ISSN 2720-6300 I No. **397**(2023)

Article

DOI:10.22367/srsd.2023.397.3

STRATEGIC RISK LEADERSHIP AND SUSTAINABILITY IN AN EVER CHANGING ENVIRONMENT

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Received: 29.09.2022 I Revised: 15.12.2022 I Accepted: 10.01.2023 I Available on-line: 1.03.2023

ABSTRACT

PURPOSE: The purpose of this study is to analyze the relationship between sustainable performance and risk management, whereby sustainability (innovation), interdisciplinarity and leadership give new insights into the traditional perspectives on performance and risk management in the field of accounting and finance.

DESIGN/METHOD: A number of 58 cases were collected. Due to the substantiated selection, 51 unique cases were used for the data analysis. Using the cases, the researchers built a database with fixed observation categories to operationalize the theoretical framework. This database contains data on widespread characteristics of an organization, strategic characteristics (mission, vision, value proposition, core values from the Balanced Score Card categories, and strategic goals), strategy characteristics of the sustainability strategies, the 17 sustainability goals of the UN, risks (from the COSO Integrated framework: strategic, financial, operational) and control measures appropriate to the risks.

RESULTS/FINDINGS: The empirical research shows that if organizations have a mission and/or vision that includes sustainability, in more than half of the cases it is used in strategic goals and core values. However, this is far from happening in every organization. These organizations more often apply a sustainability strategy, and all pursue SDGs. It therefore seems that they use sustainable terms less often in the management of the company than they use in practice in the execution of the strategy. This pattern is even stronger among organizations that have not included sustainability criteria in the mission and/or vision: 60% pursue a sustainability strategy and three quarters pursue SDGs. Organizations that do not pursue a sustainability strategy do pay attention to sustainability in almost half of the cases when managing the organization. Conversely, unfortunately, not every organization that implements a sustainability strategy also propagates this via its mission/vision, strategic goals, and core values.

ORIGINALITY/VALUE: Researchers have investigated (part 1) whether implementing a sustainability criterion in a mission/vision has consequences for managing the organization based on sustainable strategic goals and core values; and (part 2) if a company pursues SDGs and/or a sustainability strategy, sustainability criteria are mentioned in the strategic characteristics.

Cite as: Snippe, L., Kara, A. (2023). Strategic risk leadership and sustainability in an ever changing environment. *Studies in Risk and Sustainable Development. Ryzyko i Zrównoważony Rozwój. Studia Uniwersytetu Ekonomicznego w Katowicach, 397*(2023), 1-18. DOI:10.22367/srsd.2023.397.3

KEYWORDS: sustainability, strategy, leadership, risk management, performance management.

JEL: A12, A13, A23, D21, D22, D62, D81.

1. INTRODUCTION

The purpose of this study is to analyze the relationship between sustainable performance and risk management, whereby sustainability, interdisciplinarity and leadership give new insights into the traditional perspectives on performance and risk management in the field of accounting and finance.

Risk oversight is considered an integral part of the effective functioning of corporate boards as it supports value creation for the company (Kashif Shad et al., 2019; Kaen, 2002). Tightening regulations and the issuing of new governance standards by investors and rating agencies in the aftermath of the 2008 financial crisis have raised expectations for boards to exert more effective oversight of their companies' risk management (Kirkpatrick, 2009; Simkins & Ramirez, 2008).

It was revealed that research on sustainable development seems to have underestimated the role of responsible leadership in embedding a risk culture that underpins sustainable innovation. Responsible leaders can establish and maintain a risk culture that promotes sustainable innovation (Chukwudum & Fragouli, 2019). Specifically social purpose organizations are focused on their dual – economic and social – value creation focus (Weerawardena et al., 2021). Changes in the external environment (e.g. regulatory, competition, or crisis events) often trigger a managerial exploration of innovative action related to business model elements (Osiyevskyy & Dewald, 2018).

Sustainable business regards optimal utilization of opportunities and effective management of risks arising from social, economic and environmental developments in order to create long term shareholder value (Paraschiv et al., 2012). For a business to attain sustainable goals, it will have to proactively integrate sustainability considerations into its innovative activities (Galpin, Whitttington & Bell, 2015; Paraschiv et al., 2012).

However, little is known about collective (inter-personal) behavioral dynamics, as well as the determinants and the limitations relevant for effective risk resilience. In this regard, it is desirable that studies on risk and risk management go beyond the traditional management, finance and/or accounting perspectives to include the behavioral perspective as well (Florio, 2022). Millar et al. (2018) mention strategic leadership, contextual awareness and organizational development as examples of VUCA driven management innovation clusters to focus research on.

That leads to the following research question: "*How to use risk management in an ever changing environment?"*

Which will be partly answered by the following theoretical subquestions:

I. What does risk leadership consists of in an ever-changing environment?
II. What is the role of performance and risk management in a traditional organization?
III. How are risks handled in and by a resilient organization?

After the literature review on the abovementioned topics, practice-oriented research paints a picture of whether organizations are congruent in mission and vision with the strategy and core values, related to sustainability strategies and pursuing SDGs.

