCA BUREAUCRACY: GLOBAL TURBULENCE, INFLUENCE, CHALLENGES, AND STRATEGIES

ALINOR C. AMIL

Assistant Professor (IV), Mindanao State University- Main Campus, Marawi City, Philippines

Submitted: June 23, 2024 Revised: June 28, 2024 Accepted: July 12, 2024

How to Cite the Article: Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Keywords

Abstract

Leadership, Decision- making, VUCA Bureaucracy

The current bureaucratic environment is volatile, unpredictable, complex, and ambiguous (VUCA) due to increasing globalization, technological innovation, and geopolitical instability. This paper studied leadership decision-making in VUCA Bureaucracy, focusing on the types of global turbulence in VUCA Bureaucracy, the influence of global turbulence in VUCA Bureaucracy on the decision- making processes of leaders in bureaucratic settings, the specific challenges leaders encountered in making decisions under conditions of volatility, uncertainty, complexity, and ambiguity, and the strategies to address the challenges and global turbulence encountered by leaders in making decisions under VUCA bureaucracy. Through a systematic review, this paper synthesized real-world examples, academic literature, and case studies. The results and their implications brought to light the VUCA world's unpredictable character, its significant influence on leadership decisionmaking, the unique difficulties that leaders encountered, and the necessity of creative solutions to survive in this changing environment. The main points of the recommendations were to invest in the development of adaptive leadership, to build strategic insight and foresight, to promote innovation, to cultivate resilience and agility, to invest in strong information systems and technology, and to promote open channels of communication. With the help of these recommendations, leaders should be able to successfully negotiate the intricacies of the modern VUCA world and take advantage of previously unprecedented chances and difficulties.



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

1. Introduction

The bureaucratic environment of the twenty-first century is defined by volatility, uncertainty, complexity, and ambiguity (VUCA). This dynamic terrain is the result of the combination of fast globalization, technological innovation, and geopolitical instability. The traditional boundaries of leadership within bureaucratic institutions have been drastically altered by this VUCA reality, which has presented leaders with previously unprecedented chances and difficulties that call for creative thinking and adaptable tactics.

The need for leadership in steering these turbulent oceans increases as organizations deal with the complex effects of VUCA. Once renowned for their consistency and predictability, bureaucratic systems now find themselves in the middle of a world experiencing unprecedented upheaval and in need of flexible, powerful leadership to help them navigate the complexity of today's reality.

Hence, this paper generally aimed to provide a systematic review on leadership decision- making in VUCA Bureaucracy. Specifically, this paper aimed to answer the following questions: 1. What are the types of global turbulence in VUCA Bureaucracy? 2. What is the influence of global turbulence in VUCA Bureaucracy on the decision- making processes of leaders in bureaucratic settings? 3. What specific challenges do leaders encounter in making decisions under conditions of volatility, uncertainty, complexity, and ambiguity? and finally, what are the strategies to address the challenges and global turbulence encountered by leaders in making decisions under VUCA bureaucracy?

2. Methodology

Generally, this paper aimed to study leadership decision- making in VUCA Bureaucracy. Specifically, this paper aimed to determine the types of global turbulence in VUCA Bureaucracy, the influence of global turbulence in VUCA Bureaucracy on the decision- making processes of leaders in bureaucratic settings, the specific challenges leaders encountered in making decisions under conditions of volatility, uncertainty, complexity, and ambiguity, and the strategies to address the challenges and global turbulence encountered by leaders in making decisions under VUCA bureaucracy. To achieve these objectives, this paper utilized a systematic review to synthesize real-world examples, academic literature, case studies and other academic articles that were thoroughly identified, evaluated and summarized.

3. Results And Discussion

3.1 Types of global turbulence in VUCA Bureaucracy

The VUCA framework, which stands for volatility, uncertainty, complexity, and ambiguity, is a valuable tool for comprehending the complex issues that modern organizations must deal with in the global environment. The various aspects of volatility, uncertainty, complexity, and ambiguity that affect the public and private sectors, as well as polycrisis, geopolitical tensions, technological devices



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

disruptions, and environmental challenges, are highlighted by the following types of global turbulence that define VUCA bureaucracy.

3.1.1 Volatility

When discussing organizational stability, the term "volatility" refers to sudden, erratic shifts that have the potential to seriously upset the balance of institutions and enterprises. Within the private sector, this relates to the ever-changing nature of consumer preferences, market trends, and technical advancements—all of which have the capacity to significantly influence business performance and plans. Similar to this, changes in politics, the economy, and social dynamics all affect government goals and policy agendas, which leads to volatility in the public sector. Because both industries are characterized by constant change, what is true now might not be true tomorrow, adding to the general instability that businesses and institutions face (Investopedia, 2024).

Volatility is a key notion in finance that extends beyond organizational contexts, especially when discussing the risk or uncertainty surrounding the magnitude of changes in a security's value. Lower volatility denotes more consistent value variations, whereas higher volatility shows the possibility of significant swings in either direction over a brief period of time. Financial instrument volatility follows a Gaussian random walk, where the distribution's width grows with increasing time. Nevertheless, as time advances, the volatility rises with the square-root of time, capturing characteristics like "fat tails" and departures from Gaussian distributions (Investopedia, 2024).

To effectively handle the inherent instability, leaders and organizations must comprehend and mitigate volatility. Numerous factors, such as local and national economic conditions, technological developments, market rivalry, outside events and disruptions, and regulatory changes, can have an impact on volatility. These factors can all lead to erratic shifts in demand and market dynamics (TechTarget, 2024).

Therefore, volatility is a term used to describe the quick and big changes that can affect organizations, the financial system, and other industries. These changes require proactive approaches to manage and adjust to the inherent instability (U.S. Bank, 2022).

