

Radboud University



Master's thesis

*How Does Leadership Contribute to the Sustainability
Strategy Implementation of Higher Education
Institutions? A Comparison for Radboud University.*

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Table of contents

Abstract	3
1. Introduction	4
2. Theoretical Framework	7
2.1 Emergence of sustainability.....	7
2.2 Implementation of sustainability.....	8
2.3 Leadership and implementation.....	9
2.4 Leadership and dynamic capabilities.....	10
2.5 Definition of leadership.....	12
2.6 Leadership for sustainable development	12
3. Methods	16
3.1 Research strategy.....	16
3.2 Research design.....	16
3.3 Reliability and validity	18
3.4 Sample.....	18
3.5 Procedure.....	19
3.6 Analysis.....	19
4. Results	20
4.1 Practices in current leadership.....	20
4.1.1 Executive board	20
4.1.2 Division directors.....	22
4.2 Development leadership.....	24
4.3 Sustainability leadership	27
Sustainability leadership styles	27
Sustainability leadership characteristics	29
Sustainability leadership actions	31
4.4 Improvement in sustainability strategy implementation	31
5. Discussion	36
5.1 Research questions.....	37
1. How is current leadership practiced?	37
2. How can leadership be developed?	38
3. How can the sustainability strategy implementation be improved?	41
5.2 Theoretical implications.....	43
5.3 Policy implications.....	44
5.4 Managerial implications	45
5.5 Limitations.....	46
5.6 Future research	47
6. Conclusion	48
7. References	49

8. Appendix	62
<i>Appendix A.1: Coding Schemes</i>	62

Abstract

Higher education institutions (HEIs) play a crucial role in societal transformation and are acknowledged as vital in their contribution to promoting sustainable development (SD). Despite an enlargement of academic sustainability programmes, holistic integration of SD is not sufficient to lead society to a more sustainable future. Efforts are executed in a non-coherent manner, fostering compartmentalization, and as a result, HEIs have difficulties implementing sustainability and contribute to SD. A lack of leadership has been perceived as one of the causes but is often neglected and has more recently been related to SD through its role in embedding and developing sustainability in HEIs. Due to a scarcity of research on leadership in HEIs, this research attempts to address this gap in exploring how leadership can contribute to sustainability strategy implementation. The main aim of this study was to understand how to improve sustainability strategy implementation in HEIs by discussing the sustainability leadership concept as described in the literature. Data is obtained from a qualitative case study among management, sustainability managers, academic staff, and student initiatives. The sampling strategy was purposive, based on position in the organization. Because the participants obtained high management positions, their perspectives were assumed to entail a major level of expertise. Respondents were questioned to explore which leadership traits and styles can contribute to sustainability strategy implementation. Styles were situational, transformational, servant, and authentic leadership styles, with the decisiveness trait, and actions were empowering, aligning, coaching, and facilitating the development of employees. Based on the findings, the greatest points of improvement appeared to be a lack of responsibility towards sustainability, an improper organizational mindset, and a failure in the execution of the policy. Therefore, this research uncovers a cultural problem with a required change in the underlying paradigm. In the process of managing culture, data neglected the important role of leadership. As a result, this research stresses the importance of the role of leadership in managing the required culture for SD. According to the empirical insights, this study suggests that leadership has a role to play in creating, maintaining, and consolidating culture, and changing the culture if required.

1. Introduction

Higher education institutions (HEIs) play a crucial role in the transformation of societies, are recognized as vital in their role to promote sustainable development (SD), and contribute to the sustainable development goals (SDGs; García, Kevany, & Huisingsh, 2006; Lozano, 2006; Ferguson & Roofe, 2020). This is because HEIs shape sustainable, responsible, and ethical awareness of future generations by establishing public understanding concerning the repercussions and consequences of unsustainable activities (Pizzutilo & Venezia, 2021). Over the last 10 years, the number of declarations and initiatives to encourage SD has increased, and HEIs have shown an increasing commitment in their support and effectively implemented SD practices (Aleixo, Azeiteiro & Leal, 2018). Several advancements and successes have been observed in operational dimensions, educational and curricular transformation, and outreach and research activities (GUNI 2012; Filho, 2009). Despite an increase in academic sustainability programmes, holistic integration of sustainability is still not sufficient to ensure graduates are prepared for leading society to a more sustainable future (Dyer & Dyer, 2017). In other words, there is less focus on the establishment, but the establishment is required to ensure that desired SDs are implemented successfully (Mader, Scott, & Razak, 2013). However, SD practices can only be entirely implemented if it is accepted throughout the whole institution (Lozano et al., 2013). Leadership is often overlooked but has more recently been associated with SD and is required to develop and embed of sustainability in higher education (Ryan, 2011).

In the context of development and embedding of sustainability in HEIs, the problem is that due to the highly complex nature of HEIs, many efforts are performed in a segregated manner, which fosters compartmentalization, meaning that efforts of the sustainability transition address only a few aspects of the institutional framework (Denman, 2009). In other words, HEIs have difficulties implementing sustainability and contributing to SDGs. One justification for the compartmentalization has been a lack of leadership effectiveness of HEI management, leading to failure in the implementation of sustainability policy for the educational context (Radinger-Peer & Pflitsch, 2017; Pietsch, Tulowitzki, & Koch, 2018). This has been mainly due to HEIs' leadership focus on a bureaucratic culture, the inability to look in-depth into the future (Velazquez, Munguia, Platt & Taddej, 2006), and a lack of promotion of programmes and policies of senior management (Sáez de Cámara, 2021). Nonetheless, the authors mention that leadership has an essential role in promoting sustainability in HEIs (Radinger-Peer & Pflitsch, 2017). Incorporating SD in education requires an incremental transformation in the overall manner in which HEIs' operations, structure, and leadership facilitate such transformative settings (Mader, Scott, & Razak, 2013). This is because leadership uses personal power to demand new behaviour to achieve a purpose and will propose new directions if a group has difficulties (Schein, 2016). In this complex context of leadership and SD, new perspectives of sustainability leadership – or leadership for sustainability – arise. However, research regarding leadership and sustainability has revealed numerous meanings and ideas that are constantly emerging,

changing, or being redefined (McCann & Holt, 2010). Furthermore, sustainability literature has paid little attention to how leaders enact sustainability strategies (Morsing & Oswald, 2009). To conclude, compartmentalization is caused by a lack of leadership effectiveness of management in HEIs, but considering the vital role of leadership in the complex process of embedding sustainability a new leadership approach emerged.

In the process of embedding sustainability in HEIs, the administration and campus management, teaching, and research often operate with little interaction. In the overarching context of sustainability, this compartmentalization is an important failure because it hinders a systematic approach that enables extensive solutions (Sabogal et al., 2020). Sabogal et al. (2020) state that it is therefore important that SD be embraced as a holistic approach that focuses on all HEI areas. A holistic view means questioning how things work and analysing them from an outside perspective (Lovelock, 2007). Holistic implementation is important because to become sustainability change drivers, HEI leaders and staff should be empowered to implement and catalyse renewed paradigms and assure that SD is perceived as the ‘Golden Thread’ across the whole HEI system (Lozano et al., 2013). During these processes, the role and activity of leadership are particularly crucial when the state of the organizational system is required to be transformed (Artigiani, 2015; Cicero & Van Knippenberg, 2010), and leadership is a central interpreter on how sustainability links to the wider organizational system (Metcalf & Benn, 2013). However, the concept of sustainability is based on the integration of people, planet, and profit, which requires a synergistic approach focused on mutual gains and therefore demands a new leadership approach (Crews, 2010; Ferdig, 2007). Therefore, the question arises of how competencies, resources, visions, and ideas can be assembled and how the perceptions of new futures can be designed through leadership. Therefore, the new role of HEIs in their contribution to the SDGs, the emerging and changing concept of sustainability leadership, and the importance of leadership in an HEI context are not fully addressed by the literature and require further exploration (Leal Filho et al., 2020).

Building on this, the main aim of this research is to improve sustainability strategy implementation in HEIs. This is conducted by first (1) defining successful leadership for SD in HEIs, (2) exploring how current leadership is practised in an HEI, (3) exploring the utility of the leadership streams for SD in practice, and (4) gaining a larger overall understanding of how to improve sustainability strategy implementation in HEIs. A literature review is conducted to understand the challenge regarding the implementation of sustainability in HEIs, to explain the relationship between leadership and SD by building on the dynamic capabilities theory, and to explicate the concept of sustainability leadership by drawing on leadership streams related to SD in the literature. Due to the complex nature of leadership, which owes to leadership’s dynamic and swift decisions relating to actions and values, this research aims to serve as an inventory of leadership and its implications in HEIs. While considering the limitations of the body of knowledge, this research explores leadership and sustainability implementation in HEIs. Therefore, qualitative research is performed to collect data

from Dutch HEI leaders, staff, and students by conducting in-depth interviews to provide recommendations. The methods section describes the technique used to address the research objective; the results section depicts the output of a single case study; the discussion section underlines the main findings; the limitations and recommendations are emphasized; suggestions for future research are given; and finally, the conclusion mentions the final comments. Considering the experienced difficulties of implementing sustainability in HEIs and the key role of leadership in the implementation of sustainability strategies, the following research question is composed:

How does leadership contribute to the sustainability strategy implementation of higher education institutions?

To answer the main research question, four sub-questions are composed: (1) How is successful sustainable leadership in HEIs defined? (2) How is current leadership practiced in an HEI? (3) How can leadership be developed?, and (4) How can leadership improve the sustainability strategy implementation?

The theoretical relevance entails that leadership theory is often drawn from corporations, which are believed to have a different core mission from HEIs (Lumby, 2012). Most corporations first want to make a profit, while core activities of HEIs include learning, teaching research, engagement, and campus operations (Cebrián, Grace, & Humphris, 2013). In addition, in their new HEI role as a driver of innovation and as a stakeholder in private and public partnerships, this ‘third mission’ demands a more adaptive and broader role for HEIs because regional needs differ in environmental developments (Chatterton & Goddard, 2000; Gunasekara, 2006). Besides the role of management and academics as leaders in HEIs, the bottom-up empowerment of the students as change agents also needs to be considered (Dyer & Dyer, 2017; Missimer & Connell, 2012). Covering those distinctive core activities and new HEI mission for management, staff, and students, Lumby (2012) notes that leadership is vital, but evidence of leadership impact on core activities such as research, teaching, learning, and organization is lacking, which means to what extent and whether leadership influences its impact on core activities and therefore it is helpful to fill the gap about how leaders are operating. Lumby (2012) assumes that the absence of knowledge is caused by the contingent and complex intrinsic nature of leadership, and leaders need to make adroit decisions of actions and values. Therefore, insights and evidence of leadership effects are more necessary compared to other areas with more predictable causes and effects. To conclude, a move towards a standardized perspective of leadership would jeopardize leadership in HEIs (Eacott, 2011).

The practical contribution refers to the implementation of sustainability in HEIs, where the focus has shifted from what needs to be done in each area of learning, utilization of resources, and education to how it needs to be done because sustainability initiatives require an emphasis on the soft side of the organization (Srivastava, 2020). Changes in organizational structures and leadership strategies therefore demand more focus of leaders in HEIs (Moore, 2005; Amui et al., 2017), along with staff and teachers (Szekely & Mason, 2019), because translation and implementation of

sustainability concepts and practices need to be integrated into different domains (Leal Filho et al., 2018; UNESCO 2012; Lozano et al., 2015). However, sustainability is difficult to implement because it is an example of a *wicked problem*, being difficult to define, having multiple solutions, consisting of competing objectives, and having open-ended timeframes (Lotz-Sisitka et al., 2015; Seager et al., 2012). To handle these multidisciplinary challenges, interpersonal skills, critical thinking, and systems thinking are illustrated as the path forward (Leal Filho & Dahms, 2018; Hermann & Bossle, 2020; Hoffmann & Siege, 2018; Iwaniec et al., 2014; Wals, 2012; Warburton, 2003).