2. RISK LEADERSHIP IN AN EVER CHANGING ENVIRIONMENT

The changing environment is called the VUCA world. VUCA stands for volatility, uncertainty, complexity, and ambiguity (Whiteman, 1998). The four factors are fed daily by numerous developments on a global, national, or local scale. Developments that continuously and mutually influence each other, in ways that we can never fully understand (Van Staveren, 2020). What do we know about VUCA? Volatility: changes occur in a high speed; Uncertainty: deterministic models that were appropriate for giving solutions do not work; Complexity: the access to the global world has made it easy to connect to every part of the world, yet it has become overly complex; Ambiguity: there are several views to give meaning to things that happen around us (Nandram & Bindlish, 2017). The concept of VUCA is now embraced by many disciplines. You will come across VUCA in recent books and articles on leadership, management, and public administration. For example, to indicate the dynamics of organizational environments and to indicate that this requires other forms of leadership, management, and governance (Van Staveren, 2020). The constant change in the environment creates numerous pitfalls for leaders. Of course, optimists see the edge a company can gain if its leaders can meet the associated challenges (Bennett & Lemoine, 2014).

Big societal challenges and risks, such as climate change, poverty, loss of biodiversity, animal welfare, scarcity of resources, human rights, and distribution of wealth, to name just a few, increasingly affect every company, be it large or small, local, or international, a big, listed company or a small family business. Increasingly these developments influence the cost structure, the chance of market success, the reputation, and the value of the company. Growing transparency in society on company operations makes this more important. To operate successfully, it is crucial that management deal with these themes appropriately, focusing on a sustainable future. It is equally important to use sustainability as an impetus for innovation, and thereby for the quality and vitality of the economy (Van Tulder et al., 2013). If leaders are clear sighted, proactive, inclusive, and respond decisively, it is thought that harm and damages can be minimized, and trust can be gained (Wardman, 2020). What we do or do not do now partly determines our future. That is why the time factor is also important. VUCA provides a permanent attack on the reliability of existing services and products. How can governments, institutions and companies organize themselves in such a way that, despite the continuous volatility, uncertainty, complexity, and ambiguity, they remain able to do what they are supposed to do, with the expected quality and security and at an affordable cost? (Van Staveren, 2020).

The involvement of stakeholders in company activities lies at the heart of sustainable enterprise. Taking on board (legitimate) stakeholders' interests and expectations when making decisions ensures that ethical, social, and environmental issues are handled well. Social stakeholders must be involved to achieve fast, effective strategy implementation. The direction of the sustainability trajectory is far from clear. If you are setting out on your journey, it is a clever idea to bring along several partners. Companies really intending to operate sustainably must be prepared to commit to stakeholders to create social value (Van Tulder et al., 2013). Circular and sustainable innovative entrepreneurship can consist of finding a new balance between economic, social, and ecological aspects of business operations, aimed at visibly establishing a new sustainable way of working and expanding it (Bossink, 2021).

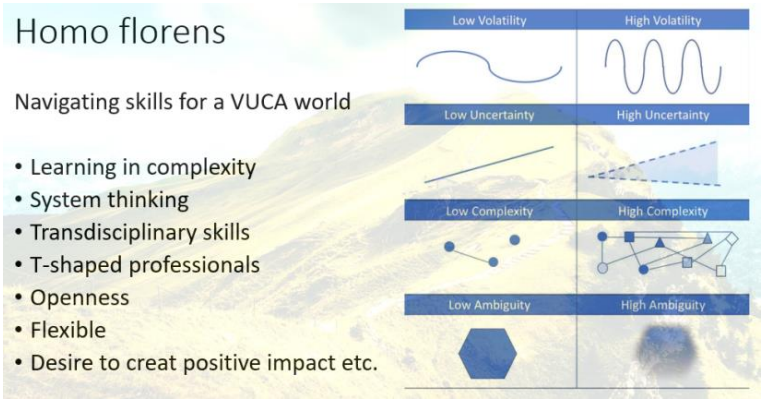
2.1. THE HUMAN IMAGE

An image of man is a thoughtful and coherent representation of what it means to be human. Human images relate to beliefs. Because the environment in which we find ourselves is changing faster and more unpredictably, it helps us all to create an appropriate mindset. We grew up thinking from the perspective of the 'homo economicus', who tries to maximize utility as a consumer and economic profit as a producer.

Over the past decades, this has resulted in building strong organizations (Leren voor morgen, 2021). In the development of higher economic education in The Netherlands, the focus is on a new view of man, which is broader than the 'homo economicus'. The point of departure is the 'homo florens' (the blooming man) (Leren voor morgen, 2021).

The thinking of the 'homo florens' is about maximizing the usefulness and well-being for individuals, as well as for the community. This person is focused on lasting relationships and finds satisfaction in the well-being of others. This person naturally also thinks about his own well-being, but only really blossoms in relation to others. This view of humanity can offer students in higher economic education a perspective on an economy in which the prosperity of others matters. This supports them to participate in the transition to a sustainable and humane economy during their career. This way of thinking and acting leads to the creation of strong networks across organizational boundaries (Leren voor morgen, 2021). Figure 1 shows the skills that the homo florens need are different from those of the homo economicus, because they must deal with a different environment (Bartelts & Snippe, 2022). Diskiene and Pauliene (2018) argue that leadership is an identity creation. Leaders lead groups and organizations by a reflection of their identity.

Figure 1. Homo florens, navigating skills for a VUCA-world



Source: Bartelts and Snippe (2022).

Leadership in a VUCA-world needs to adapt to the four VUCA factors in several aspects. For example, you need a dynamic model of the world. This means visions and strategies are always in flux to adapt to this changing world. You can no longer offer security. Trying what is going on is the best you can do (Ducheyne, 2016). This increases your dependence on others. You need creativity from inside and outside the organization to successfully achieve goals in a VUCA environment (Van Staveren, 2020).