3.1.2 Uncertainty

A lack of predictability and the possibility of surprise are the hallmarks of uncertainty, which affects many facets of life, from business and government to decision-making procedures and personal wellbeing. It differs from variability, which is determined by observed data, in that it is measured by a probability distribution based on the likelihood of the true value of an unknown variable (Karlin, J., 2024).

Uncertainties about future demand, competition, and regulatory changes provide major obstacles in the corporate world. For example, a company's decision-making process can be impacted by ambiguities around the expansion intentions of its rivals, which could affect industry pricing and profitability. This



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

calls for quick decisions and flexible approaches to deal with erratic market conditions and changes in the sector. The general uncertainty is increased by the inability to forecast how markets and other elements will change, which affects strategic planning and decision-making processes for both governments and enterprises (Karlin, J., 2024).

Governments face similar uncertainties related to environmental challenges, geopolitical difficulties, and public health crises. In order to effectively manage changing global dynamics and unforeseen events, these uncertainties necessitate flexibility in governance and policymaking. Uncertainty in personal situations can exacerbate tension, anxiety, and a feeling of helplessness. On the other hand, deliberately confronting and recognizing feelings associated with uncertainty can lessen stress, improve acceptance of one's situation, and bring serenity to the face of difficulties (Centers for Disease Control and Prevention, 2012).

Because of this, uncertainty poses problems in a number of areas, requiring adaptable governance, emotional fortitude, and adaptive ways to deal with uncertain situations and deal with unanticipated events.

3.1.3 Complexity

Complexity arises from the interdependent and interrelated character of global systems. The private sector exemplifies this complexity through its interwoven worldwide supply networks, varied stakeholder interests, and swift technological progress. Resilience strategies, such diversifying sources of origin and working to reduce reliance on imports, are necessary to handle possible hazards from concentration at the global, national, or corporate level. These initiatives entail regulating demand by looking for substitute technologies that are less dependent on natural resources and increasing supply in new areas (McKinsey & Company, 2022).

In the field of public governance, complexity results from juggling conflicting policy goals, complicated bureaucratic structures, and a variety of societal demands. Achieving financial stability, economic growth, and greater living standards is the problem; given the unique characteristics of each nation's economy and political system, different approaches are needed for each (International Monetary Fund, 2008). The IMF has emphasized the importance of global interconnections in its analysis, particularly economic spillovers between countries and the critically important financial sector. This underscores the need to evolve and anticipate what lies ahead, including governance reforms to prevent and resolve crises and broaden representation to reflect the changing dynamics of the global economy (International Monetary Fund. (2015).

It is now difficult to pinpoint precise answers due to the transition from straightforward cause-andeffect chains to complex networks of forces and occurrences. A highly integrated global marketplace has resulted from the integration of economies, cultures, and communities, which is a hallmark of



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

globalization, which is defined as an increase in the interdependence and connectivity across nations and regions worldwide (Vela, R. A., 2023).

Owing to better accessibility made possible by communication technologies, this has affected many facets of modern life and set off systemic patterns of global trade, economics, culture, society, and behavior (IGI Global., 2014).

The complexity of the world economy has given rise to disagreements over trade-related matters, including market saturation, industry subsidies, and restrictions on products or industries. In order to resolve these problems and assist people who have suffered losses due to trade rivalry, trade partners must be negotiated with and coordinated with. (Peterson Institute for International Economics, 2018).

In conclusion, the complexity brought about by the interrelated and interdependent character of global systems poses difficulties for both public and private governance, calling for the development of flexible tactics and cooperative methods to deal with the complex effects of globalization.

3.1.4 Ambiguity

Ambiguity refers to circumstances in which decisions' consequences are not immediately apparent. Strategic planning in the private sector may be hampered by unclear market signals or technological upheavals. In the public sector, complex policy questions or social quandaries necessitate nuanced methods of decision-making. A cloud of uncertainty and miscommunication causes long-standing facts to vanish, making decision-making even more difficult. Decision-makers face difficulty when there is uncertainty since it makes it impossible to use conventional optimization techniques, including estimating the objective expected values of different courses of action. In actuality, fundamental limitations on the decision-makers' rationality and on the information available about the alternatives and the future lead ambiguity to develop in most strategically significant decisions in some way (Arend, 2020).

Making strategic decisions is one of a manager's most crucial responsibilities. The presence of ambiguity and interdependencies with competitors significantly increases the difficulty of these decision-making situations. Traditional optimization methods are rendered useless by irreducible ambiguity, forcing managers to grapple with what strategy to employ in order to maximize payoffs (Arend, 2020).

Organizations frequently struggle with ethical ambiguity, but it's something that can be resolved with careful thought and effective communication. When there is no obvious right or incorrect response to a moral conundrum, ethical ambiguity results. This may occur when there are conflicting values among stakeholders, when decisions cannot be made with proper information, or when actions may have unknown results (Oboloo, 2024).

In the last decade, organizations have had to deal with a complex, turbulent environment. Misunderstanding of this environment has been the downfall of many projects, programs, and



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

organizations because, for as much as we have learned to deal with uncertainty, we do not understand how to deal with ambiguity. Value management through sense-making and networking is probably the best approach in such a situation (Thiry, 2011).

Real decision-makers were given the task of making decisions in ambiguity-filled strategic games and providing justifications for those decisions in an exploratory study. These games are distinct in that they cannot be optimized; however, the difficulty these options pose—having to make decisions about irreversible resource commitments in a competitive environment and without full knowledge—is becoming more common in today's corporate environment (Arend, 2022).

These diverse sources of information demonstrate how ubiquitous ambiguity is in decision-making across industries and how it complicates matters of strategy and ethics.