At the same time, HEIs are complex organizations because they are loosely structured: individual members and sub-units connect on multiple scales and are influenced via cultural, cognitive, regulative, and normative drivers (Radinger-Peer & Pflitsch, 2017). Furthermore, the contexts in which HEIs operate are complex, diverse, and rich, with HEIs differing in structure, mission, size, and culture, and success is – in essence – multi-dimensional, spanning the enterprise, teaching, research, and engagement (Dooris, Powell, Parkin, & Farrier, 2021). Leadership must consider these components and be constantly adaptable to these contextual factors (Dooris et al., 2021). In other words, sustainability transformation in HEIs is complicated and characterized as challenging; progressive; long; and having multiple barriers, contestation, and forms of resistance (De Castro & Jabbour, 2013; Leal Filho, 2009; Lozano et al., 2013). As a result, this transformation with accompanying sustainability issues involves specific approaches, skills, and changes (Sweet, Roome, & Sweet, 2003). In other words, the complexity of sustainability and the multi-dimensional implementation components in HEIs require specific leadership approaches.

To conclude, this research responds to the rising demand in the literature about what type of leadership practices are contributing to sustainability in HEIs (Mader et al., 2013; Suriyankietkaew & Avery, 2016). The understanding of the leadership impact in organizational change and learning (Mader et al., 2013) serves as an inventory to guide implementation processes by identifying aspects that are conducive for sustainability transitions in Dutch HEIs.

2. Theoretical Framework

2.1 Emergence of sustainability

HEIs are a key player in the transformation to sustainability because of their mission of generating knowledge and the transfer of knowledge through teaching and research (UNESCO, 2005; United Nations, 2012). Therefore, HEIs have incorporated education for SD and environmental education in their organizational system (research, education, community outreach, campus operations, assessment, and reporting) to make SD an integral part of their institution, collaborate with other HEIs, and encourage on-campus sustainability life and education programmes (Cortese, 2003; Lozano, 2006; Lozano et al., 2013). At the United Nations SD Summit in 2015, the SDGs were adopted as a

component of the 2030 SD agenda, which came into force in 2016 (United Nations, 2015; Aleixo et al., 2020). Many countries in Europe became prominent in the ranking of meeting SDG targets, but on average, Europe is still behind countries as the USA, Japan, and South Korea, while equality in educational goals is still being pursued (Sachs et al., 2017; Salvia et al., 2019; European Union, 2016). Within Europe, the integration of SD varies substantially, and some institutions address multiple SDGs to create an SD culture (Aleixo et al., 2020). Because HEIs want to commit to reaching SDGs, they should replace their core mission (Farinha, Caeiro, & Azeiteiro, 2020). To date, many efforts into the HEIs organizational system have been enforced, such as greenhouse gas reduction (Klein-Banai & Theis, 2011), regional development involvement (Dlouhá, Barton, Janoušková, & Dlouhý, 2013), and leadership commitment through the inclusion of SD in the visions and mission statements (Lee, Barker, & Mouasher, 2013).

2.2 Implementation of sustainability

Practical implementation of contributions to SDGs has remained difficult because actions are often compartmentalized, and only a few HEIs have successfully implemented SD holistically (Leal Filho et al., 2019; Lozano et al., 2015; Sáez de Cámara, Fernández, & Castillo-Eguskitza, 2021). Compartmentalization means that efforts of the sustainability transition address only a few aspects of the institutional framework (Denman, 2009). The holistic approach in SD implies the integrated achievement of environmental, social, and economic goals of development, engagement of key stakeholders in the process of SD, and the presence of the required forms of capital (Rakic & Rakic, 2015). The successful holistic implementation then has at its core multiple dimensions, covering actions in research, teaching, organization, and engagement (Dooris et al., 2021).

Currently, the implementation of SD is limited to its implementation into educational practices such as learning and teaching, but few have implemented it holistically, integrating the triple bottom line of planet, people, and profit in balance (Menon & Suresh, 2020; Sáez de Cámara et al., 2021). Therefore, despite HEIs starting to take the lead with diverse initiatives, most of them only address one or two of the sustainability domains and therefore foster compartmentalization (Leal Filho et al., 2017). HEIs are inclined to be heavily complex silos, which fosters compartmentalization (Denham, 2009). This is due to the different activity areas of HEIs – research, teaching, and management of campus (technology, administration, etc.) – that have various processes, framework conditions, and processes, demanding diverse specialist knowledge and competencies and having their own ‘cultures’ and standards (Bauer et al., 2020). In particular, Bauer et al. (2020) observe that the scientific disciplines and external stakeholders HEIs are involved with differ substantially in this respect but that extensive external and internal collaboration is required for SD.

One justification for compartmentalization has been the role of management in HEIs (Radinger-Peer & Pflitsch, 2017). Whereas organizational changes that determine the structure for

future sustainability practices have been integrated – including founding study programmes and sustainability institutes – the authors observed a lack of leadership. Lambrechts et al. (2009) also observed a lack of leadership related to SD. As mentioned, reasons given for this are a lack of policy and programme promotion, short-term focus, and bureaucratic work culture (Sáez de Cámara, 2021; Velazquez et al., 2006). Senior support of HEI management is important because such management have managerial authority to make decisions in the consultation process and convince people that the sustainability transition has an advantageous effect (Mcroy & Gibbs, 2009). Consequently, a contradiction emerges with the acknowledgement that SD implementation should be established in systems thinking and action, including a holistic approach (Ferrer-Balas, Buckland, & Mingo, 2009; Koester et al., 2006). This failure in implementation is defined as the rise of a gap between the planned output and the outcome of policy and the actual occurrence (Ansell, Sørensen, & Torfing, 2017). Appropriate embedding of sustainability requires holistic change as a core strategic principle and as a theme in student curricula and as a result requires a behavioural change (Ramísio et al., 2019). At their core, leadership and leaders are key interpreters of how this complex systems environment connects within the organization, and this connection is seen as a forceful influencer in successful sustainability implementation (Metcalf & Benn, 2013). Put differently, leaders are central in accomplishing the challenge of embedding sustainability in HEIs. However, the leadership role and HEI culture and their implications to achieve SD are in essence overlooked, but the link is vital to guarantee the success of sustainability in HEIs (Ryan, 2011).

2.3 Leadership and implementation

First, the question arises of how leadership can change behaviour and embed sustainability in HEIs. Sustainability focuses on intrinsic learning, with a focus on process-oriented learning, empowering individuals and organizations to be critical and reflective, think autonomously, and negotiate alternative paths for change against the background of complexity and uncertainty (Vare & Scott, 2007; Sterling 2010). Extending this learning approach, transformative sustainability learning is advocated, meaning learning for sustainability is facilitating personal experiences of participants that result in changes in knowledge, attitudes, and skills in relation to social, economic, and ecological justice (Gramatakos & Lavau, 2019).

According to Schein (2016), the key to learning is leadership, and learning occurs when the group or individual feels disappointed, hurt, hungry, or disconfirmed or when something expected fails to occur. The author states that when a culture is formed, learning occurs by demanding new behaviour towards achieving a purpose through a leader using personal power. The mechanism of learning will differ with the character of the difficulty. When the group is not doing what it should be doing, the leader will provide the direction, and when the group is succeeding, the behaviour is reinforced and ultimately justified with the right values and beliefs (Schein, 2016). If the group has

difficulties, leadership proposes new paths; if the group is successful, the culture defines what is demanded of its leaders; and if the group again has difficulties, the leader solves the problem by demanding or demonstrating new behaviour, which as a result evolves the culture (Schein, 2016). Put differently, when stating that learning occurs when a culture is formed, it is assumed the function of leadership is the management of the culture (Schein, 2016).

The next question is how culture is created, managed, influenced, and manipulated by leaders. In this context, Schein (2016) defines three leadership roles: (1) the role of creator of a culture, among others, leaders, politicians, or organizations create groups and cultures by establishing their basic assumptions, values, beliefs, and norms, and that culture will eventually define what type of leadership will be valued; (2) the role of leaders shifts to consolidating and maintaining the current culture, in other words a more supportive role, wherein the initial defined basic cultural values of leaders now define the desired characteristics of leaders; and (3) the role of change agent because when the culture is dysfunctional and requires change, leadership again must identify the problem, assess required changes, and launch a 'culture-change program'. In other words, the leader manages the direction of the cultural change. In terms of mechanisms that embed, reinforce, and stabilize culture, Schein (2016) distinguishes between primary embedding mechanisms and secondary mechanisms. The author states that primary embedding mechanisms for creating the new culture can be resource allocation, role modelling, allocate rewards, recruitment, and reaction to incidents and that secondary mechanisms are organizational structure, design, procedures, systems, formal statements, stories, and design of physical space.

2.4 Leadership and dynamic capabilities

The question then arises of what are the capabilities behind the mechanism that enables leaders to ensure learning and change and what underlies the primary and secondary embedding mechanisms to embed, reinforce and stabilize new cultures. Accordingly, Adner and Helfat (2003) introduced the concept of dynamic managerial capabilities, which are the capabilities in which managers create, modify, or extend ways through which firms survive and explain the relationship between management decisions, actions, change, and performance under conditions of change. The roots of dynamic capabilities (DCs) lie in the organizational routines that are conceptualized as the repository of patterned behaviours and the stored knowledge of the firm by Nelson and Winter (1982). DCs comprehend the non-routine activities of entrepreneurial managers, which are embedded in the 'signature' organizational processes and routines that are in turn rooted in the unique organizational history (Teece & Pisano, 2003).

When institutions do successfully implement sustainability in their process of transformation, they are perceived as entrepreneurial (Etzkowitz, 2004; Guerrero & Urbano, 2012). Traditional HEI management practices are therefore no longer appropriate and require renewed patterns for strategic

improvement, which demand new strategic choices (Teece, 2018; Klofsten et al., 2019). DCs enable these transformation processes and are a vital concept in practices of strategic management that have the ability to (1) sense and shape threats and opportunities; (2) seize opportunities; and (3) maintain competitiveness by protecting, enhancing, combining, or reconfiguration of the organizations' tangible and intangible assets (Teece, Pisano, & Shuen, 1997). These organizational abilities are specifically helpful in rapidly changing environments and involve the ability to successfully sustain changes, develop competitive advantage, and create value (Teece et al., 1997; Oxtoby, McGuinness, & Morgan, 2002; Wilden et al., 2013).

The DC approach is also specifically applicable for public organizations as HEIs because of the initiated adaptations and changes due to the changing society (Helfat et al., 2009). Furthermore, advanced HEIs have a unique history and are a blend of academic values, managerial practice, and DCs account for balancing the issues and needs of the diverse departments existing in HEIs by balancing conflicting demands (Seeber et al., 2015; Teece, 2018). Therefore, the DC view can be used as a response to the management approach that recognizes the unique organization and culture of HEIs (Kezar & Eckel, 2002). This is important because like the institution itself, the sustainability strategies are also multifaceted in HEIs (Hueske & Guenther, 2020).

Sustainability in organizations requires continuous adjustments due to the unpredictable and rapidly changing nature of sustainability, and those adjustments are enabled through dynamic capabilities (O'Neil & Ucbasaran, 2016; Arend, 2014). In other words, in response to the changing sustainability context, organizations need to be adaptive and flexible utilizing continuous change, improvement, learning, and development, which DCs allow them to achieve (Arend, 2014). As a result, institutions can greatly benefit if they harness the dynamic capabilities, but DCs can only be deployed, built, implemented, and honed by leadership (Schoemaker, Heaton, & Teece, 2018). It is assumed that chief executive officers play a key role in this process, but harnessing DC depends on their leadership style (Salleh & Grunewald, 2013; Diaz-Fernandez, Bornay-Barrachina, Lopez-Cabrales, 2017). This is because of the role of management perceptions of dynamism in the response to change (Ambrosini, Bowman, Collier, 2009). The perceptions of management affect their own management behaviour towards renewal of the resources base of the organization (Helfat et al., 2009). The behaviour of management and leadership styles are therefore crucial drivers for dynamic capabilities, and how management sends messages will influence practices and policies they are implementing (Diaz-Fernandez et al., 2017).