These four dynamics of VUCA affect not only organizations but also leaders (Rath et al., 2021). Knowledge and attitude plays a key role in VUCA leadership, and shifting perspectives may lead to more effectiveness. The challenge of VUCA leadership is as follows (Codraunu, 2016):

- *Volatility results in loss of direction.* Choosing to follow others and their ideas is one, to follow one's own course from your own vision and focus might be more the strategic way.
- *Uncertainty results in loss of direction.* To wait and see what happens is not an option as a pose to choosing to act autonomously and see what happens and where it takes.
- *Complexity results in experiencing powerlessness.* Does one choose to remain stuck in analyzing the situation or is it more wise to take action based on trust?
- *Ambiguity leads to division.* Having an open dialogue with people with different opinions, views and ideas enhances the ambiguity.

2.2. RISK LEADERSHIP

When it comes to leadership regarding the risks that an organization may encounter, a comparison has been made between a conventional risk manager in a corporate and apparently secure world and a contemporary risk leader prepared for complex issues and associated risks (Van Staveren, 2020). Table 1 shows the comparison of skills that a risk manager is expected to master and that a risk leader uses in the performance of his or her duties.

Table 1. Comparison of skills risk manager versus risk leader

The risk manager…	The risk leader …
Engages in risk management	Works risk-driven
Has risks as focus	Has goals as focus
Objectifies and quantifies	Subjectivates and qualifies
Manages risks	Deals with risks
Utilizes models	Utilizes processes
Is a staff position	Is a role model

From the VUCA world in which we operate, we want our organizations to be agile, so that they can move along. To function in a VUCA world, organizations need to be open and focused on their environment. They must be flexible and agile, but also sufficiently supervise the application of measures that manage their risks. These types of organizations are also described as resilient. Resilience is defined in the British Standards (Norm BS 65000) as the ability (of organizations) to anticipate, be prepared, act and adapt to sudden events as well as to gradual changes. Risk management is an essential part of resilience. It provides organizations with the tools and processes to identify changes and threats in a timely manner and choose the right strategy to deal with them. (Janicijevic & Claes, 2021). Seeing through and analyzing significant changes in time determines continuity and results. If organizations do not respond well, changes can quickly turn into risks. Risk management is being assigned with an increasingly significant role. It concerns the knowledge in the organization to mitigate risks, prevent or benefit from them. Risk management as a technical system is losing meaning. Risk management will increasingly become a matter of people's good behavior and how to encourage it (Business Research Centre, 2022). More attention also needs to be given to the effects of management innovation at an organizational and functional level (e.g., financial and operational firm performance, organizational commitment and employee involvement, and capability of ambidexterity) versus at an individual level (e.g., well-being, creativity, purpose, and agility). Effective approaches to deal with VUCA require a better understanding of and coordination between those two levels (Millar et al., 2018).

Controlling and navigating an organization is leading or moving it in the desired direction, in which people and resources are aligned to jointly realize the strategic objectives. Setting up the performance measurement system in the internal organization, seeing the changes in the external environment and being able to translate them appropriately to the internal organization, makes companies manageable. That has always been the case before, and you must play chess on two boards at the same time: internally and externally (Business Research Centre, 2022). Akkaya and Sever (2022) argue that a changing environment needs agile leaders. These leaders can uncover the strengths of their employees, use their insights into transition the organization's intended change, and take advantage of the opportunities in change while trying to minimize their negative impact on the organization. Organizations that incorporate agile leaders are better in responding quickly to a change and deliver superior business value to their stakeholders. With agile leadership, organizations will be in a better position to quickly detect developments in the business environment and achieve agility with few resources. Greineder and Leicht (2020) argue that organizations

that are trying to be agile, also changed their perspective on leadership. In the disruptive and changing environment many organizations are struggling to survive and thrive amid these unprecedented changes in business and society (Ragas & Ragas, 2021).

From a corporate governance point of view, directors must be aware of what is happening both internally and externally, which can affect the organization and it was also advised in 2015 in the report Responsible governance of educational institutions, which was commissioned by the Ministry of Education, Culture and Science (VOS/ABB, 2015). The report focuses on best practices that show how good governance can work when things are about to go wrong. The observation is that these near misses do not stand alone but are often related to broader social and political developments that lead to political and media attention. 'The politicization and medialization of near misses therefore calls for dynamization of the codes of good governance. This can be done through strategic issue management', the report says. Strategic issue management is aimed at identifying and recognizing events, both internal and external, that affect the image, legitimacy and in the extreme case the organization's survival. The researchers advise that directors and managers should be aware of it.

Considering the external VUCA developments, the arrival of a new view of man, makes it necessary for organizations and partnerships to be able to translate external trends and developments faster and more effectively into the internal organization to maintain a place in the new context and continue to achieve strategic goals. The challenge is therefore to enable the organization to face the future in a resilient and agile way. Florio (2022) argues that interdisciplinarity seems to be the key to find proper answers to difficult and impactful questions. It can be concluded that a VUCA context requires VUCA leadership.