3.1.5 Polycrisis

The term "polycrisis" has acquired traction in the context of a "super VUCA" world, denoting a chain of interconnected crises that significantly increase financial and geopolitical volatility, uncertainty, and fragility. The impact of these crises, which include accelerating global warming, generative AI, and geopolitical conflicts, is compounded since they are occurring simultaneously rather than sequentially. This elevated condition of volatility, uncertainty, complexity, and ambiguity is commonly referred to as the "super VUCA" world (Pardo, 2023).

In a "super VUCA" world, these risks have a significant effect on international mobility initiatives. The intricate relationship between present and emerging threats raises the possibility of a polycrisis and presents major obstacles for international mobility initiatives. The greatest chance of a polycrisis, which intensifies uncertainty and complexity, occurs at the junction of emerging crises and current threats. According to the Global Risks Report 2023, leaders are bracing for a difficult road ahead, although there is some hope that the crises will eventually fade. But the research also highlights how much more agility is required to anticipate and address these mounting dangers (World Economic Forum, 2023).

The term "polycrisis" refers to a broad category of problems, such as the emergency caused by climate change, geopolitical conflicts, technical breakthroughs, and social unrest. A "perfect storm" scenario is produced by this interwoven web of crises, in which several crises increase the total volatility, uncertainty, complexity, and ambiguity of a situation. The polycrisis is essentially a type of VUCA, which is defined by fast, erratic shifts, ambiguity, complex interdependencies, and the possibility of several interpretations (Muldowney, 2023).

To sum up, the idea of a polycrisis encapsulates the interconnectedness of several crises, which greatly affect international mobility initiatives by exacerbating risks, uncertainties, and complexities. Organizations must modify their mobility programs to meet the increasing difficulties brought on by



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

the simultaneous occurrence of several interconnected crises as they navigate this "super VUCA" environment.

3.1.6 Geopolitical Tensions

Global instability is largely caused by geopolitical tensions, which have an impact on both the public and private spheres. Economic penalties, trade disputes, and changes in global alliances are all possible outcomes of these tensions, which would make the climate uncertain for both governments and corporations. The global economy is significantly impacted by geopolitical tensions, which have an effect in many different areas. Geopolitical tensions can also result in higher inflation, lower growth, and significant welfare losses, creating a challenging economic environment. Increased restrictions brought on by tensions between countries can disrupt trade flows, cause problems in the supply chain, affect commodity prices, and lead to shortages of key resources like oil and gas, which can impact industrial production worldwide (Economics Observatory, 2024).

The complexity and volatility of the global economic environment are highlighted by the importance that cybersecurity plays in protecting the digital backbone of international commerce and the potential for geopolitical developments to stimulate innovation. To ensure future prosperity, businesses, investors, and governments need to adjust to these changes by taking advantage of opportunities and minimizing dangers (Santosh, 2024).

Global trade flows are impacted by supply chain resilience, national security concerns, and support for home sectors, all of which are shaped by geopolitical conflicts. commerce is at danger in this dynamic climate, which may also cause oscillations in global commerce that affect stability and economic growth (CSIS, 2024).

Geopolitical disputes have a significant effect on financial markets because alliances can upend the world economy and create areas of influence that have the power to tip the scales. In order to calm investor concerns and stabilize or grow the financial markets, diplomatic attempts to resolve these disputes are crucial (So Bourse, 2024).

Because imposing financial limitations for national security grounds may have unforeseen effects, authorities should be mindful that geopolitical tensions also constitute a severe danger to financial stability. In order to mitigate risks to global macro-financial stability, multilateral efforts should be enhanced to alleviate geopolitical tensions and economic and financial fragmentation (Catalán, Natalucci, Qureshi, Tsuruga, 2023)

In conclusion, supply chains, governance frameworks, ecosystems, and both local and global economic endeavors are all significantly impacted by geopolitical tensions. Because of how quickly events in one area of the world can spread to other parts due to the interconnectedness of the global economy, it is critical to recognize and manage the economic risks associated with geopolitical conflicts (World Economic Forum, 2024).



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

3.1.7 Technological Disruptions

The rapid development of new technology, such automation and artificial intelligence, adds a great deal of unpredictability and complexity. These developments in technology have the potential to upend established company structures, open up new markets, and demand quick response. Disruptions in technology have a variety of effects. Technological developments in automation and artificial intelligence have the potential to both worsen global inequality and poverty and save labor. Additionally, these technologies create winner-take-all situations that benefit highly skilled people and nations that are at the forefront of technological advancement (Kornek, et al., 2021). Additionally, the Fourth Industrial Revolution is witnessing a phase of adaptation due to disruptive breakthroughs like artificial intelligence and enhanced virtual reality that are driving rapid changes in corporations, industries, and consumer behavior (Repsol, 2024).

Technology has a profoundly disruptive effect on economic development; automation and digitalization are transforming processes, upending established industries, and creating large employment displacement (ResearchFDI, 2024). Furthermore, by 2025, it's anticipated that the swift development of robotics, artificial intelligence, and autonomous cars would have a major economic impact and may cause the loss of a sizable portion of the blue- and white-collar workforce (Pew Research Center, 2014).

Furthermore, leaders in industry and government face both possibilities and problems as a result of the potential for future technologies, such as next-generation genomics and advanced robots, to completely alter the way we live and work (McKinsey & Company, 2013). The need to create alternate growth paths in line with technological change is being driven by the erosion of comparative advantage in labor-intensive industry as a result of automation of low-skill work (Brookings Institution, 2020).

In conclusion, the rapid introduction of new technologies is transforming labor markets, sectors, and economic development. This presents opportunities as well as problems for organizations, individuals, and policymakers to quickly adjust.