When applied to leadership in HEIs, DCs guide leaders of HEIs in generating adaptation of the organization (Leith & Teece, 2016). This adaptation occurs in extended iterative processes which are continuously influenced by external forces. For example, these processes require DCs that enable HEIs to develop new projects (Stolze & Sailer, 2021). In these organizational processes of change management, leadership must incorporate an ethos of collegiality into approaches of management in HEIs for creating the vision, communicating the policy, and deploying strategies (Davies, Hides, &

Casey, 2001). When there is no appropriate leadership, the institution could hinder its performance and development (Muriisa, 2014). When related to sustainability, DCs facilitate such implementation through the ability to sense opportunities via benchmarking and monitoring sustainability initiatives of other HEIs, leading to the adoption of best practices (Stolze & Sailer, 2021). Additionally, this transformation requires cultural change, institutional introspection, development of problem-solving and decision-making mechanisms for HEIs, and strong DCs to help address these uncertainties (Teece, 2018). Furthermore, Stolze and Sailer (2021) found that responsibilities and roles related to sustainability are defined in cooperation with internal stakeholders to develop and create support for the vision. Therefore, Stolze and Sailer (2021) states that HEI leaders and governing bodies should exert leadership through the allocation of resources to sustainability efforts and communicate to staff and faculties that they should create, maintain, and develop relations with stakeholders.

2.5 Definition of leadership

However, it could be questioned what the definition of leadership is. The term ‘leadership’ is ambiguous, and Bennis (1982) identified over 350 definitions. Most leadership definitions describe it as a process of exerting intentional influence over others to structure, guide, and facilitate relationships and activities in groups or organizations (Yukl, 2010). However, given the complex nature of leadership, a widely accepted and specific definition does not exist (Antonakis, Cianciolo, & Sternberg, 2004). From research literature, four general approaches concerning the nature of leadership have arisen, which contemplate leadership as (1) series of personal attributes or traits possessed by leaders, (2) relationships between a leader and the one’s lead, (3) phenomena which are context-dependent, and (4) social construct (Virkus, 2020). These approaches are broad, and their borders are blurry, but the one consistent component across the definitions is that leadership is not an individual performance and needs followers (Kouzes, 2003; Virkus, 2020). Differences in those followers also require different leadership styles, and leadership involves inspiring followers to act because they intrinsically want to (Owens, 2004; Patterson, 1994). Leadership has been extensively studied from different perspectives, as the trait, behavioural, path-goal, symbolic, cultural, situational, contingency, and influence and power perspectives (transformational and transactional leadership) – which led to a great number of models and theories of leadership – offer explanations of how leadership influences thinking, behaviour, motivation, and performance (Virkus, 2020; Avolio et al., 2009).

2.6 Leadership for sustainable development

Despite this extensive exploration of leadership in a business context, leadership is also of great importance in the educational sector (Wolverton, Gmelch, Montez, & Nies, 2001). When

leadership theory is related to SD in HEIs, a new view of leadership arises focusing on the synergetic approach of integrating people, planet, and profit instead of a balancing act with an emphasis on trade-offs (Crews, 2010; Ferdig, 2007). Sustainability leadership is described as being concerned with creating future and current benefits while at the same time improving the living of all humans concerned (McCann & Holt, 2010). Additionally, research provides a process-oriented definition, stating a process of promoting concrete environmental, social, and economic practices through a broad range of internal and external stakeholders (Wang, Van Wart, & Lebrede, 2014). To explicate this concept of sustainability leadership, how leaders exert this leadership and how successful sustainability leadership can be defined must be determined. Therefore, this research examines how leadership approaches are related to SD in the literature and how they can be helpful in the HEI SD context in the literature.

According to Metcalf (2013), when speaking broadly, leadership styles can fit in five higher-order categories: behavioural, situational, trait, skill-based, and visionary theories. Visser and Courtice (2011) distinguish three core approaches to understand leadership, trait, contingency, and situational school. Recently, leadership is also explored in terms of how it connects to SD through distinctive leadership approaches, such as the situational, trait, and contingency approaches, so it can be declared as a combination of leadership approaches in an SD context (Leal Filho et al., 2020). However, more detailed, recent trends in sustainability leadership literature related specific leadership styles to SD in HEIs. Leal Filho et al. (2020) discuss sustainability leadership on an individual level, using the leadership model based on the situational leadership theory of Visser and Courtice (2011), because it accounts for context, individual and external, and internal actions. Also, for creating a change culture for sustainability in HEIs, the transformational leadership (TL) approach is addressed by multiple studies recently (Oliveira, 2017; Leithwood & Jantzi, 2006). In addition, in a business context, there emerged a trend of more ethical leadership approaches, such as Metcalf (2013) remarks that the transformational and authentic leadership styles are linked to corporate sustainability (CS). Furthermore, the author states ethical leadership is linked to CS, which has overlap with the servant leadership style due to the significant ethical component of both leadership approaches (Avery & Bergsteiner, 2011). Therefore, because these four leadership approaches have captured the attention of leading researchers, this research further focusses on the situational perspective, transformational, authentic, and servant leadership approaches to SD.

First, Visser and Courtice (2011) state that sustainability is not a separate approach of leadership but a blend of leadership characteristics applied in a specific context. Ferdig (2007) assumes that the sustainability problems are complicated and cannot be reduced to separate manageable parts, that anyone can take responsibility, and the role of the leader involves co-learning and generation. Therefore, leaders need to be aware of their activities in the environment and the system in which they engage (Burns & Miller, 2012). Thinking in systems is also consistent with the effective leadership qualities of Schein (2015). The author mentioned that effective sustainable

leadership qualities are systems thinking, collaboration, and regular reflective practices. According to the Cambridge sustainability leadership model, (1) traits are systemic, enquiring, caring, and self-aware; (2) styles are inclusive, creative, visionary, radical, and altruistic; (3) skills are managed complexity, communication of vision, judgement, innovation and a long-term view; and (4) knowledge of dilemmas, options, connections, impact, and views (Visser & Courtice, 2011).

From a theoretical point of view, this concept is not assigned as a separate leadership school but a mix of leadership characteristics applied in a context. However, if it needs to be assigned with a mainstream theory, then it is the 'situational' school because the context of sustainability calls for specific leadership types (Visser & Courtice, 2011). The situational leadership theory states that there is no best leadership style, but instead the leadership style is contingent on the situation (Hersey, Blanchard, & Natemeyer, 1979). Effective leadership depends on the task, and successful leaders adapt their style to the willingness and ability of the social entity they attempt to lead. Effectiveness, therefore, varies according to the task and entity being influenced but also the function or job that has to be accomplished (Hersey & Blanchard, 1977). This is because the sustainability context calls for a blend of different leadership styles and characteristics required, such as the systemic, conscientiousness and caring traits; inclusive, courageous, and creative styles; skills such as managing complexity and communication of the long-term vision; and having knowledge of the sustainability concerns (Visser & Courtice, 2011). This perspective assumes complexity, stating that anyone can take responsibility and become a leader for sustainability (Ferdig, 2007).

The second leadership stream that is increasingly connected to SD is the transformational leadership (TL) style, which is part of the full range leadership theory (Rok, 2009). TL is described as the ability to influence the ethics and moral values of employees in such a manner that they incline to exceed performance expectations (Bass & Bass Bernard, 1985; Yukl, 1999). Components of TL are inspirational motivation, individual consideration, intellectual stimulation, and an idealized vision (Bass & Avolio, 1993), which could be perceived as intangible resources that transformational leaders can utilize to enhance the mutual trust of followers (Li et al., 2019). Inspirational motivation entails the capability to communicate goals together with a convincing and clear vision that boosts expectations and intrinsically motivates followers (Boamah, Laschinger, Wong, & Clarke, 2018). Individual consideration is the ability to understand and recognize the developmental requirements of the followers, treating them equally, and listen to their concerns (Choi, Kim, Ullah, & Kang, 2016). Intellectual stimulation means the capability of critical thinking, solving and recognizing problems practically, risk-taking, and testing the expectation of followers (Zhu, Newman, Miao, & Hooke, 2013). Lastly, idealized influence is the capability of motivating followers to recognize and trust the missions and charisma of their leader (Li et al., 2019).

When relating those components to HEIs, by conducting discussions synergistically, HEIs develop a culture of organizational learning with new capacity and skills for action (Albrecht, Burandt, & Schaltegger, 2007). Essential to progress towards sustainability in HEIs are those analyses of

learned lessons concerning educational experiences (Bilodeau, Podger, & Abd-El-Aziz, 2014). These conditions propose leadership that will ensure that comprehensive and flexible strategies are required, which is emphasized in the ability to respect and listen to ideas of university employees, students, and teachers and the ability to stimulate knowledge creativity, act democratically, dialogue, and anticipate change, and those characteristics constitute TL (Leal Filho, 2018). The concept of TL is also defined as the obtainment of a high morality or motivational level of follower and leader, or when followers' commitment transcends self-interests by the organizational objectives by promoting changes and high performance (Burns, 2003; Leal Filho, 2018). This means employees think the organisational goals are more important than their own personal desires. TL is being able to inspire through a vision, recognize and understand the needs of employees by being emphatic and treating them equal, and therefore understand their development, stimulate via critical thinking, recognize and solve problems, and lastly motivate followers in trusting the mission and charm of the leader (Boamah et al., 2018; Choi et al., 2016; Zhu et al., 2013; Li et al., 2019). As a result, HEIs develop skills for actions and develop a culture of learning (Albrecht et al., 2007), and those capabilities ensure that flexible and comprehensive strategies are executed (Leal Filho, 2018).

Third, the authentic leadership style is related to SD. Authentic leadership suggests leaders depend on core values, defined as a process that draws on a developed organizational context and positive psychological capacities, resulting in self-regulated positive behaviours and higher self-awareness, on behalf of the associates and leader, thereby fostering self-development (Luthans & Avolio, 2003). It has the purpose to make followers a leader themselves in the future (Wang et al., 2014). To lead a diverse group to a common vision can be risky, requiring courage, and courageous leadership accepts imperfections while focusing on self-reflection, eventually leading to authentic leadership (Pelonis, 2021). The authentic leadership style is suggested as an approach to sustainability in HEIs because authentic leaders do practice what they preach, remain transparent and authentic in decision making, and motivate by example, and therefore a positive image is built amongst employees (Srivastava, Mani, Yadav, & Joshi, 2020). In addition, the more transparent leadership is in the implementation of procedures and policies, the more sustainability will be attained in the organization (Ni, Yan, & Pounder, 2018).

Lastly, the servant leadership theory is related to SD. Servant leadership is defined as leaders who put the needs, interests, and aspirations of other people above their own (Greenleaf, 1977). Servant leadership is still in development as a concept but is characterized by foresight, stewardship, and healing (Parris & Peachey, 2013; Spears & Lawrence, 2002; Block, 1993; Greenleaf, 1977). This is supported by Peterlin, Pearse, and Dimovski (2015), who argue that a different leadership type is required for a strategic decision in organizations that endeavour to become more sustainable, and that servant leadership will provide a solid basis for making such decisions. The authors argue that this is because the focus of servant leaders is to contribute and serve to the well-being of the natural environment and other individuals before self-interest, their long-term focus lies with multiple

stakeholders, and they recognize the leadership duty as organizational stewards to serve the public good.

To conclude, distinctive leadership approaches are related to SD in the literature. Those approaches are a blend of leadership characteristics based on the situational leadership theory; second, the TL theory, which is part of the full range leadership theory; and third, the authentic and servant leadership approaches. Moreover, implementation of sustainability remains difficult due to the multiple dimensions of implementation. Implementing sustainability demands a change in behaviour, and to embed sustainability, learning for sustainability is required that is facilitated in personal experiences. In these processes, it is unclear how leadership affects the core activities because leadership has a contingent and complex nature. Therefore, when taking those complex processes of leadership and sustainability implementation into account, this research wants to explore how leadership can contribute to sustainability strategy implementation.

3. Methods

3.1 Research strategy

This subparagraph elaborates on how the research is conducted, first by discussing the reasoning why there is chosen for a qualitative study and followed by explaining how data was obtained and how it was accordingly analysed. Besides the interviews, documents relating to the sustainability strategy and the policy execution programme of the Radboud University (RU) are also used in this study.

This research is conducted to explore how leadership contributes to the sustainability strategy implementation in HEIs. The study adopted a qualitative approach with an explorative perspective. Qualitative methods are suitable considering the explorative nature of the research (Strauss & Corbin, 1990). A qualitative research methodology is defined as an iterative process in which an understanding emerges through making renewed distinctions, which result from stepping closer to the studied phenomenon (Aspers & Corte, 2019). Qualitative research is required because it has a focus on an in-depth understanding of experiences, words, and opinions instead of numbers, which is helpful in the understanding of complex social phenomenon. Leadership is contingent and complex, and leaders constantly need to make dynamic and swift decisions about their actions, values, stimulation, and insights. With leadership, causes and effects are less predictable. Therefore, this research is an inventory of current leadership practices and explores how leaders operate and can contribute to the implementation of the sustainability strategy in HEIs. Furthermore, to explicate the concept of leadership associated with SD, this research attempts to explore which leadership styles or elements are helpful in practice.