3. PERFORM IN A TRADITIONAL ENVIRONMENT

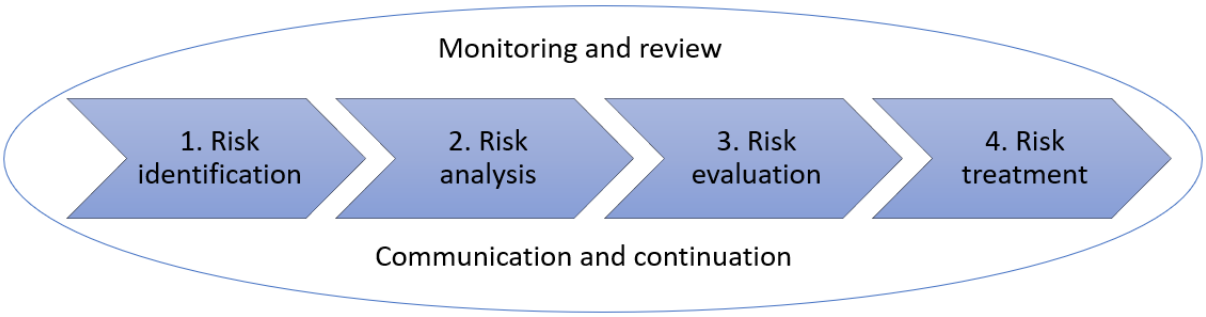
Performance management (PM) and risk management (RM) are two complementary systems if you read the literature. Theory and practice can differ from each other. The researcher observed in a lot of companies that, from a strategic point of view, these systems must be applied in an integrated manner to be effective. Therefore, the role of performance and risk management in a traditional organization (subquestion 2) will be discussed.

Bracci et al. (2022) look at PM: performance management describes a range of managerial activities designed to monitor, measure, and adjust aspects of individual and organizational performance through management control tools. Performance management integrates the management of organizational performance with the management of individual performance. About RM, they say that risk management systems can enhance organizational performance management systems' effectiveness. The creators of the Balanced Scorecard, Kaplan and Norton (1996) explain in a later study that Linking the Balanced Scorecard to strategy that a Balanced Scorecard provides a comprehensive framework to translate a company's vision and strategy into a coherent and linked set of performance measures. Outcome measures and the performance drivers of those outcomes should be both included. By describing the wishes and outcomes of the organization, managers and directors can channel the skills, energies, and specific knowledge of people across the organization to achieve long-term business goals.

It is important for an entrepreneur that the organizational objectives are achieved, and business continuity is guaranteed. The essence of risk management is that the company is not hindered in achieving its objectives by the risks and consequences thereof. Effective risk management secures organizational objectives and values. A lot of similar definitions are given about RM, for example Esposito and Ricci (2015) say that RM is an organizational process aimed at defining actions to prevent the destruction of value, or disvalue.

An organization's risk management process consists of the following steps: risk identification, analysis, evaluation, and treatment. Monitoring and review, and communication and continuation happens continuously (ISO 31000), see Figure 2. Moreover, the organization always works from a specific scope and context.

Figure 2. The six steps of risk management (ISO 31000)



Within the risk management process mentioned above, the first four steps are the risk assessment; thus identifying, analyzing, evaluating, and treating. Janicijevic and Claes (2019) describe in the book 'Risicomanagement' that the first step (identification) is an orientation to the organization, in which the risks are determined that are most relevant. The scope of the risks is determined during the analysis. After that, the evaluation takes place: the identified risks that could pose a significant threat to the organization and require further investigation. The fourth step – and thus the last for the risk assessment – is to find an appropriate risk treatment. This means that there is continuous attention to risks and that the organization can be surprised as little as possible by unexpected events and developments.

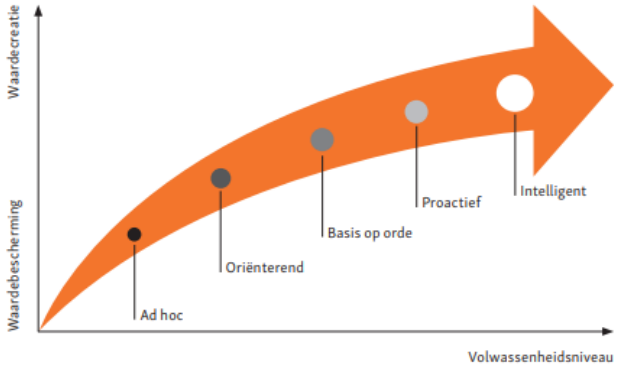
Difficult demands are made on the ability to manage organizations in an increasingly unpredictable world and complex context. Board members must deal with unruly and difficult problems linked to the board task's content and nature. Rationality partly provides solutions for the simple and manageable problems. In practice, however, a broader repertoire is required for the more complex, multidimensional assignments and problems. This is not always visible to the outside world. Criticism from the sidelines is often based on a simple line of reasoning, in which there is little understanding and empathy for the complexity of the issue (Weijers, 2011).

In practice, the realization of measures and the monitoring of their effects is a challenge for organizations. Most organizations have carried out risk analysis and mapped out what to do. Many organizations allow the process to stagnate when the measures are put into practice. This is often due to the 'issues of the day', lack of risk ownership, insufficient specification of measures and lack of control over the outcomes of the process. Preventive measures that have not been implemented can pose an additional threat, especially if the organization trusts that the measures have been taken in accordance with the agreements (Janicijevic & Claes, 2019).

To know how optimal value creation can be achieved, it helps to have the insight into the maturity level of the organization about risk management.

The five maturity levels in risk management are indicated in Figure 3 (Van der Weerdt-Norder & Tillaart, 2020). These are five gradations from the value protection to value creation, which offer direction and handles in determining the right ambition. For example, at the ad hoc level, unfavorable events are only reacted to when they occur, so reactively. There is no reporting and monitoring. At the intelligent level, risk management is fully integrated into decision making and looking ahead. There is continuous and active management of risks at all levels in the organization. The other levels give a gradation between the 'ad hoc' and 'intelligent' level.

Figure 3. The five maturity levels of risk management



Source: Van der Weerdt-Norder and Tillaart (2020).