3.1.8 Environmental Challenges

The turbulence in a VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) society is mostly caused by the acceleration of global warming and other environmental concerns. Organizations must embrace sustainable practices in order to meet these problems, as well as adjust to evolving environmental laws and circumstances. Business today is a complicated, multifaceted activity due to the convergence of global market dynamics, technology breakthroughs, environmental concerns, and sociological shifts. In the current dynamic landscape, adopting sustainable practices is crucial for constructing robust and conscientious supply chains. But this goal could also lead to moral conundrums, including the tension between local jobs and environmental preservation, which call for intricate solutions that take into account the interests of many stakeholders (Vela, 2023).

Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Furthermore, in order to effectively address the environmental concerns, legislative solutions are needed as they are linked to a variety of socioeconomic repercussions. For example, the 2030 Agenda for Sustainable Development, which was adopted by Heads of State and Government at a special UN summit, contains targets and goals for sustainable development that address climate change, the environment, energy, transportation, industry, agriculture, and sustainable finance. The EU's eighth Environmental Action Programme supports and implements these objectives, which are closely related (European Environment Agency, 2023).

Furthermore, international frameworks and accords like the Paris Agreement, the UN Framework Convention on Climate Change, and the Sustainable Development Goals offer direction for future developments in the fight against climate change. In order to lessen the effects of global warming and environmental difficulties, these frameworks underline the significance of reducing emissions, adjusting to climate impacts, and financing necessary modifications (European Environment Agency, 2023).

In conclusion, organizations must take the initiative to design strategies that not only get beyond barriers but also help create a more just and sustainable global business environment in light of the environmental issues that face us in a volatile, uncertain, and peaceful world (United Nations, 2024).

Ultimately, there are many different kinds of global turbulence in VUCA bureaucracy, such as technology disruptions, environmental problems, geopolitical conflicts, volatility, uncertainty, complexity, ambiguity, and polycrisis. Comprehending these characteristics is vital for organizations to formulate efficacious strategies and adeptly maneuver the intricacies of the contemporary business milieu. Organizations may flourish in a volatile and uncertain world by adopting adaptive leadership, building resilience, and utilizing strategic relationships.

3.2 Influence of global turbulence in VUCA Bureaucracy on the decision- making processes of leaders in bureaucratic settings

Global instability in VUCA bureaucracy has a complex impact on leaders' decision-making processes in bureaucratic environments, necessitating adaptive methods. Volatility, Uncertainty, Complexity, and Ambiguity, or VUCA framework, highlights the circumstances and difficulties that organizations have when formulating plans, controlling risks, enacting change, and resolving issues (Wikipedia, 2024).

3.2.1 Agility-Enhancing Practices

Organizational success is significantly influenced by the human dynamics of agility in volatile, unpredictable, complex, and ambiguous (VUCA) settings. It is the responsibility of leaders and other important decision-makers to lead their organizations through turbulent times by defining hurdles to agility, recognizing VUCA, and putting agility-enhancing procedures into place. In turbulent times, these steps are essential to any team's or organization's continued success. The importance of leaders'



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

VUCA sensing and sensemaking in promoting organizational agility during times of crisis is emphasized in Jin and Han's (2020) study. They draw attention to how knowledge management skills might support adaptability in the face of volatile, uncertain, and complex situations. This emphasizes how crucial it is to use information and insights to improve organizational agility in high-stress situations (Baran and Woznyj, 2020).

Agility-enhancing methods are a broad category of tactics and programs designed to encourage resilience, flexibility, and adaptation in organizations. Creating cross-functional teams, putting agile project management techniques into practice, fostering a culture of experimentation and ongoing learning, and integrating technology to facilitate quick decision-making and responsiveness are a few examples of these approaches. Moreover, cultivating agility in an organization requires allowing staff to take measured risks, promoting open lines of communication, and stimulating creative thinking (Robinson, 2021).

Furthermore, organizational agility is mostly dependent on having the capacity to foresee disruptions and act proactively in response to them, as well as being open to change. Organizations can improve their ability to effectively traverse VUCA settings by utilizing data analytics, scenario planning, and strategic foresight (Ross, 2020).

To sum up, agility-enhancing strategies are essential for organizations looking to prosper in volatile and uncertain times. Organizations can position themselves to not only survive but also prosper in the face of turbulence by coordinating their organizational culture, knowledge management skills, and leadership strategies with the imperatives of agility.

3.2.2 Adaptive Leadership

In a world characterized by volatility, uncertainty, complexity, and ambiguity, traditional leadership approaches frequently fail to encourage the entrepreneurship and creativity required for organizations to stay competitive. Fostering an organizational culture that values autonomy, trust, and collaboration is crucial for success in such a setting. When using VUCA as a guiding framework, leaders frequently see change as both inevitable and something to prepare for. A framework for efficient management and leadership is provided by the several theme areas of discussion that arise in the setting of VUCA (Thunderbird School of Global Management, 2016).

The idea of "adaptive leadership" recognizes that in the face of volatile, unpredictable situations, leaders must be able to change and grow. It challenges the conventional view of leadership as a hierarchical role and places more emphasis on organizing people and groups to take on adaptive issues that call for systemic change, learning, and innovation. Adaptive leadership is crucial in a volatile, uncertain, and complex world because it helps leaders manage change by building resilience, agility, and an ability to accept change. It promotes proactive, creative, and ambiguity-averse leadership (Thunderbird School of Global Management, 2016).

Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

According to Thunderbird School of Global Management (2016), the new COO in the article "Adaptive Leadership for the VUCA World: A Tale of Two Managers" is a prime example of this type of leadership. He sets the vision while giving managers the freedom to interpret it broadly for their teams, restructures the company to foster competition while fostering collaboration, and embraces the new complexity and ambiguity in the market.