3.2 Research design

The main emphasis of this study is inductive because it attempts to understand how leadership can contribute to the sustainability strategy implementation in HEIs. Regardless of the explorative nature, this study still uses the existing perspectives of the dynamic capabilities theory and streams of leadership theory. However, for the component of exploring whether leadership elements and styles related to SD are helpful in practice, the reasoning is deductive.

Various methods can be applied in qualitative research. Regarding this research, interviews appeared to be the most suitable method because they enable the asking of open-ended questions about the small sample size and exploring individual opinions, attitudes, and experiences. The degree of structure varies in interviews. Unstructured and semi-structured interviews have a focus on the experiences and opinions of interviewees to obtain comprehensive data (Bryman, 2008). The structure of the interviews of this study was semi-structured because the structure allowed orientation during the conversations (Patton, 2002). Furthermore, semi-structured interviews enabled the coverage of topics that were not foreseen in order to deepen understanding of a specific topic or merely adapt to the most suitable order as perceived by the interviewer. A disadvantage of interviews is that they may fail to uncover the essence or truth of individuals' opinions, beliefs, or experiences due to their artificial character (Pole & Lampard, 2002).

Previous to the conduction of interviews, literature was studied extensively. Acquired insights were used as inspiration and guidance for the open questions regarding the understanding of the implementation of sustainability strategies and leadership. Relevant themes and theories were collected and transformed into questions. The first sub-question was answered in the literature review, which was (1) How is successful sustainable leadership in higher education institutions defined? The three other sub-questions were (2) How is current leadership practiced in an HEI? (3) How can leadership be developed?, by also exploring how leadership streams related to SD in the literature are helpful in practice, and (4) How can the sustainability strategy implementation be improved? To prepare eloquent interviews, questions were distributed among three broad categories based on the research questions and themes. This resulted in a topic guide with interview questions, which did not have to be compelled to follow in chronological order. According to the second, third, and fourth research questions, the topic guide was divided into three subcategories: (1) current leadership, (2) sustainability leadership perspective, and (3) desired leadership situation. The primary questions regarding the semi-structured interview can be found in Table 1.

Table 1

Topic guide

1. What are the actions, effects, and feelings of the current leadership?
2. How do you perceive leadership?
3. If we look at the contribution to sustainability, what kind of leadership is experienced in the field of sustainability?

4. What specific leadership actions do you think contribute to the sustainability policy?
5. Does current leadership enable the transition to sustainability and help it to achieve the sustainable development goals?
6. What can be done differently in the area of sustainability with regards to leadership? What comes to mind?
7. How can leadership be strengthened to contribute to the implementation of the RU sustainability strategy?
8. Do leaders take responsibility for sustainability?
9. Are the resources allocated appropriately?
10. The literature describes the sustainability leadership perspective, how do you experience these elements?
11. Are these elements useful for you and leadership in the RU?
12. How can these new styles/elements be applied to you?
13. Which elements of this perspective do you think are missing from RU?
14. Or where is the literature incorrect?
15. What can be improved, or what needs to be further developed?
16. What does the ideal/desired leadership image look like?

3.3 Reliability and validity

Reliability is the question of duplication of other researchers at another place and time that would result in the same outcomes (Silverman, 2006). Furthermore, validity is an important concept, referring to the question of whether research measures what it is intended to measure (Silverman, 2015). To increase the reliability and validity, follow-up questions were asked. In addition, this research tried to simplify and rephrase answers to clarify the underlying intended message of the respondent. Lastly, anonymity was guaranteed so respondents could provide answers which are less socially desirable.

3.4 Sample

This research was executed within the RU in Nijmegen. The RU is a Dutch university that emerged from a Catholic emancipation movement and has become more aware of its responsibility in its environment, wanting to play a role as the frontrunner in The Netherlands contributing to the SDGs of the United Nations. The RU was chosen because it is at the beginning of implementing its sustainability policy. For this research, data were gathered via 11 in-depth interviews within the RU in Nijmegen. The sample consisted of

- Management (6)

- Sustainability directors/coordinators/managers (2)
- Academic staff (1)
- Student initiatives (2)

The division directors were chosen because senior administration is required for creating support for innovation in the challenging environment of sustainability initiatives in HEIs (Brinkhurst, Rose, Maurice, & Ackerman, 2011). The division leaders lead but simultaneously have a close association with the executive board of the HEI. The sustainability professionals are leading the HEI towards the goal of contributing to the SDGs, and the students are conducting an internship regarding sustainability and have above-average interests in sustainability. Therefore, the research aimed to gain a comprehensive understanding of different levels of sustainability implementation with a focus on individual leaders but at the same time acquiring diverse perspectives while having a small sample size. This means the sampling strategy of this research is purposive sampling because members of the sample are chosen according to their role in the organization (Patton, 2002). To identify the respondents, the Radboud Services organizational chart was used, and the RU offices for sustainability initiatives were contacted.

3.5 Procedure

Members who were identified as division leaders were contacted via email. From the 11 interviews, 7 interviews were conducted via Zoom, and four interviews were conducted via telephone. Despite the limitations of remote conduction of interviews, such as the inability to communicate via facial expression or body language and decreased interpersonal rapport, the remote interview approach increased the convenience of the respondents. At the same time, unnecessary environmental harms were avoided by avoiding travel. During the interviews, a topic guide was used, but it could slightly deviate from particular prompts as suitable to the specific conversation. This combination provided the structure of the topic guide, the flexibility to ask further, the opportunity to interact, and the chance to get below the surface and generate new thoughts and knowledge. At the same time, theoretical concepts were covered during the conversation, and analysis was facilitated according to the categories. Interviews were written out by hand, or were voice-recorded and later written down, and interviews varied between 15 and 45 minutes. Data was stored safely and anonymously, and notes or voice recordings were deleted after the research.

3.6 Analysis

For analysing qualitative content three interpretation forms exist: ‘summarizing’, which means data reduction; ‘explicating’, meaning finding more material; and ‘structuring’, which is filtering important components from the obtained data (Mayring, 2003). Most appropriate for the qualitative content

analysis for this research seemed to be structuring the data by filtering significant aspects and filtering out relevant content and analysing them with regards to the specific categories.

For coding the data and analysing the content, the software tool Atlas.ti was used. This tool assists researchers in systematically analysing and uncovering complex phenomena from unstructured data such as text. It must be noted that during the process of coding the data, there is a risk of missing data that does not fit into a specific category (Silverman, 2015). Furthermore, Atlas.ti does not run analysis itself and it is dependent on the intentions of the researcher.

To gain comprehensive insight into the interviews and to structure the data, two types of coding were used. First, based on the research questions, a list of codes was created beforehand, also called framework coding. Second, via grounded theory, a new theory can be developed due to having no preconception of themes beforehand. The grounded theory method is a cycle of gathering data, data analysis, and reflection to formulate new categories of data towards developing new theory, which is verified through scientific literature (Glaser & Strauss, 1967). In grounded theory, coding is done through open coding, axial coding, and selective coding. Open coding refers to breaking up data into parts, axial coding refers to categorizing codes, and selective coding refers to connecting axial categories to create core categories (Williams & Moser, 2019). As mentioned earlier, according to the research questions, data was characterized in three subcategories: (1) current leadership, (2) sustainability leadership perspective, and (3) desired leadership situation. The steps of the framework coding and the grounded theory can be found in Appendix A.1.

4. Results

As mentioned in the introduction, this research used qualitative data to answer the following sub-questions: (2) How is current leadership practiced in an HEI? (3) How can leadership be developed? and (4) How can the sustainability strategy implementation be improved?

4.1 Practices in current leadership

To explore how current leadership is practised, four groups were made in Atlas.ti (Appendix Table A.1). In the first group, how the current leadership of the executive board is being practised in general was explored, and in the second group, the focus was on how the executive board practices leadership regarding sustainability. For the third group, how division directors practice leadership in general was explored, and in the fourth group, the focus was on how division directors practice leadership regarding sustainability practices.

4.1.1 Executive board

Leadership in general

There was consensus about the current leadership approach in general from the executive board, and characteristics are:

- **Strong**
Overall, leadership in general from the executive board was described as strong, (Appendix Table A.2).
- **Authentic**
The executive board was described as ‘very authentic’ (Respondent 1), ‘open’, and ‘caring and concerned’ (Respondent 3). Respondent 1 added that leadership is human, listens to ideas, and sets the course.
- **Create vision**
Respondent 3 mentioned that the board sets a vision, acts as a role model, and facilitates a supportive atmosphere.
- **Decisiveness**
Respondent 3 noted that as far as decisiveness is concerned, the board acts decisively.

Leadership for sustainability

How the leadership of the executive board is practised to sustainability practices was overall perceived as positive, and there was a consensus of opinions (Appendix Table A.3). The most-described components were the encouragement of the vision and a supportive role towards employees. Respondents 2 and 5 stated that the board acted in a powerful and strong manner on themes such as sustainability.

- **Social**
Subsequently, the social and supportive aspects appeared. Respondent 1 mentioned the board as being social, supportive, trusting, having a sparring role, and providing space.
- **Risk-taking**
Respondent 6 states that the executive board has the intention to take more risks and is willing to invest more and seize chances when they occur. This was complemented by Respondent 10:

‘If I look at my situation, for example at energy consumption and at how we are making it more sustainable and what we have already done in the past year, the university is very consciously investing in this, so that we already have hundreds of thousands in Kub gas saved just by using a different network. The university consciously wants to integrate the sustainability issue into our organization, in terms of business operations, education and research. And they want to invest, preach and guide in this’.

- **Encouragement**

The willingness to invest, preach, and guide was expanded on by other respondents. Respondent 1 stated that also regarding other societal issues, the executive board want to invest and mention it in their strategy. Respondent 2 stated they have strongly spoken out about their ambitions regarding sustainability, and Respondent 5 added t that they invested something and encouraged sustainability by appointing a sustainability director. Respondent 11 summarized,

'The executive director really put it on the map: she thought it was very important. Not only in the lecture but in all kinds of expressions outside of it, attention was drawn to it. And actual action was taken. The fact that we have a sustainability director for the program of sustainability, for example, has been guaranteed by the vice-chairman'.

This was confirmed by Respondent 1:

'What makes them so helpful is that they really advocated the strategic anchoring of sustainability. That sentence is also present in the strategy of the Radboud University, and that is such an important parenthesis, for everything that is developed from it, and what is created within the University, and they defend that all the time and represent it completely. You see a lot of expressions of the board – or in their involvement in events and in things – that is very often about sustainability'.

Respondent 1 stated that in tough discussions or issues, they set course and dare to choose a trajectory. Respondent 6 confirmed that the board is informed about the importance of sustainability and that it needs to be integrated throughout the whole organization. The sustainability vision is continuously communicated. Respondent 5 mentioned that they not only set the course but that the course is confirmed by their actions.

- **Role model**

Building on previous statements, the executive board also acts as a role model with regard to sustainability. Respondent 1 stated,

'When it comes to sustainability or other topics such as safety and integrity and all kinds of important ethical topics, they not only say what they think is important, but you also feel personal that they also comply with that as a person. For example, I also know that they do not eat meat, that they take care of the environment as a private person, and this is reflected in their leadership at RU. They choose certain social themes, they are also very socially involved, which they have included in the RU strategy, even if there are difficult discussions about it, I do think that they show leadership by choosing to do. Therefore ... as RU, we stand for these values or themes'.

4.1.2 Division directors

Leadership in general

The next section elaborates on how division directors practice leadership in general (Appendix Table A.4). The data exposed two perspectives. One perspective focused more on the support and encouragement of employees. The other perspective had a significant emphasis on the task content approach. There was inconsistency with regards to having a vision, which was obtained by some directors but not all.

- **Cooperation**

First, Respondent 10 mentioned cooperation as part of his approach:

'Cooperation and bridging gaps, sometimes through my own initiative, or I participate in an initiative, but working together is one of my styles of leadership.'