The traditional risk management models, such as COSO ERM, Risk management framework ISO 31000 and the Risman risk management process are focused on one organization (internal organization and external environment). In the turbulent times we live in now, it may not always be enough to focus on that and still achieve or secure the strategic goals of the organization with risk management. One of the megatrends, for example climate change or sustainability, could still surprise negatively. The COVID-19 pandemic is an example of a tail-risk that has materialized and has a potential to impact ERM systems on an unprecedented scale. The initial response to the pandemic may be more in the form of short-term actions to stabilize the organization and see it through the initial crisis (Pagach & Wieczorek-Kosmala, 2020).

Van der Veen and Van Buren (2021) argue disruption, shorter product life cycles, new business models, demanding consumers, declining margins, platforms, and collaboration as possible consequences with a major impact on organizations. Sustainability is a new standard in business. The challenge is to recognize these developments and respond to them.

Snippe and Bossert (2022) found that pursuing SDGs or a sustainability strategy does not lead to differences in operational risks, but it does lead to different risks at strategic and financial levels. Operational risks were found but did not change in case of a sustainable strategy. This also underlines the need to re-identify periodically the identified risks, because the environment in which the organization finds itself has changed or the strategy is influenced by a (mega)trend such as sustainability.

The role of performance and risk management in leading an organization (subquestion 2) has been evaluated above. First, the definitions of PM and RM from different perspectives were given. Then, the risk management process of an organization was described, and pitfalls were mentioned. Third, the maturity levels of risk management – from value protection to value creation – have been discussed. Finally, the challenges of megatrends and the impact on business are given. An example from recent research about changing risks when a company pursues a sustainability strategy and/or pursues SDGs has been given.

It can be concluded that performance and risk management should be executed in an integrated manner for effective execution. In doing so, there must be internal and external focus at the same time, and alignment is needed between those two. PM is oriented towards achieving objectives and RM is focused on maintaining performance when risks arise. If risk assessment is done, periodical evaluation makes sure that external trends are implemented in the awareness of the organization to protect the values whether to create new values. Despite that, a residual risk still remains: well executed PM and RM was not enough for an organization to survive in a VUCA environment.

4. STAY FOCUSED AND SURVIVE IN A VUCA WORLD

Traditional performance and risk management is not a guarantee that an organization will survive, through the remaining residual risks, including the megatrends in a VUCA world. How risks are handled in and by a resilient organization (subquestion 3), will be discussed in the following part.

Van der Veen and Van Buren (2021) argue that climate change and sustainability are mentioned as one of the megatrends. Megatrends cannot be influenced at an individual level or can only be influenced to a limited extent. It is important to see what they mean for a country, an industry, and an individual company. It also describes that supply chain management (chain management) has two roles in achieving the strategic objectives, namely organizing the primary process, but just as important being a 'director of value'. This director oversees the entire chain and facilitates the strategic discussion across functions to achieve synergy in jointly improving results, distinction and growth, based on customer value.

It is striking that this is not only looked at from the perspective of an organization, but also from a country/local area and industry. Surviving in a VUCA world means also shifting perspectives as far as leadership is concerned (Ramachandran, 2021). The VUCA environment creates an acute challenge for management in designing innovation, changing organizational structures, planning strategy, orchestrating partnerships and ecosystems, and managing talent (Millar et al., 2018).

To remain agile in the future, three matters are mentioned that need to be discussed at a strategic level (internally and externally with chain partners). It is important to (1) measure results with, for example, KPIs (Key Performance Indicators) to see if the company is on track. At the same time, it may happen that all KPIs are green, but that there are developments in the world around the company that make it necessary to take measures. Therefore, keep (2) an eye on the context. The last is (3) working with scenarios. For example: Agriculture is cited as a sector that can be hit hard by extreme weather conditions. A company can anticipate this by working with scenarios together with partners in the value chain and local area, to process value creation in this industry (Van der Veen & Van Buren, 2021).

For the aforementioned scenario analysis within a chain, the reference is made to Van der Veen (2020) Planning when planning is impossible: scenario analysis. The four steps concern:

1. Mapping out what the integral supply and demand chain looks like; who are the important players and what are the important parameters that are controlled by those organizations?
2. Making a risk analysis, in which both threats and opportunities must be considered. Highlighting scenarios in a structured manner that have a relatively high 'chance times impact'.
3. Determining the most important scenarios and how to deal with them. This is especially important for preventive measures by the company and chain partners.
4. Determining and monitoring the so-called early indicators. There are signs of most situations. The trick is to notice those signals as early as possible, so that acceleration can be given to actions that belong to the scenario.

This mainly describes an approach to implementing the chain's strategic goals, in which continuous connection with the environment is important to know if measures should be taken to ensure that risks are not (fully) expressed. The elaborate approach for risk management in a chain, such as is available for an individual organization in the form of the COSO-ERM Integrated Framework (2017), is not feasible. Therefore, a model was sought in which an organization creates awareness to maintain and/or develop its position while there are challenges to minimize the consequences of not adapting to a megatrend (in this case sustainability).

Claassen (2019) maps four types of organizations, based on the volatility of the external environment and the complexity of the organization. If the external environment is very dynamic and the organization is overly complex, it is exceedingly difficult to paint an unambiguous picture of the future. In such case, it makes sense to decentralize strategic planning, reducing organizational complexity and potentially volatility. Scenario planning is then a good technique for making strategic plans. This is researching possible extreme, but conceivable scenarios with the aim of creating awareness. Scenario planning looks at multiple uncertainties simultaneously, as well as extreme changes. The scenario planning process consists of six steps: 1. Scope and stakeholders, 2. Environmental analysis, 3. Analysis of trends and uncertainties, 4. Developing scenarios, 5. Validation and 6. Strategic options and choice.