Furthermore, by encouraging resilience, agility, and the ability to accept change, "Adaptive Leadership: Navigating a VUCA World" highlights the significance of adaptive leadership in helping leaders to traverse the uncertain and confusing terrain. It promotes proactive, creative, and ambiguity-averse leadership (New Metrics, 2024).

To sum up, adaptive leadership is essential for negotiating the difficulties of a volatile, uncertain, and complicated environment. It empowers leaders to anticipate problems, build resilience, and stimulate innovation inside their organizations.

3.2.3 Decision-Making Challenges

In a world characterized by volatility, uncertainty, complexity, and ambiguity, or VUCA, the dynamic and unexpected nature of the surroundings has a significant impact on decision-making. VUCA's constraints can either make decision-making more difficult or improve one's capacity for planning, strategizing, and moving forward. This framework lays the groundwork for efficient management and leadership by enticing leaders to look beyond the walls of their own organizations and take the larger picture into account when making choices. The VUCA framework functions as a conceptual tool that highlights the circumstances and difficulties that organizations encounter when planning, directing change, managing risks, and coming up with solutions. It gives a framework for the parameters of planning and policy-making and expresses how organizations view their present and future difficulties. The interplay of the VUCA components can either make decision-making more difficult or improve one's capacity for planning, strategizing, and moving forward—laying the foundation for efficient management and effective leadership (VUCA, 2024).

In a VUCA world, leadership entails learning to think strategically, foresee and react to change fast, and come up with original solutions. Additionally, it pushes decision-makers to look about the bigger picture, recognize connections, and approach planning and thinking in a meta-strategic manner (VUCA World, 2024).

Making decisions in a VUCA world necessitates striking a balance between analysis and intuition. It's critical to obtain as much information as you can, think through multiple situations, and be prepared to modify your mind as events do. Effective decision-making and problem-solving require an understanding of and attention to the complexity inherent in the VUCA framework (Digital Leadership, 2024).



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Organizations are prompted by the challenges presented by a volatile and uncertain world (VUCA) to remain open-minded and see their strategic decisions as part of a diverse portfolio rather than as single investments. A strong vision is the foundation of effective leadership, and it is crucial to have systems in place to share that vision with others and make sure they understand how they can contribute to the organization's future success (Smartrak, 2023).

As a result, making decisions in a volatile, uncertain, and compliant environment requires being proactive, adaptable, and eager to explore new possibilities. It calls for a strategic vision, a delicate balance between analysis and intuition, and the capacity to successfully negotiate ambiguity and complexity.

In summary, adaptive leadership, agility-enhancing techniques, and a fundamental shift in traditional, competitive mental models are required for leaders operating in bureaucratic settings to effectively navigate the complexities and uncertainties of the volatile, uncertain, and complex (VUCA) environment.

3.3 Specific challenges leaders encountered in making decisions under conditions of volatility, uncertainty, complexity, and ambiguity

When making decisions in volatile, unpredictable, complex, and ambiguous (VUCA) environments, leaders face several unique obstacles.

3.3.1 Quick and unpredictable shifts

The swift and erratic pace of change is typified by volatility, which poses a challenge for leaders seeking to effectively foresee and plan for these transitions. Small triggers can cause big shifts, and in a volatile market, commodity values can fluctuate dramatically in a short amount of time, abruptly changing the course of a trend (TechTarget, 2024).

3.3.2 Events and Issues are Unpredictable

Because uncertainty is linked to the unpredictable nature of situations and problems, it can be difficult for leaders to forecast outcomes and make wise plans. Decision-making becomes more difficult because the future is unpredictable and diverse viewpoints may exist (BiteSize Learning, 2024).

3.3.3 Connected Factors and Problems

Decision-making processes may become more difficult when there are entwined factors and issues, which are described as complex. Making decisions can become more difficult as a result of this complexity, which can produce a highly hazy image of what is happening and what needs to be done to fix it (PMI, 2024).

3.3.4 Uncertainty in Reality and Possibility of Misunderstandings



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Ambiguity makes it difficult for leaders to make firm decisions because it highlights the hazy realities and possible misconceptions resulting from conflicting information. VUCA makes it difficult to tackle difficult situations and simple to misinterpret the environment by conflating four unique sorts of obstacles that require four distinct types of answers (Harvard Business Review, 2014).

3.3.5 Insufficient Information for Sure Decisions

The VUCA environment increases the complexity of decision-making by posing problems such a lack of evidence to support decisions with confidence. It can be difficult to make wise decisions when metrics are changing suddenly, and outcomes are diverging in a way that points to hidden forces at play (BiteSize Learning, 2024).

3.3.6 Managing in a Changing Environment

To survive and thrive in the tumultuous VUCA environment, leaders need to master complexity through clarity, neutralize uncertainty through comprehension, resolve ambiguity through agility, and oppose volatility with vision. This entails fostering a consistent decision-making culture, fostering clarity and alignment, and encouraging innovation and resilience (FlashPoint Leadership, 2020).

3.3.7 Getting Around in a Changing Environment

Leaders in organizations must constantly adapt and make wise judgments as they navigate a constantly changing environment characterized by volatility, uncertainty, complexity, and ambiguity. Leaders can pursue steps that move them to the opportunity in their own adversity by changing their attitude from volatility to vision, from uncertainty to understanding, from complexity to clarity, and from ambiguity to agility (FlashPoint Leadership, 2020).

In summary, leaders in a VUCA world must navigate through rapid change, unpredictability, interconnected issues, and unclear realities, requiring them to develop adaptive strategies and decision-making processes to thrive in such challenging conditions.

3.4 Strategies to address the challenges and global turbulence encountered by leaders in making decisions under VUCA bureaucracy

3.4.1 Determine Your VUCA

Within the context of their organization, volatility, uncertainty, complexity, and ambiguity present unique difficulties that leaders must recognize and address. This entails being aware of the distinct dynamics and elements that make up the VUCA environment. Leaders may effectively handle these obstacles by customizing their answers and strategies based on their understanding of the unique manifestations of VUCA within their organizations (Baran and Woznyj, 2020).