- **Distribution of resources**

Respondent 6 stated that he ensures the distribution of resources and that they are used effectively and efficiently. Furthermore, it is under his supervision that the right course is chosen.

- **Social**

Providing guidance was also mentioned by Respondent 9 as his approach, including inviting experts to share knowledge so that trends and developments are translated from outside.

According to Respondent 1, division directors are social, have social skills, and are approachable.

- **Open**

Respondent 10 described his leadership approach as open, and Respondent 3 builds on openness, mentioning that transparency, consistency, and predictability are important for his approach and create a safe working environment. He has a preference for giving trust and space to employees.

- **Content approach**

Leading on content was widely recognized. This content approach was mentioned by Respondent 3 – stating that he leads on content – and Respondent 6 – stating that he guides on content, such as reminding the strategic operational goals to his employees. Respondent 1 confirmed this approach for the division directors, stating that they are more operational involved, have a business attitude, and are more involved in the content. Building on the previous response of Respondent 1, Respondent 1 remarked that operational focus is not inappropriate either. It was recognized by the respondent that there is a difference between leading and managing. A leader is like a manager, and the director is somewhat in between, including the role and task they have. Their divisions are seen as small companies that must operate sufficiently, so it makes sense that division directors are more of a manager. It is noticed that the executive board has more space to be a real leader, to chart the appropriate course, and to rise above the material, meaning the opportunity to have a strategic overview of the organisation.

Leadership for sustainability

Next section is about how management practices leadership to the sustainability strategy implementation. It appeared to be difficult to differentiate between leadership in general and

leadership for sustainability. However, some elements emerged from the data besides the emphasis on the task content.

- **Provide vision**

Providing a vision was the most common among the directors (Appendix Table A.5). With regards to communication of the vision, Respondent 10 stated that he works from a particular vision and added:

'I also work with professionals who are employed by the university and try to profile them as the figurehead of their speciality and to allow employees to learn and develop further'.

- **Content approach**

The focus on a content approach was not perceived as negative. Respondent 1 continued:

'[Regarding] being more businesslike, I do not see that as an obstacle; that is even good for sustainability'

- **Seducing**

Respondent 2 noticed that SD is more about seducing employees. In particular, to make policy to stimulate more sustainable behaviour, one must think of transportation or work mode.

- **Coaching**

Coaching was also mentioned as an approach. Respondent 6 described his leadership approach as mostly coaching to empower people to take action and initiative and let the bottom of the organisation come up with sustainability initiatives.

4.2 Development leadership

The third sub-question was How can leadership be developed to enhance the implementation of the sustainability strategy? To answer this research question, two questions were composed. The first was Does current leadership facilitates the sustainability strategy implementation? and the second was How can leadership be developed?

Leadership as a facilitator in sustainability strategy implementation

To assess the current leadership situation with regards to the facilitation of the sustainability strategy implementation, the first question was Does current leadership facilitates the sustainability strategy implementation? The data shows that one-half agreed, one respondent did not provide a direct answer, and the other half did not directly perceive facilitation (Appendix B.1).

- **Agreement:**

Regarding the executive board, Respondent 1 reacted in the affirmative:

'Yes, I feel it that way, and I'm super happy about that. That can be such a leader, but it can also be a CEO in a company, which can help you a lot or get in the way for managers'.

In addition, Respondent 10 stated:

'Yes, because of the leadership vision, openness, and connecting, this provides so much space to managers, team leaders, department heads, to tackle the theme of sustainability'.

Regarding leadership in general, Respondent 4 responded that if current leadership facilitates the sustainability strategy implementation, the answer was that it was sure leadership facilitates the sustainability strategy implementation. Respondent 6 agreed because of the two governance examples of integration of sustainability in the curriculum and the current procurement policy.

- **Lack of direct answer:**

The question if the leadership of the current division directors facilitates the sustainability strategy, Respondent 11 stated 'That is a difficult question'. Respondent 1 argued the following:

'If you work from that vision, and that visionary, the division directors and the college have that in them, otherwise you wouldn't be in such a position, only they exude that less every day because they are very busy with day-to-day work'.

- **Not directly perceived as facilitator:**

Respondent 2 was less optimistic, stating that sustainability could be improved on all organizational components, from human resource policy to energy use. The respondent stated that the importance of sustainability is not exerted through leadership. Another point that emerged was stated by Respondent 8, focusing not directly on leadership but more on a coherent approach:

'I think, anyway, if you want to make a change in sustainability, how are you going to define and measure that? That was unknown to a lot of people in the beginning. And then later it was the case, with that new division: 'ok, who does sustainability fall under'. And at the beginning, it became a disconnected thing in academic affairs, and then later they found out that didn't really work well either. Sustainability should actually be something of an umbrella for all divisions and the entire university. I think too little is being done to create a coherent approach in the field of sustainability. For example, if you look at the annual reports to the RU, they may contain a small section on sustainability. I think if you have a good approach, then you make specific goals there. And look at how much improvement you've made, and that's missing'.

Development Leadership

The next section provides the answers to the sub-question How can leadership be developed? To develop and enhance current leadership, several components were mentioned (Appendix B.2). Opinions were divided among the answers of the opportunity of academic substantiation, and the potential of being a role model as an executive board was mentioned. Additionally, being more creative and listening to the bottom up were mentioned as points of enhancement. The aspects of enhancing leadership or leadership development itself and enacting the sustainability policy systematically or coherently were widely noticed among the respondents.

- **Academic substantiation**

Respondent 3 stated that the importance of sustainability can be substantiated from his discipline and that this substantiation is conducive for organizational support.

- **Creativity**

Respondent 6 mentioned that the university can be more creative and that they mostly play safe.

- **Bottom-up initiatives**

Respondent 4 stated that it has to do with listening to the bottom-up, instead of top-down, and that searching for a balance between these two approaches is important. Respondent 7 confirmed this:

'The questions should come more from the bottom up, if you impose rules for sustainability from above it can work, but whether you will get it is the question. I don't know if it's realistic. After all, you have to get a vision from above'.

- **Role model potential executive board**

Respondent 4 continued by mentioning that the board of RU has the potential to become a role model, or could serve as ambassador/influencer, but due to coronavirus measures, it is less visible at the moment.

- **Leadership recognition**

Leadership and the recognition of leadership as a profession were mentioned as points of development itself. Respondent 2 mentioned leadership is something leaders do 'on the side' and that the leadership role is not always professionally executed. It was described as a slow process of recognition, and leadership is a profession in its own right. This was also displayed by other answers. One respondent admitted that their leadership skills could be improved, and two other respondents could not directly answer this question and needed some time to think about their leadership approach.

- **Platform building**

A practical idea was provided by one of the interviewees, and network building was mentioned specifically by Respondent 7:

'Quite a lot is already being done in education, but also in research. It should therefore have a kind of platform in which different people come together, and one focuses on sustainability

with regards to law, the other in the field of literature, and a third in the field of business administration or leadership’.

- **Leadership behaviour faculties**

Furthermore, specific other areas of the organization were mentioned. Respondent 11 stated that the behaviour of the executive board is something desired in deans.

‘Well I, on the one hand, I do think that her behaviour is a very good one: you might want to see that more possessed by deans’.

- **Coherent approach**

Again, the point of a coherent, systematic approach emerged from this question. Respondent 6 stated that the optimal manner of leadership is to bring policy and execution as close as possible and then act decisively and uniformly. In other words, the RU was perceived as good in creating a vision, outlining actions, and making an action plan, but it is not always obvious who executes them and who is the supervisor.

4.3 Sustainability leadership

To explore how elements of the leadership schools as mentioned in the literature related to SD were helpful, elements of the streams were presented to the respondents to explain the concept of sustainability leadership (Appendix Table C.1). When analysing the data, several leadership styles appeared. The situational leadership stream and the TL stream were mostly represented. Furthermore, the servant and authentic leadership styles appeared from the data to a lesser extent. Among the traits, decisiveness was most frequently mentioned. Additionally, sensing of sustainability opportunities and discussing issues were noticed to a lower degree. However, it must be noted there is an overlap between leadership styles and traits. For example, transparency is part of the servant leadership style as well as the authentic leadership style.

Sustainability leadership styles

- **Situational leadership style**

The elements of the situational leadership stream were a mix of characteristics – such as caring, self-awareness, and being inclusive – with the skills of communicating the vision and above all having knowledge regarding specific dilemmas. Thinking in systems, cooperation, and self-awareness were also proposed. Respondent 1 reacted positively:

‘Yes, I think you can tick them all off. The knowledge about sustainability comes mainly from us, scientists, in such a way that knowledge ends up in the right place. We mainly do that. You

can't say that the executive board is a sustainability expert, but they did hire people for that and set things up'.

The systematic thinking, managing of complexity, knowledge of the dilemmas, and self-awareness were also perceived as helpful by Respondent 2. These characteristics have already been attempted to be included in the plan of action, according to Respondent 5, who also stated that it is a good list. Respondent 4 agreed on these characteristics:

'Yes, that is very much in line with what I think was said. That bottom-up, the sustainability director trusts us that we are close to students and therefore know what would appeal to us. That there is room for personal initiative'.

The part of cooperation was extensively mentioned by Respondent 10. He mentioned that cooperation and bridging gaps are important, individually or via cooperation. He added that he also uses his external environment for goal setting:

'To set the vision and goals I consult my environment, in coordination with my "clients" (students), with the faculties, and with the executive board'.

Additionally, the specific situational leadership theory was mentioned by one of the respondents. Respondent 1 described the situational leadership style as helpful, especially in the SD context.

'It's ... I don't know if you're calling situational or temporal leadership. But you ... what I try in my leadership, is, say, to get the entire organization along, but wait for the right momentum. If I see that the division is very busy with other things, yes, and I notice little time and attention for sustainability. If I don't press on that, I'll go there later'.

- **Transformational leadership style**

The TL approach was verified by the components of inspirational motivation, intellectual stimulation, consideration, and idealized vision (Bass & Avolio, 2004). With regards to the utility of these elements, Respondent 2 and Respondent 7 stated that those components are important for the sustainability transition. Respondent 1 identified that the components are present at the executive board:

'Yes, especially if you ask. Then you get advice and good advice. Because they have a great overview of the organization [and about] how everything works'.

Furthermore, Respondent 8 thought that these elements are helpful, but that the division directors are busy with their daily tasks, which are quite demanding, and that is why sustainability is insufficiently focused on.

Regarding the rest of the organization, Respondent 5 identified the helpful components and that they have been obtained by some leaders in the organization. Building on this, the respondent mentioned with regards to the recruitment, that such components should be taken into consideration when hiring a new professor. Inspirational motivation was a component that was widely supported. Respondent 1 stated that having a vision is very important, and Respondent 8 agreed, stating,

'Partly, leaders must be inspiring. Kind of coach-like, so express it yourself, and follow their own policy, but also inspire people around them to do the same'.

This relates to the component of inspirational motivation, but also the individual consideration component. In particular, the part of being a role model, described in the literature as the idealized influence, was agreed upon by Respondent 11, who emphasized,

'That transformational I believe that I thought that was a very nice term, that role model. It is surely [that] you are credible in what you say. Especially when it comes to sustainability. Can you show how it just works? We would be able to emphasize that in our leadership'.

To conclude, Respondent 9 stated that he thinks the TL part is sufficient, but it is in the translation to specific action where most progress could be made.

- **Servant leadership style**

Respondent 3 has a preference for servant leadership, mentioning that being a role model is also a component of servant leadership. The components transparency, responsibility, support, and facilitation of others' success were mentioned by the respondent as important. This was also mentioned by Respondent 6, adding the area of coaching between people, which is better suited to a university.

Sustainability leadership characteristics

Additionally, other leadership streams and approaches and other characteristics were mentioned.

- **Decisiveness**

A component that was most mentioned was decisiveness: being determined, resolute, or persistent. Respondent 1 stated,

'The higher targets: I try to manage that, [and] we always keep that in mind', trying to make SMART agreements.

They said,

'I always want to make progress'.

Respondent 3 self-evaluated that he is determined to reach his own goal, which is sometimes hard in a large organization. Furthermore, the respondents referred to stating in short and clear words in which direction people need to go, without being rude. Finally, Respondent 11 was also clear:

'I think you have to be persistent'.