Applicable principles governing how the future is explored and how the future scenarios should be interpreted are:

- trends and uncertainties come from outside and cannot be influenced by the organization;
- scenarios are an outside-in analysis: what are the possible consequences of external factors for an internal organization;
- scenarios are based on extremes so that possible consequences become clearly visible;
- several scenarios are always outlined, so that possible effects of different trends become visible (Claassen, 2019).

To get some grip on risks, it is important to secure risk management in various layers of an organization in a planning and control cycle. At a strategic (organizational), tactical (business unit, department, project) and operational level, performance is controlled with due regard for the applicable risks (Van der Weerdt-Norder & Tillaart, 2020).

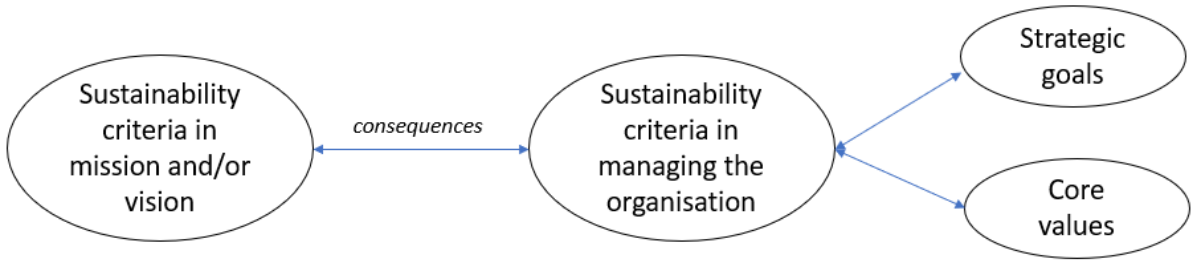
Examples have been given of how an agile organization deals with effective performance and risk management. In conclusion, it can be said that an organization should always look beyond the KPIs within the safe margin and that awareness is needed at all levels in the organization to conduct effective performance and risk management. Moreover, it is important to look at the dynamic external environment and to combine it with the complexity of the internal organization. Various scenarios arise from this. It is about creating awareness, whereby leadership plays an important role. Scenario planning is not an exact science. In addition, interact with chain partners and jointly see what value creation is desired in the future.

5. RESEARCH FRAMEWORK

In this study, the role of performance and risk management in a traditional organization has been looked at. After that, it has been studied how risks could be dealt with in a VUCA context. It has been revealed that sustainability (innovation) is an essential criterion for companies of the future.

Therefore, a conceptual model assuming that: implementing sustainability criteria in mission/vision has consequences for managing the organization based on sustainable strategic goals and core values has been designed (see Figure 4). This is part 1 of the qualitative empirical study. Based on the literature review, it is also expected that: if a company pursues SDGs and/or a sustainability strategy, sustainability criteria in strategic characteristics (mission/vision), core values and strategic goals will also be mentioned. This is part 2 of the empirical study. Following the earlier study into changing risks of organizations pursuing a sustainability strategy (Snippe & Bossert, 2021), the following theory of sustainability strategies will be used again but in a unique way.

Figure 4. Conceptual model



Three different strategies for creating a sustainable business model have been presented by Atasu, Dumas and Van Wassenhove (2021). The sustainable business strategies Retain product ownership (RPO), Product life extension (PLE) and Design for recycling (DFR) are described by three characteristics each. Some companies involve a combination of those three strategies. A research framework has been shown in table 2, wherein a combination of values and sustainability criteria in mission and/or vision is shown. The 'values' are expressed through the SDGs, and the sustainability strategies form the 'how' characteristics (Atasu et al., 2021).

Table 2. Research framework: Sustainability in managing the organization

Criteria	Value types & strategies	Characterictics
Sustainability in managing the organisation	17 SDG's (UN)	1. No Poverty 2. Zero hunger 3. Good Health and wellbeing 4. Quality Education 5. Gender equality 6. Clean water and sanitation 7. Affordable and clean energy 8. Decent work and economic growth 9. Industry, innovation and infrastructure 10. Reduced inequalities 11. Sustainable cities and communities 12. Responsible consumption and production 13. Climate action 14. Life below water 15. Life on land 16. Peace, justice and strong institutions 17. Partnerships for the goals
	no sustainable values	
	Retain Product Ownership	1. Product responsibility 2. Recurring business 3. Complex products
	Product Life Extension	1. Life cycle 2. Premium pricing 3. Used products
	Design For Recycling	1. Redesign products/ processes 2. Partnerships 3. Technology focus
	no sustainable strategy	

6. RESEARCH METHODOLOGY AND DESIGN

The practice-oriented research involves 51 case studies. Students have recorded in an exam whether the organization for which they did the analysis report on the use of sustainability criteria in strategic goals and core values. The approach was for students to be trained in performance and risk management and sustainability strategies. In the analysis, they performed a Balanced Scorecard and risk analysis for the organization. For risk analysis, students were trained in researching and reporting on risks using the COSO model (see COSO ERM 2013 and The Integrated Framework COSO ERM 2017). Students were supervised by examiners and completed the analysis and reporting with a sufficient grade, as a condition of taking into account the data in the case studies[1].