3.4.2 Describe the Barriers to Agility.



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Leaders need to identify the barriers that impede flexibility in their bureaucratic environments. This entails being aware of the particular obstacles that decision-making processes face in order to be flexible and responsive. A growing body of research suggests that assessing and identifying the main barriers to agility can help manage turbulence (Baran and Woznyj, 2020).

3.4.3 Put Enhanced Agility Practices into Practice

Practices targeted at improving agility within their enterprises can be put into place by leaders and other decision-makers. This could entail creating an environment that is flexible and innovative in decision-making processes, as well as transparent linkages and procedures. In order to reduce administrative obstacles and expedite decision-making, it also entails enhancing cooperation and transparency (VUCA World, 2024).4. Leadership Models for VUCA

In a VUCA world, leadership models have been developed to deal with uncertainty. These models place a strong emphasis on cultivating the capacity to foresee and promptly adjust to changes, think strategically, and generate original solutions. Additionally, they urge CEOs to go beyond the confines of their own company and take the larger context of their decisions into account (VUCA World, 2024).

3.4.4 Resilient Leadership

Another strategy that emphasizes actions that support people in weathering a crisis and adjusting to or recovering from misfortune is resilient leadership. The aim of a leader is to maintain an organization's competitive edge throughout time by enabling it to achieve outstanding results in relation to present objectives and by skillfully inventing and adjusting to swift, tumultuous shifts in markets and technologies (Digital Leadership, 2024).

3.4.5 Adjust in a VUCA World

In a volatile, uncertain, and complex (VUCA) environment, leaders need to be willing to learn from their mistakes and adjust their plans accordingly. This now forms a significant portion of strategic planning. Any work plan's strategy and execution must be adaptable enough to handle the volatility, uncertainty, complexity, and ambiguity of the business world (How VUCA Affects Business, 2023).

3.4.6 Talent Management in a VUCA Environment

In a VUCA world, talent strategies should focus on fostering greater openness and collaboration in order to reduce administrative bottlenecks and expedite decision-making. In order to satisfy the demands of global talent management and to avoid being headquarters-country-centric, it also entails increasing the average calculated risk-taking percentage (ERE, 2012).

To summarize, the approaches to deal with the difficulties and worldwide instability that leaders face when making decisions under VUCA bureaucracy include comprehending VUCA, identifying impediments to agility, putting agility-boosting procedures into place, and adopting leadership models and behaviors that encourage resilience and adaptability in the face of complexity and uncertainty.



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

3.5 Implication And Recommendation

3.5.1 Implication

Based on the results and discussions made in this study, the following implications were drawn:

Firstly, the term "VUCA world" refers to the increasingly unpredictable and rapidly changing environment that people, governments, and organizations must contend with in today's globe. It is defined by variability, uncertainty, complexity, and ambiguity. It is linked to ongoing upheavals, rapid technical advancements, shifting geopolitical landscapes, and unstable financial markets. Strong ideas like globalization, neoliberalism, change, and populism are strongly linked to the VUCA World, which has a major impact on the rise of new social classes and the problems they bring.

Secondly, in bureaucratic environments, leaders' decision-making processes are significantly impacted by the VUCA reality. In the face of ongoing upheavals and uncertainty, leaders are required to anticipate change, simulate possibilities, and cultivate flexible and adaptive responsiveness. The VUCA paradigm emphasizes strategic knowledge, foresight, and the behavior of entities inside organizations, offering a lens through which organizations can perceive their possibilities and challenges.

Thirdly, decision-making in volatile, uncertain, complicated, and ambiguous environments presents unique difficulties for leaders. These difficulties include the swift and erratic pace of change, a dearth of knowledge and predictability, interconnected forces and problems that obscure cause-and-effect links, hazy realities, and possible misinterpretations resulting from conflicting messages.

Lastly, it is critical for enterprises to create strategies that leverage innovation, foster resilience, and negotiate complexity in order to solve the difficulties and global turbulence that leaders face while making decisions under VUCA bureaucracy. It is more important than ever to comprehend and navigate the VUCA world, which is defined by volatility, uncertainty, complexity, and ambiguity. In this changing environment, effective solutions are essential for not only surviving but thriving.

3.5.2 Recommendation

Based on the implications drawn from the study, the following recommendations can be made to address the challenges and global turbulence encountered by leaders in making decisions under VUCA bureaucracy:

First and foremost, organizations ought to fund leadership development initiatives that emphasize flexible tactics and creative thinking. The emphasis of these programs ought to be on developing the capacity to foresee change, create scenarios, and become flexible and adaptable in the face of ongoing disruptions and uncertainty. Through the development of leaders capable of thriving in intricate and uncertain settings, organizations can more effectively manage the obstacles presented by VUCA.



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

Secondly, strategic intelligence and foresight should be given top priority by leaders and organizations. This entails getting a thorough grasp of the VUCA environment, the difficulties it presents, and the opportunities that are just beginning to emerge. Leaders who prioritize strategic thinking and insight are better equipped to make well-informed decisions and adapt proactively to the swift and uncertain pace of change.

Thirdly, in order to meet the problems presented by VUCA, organizations had to cultivate an innovative culture. Encouragement of innovation, taking calculated risks, and experimenting can aid organizations in adjusting to the ever-changing environment. It is imperative for leaders to promote innovation and establish a welcoming and nurturing environment for novel concepts.

Fourthly, organizations and leaders need to develop resilience and agility in the face of global unrest. This entails developing the ability to tolerate setbacks, adjust to change, and make swift decisions in the face of changing conditions. Organizations may prosper in the VUCA environment by demonstrating resilience and adaptability.