- **Courage**

Another component was courage. According to Respondent 3, leaders need to have the courage to choose a direction, and it is important to be clear so that it can be widely integrated into the organization and so that courage and willpower will emerge. Another reason why courage is demanded is that leaders must make decisions that are not popular, which was mentioned by Respondent 8:

'I also think sometimes management needs to make decisions that are not very popular but can make great strides. For example, the TU Delft makes their canteen completely vegetarian. In the beginning, people will think "oh, is it obligated". And later people are so used to it, and they barely noticed that they have made that progression'.

Regarding students, Respondent 6 mentioned that the challenge is in creating an environment where students can safely take risks. He continues by saying that the curriculum should not be fixed, but there should be room for students to try other courses, projects, or internships. To conclude, Respondent 10, mentioned courage but also the component of having a certain mindset.

'So really the mindset, the translation for leadership is what sustainability means for me, my team and my environment, the faculty, the department. That is what leadership is all about, and that takes courage'.

Sustainability leadership actions

Specific leadership actions regarding the execution of the sustainability strategy implementation were spread among several actions and not one component obtained the vast majority (Appendix C.2).

- **Alignment**

Aligning tasks by systematically thinking and planning by making connections through a large piece of paper was helpful, stated Respondent 3. As a result, he created an overview to observe the coherence of complex policy decisions.

- **Empowering employees in development**

Respondent 2 stated that they mostly facilitate mobility inside the organization through practices and making policy. Respondent 7 mentioned it is mostly by organizing seminars, and stimulation of successful practices.

- **Procurement**

Furthermore, Respondent 2 and Respondent 3 stated that sustainability implementation is currently mostly about procurement.

- **Seducing**

Seducing employees to behave more sustainably is also mentioned as one of the actions that contribute. Respondent 2 stated sustainability strategy implementation is about seducing people and making things easier.

4.4 Improvement in sustainability strategy implementation

When exploring how the sustainability strategy implementation can be improved, several barriers emerged. Therefore, the specific category ‘barriers’ was created (Appendix D.1). To some extent, a high workload, lack of internal communication, and a complex organizational structure were perceived as barriers to the successful implementation of the sustainability strategy. Furthermore, the largest points of improvement appeared to be a lack of a sustainability mindset, a lack of responsibility towards sustainability, and failure in strategic operations. Those components extensively emerged from the data, as seen in Appendix Table D.1.

- **High workload**

Already mentioned by Respondent 8, the workload is perceived as a barrier within the university. Respondent 1 added,

‘Furthermore, it is sometimes difficult. For example, you have a lot of work pressure in education, and we want to integrate sustainability into the curriculum’.

Other respondents agreed: Respondent 3 mentioned that because due to the daily demands of division directors, sustainability is not a top priority, stating that sustainability is currently mostly accomplished through procurement. However, he added that this requires manpower and/or focus, which is not currently on hand. Some nice words are spoken, but the real reduction of workload is still hard to change according to Respondent 5. Respondent 8 agreed, stating that division directors are busy with their daily demands and barely can focus on sustainability.

- **Internal communication**

Another aspect that was missed by Respondent 8 was internal sharing of information or internal communication.

'The Green Office did all kinds of things. It took action, but then it was not really shared internally; for example, if you say which progress has been made with regards to the sustainability in the organization'.

- **Organizational structure**

The structure of the organization was also part of the discussion. Respondent 6 mentioned that financial approval takes time. This appeared difficult when opportunities appeared. Furthermore, an inclusive working environment was a concern, according to Respondent 3, mentioning that it could be hard for outsiders to find their way into the organization. This was recognized by Respondent 5, stating that organizational structure is a national problem for HEIs, and Respondent 8 stated that the diversity policy – or diversity on its own – could be a trend. The importance of this subject was also acknowledged by Respondent 10:

'We must not only look at the reduction of CO₂ emissions but also at inclusivity: can everyone participate, does everyone participate, is there equal opportunities for everyone?'

As mentioned, there arose an abundance of terms such as 'mindset' and 'responsibility' and terms and phrases related to those concepts (Appendix Table E.1). Therefore, this research created the separate category 'culture' and re-analysed the data. Additionally, phrases as 'execution of the vision', 'strategic operations', or 'programme execution', and terms and phrases related to those constructs were also frequently used. Consequently, this research created the category 'policy execution' (Appendix Table E.2).

- **Mindset**

First, regarding the category culture, Respondent 10 mentioned that it is 'the mindset' that is important for sustainability. In general, the lack of a sustainable mindset is perceived as a barrier

within the organization, but it was also mentioned that sustainability should not always be a top priority because daily tasks also demand attention. Respondent 1 stated,

'We are not going to roll out a whole course; we are just going to see how we as little effort as possible, making that link very logical in the existing education. That is an obstacle in that sense, but it doesn't stop there. Not that it does not come about it, but you have to convince more and it takes longer'.

This perception was likewise stated by Respondent 2, saying it was perceived hard to incorporate the sustainability mindset. Furthermore, the respondent mentioned does not actively engage in the sustainability theme. Sustainability is not in front of the agenda, confirmed Respondent 3, and Respondent 8 expanded:

'I think that sustainability always is a little behind in the agenda, from 'that will be in the future', and maybe they are not always aware of it, and I think at a given moment they thought, "We have a sustainability office?"'

When Respondent 5 was asked whether there needed to be more sustainability directors, she answered that they needed the way of thinking of the sustainability director. The latter part was also agreed on by Respondent 9, reporting that designating a diversity officer and sustainability director are very good steps, but at the same time it results in thoughts that those aspects are covered because they handle the topics with their programmes. Respondent 8 continued on this point, mentioning,

'Sustainability must become more a kind of mindset, a fixed mindset. Now it is more like a kind of "oh yeah sustainability is also there". A bit the same as the diversity policy. That "comes and goes". Now it's all new and trending and [a] hot topic. And then people become very enthusiastic, and then three months later people forget the weather, and then "Oh yes sustainability is also there".'

However, Respondent 11 argued that it is beneficial that the directors are not always concerned with sustainability:

'But we have so many topics that it is not just concerned with sustainability for the rest of the day. And, yes, I think that you should see it that way, which is good; otherwise, we don't come to those other things. That is why we also have a programme director. The good thing is that she tries to invest in the line as much as possible. We do need a booster that can present, and

that ensures that the conversation keeps being fed. That we also helped, if we want this, how we want to do that. Fortunately, not every division director ... devotes that completely for himself, because then it becomes an uncontrollable whole'.

Taking a whole-university perspective for the theme of sustainability, the corresponding mindset should be applied for 'all the users' of the RU system, according to Respondent 10:

'So here the users look to the business operations. In principle, they indeed push the theme of sustainability from themselves. They, therefore, do not look at their actions. It would be nice if they ask themselves the question: What does sustainability mean to me, for me as an official, or for my unit? What can we do to let the organization operate more sustainable'.

To conclude, Respondent 11 introduced a bolder and more hypothetical argument, suggesting that at a given moment a HEI can propose, like a kind of branding, they want to stand out on sustainability and say they invest in a certain goal to realize:

'For example, "singularity universities" that say issues must concern at least one billion people. The problem that we think about should really go over such a large amount of people, and otherwise, it is not in our portfolio. You might consider placing a big claim for the HEI, to indicate, we really want to emphatically stand out between all other HEIs. I'm not saying it should. I note that we do not go that far'.

- **Responsibility**

Responses relating to a lack of responsibility revealed thoughts that sustainability offices covered the sustainable policy execution. Furthermore, it appeared difficult to oversee who is accountable for specific policy executions and how the policy is being executed. Therefore, the 'who' and 'how' were perceived as points of improvement.

The response of Respondent 9 was that with a sustainability office or a sustainability director, thoughts arise the sustainability goals are handled by the sustainability office and director, is shared by others. Similarly, the thought that the HEI has a staff department for sustainability was observed by Respondent 2, who mentioned that it is often said that with regards to sustainability, there is a department. When integrating sustainability in the primary organizational processes such as research and education, nobody is specifically responsible, said Respondent 5. Furthermore, it was remarked that many division directors also thought the Green Office was responsible for the sustainability policy within Radboud Services; however, that level of decision making has never existed, said Respondent 8. Additionally, there were difficulties with the allocation of the

sustainability theme, and for many members of the organization, this subject was unclear. Nonetheless, work is in progress, according to Respondent 8:

'Sustainability should be something that is overarching for all divisions and the university as a whole'.

It is difficult for an organization to make individuals accountable because the structure is decentralized, said Respondent 5. However, the respondent said that at the same time, with all the restrictions from the board or the faculties, more action needs to be taken, and they hope that everybody of the faculty agrees with this. The execution of the problem must be clear: the 'who', but also the 'how' in policy execution are important, replied Respondent 6. This indicates that the matter of responsibility impedes programmatic execution.

This opinion was shared by Respondent 9, who expressed that the part of TL is adequate, but the real transition to sustainability actions with the according responsibilities of those actions, is the part where the most progress could be made. This reveals the difficulty of initiating the actions and distribute the corresponding responsibility of those actions. The execution needs to be clear, complemented Respondent 6, saying that the HEI is often caught in programme-based management. That means making clear choices and establishing focus instead of doing all things at the same time, Respondent 9 added. On top of that, Respondent 7 stated that duplication of work effort occasionally occurred, pointing to the need for a coherent approach, which was already referred to by Respondent 8. Additionally, Respondent 8 mentioned,

'In any case, make sure that sustainability becomes a fixed point on the agenda. For example, if you are planning for the year agenda, make it a fixed point'.

Respondent 9 summarized the strategy as the translation to strategic goals, of which the 'who' and 'how', are the most important parts. Furthermore, the respondent suggested that the theme is positioned at the sustainability programme, but the respondent can imagine that, for example, the board demands some priorities in a few years. Another way formalizing goals, such as a procurement policy, was remarked by Respondent 11 as helpful in stating that they now have a new procurement policy, in which the respondent indicated that they want to buy sustainably. The respondent identified that if that policy is there, everyone keeps themselves to it, but if they do not have that, it is harder to expect people to illustrate the desired behaviour. On the question, What would then be a desirable vision? Respondent 7 answered,

'Now the vision is that it has to make a social impact. How do you make that? And what is that?'

A lack of responsibility is not irrefutable among the respondents, as observed by Respondent 10, saying it may be because the university is at the beginning of the transition to integrate sustainability into the curriculum. That is fundamentally different. This is shared by Respondent 11, who replied that it is not that certain. If the respondent looked at the division directors and their perspective, then sustainability is a very important topic which returns in all the policy considerations. But is noticed that there are so many topics and that it is not appropriate to be concerned with sustainability for the rest of the day. However, when the question was asked: ‘Do you think for example, that the board or another governing body, must take responsibility that certain divisions will impose concrete goals, instead of targets?’ Respondent 11 responded:

‘Yes, I think so. It can help that if you have good thoughts about whether those goals are realizable. Therefore, then you have to feel any feeling for realism, and you have to think carefully, if I am demanding this, then I must also ensure that the preconditions are there. Then I have to be able to take care of it, and if it costs extra money, then there must also be financial capital available. If that means that you have to hire more people there, then those options must be granted when walking in that direction’.

The importance of preconditions is also currently a part of the concern. Respondent 5 stated that there is only a budget for salary, but it would be logical if sustainability initiatives receive a follow-up. Examples are provided in organizing events and activities and that the budget does not necessarily need to be provided to a specific department. Furthermore, the respondent continued by mentioning that it would be logical if people were helped when writing research proposals regarding sustainability.

5. Discussion

Currently, leadership in HEIs is poorly understood and this is important because leadership is perceived as vital in embedding sustainability in HEIs. Accordingly, this study used qualitative research to investigate how leadership contributes to sustainability strategy implementation. The study found that an improper sustainable mindset, a lack of responsibility for sustainability, and failure in the execution of the sustainability policy were perceived as the greatest points of improvement.

First, in this section, the answers to the remaining sub-questions are evaluated and discussed. The qualitative data is compared to the literature, and it is examined whether it is in accordance with existing knowledge or whether it is contradictory to the literature. After that, a summary paragraph is composed to answer the main research question. Then, there follow the theoretical, policy, and managerial implications, followed by the limitations and future research suggestions.

5.1 Research questions

1. How is current leadership practiced?

During the interviews, it was difficult to detect what specific leadership approach was present. This was expressed in the reactions of the respondents because each individual described their perception of leadership differently. Furthermore, it was difficult to differentiate between the leadership approach in general and the leadership approach concerning sustainability practices. In addition, some leadership styles had overlapped. Nonetheless, this study gained valuable insights of how current leadership is practised.