6.1. DATA COLLECTION

All data from the case studies was collected through written sources, interviews with the organization's client and other officers. Initially, 58 cases were submitted. 56 cases were closed with sufficient assessment. Only unique cases were used in the analysis. Since six cases were from the same organization, five were removed from the selection. In the end, 51 unique cases were used for the data analysis.
Using the data from the cases, the researchers built a database to operationalize the theoretical framework. This database contains data on universal characteristics of the 51 cases:

- General characteristics: industry, amount of full time employees, year revenues, balance total amount.
- Strategic characteristics in short description: mission, vision, value proposition, core values from Balanced Score Card perspectives (financial, customer, internal business processes, learning and growth), strategic goals.
- Sustainability strategies characteristics (as shown in Table 2).
- The 17 sustainability goals of the UN (as shown in Table 2).
- Maximum of nine applicable risks -on strategic (maximum three risks), financial (maximum three risks) and operational (maximum three risks) level- and control measures appropriate to the risks.

In addition to the original data, it has been evaluated by the researcher whether or not the mentioned strategic characteristics are sustainable. In the analysis this will be reflected as 'sustainability criteria'. In the evaluation of sustainability strategies, a strategy is labelled as sustainable if at least two of the three characteristics are applicable (for example: an organization conducts the sustainability strategy "Product life extension" if 'premium pricing' and 'used products' are part of the strategy).

6.2. DATABASE ANALYSIS METHOD

In the *first part* of the empirical study, which is an elaboration of the conceptual model (Figure 4), it is investigated whether the organizations that have included 'sustainability criteria' in their mission and/or vision also have 'sustainability criteria' in their strategic goals and/or core values. The steps that have been taken for this are as follows:

i. For organizations that have included elements in their mission and/or vision that are related to sustainability, it was analyzed whether:
   - they had also included sustainability criteria in their strategic goals and core values, and
   - they pursue at least one sustainability strategy and

- they pursue SDGs
- there are no sustainability criteria, sustainable strategy and SDGs applicable.

ii. For organizations that have not included elements in their mission and/or vision that are related to sustainability the same analysis was performed, and

iii. For organizations of which this is unknown, the same analysis was performed.

In each case, it has been counted how often this happened. After that, the number of positive counts has been expressed as a percentage of the total.

The aim of the second part of this research was to investigate whether an organization pursues a sustainability strategy, SDGs are applicable, sustainability criteria are mentioned in strategic characteristics (mission/vision), strategic goals and core values of the organization. In the analysis it has been also looked at possible different outcomes of the sustainability strategies. The steps that have been taken for this are as follows:

i. Organizations that implement a sustainability strategy (three types) and organizations that do not, have been divided into four categories.

ii. For each category, first it was examined whether the organizations were pursuing SDGs. Subsequently, it was counted per category how often combination of characteristics occurred:
   - whether sustainability criteria were included in the mission and/or vision, the strategic goals, the core values, or
   - whether this was not the case at all.

A database with fixed observation categories was used, and the sustainability criteria in managing the organization were expressed as a percentage of occurrence if a sustainability goal or strategy were met.

7. FINDINGS

The carried-out investigation has led to the following findings.

Part 1 leads to the findings as shown in Table 3. Sustainability criteria in their strategic goals and/or core values were identified at 26 of the 51 organizations. In only more than half of the cases, sustainability criteria were recognized in the strategic goals, in approximately 70% of the organizations in the core values, and a sustainability strategy was established. In almost all cases, SDGs were also pursued. This has been interpreted by the researcher as: the organization does have the ambition to be sustainable, but does not yet have sufficient concrete direction on it.

No sustainability criteria in their strategic goals and/or core values were identified at 23 out of the 51 organizations. Strategic goals and core values were only achieved at 13% and 17% of the organizations were recognized as sustainable. Remarkably enough, more than half of the organizations (60%) identified a sustainability strategy and three quarters of the organizations pursued SDGs. Three of the 23 organizations did not include any sustainability element. This also applies to the two organizations for which it was not known whether the mission and/or vision contained sustainability criteria. This is interpreted by the researcher as follows: the organization has no intention of being sustainable and at the same time in many cases steers towards sustainable policy.

Table 3. Sustainability criteria in mission/vision leads to sustainability in strategic goals, core values, sustainable strategy, and SDGs?

		#	Sustainability criteria in:	#	%
Sustainability criteria in mission and/or vision?	Yes	26	Strategic goals	15	*57,7*
			Core values	18	*69,2*
			Sustainable strategy	19	*73,1*
			SDGs	24	*92,3*
			No criteria at all	0	*0,0*
	No	23	Strategic goals	3	*13,0*
			Core values	4	*17,4*
			Sustainable strategy	14	*60,9*
			SDGs	17	*73,9*
			No criteria at all	3	*13,0*
	Unknown	2	Strategic goals	0	*0,0*
			Core values	0	*0,0*
			Sustainable strategy	0	*0,0*
			SDGs	0	*0,0*
			No criteria at all	2	*100,0*

Part 2 leads to the findings as shown in Table 4. Out of the 51 organizations, 18 did not meet the criteria of a sustainability strategy, representing 35% of the organizations. 33 organizations meet the criteria of at least one sustainability strategy. Some organizations meet criteria of two or three sustainability strategies. Retaining product ownership has been recognized as a strategy at 18 organizations, Product life extension at nine organizations and Design for recycling at 25 organizations.

The results of the analysis show that in all sustainability strategies there have been organizations that do not have any sustainability criteria in the mission/vision, strategic goals, and core values. For organizations that do not pursue a sustainability strategy, this concerns 55% of the organizations. In the Retain product ownership and Design for recycling strategies, about three quarters of the organizations have seen sustainability criteria included in the mission/vision, strategic goals and/or core values. This was the case in almost all cases with the product life extension strategy.