Fifthly, organizations should invest in strong information systems and technology given the advancements in technology and the unstable economic situations linked to the volatile user-centered environment (VUCA). In unstable circumstances, rapid and reliable information access is essential for making decisions. Technology utilization can also improve an organization's responsiveness and agility.

Finally, by promoting a common understanding of organizations objectives and plans, open and transparent communication channels can assist reduce the uncertainties and complexities inherent with VUCA.

By putting these suggestions into practice, organizations may better prepare their leaders to handle the complexity of the modern VUCA world and prosper in the face of hitherto unseen opportunities and challenges.

4. Authors Contribution

The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

5. Conflict Of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

6. Plagiarism Policy

All authors declare that any kind of violation of plagiarism, copyright and ethical matters will taken care by all authors. Journal and editors are not liable for aforesaid matters.



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

7. Sources Of Funding

The authors received no financial aid to support for the research.

References

- [1] Arend RJ (2022). Strategy under Ambiguity, and a New Type of Decision Dilemma. *Administrative Sciences*. https://www.mdpi.com/2076-3387/12/2/44
- [2] Arend, Richard J. (2020). Strategic decision-making under ambiguity: a new problem space and a proposed optimization approach. https://link.springer.com/article/10.1007/s40685-020-00129-7
- [3] Baran and Woznyj (2020). The human dynamics of agility. National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7439966/
- [4] BiteSize Learning. (2024). VUCA (volatility, uncertainty, complexity + ambiguity) explained. Retrieved from https://www.bitesizelearning.co.uk/resources/vuca-volatility-uncertainty-complexity-ambiguity
- [5] Brookings Institution. (2020). Technology and the future of growth: Challenges of change. *Brookings*. https://www.brookings.edu/articles/technology-and-the-future-of-growth-challenges-of-change/
- [6] Catalán, M., Natalucci, F., Qureshi, M. S., & Tsuruga, T. (2023, April 5). Geopolitics and Fragmentation Emerge as Serious Financial Stability
- $Threats. \ {\it IMF}. \ {\it https://www.imf.org/en/Blogs/Articles/2023/04/05/geopolitics-and-fragmentation-emerge-asserious-financial-stability-threats}$
- [7] Centers for Disease Control and Prevention (US). (2012). Principles of Epidemiology in Public Health Practice, Third Edition: An Introduction to Applied Epidemiology and Biostatistics. National Center for Biotechnology Information. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK200849/
- [8] CSIS. (2024). Geoeconomics Bi-Weekly: Geopolitical Tensions Continue to Shape Global Trade. *Center for Strategic and International Studies*. https://www.csis.org/analysis/geoeconomics-bi-weekly-geopolitical-tensions-continue-shape-global-trade
- [9] Digital Leadership. (2024). VUCA World: Meaning, Examples and Management Steps. Retrieved from https://digitalleadership.com/blog/vuca-world/
- [10] Economics Observatory. (2024). How are geopolitical risks affecting the world economy? [Web log post]. https://www.economicsobservatory.com/how-are-geopolitical-risks-affecting-the-world-economy
- [11] ERE. (2012). Talent Strategies for a Turbulent VUCA World: Shifting to an Adaptive Approach. *ERE*. https://www.ere.net/articles/talent-strategies-for-a-turbulent-vuca-world-shifting-to-an-adaptive-approach
- [12] European Environment Agency. (2023). Sustainability challenges. *European Environment Agency*. https://www.eea.europa.eu/en/topics/in-depth/sustainability-challenges
- [13] Flash Point Leadership. (2020). Preparing Leaders for the Future: The Antidote to the VUCA Challenge. Retrieved from https://www.flashpointleadership.com/blog/preparing-leaders-for-the-future-in-a-challenging-world
- [14] Harvard Business Review. (2014). What VUCA Really Means for You. Retrieved June 21, 2024, from https://hbr.org/2014/01/what-vuca-really-means-for-you
- [15] How VUCA Affects Business. (2023). *Holaspirit*. Retrieved from https://www.holaspirit.com/blog/how-vuca-affects-business