Executive board

The general leadership style from the executive board was described as authentic, open, and caring. Based on these elements, an authentic leadership (AL) style can be identified (Gardner, Cogliser, Davis, & Dickens, 2011). Little attention has been given to AL in HEI literature (Alonderiene & Majauskaite, 2016). However, AL has obtained more attention among scholars in leadership, claiming it leads to desired organizational outcomes and is highly beneficial for organizations (Luthans et al., 2006; Walumba et al., 2008). In line with the literature, the answers of the respondents indicated that the elements of AL increased the legitimacy of the executive board. This is explained by encouragement and openness, which increases the trust in leadership and leads to the encouragement of employees. In addition, the literature adds that AL stimulates openness, free transfer of ideas, and leading by example, which can intend to support societal and environmental issues of sustainability (Srivastava, 2020). Therefore, it is argued AL is also helpful for the sustainability implementation in HEIs. As a result, this study contributes to AL literature in the context of HEI and sustainability.

With regards to sustainability, the leadership of the executive board corresponded with the sustainability leadership perspective based on the situational leadership theory of Visser and Courtice (2011) as well as the components of the TL style (Avolio & Bass, 2004). This indicates that leadership styles correspond with the sustainability leadership literature. First, an explanation is that sustainability requires adaptation of the leadership style because HEIs have diverse tasks due to multiple levels of implementation, and HEIs have varying entities, such as management, deans, staff, and students. Second, to motivate and encourage sustainability, how sustainability is expressed by leaders and that they are perceived as credible and inspiring to intrinsically motivate are also of importance.

Management

Among management, it was more difficult to identify a certain style. A possible explanation was that data was obtained via self-reflection. In general, characteristics that emerged from the data were

described as cooperative, social, and open. What strongly emerged from the data was the emphasis on managing daily operations.

With regards to implementing sustainability, providing the vision and coaching corresponded with the leadership perspective of Visser and Courtice (2011). A reason for this was provided by letting the initiative start as low as possible in the organization by setting goals and providing support through coaching. Remarkably, one respondent noted the servant leadership theory as useful in practice. The servant leadership theory is also described in the literature as helpful for sustainability. Answers from the respondent showed its focus on well-being before self-interest. What can underlie the focus on well-being before self-interests, is the long-term focus on stakeholders and the recognition of their role as stewards to the public. For sustainability, a leadership focus on content and daily activities were not fully noted as disturbance from respondents. However, a large focus on daily operations can constrain SD implementation because leadership needs to engage in institutional development for SD and serve as a catalyst in embedding sustainability in HEIs (Mulà et al., 2017; Scott et al., 2012).

2. How can leadership be developed?

There were several points for the development of leadership. First, to develop and enhance current leadership, creativity and courage are mentioned as points of improvement. At the same time, it appears that the executive board increasingly is willing to invest more and that more financial capital will become available shortly. Therefore, this point of development has been considered.

Second, remarkably, all students in the sample mentioned that the approach could be more bottom-up. Data showed that students felt less heard concerning policy and strategy. This is not in line with the literature. However, the institutional change process required for sustainability involves many actors and organizational levels. Generally, student leaders are identified as change-makers, but they have been part of the academic community for a short amount of time (Brinkhurst, Rose, Maurice, & Ackerman, 2011). Brinkhurst et al. (2011) continue that despite students providing rich ideas and perspectives, it is the staff and faculty who are the long-term population on campus and are therefore critical for the institutional change. An explanation is that the student members of student sustainability initiatives are more motivated than the average student. However, this does not deny the importance of bottom-up initiatives and that the data could be an indication of an inappropriate fit. The literature states that if an appropriate fit between top-down and bottom-up was not achieved in the long-term, this was because the translation of policy and strategy of SD between department levels was not on all occasions successful (Verhulst & Lambrechts, 2015). Therefore, leadership can pay attention to creating the right balance between bottom-up and top-down and examine policies to create the right conditions for initiatives.

Third, at the level of the faculties, data expressed that the behaviour expressed by one of the executive board members, is also the desired behaviour for deans, which indicates improper

sustainable behaviour at faculties. This is recognized by Mula et al. (2017), stressing the urge for the understanding of integrating SD in development activities for professionals, not just to make an impact in classrooms but also enhance institutional change, decisively influencing learning and teaching discourse in HEIs. The role of the faculties has not been explicitly considered, while involvement and participation in sustainability changes have been recognized (Viebahn, 2002; UBC, 2007). Literature states that leadership roles of staff and faculties are of larger importance than is reported, given their understanding and knowledge of the functioning, extensive technical expertise, and connection between institutional bottom and top of the HEI (Brinkhurst et al., 2011). The data of this research is in line with the expectation of the importance of faculties and staff. While work pressure is the most common explanation, influencing learning and discourse is essential to engage all students with sustainability.

Lastly, the data showed that there is little active engagement in the development of leadership or leadership development programmes on a structural or regular basis. In the literature, there is a call for policy in favour of regular professional leadership development in the HEI to provide the necessary relationship management competencies and business skills (Tran & Nghia, 2020). While staff development programmes are facilitated in the HEI, there is a call for frequent involvement in external training and mentoring schemes. These practices can become periodical practices and therefore be fundamental for strategic advancement in SD (Stolze & Sailer, 2021). Furthermore, it is recognized that few institutions have decent staff development programmes to develop SD in HEIs (Mula et al., 2017). The lack of participation can be explained by the demanding daily tasks of management. When there is a policy demanding structural leadership development organization-wide, relationship management competencies can be enhanced to cover the multidisciplinary sustainability challenges across the HEI. Furthermore, business skills can be useful in procurement to negotiate more sustainable equipment.

Sustainability leadership concept

Exploring which streams of leadership theory related to SD are useful in practice was difficult because all terms have a 'positive' characterization, and all seem to be useful in practice, regardless of the context or social entity. This relationship was difficult to validate via qualitative research because it was easy for interviewees to agree with the terms. As mentioned, the elements of the situational and TL style were perceived as useful in practice. Mostly evident in the data was the TL, with the explanation that it is an important component of how sustainability is expressed by leaders and because they are perceived as credible and inspiring and intrinsically motivate others. Therefore, this research confirms current leadership literature related to SD. In addition, the answers of the respondents provided other grounds to explicate the concept of sustainability leadership and expand the concept of sustainability leadership in HEIs because the authentic and servant leadership style emerged from the data.

First, the general leadership style of the executive board appeared to conform with elements of the AL style. Although this leadership style was not directly linked to SD by respondents due to the overlap between general leadership style and leadership style for sustainability, the concept can be useful. This is because the AL style has recently been related to SD in HEIs. The data showed AL components such as practising what you preach, motivation by example, and transparency and authenticity in decision making, resulted in a positive image by respondents. Literature states that employees are therefore more willing to accept the organizational brand and that long-term commitment increased among employees (Srivastava et al., 2020). These elements are seen as essential to SD in HEIs because the sustainability transformation in HEIs is characterized as long, due to the complexity of sustainability, structure, and different cultures of HEIs. Furthermore, AL lead by setting examples of free transfers of ideas and openness (Srivastava et al., 2020). This can have a positive effect on innovation and learning, fostering collaboration and knowledge exchange in HEIs that is essential for SD.

Second, as mentioned, servant leadership appeared in the data as helpful. In line with the literature, strategic decision making of leaders with the SL approach considers the ecological, economic, and social dimensions of those decisions (Peterlin et al., 2015). The reason is that SL is a values-based approach, meaning that leaders actively incorporate values and stakeholders in organizational thinking (Viinamäki, 2009; Viinamäki, 2012). Another reason, according to Peterlin (2015), is that SL leaders aim to spread the pro-natural perspective and pro-social behaviour, looking beyond the needs of the organizations and future generations. In particular, looking beyond the needs for future generations can be helpful to setting the long-term vision for HEIs because they prepare future generations via learning and teaching. The component characterizes a long-term focus that is required for sustainability issues that are also characterized as complex and long. With a long-term focus from SL, leaders will search for alternative futures if required and provide the future direction. In those processes, SL are more inclined to make ecological, social, and economic dimensions in their decisions (Peterlin et al., 2015). Thus, organizations can reconsider selecting leaders based on the fit between organizational values and the personal leadership values of the individual.

Third, the trait of decisiveness was prominently related to SD in HEIs. An explanation is that decisiveness is a core component of intrapreneurial self-capital (ISC), which is an adaptive resource intended to stimulate personal success, and its components can be considered as an influential characteristic of individuals, assisting them in the creation of innovative solutions when they are confronted with difficulties imposed by their external environment (Di Fabio & Saklofske, 2019; Di Fabio, 2014). Based on this, ISC favours SD due to the context of transition and change by encouraging solutions that are innovative (Di Fabio & Saklofske, 2019). Further, with regards to education, decisiveness is one of the components of education for SD (Vare et al., 2019). It is important for leaders to take this into account, as multiple forms of resistance and barriers can emerge within an HEI due to its different cultures and different perspectives on what sustainability is. As a

result, change not only requires focus but decisiveness is also vital for the long-term process of implementation.

With regards to the actions related to the implementation of the sustainability strategy, which were aligning, empowering, facilitating the development of employees, and coaching, the actions are in line or alternatively stated in the sustainability leadership model of Visser and Courtice (2011).

3. How can the sustainability strategy implementation be improved?

The most apparent components revealed by the data to improve the sustainability strategy implementation in HEIs were a lack of a sustainable mindset, a lack of responsibility for SD, and failure of execution of the sustainability policy. In all three components, data neglected the role of leadership, which is emphasized after addressing the three components. The last paragraph provides an answer to the main research question.

First, the data is in line with the literature in mentioning that a new mindset is required in organizations to transform internally to provide value and make an external impact (Moon, 2018). A mindset is the personal belief of fixedness of human traits (Murphy & Reeves, 2019). It is defined as a way of thinking and the opinions of an individual, or in other words, a way of construing actions or objects (Barry & Halfmann, 2016). As emerged from the interviews, the mindset should be applied to all users of the HEI. Mindset is therefore observed at an organizational level. Underlying the organizational mindset is the core belief about the organization that can be fundamental in how employees behave and think in the organizational setting (Schein, 2010). Core beliefs are assumptions that are implicit and guide employees' perception and behaviour, and thereby shape the cultural norms of the organization regarding the standards for interactions and behaviour within the organization (O'reilly & Chatman, 1996; Sørensen, 2002). Alternatively stated is that mindset predicts culture. An explanation is that the mindset influences the psychological experiences, behaviours, and norms of individuals within an organization, so to understand how the organizational culture is established, it is essential to identify core beliefs that cause cultural norms (Canning et al., 2020). In other words, the organizational mindset can strongly influence the wider culture of the organization because those core beliefs drive employees' behaviour, which creates a self-reinforcing cycle (Canning et al., 2020).

Building on the assumption that the mindset predicts culture, and because data widely mentioned mindsets should change, this study assumes this indicates that the organizational culture should change to contribute to the sustainability strategy implementation in HEIs. In literature, a conservative culture is seen as one of the key barriers by other authors (Disterheft, Caeiro, Azeiteiro, & Leal Filho, 2015; Leal Filho, 2011; Hoover & Harder, 2015; Lozano, 2006). Contrarily, common attitudes, behaviours, and values are stressed as a prerequisite for deeper change (Sylvestre et al., 2013; Viegas et al., 2016), and cultural governance approaches are therefore needed (Adams et al., 2018; Disterheft et al., 2015). SD in HEIs requires a change in the foundations of their culture

(Sterling, 2004). The reason is that sustainability does not only imply a shift in learning practices and provisions of HEIs but also in the underlying paradigm (Sterling, 2004).