Table 4. Sustainability strategy leads to sustainability criteria in mission/vision, strategic goals, and core values

Sustainability strategy	#	%	Sustainability criteria in:	#	%
Retain product ownership	18	*35,29*	Mission/vision	11	*61,1*
			Strategic goals	9	*50,0*
of which also pursuing SDGs	16		Core values	10	*55,6*
			No criteria at all	5	*27,8*
Product life extension	9	*17,65*	Mission/vision	7	*77,8*
			Strategic goals	4	*44,4*
of which also pursuing SDGs	9		Core values	7	*77,8*
			No criteria at all	1	*11,1*
Design for recycling	25	*49,02*	Mission/vision	14	*56,0*
			Strategic goals	10	*40,0*
of which also pursuing SDGs	20		Core values	13	*52,0*
			No criteria at all	7	*28,0*
No sustainability strategy	18	*35,29*	Mission/vision	7	*38,9*
			Strategic goals	4	*22,2*
but pursuing SDGs	14		Core values	5	*27,8*
			No criteria at all	10	*55,6*

8. CONCLUSIONS

The research was concentrated on *'How to use risk management in an ever changing environment?'*

Risk management in an ever changing environment consists of: 1. Risk leadership (clear sighted, proactive, inclusive, and respond decisively), 2. For agile organizations with clear and transparent organizational goals, and a 3. Dynamic model of the world, whereby visions and strategies are always in flux to adapt to this changing world.

Performance and risk management are playing a crucial role in managing an organisation, to achieve objectives and maintaining performance when risks arise. There must be internal and external focus at the same time and alignment is needed between those two.

In a resilient organization, risks are handled due to a holistic view, where the organization is part of a system consisting all disciplines. With strategic planning, in interaction with chain partners and the area where the organization is involved, future scenario's arise. It's about creating awareness and adaptiveness to create a sustainable organization.

In the results of part 1 of the empirical research, it has been found that sustainability is not congruent in mission and vision with the strategy and core values, and related to sustainability strategies and pursuing SDGs. That means that organizations do have the ambition to be sustainable, but do not yet have sufficient concrete direction on it, and also; the organizations have no intention of being sustainable and at the same time in many cases steers towards sustainable policy.

In the results of part 2 of the empirical research, it has been found that in all sustainability strategies there are organizations (11-28%) that do not have any sustainability criteria in the mission/vision, strategic goals, and core values. On the other hand, from the organizations that do not follow a sustainability strategy, 44% of them shows sustainability criteria in mission/vision, strategic goals and/or core values. Same as in part 1, part 2 show *incongruence* in mission/vision with managing the organization for sustainability strategies.

To continue to be valuable as an organization in the future, it is important to keep the economic, social, and ecological values in balance, which leads to a sustainable company. That is why it is important to align (sustainable) mission/vision with (sustainable) strategic goals and core values in order to lead the company to the future.

There are some limitations of the study such as the facts that several industries are represented in the cases. Specific choices in selection of the cases, gives the possibility to make more specific statements. Furthermore, another research method could give more understanding of the cases. For example, a case study in which different officers per organization and possibly also partners, customers and other stakeholders in the value chain are questioned on topics.

9. RECOMMENDATIONS FOR FURTHER RESEARCH

Recommendation for further research focuses on leaders in individual organizations and the social task of sectors and areas.

Leaders in individual organizations

It is important for organizations to gain insight into how they can integrate strategic performance and risk management and how to apply a scenario planning approach to be prepared for dynamics in the environment. The current models (COSO Integrated framework, ISO 31000, etc.) do not tackle this integrally,

so that important external developments are not always effectively translated for effective management of an organization. A validated approach for strategic performance and risk management, which leads to scenarios and possible impact analyzes, can lead to a higher chance of survival of the organization in the VUCA world.

Social task of sectors and areas

From a sector or value chain, the key seems to lie in bringing parties together, making individual interests, unwritten rules, and money flows transparent. Only then can one formulate ambitions based on the social task, considering, among other things, new standards regarding sustainability and climate, and changing customer needs. For some parties it is an advantage that everything becomes more transparent because they can personally benefit and there will also be parties in a sector or chain that will benefit from the current lack of transparency towards the public.

In further research, the researcher will delve into a future-proof, integrated approach to performance and risk management. The research methodology of the case studies will provide the most valuable information: if all the check marks are green in the management report (sustainability in vision, mission, strategic goals, and core values), additional points for attention and opportunities arise from a planned approach for strategic performance and risk management, leading to scenarios and impact analyses. The researcher is also curious about how this is secured in an organization as a dynamic element in a strategic cycle. Moreover, this can provide insight into the challenges of companies that want to become resilient and transformative in the existing system.

From within a sector, the researcher wants to gain insight into how entrepreneurs can act on changes in the external environment, such as the changing climate. This can have a major impact on the business operations. How can a sector deal with this development? Preventive and corrective risk management is discussed as well as possible obstacles to applying this approach, as well as opportunities that can be used from the changing situation.

[1] In 2020, 2021 and 2022 students of the Finance & Control program at the Inholland University of Applied Sciences locations Alkmaar, Diemen, Haarlem and Rotterdam worked together in groups on this exam.

FUNDING I Not applicable.

CONFLICTS OF INTERESTS I The Author declares no conflict of interest.

DATA AVAILABILITY STATEMENT I Data available on request from the author.

AUTHOR CONTRIBUTIONS I Two authors have contributed to the content of the paper. Linda Snippe has contributed to all parts of this paper, Abdul Kara has contributed to the literature review of this paper. All Authors have approved and agreed to the published version of this paper.

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