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

- [16] IGI Global. (2014). Education and Literature for Development in Responsibility: Partnership Hedges Globalization. Retrieved from https://www.igi-global.com/dictionary/education-literature-development-responsibility/12284
- [17] International Monetary Fund. (2008). Issues Brief Globalization: A Brief Overview. Retrieved from https://www.imf.org/external/np/exr/ib/2008/053008.htm
- [18] International Monetary Fund. (2015). Catalyst for Change: Empowering Women and Tackling Income Inequality. Retrieved from https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp091913
- [19] Investopedia. (2024). Volatility. Investopedia. Retrieved from https://www.investopedia.com/terms/v/volatility.asp
- [20] Karlin, J. (2024). Navigating Leadership in a BANI World: A Comparison to the VUCA Paradigm. LinkedIn. <a href="https://www.linkedin.com/pulse/navigating-leadership-bani-world-comparison-vuca-paradigm-karlin-jphhe?trk=article-ssr-frontend-pulse_more-articles_related-content-pulse_more-articles_pulse_more-articles_pulse_more-articles_pulse_more-articles_pulse_more-articles_pulse_more-articles_pulse_pu
- card#:~:text=In%20the%20public%20sector%2C%20political%20shifts%2C%20economic%20conditions%2C
 %20and%20social%20dynamics%20create%20volatility%2C%20influencing%20policy%20agendas%20and%
 20government%20priorities
- [21] Kornek, et al. (2021). Technological Progress, Artificial Intelligence, and Inclusive Growth. IMF e-Library. https://www.elibrary.imf.org/view/journals/001/2021/166/article-A001-en.xml
- [22] McKinsey & Company. (2022). Global flows: The ties that bind in an interconnected world. Retrieved [Month Day, Year], from https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/global-flows-the-ties-that-bind-in-an-interconnected-world
- [23] McKinsey & Company. (2013). Disruptive technologies: Advances that will transform life, business, and the global economy. *McKinsey & Company*. https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/disruptive-technologies.
- [24] Muldowney, S. (2023). Title of the article. *INTHEBLACK*. https://intheblack.cpaaustralia.com.au/economy/how-to-boost-business-resilience-inglobal-polycrisis
- [25] New Metrics. (2024). Adaptive leadership: Navigating a VUCA world. New Metrics. Retrieved from https://www.newmetrics.net/insights/adaptive-leadership-navigating-a-vuca-world/
- [26] Oboloo (2024). How can ethical ambiguity be addressed in a business setting?. https://oboloo.com/blog/how-can-ethical-ambiguity-be-addressed-in-a-business-setting/
- [27] Pardo, C. (2023). How do the risks in a "super VUCA" world impact global mobility programs? Plus Relocation. https://www.topics.plusrelocation.com/post/102irgs/how-do-the-risks-in-a-super-vuca-world-impact-global-mobility-programs
- [28] Peterson Institute for International Economics. (2018.). What Is Globalization? Retrieved from https://www.piie.com/microsites/globalization/what-is-globalization
- [29] Pew Research Center. (2014). AI, Robotics, and the Future of Jobs. *Pew Research Center*. [https://www.pewresearch.org/internet/2014/08/06/future-of-jobs/]
- [30] PMI. (2024). VUCA (Volatility, Uncertainty, Complexity and Ambiguity). Retrieved from https://www.pmi.org/disciplined-agile/vuca-volatility-uncertainty-complexity-and-ambiguity



Amil, Alinor C. (2024). Leadership Decision- Making in Vuca Bureaucracy: Global Turbulence, Influence, Challenges, and Strategies, International Journal of Multidisciplinary Research & Reviews, Vol 03, No. 03, pp. 109-127.

- [31] Repsol. (2024). Disruptive Technologies. *Repsol Energy and the Future*. https://www.repsol.com/en/energy-and-the-future/technology-and-innovation/disruptive-technologies/index.cshtml
- [32] ResearchFDI. (2024). How technology is changing the landscape of economic development. *ResearchFDI*. [https://researchfdi.com/resources/articles/how-technology-is-changing-the-landscape-of-economic-development/].
- [33] Robinson (2021). How to Develop Agility and Adaptability in VUCA Environments: 4 Tips to Consider. Training Industry. https://trainingindustry.com/articles/strategy-alignment-and-planning/how-to-develop-agility-and-adaptability-in-vuca-environments-4-tips-to-consider/
- [34] Ross (2020). The Need for Agility in a Volatile, Uncertain, Complex and Ambiguous World. LinkedIn. https://www.linkedin.com/pulse/need-agility-volatile-uncertain-complex-ambiguous-david
- [35] Santosh, G. (2024). Geopolitical shifts and their impact on global trade and investment [LinkedIn article]. LinkedIn. https://www.linkedin.com/pulse/geopolitical-shifts-impact-global-trade-investment-santosh-g-swn2c
- [36] Smartrak. (2023). Decision making in a VUCA world. Retrieved from https://smartrak.com/decision-making-in-a-vuca-world/
- [37] So Bourse (2024). *Conciliation Conflict Geopolitics Stock Market*. https://www.so-bourse.com/en/conciliation-conflict-geopolitics-stock-market.html
- [38] TechTarget. (2024). What is VUCA (Volatility, Uncertainty, Complexity and Ambiguity)? | Definition from TechTarget. Retrieved from https://www.techtarget.com/whatis/definition/VUCA-volatility-uncertainty-complexity-and-ambiguity
- [39] Thiry, M. (2011). Ambiguity management: the new frontier. Paper presented at PMI® Global Congress 2011—North America, Dallas, TX. Newtown Square, PA: Project Management Institute. https://www.pmi.org/learning/library/ambiguity-management-new-frontier-6285
- [40] Thunderbird School of Global Management. (2016). Adaptive leadership for the VUCA world: A tale of two managers. Thunderbird. Retrieved from https://thunderbird.asu.edu/thought-leadership/insights/adaptive-leadership-vuca-world-tale-two-managers
- [41] U.S. Bank. (2024.). How to handle market volatility. U.S. Bank. Retrieved from https://www.usbank.com/investing/financial-perspectives/investing-insights/how-to-handle-market-volatility.html
- [42] United Nations. (2024). What Is Climate Change? *United Nations*. https://www.un.org/en/climatechange/what-is-climate-change
- [43] Vela, R. A. (2023). Globalization's Impact on Supply Chains: Challenges and Solutions. LinkedIn. Retrieved from https://www.linkedin.com/pulse/globalizations-impact-supply-chains-challenges-solutions-vela
- [44] VUCA World. (2024.). Retrieved from https://www.vuca-world.org/
- [45] VUCA. (2024). In Wikipedia. Retrieved from https://en.wikipedia.org/wiki/VUCA
- [46] Wikipedia. (2024, June 20). VUCA. Wikipedia. https://en.wikipedia.org/wiki/VUCA
- [47] World Economic Forum. (2023). Were on the brink of a polycrisis. How worried should we be? [Web log post]. https://www.weforum.org/agenda/2023/01/polycrisis-global-risks-report-cost-of-living/
- [48] World Economic Forum. (2024). 4 ways geopolitical tensions are increasing carbon emissions. *World Economic Forum*. https://www.weforum.org/agenda/2024/03/geopolitics-carbon-emissions-ukraine-red-sea/