The literature claims that HEIs often align responses to climate change to cost-savings and technological improvements, depicting a capitalist repairment to attempt to contribute to SD with market-based instruments, which reinforces neoliberal paradigms of innovation and efficiency whereas more ambitious change is neglected (O'Neill & Sinden, 2021). O'Neill and Sinden (2021) state that the neoliberal paradigm entails that research questioning dominant Western lifestyles or modes of consumption are not often promoted by HEIs in their climate and sustainability strategies. Ideas and language within sustainability strategies of HEIs often reproduce and adopt the dominance of the neoliberalism paradigm (Blythe et al., 2018; Swaffield, 2016). This is essential because paradigm change cannot emerge until people have a spoken language specific to what alternative futures they have and where they are at the current time (Hall, 2016). Data of current research supports that the HEI aligns its strategy and research to the United Nations SDGs, which reproduce mainstream sustainability definitions (UN, 2015). However, literature notes that those SDGs are criticized for promoting a neoliberal and anthropocentric vision, with an environment inferior to social and economic concerns (Hickel, 2019; Kopnina, 2016). The reason is that promoting the growth of the economy undermines sustainability objectives and aligning the sustainability objectives to the SDGs means that HEIs do not question dominant practices such as (over) consumption or degrowth (Kopnina, 2016; O'Neill & Sinden, 2021). Thus, when organisational mindset is perceived as a constraint, it entails a cultural problem, and to change the culture, the underlying paradigm is required to change.

Second, responsibility also was perceived as a concern within RU. Data revealed that a lack of responsibility was a commonly perceived barrier among the respondents. This was in line with Niedlich (2020), emphasizing the importance of responsibility. The author states that responsibility is another component of culture. An explanation in line with what Sterling (2004) observes as a vital concern is the 'response-ability', meaning the extent an HEI as a whole can respond to the context of the chances of sustainability and the emergency of unsustainability. Incorporating sustainability in governance is consequently linked at close range with concerns of authority (Verhulst & Lambrechts, 2015). As a response, scholars emphasize the importance of dialogue and participation while promoting SD as a co-creative process involving non-vertical decision making and diverse stakeholders.

Third, data showed the problem of questioning how the sustainability policy must be executed. A reason for this was that the sustainability policy was mentioned to be too open-ended or too voluntary. This was in line with Lambrechts et al. (2009), who state that when SD is too open-ended, or too voluntary, this is caused by a lack of a consistent policy. The concern is that the HEI is often caught in programme-based execution, explained by a lack of a coherent approach, which is also in line with Lambrechts et al. (2009). Respondents suggested that this was solved by making clear

choices and establishing focus. Correspondingly, a policy was mentioned to be considered as a necessity to enforce desired behaviour, and one respondent mentioned that the policy could be made compulsory to be most effective. In addition, data pointed to the need for follow-up processes and that the need for budget derived from that. This is in line with Finnveden et al. (2020), stressing the importance of the follow-up of sustainability processes, and an absence of resources and funding together with a lack of ad hoc structures to support sustainability are seen as the main obstacles impeding the holistic development of SDGs in HEIs (Sáez de Cámara et al., 2021).

To conclude, it is remarkable that the data collected here have denied the role of leadership in improving the mindset and responsibility to SD and therefore ignored the relationship between leadership and culture. This is not in line with the literature. According to Fuchs et al. (2020), HEI management has the responsibility to apply and develop environmental strategies for management as a core tool in the promotion of SD in HEIs. Furthermore, according to Schein (2016), leadership does have an essential role in embedding, and reinforcing and stabilizing culture. In other words, leadership has a role to play with regards to the sustainability mindset and responsibility towards sustainability, and embed, reinforce, and stabilise the appropriate culture for SD. Furthermore, the role of leadership in consistent policy and follow-up processes is neglected. In the literature, leaders' reinforcement and stabilizing mechanisms of culture exist, such as organizational systems and procedures (Schein, 2016). Therefore, this research emphasizes the role of leaders in making policy and follow-up processes by helping to create organizational systems and procedures that develop in a consistent policy. As a result, this study underlines the importance of leadership in managing culture and stresses the importance of leaders in embedding, reinforcing, and stabilizing the required culture for SD.

Lastly, the main research question is answered. Leadership can contribute to sustainability strategy implementation in HEIs through the situational, transformational, servant, and authentic leadership approaches. Besides, the decisiveness trait and actions of aligning, empowering, facilitating employee development, and coaching contributed to SD. In addition, leadership is required to facilitate the balancing act of bottom-up and top-down sustainability initiatives, leadership must signal the importance of SD in development activities for all professionals in the organisation, and leadership can actively engage in periodical professional development programs for strategic advancement in SD. Ultimately, leadership must be aware of the essential roles of creating, maintaining, and changing a culture fostering SD.

5.2 Theoretical implications

From a theoretical perspective, this study does contribute to the research gap of how leaders operate in the implementation of SD in HEIs. This is because this research explicates the concept of leadership for SD. First, the situational and TL styles were perceived as useful in the data. In their role as the driver of change, HEI leaders are required to be adaptable to different tasks because the multiple

departments and levels require different levels in the implementation of sustainability in HEIs. At the same time, as a driver of innovation, HEI leaders need to be credible and encourage sustainability towards internal and external stakeholders. Furthermore, this research adds the authentic and servant leadership style to the concept of sustainability leadership in HEIs. The results show that both approaches could be helpful in SD, which was in line with the literature. Lastly, in the context of SD, decisiveness was the trait that was perceived as important. Therefore, this research contributes not only to the assumption that decisiveness is helpful in an HEI context but also the importance of decisiveness in the context of sustainability implementation in HEIs.

5.3 Policy implications

This research has shown that it is not straightforward for management to incorporate the proper mindset. The mindset at an organizational level is communicated through policy, procedures, and practices of the organization by influential individuals such as managers and leaders (Murphy & Reeves, 2019). Therefore, this research underlines the importance of having sustainability procedures, policies, and practices to change the mindset of stakeholders. Unfortunately, this research did not explore what type of policies, practices, and procedures can contribute to changing the organizational sustainability mindset.

Second, this study agrees with Broman et al. (2017) in suggesting that leadership development in all areas should integrate the implementation of systematic, systemic, and strategic efforts and thinking. As mentioned, to answer the policy call for frequent professional development programmes for leaders, frequent engagement in external training and mentoring systems can provide the necessary relationship management capabilities and business skills to obtain strategic advancement in SD (Tran & Nghia, 2020; Stolze & Sailer, 2021). While professional leadership development programmes are apparent in the case of the current HEI, periodical integration of development programmes could provide the necessary competencies for sustainability throughout the organization for anyone who aspires to become a leader.

Third, as support in making policy and anticipating those obstacles of implementation of SD as enumerated in the discussion, Lambrechts et al. (2009) suggest that the creation of a steering group is the most important determinant of success for implementing SD in HEIs since it serves to distribute initiatives and information, prevent duplication of work, coordinate of the implementation of specific policy texts, and attract funding. The authors assert that it is also capable of preparing policy frameworks and formulating strategic and operational actions, goals, and critical performance indicators. An important component of this steering group is that the composition is preferably composed of stakeholders across the whole organization (Velazquez et al., 2016).

Building on this, this research notes that the HEI of the current study has a sustainability director and several sustainability initiatives. In addition, the HEI has a sustainability strategy and an

executive council, as noted in the policy execution programme. However, for specific integration of the sustainability strategy, a holistic integration mechanism is not apparent. Mader et al. (2013) offer a similar approach but remark that the establishment of a sustainability director, a senior coordination team, and a leadership team that ensures constant cross-unit and departmental collaboration is one of the first steps. The authors illustrate next steps such as (1) establishing small implementation and coordination units that report to the sustainability director to leverage, link, identify and enlighten sustainability initiatives; (2) integrating a system of ‘nested leadership’, with local leaders reflecting the accountabilities and focus of the central sustainability leader and translate it to their local context; and (3) ensuring that SD is a standing point on the agenda for all committees at the core.

Thus, although one of the respondents mentioned the need for more ‘thinking like a sustainability director’, instead of more sustainability directors, this research argues the need for coordination and implementation units of sustainability professionals to integrate the policy holistically. There is currently a sustainability director and a sustainability council in the current HEI. However, to manage a coherent approach and translate policy to departments and faculties, simultaneous local adaptation and implementation are required. Therefore, a mechanism of coordination and implementation units across the organization could be implemented to create, link, and leverage initiatives. Therefore, the question of ‘how’ is addressed. Once the policy has been initiated, a system of ‘nested leaders’ could be established to reflect the accountabilities and facilitate the local adaptation. As a result, under the supervision of a sustainability director or team, the ‘who’ question is addressed. Building on the data of the respondents, this policy could be obligatory from the level of the executive board to be most effective.

Lastly, the concept of sustainability leadership can act as a guide concerning the hiring policy. More attention could be paid to recruitment by hiring new employees that are adjudicated on characteristics and styles that are related to SD. This research explicates the situational leadership perspective of Visser and Courtice (2011) using the TL stream. In addition, the authentic and the servant leadership stream also emerged from the data and were perceived as helpful in SD in HEIs.

5.4 Managerial implications

First, this research presents the importance of leadership in their role of contributing to sustainability strategy implementation. Leaders can contribute to a sustainable mindset and responsibility for sustainability and can facilitate the design of a consistent policy. With regards to sustainability, the vital role of leadership is learning. For example, when employees do not make sustainable decisions, it is the task of the leader to provide the direction. As Schein (2016) notes, leaders first create culture. In the case of the current HEI, which is in the early stages of implementing a sustainability strategy, it is important that leaders create the proper culture that corresponds with the strategy because SD requires a change in their foundation of the HEI culture. Next, leaders maintain and consolidate the

sustainability culture that exists, whereas the culture defines the characteristics of leadership. However, because cultures are dynamic and nested in each other, dysfunctional beliefs, norms, basic assumptions, and values will require a new change in HEIs. After that, leaders should identify the problem, assess required changes, and launch a culture change programme. In other words, the leaders manage the future direction of the evolution of the organizational culture.

Second, this research identified that in the sustainability strategy of the current HEI, the dominant Western lifestyles are not criticized. HEIs can aim to create a path to degrowth by questioning the dominant Western lifestyle and mode of consumption, instead of reproducing capitalist technology as solution fixes (O’neill & Sinden, 2021). As a result, this research emphasizes the opportunity for the current HEI to change their underlying paradigm and therefore initiate the changing culture required for sustainability. To change the paradigm, management needs to be aware of their language and ideas because paradigm shifts only emerge when employees have a language about their alternative future and current position in sustainability. HEI leaders can change the paradigm by changing their language and proposing alternative futures, and thereby HEI can set an example for society.

5.5 Limitations

The following section depicts the limitations of this research. First, achievement of reliability can be problematic for qualitative research. Taylor and Bogdan (1998) state that qualitative methods have an emphasis on validity and are created to guarantee a tight fit between data and what respondents convey. Pole and Lampard (2002) mention that reliability in qualitative interviews is often a challenge because the data is a reflection of current circumstances wherein the interview was conducted. Therefore, replicating the same interviews could result in different research outcomes due to a changing context. Additionally, management respondents were asked to describe their leadership style via self-evaluation, which could result in lower reliability. With regards to validity, especially in qualitative research employing exploratory methods, the answer to this question could be less obvious. Like reliability, the context wherein the data is obtained should be taken into consideration (Pole & Lampard, 2002).

Second, due to time restrictions, this research was not able to introduce all elements of both streams of literature related to SD to all the respondents. Simply put, not all components were presented to every respondent. Reaching out to a larger number of respondents would have resulted in greater robustness. Specifically, a broader diversity of leadership perspectives could be obtained by also interviewing employees from divisions or faculties themselves to gain a more comprehensive understanding of attitudes, opinions, and positions.

Third, a limitation regarding the deductive part is that when exploring the leadership streams associated with SD, leadership terms seem to be ‘positive terms’. It can be that respondents tend to agree with terms as creativity, encouraging of the vision, or systems thinking. Regardless of the context, these terms could be considered as helpful. This could be perceived as the acquiescence bias, where respondents tend to agree with positive options (Hurd & Kapteyn, 1999).

Fourth, during four interviews, notes were written down by hand. This could have resulted in a loss of information or facial expressions that were not perceived by the researcher. Furthermore, four interviews were executed via telephone, which may also have led to a loss of information conveyed by facial expressions or body language.

Lastly, this research accounts for the overlap of the concepts of leadership and management. Persons who are in a management position are believed to be leaders, but not all individuals who are manager lead (Bass & Bass, 2009; Yukl, 1998). Leadership and management are perceived as complementary, but distinct systems in organizations (Leal Filho et al., 2020). Management handles complexity, preserves organizational routines, and advocates for stability (Zaleznik, 2004). It involves controlling, making budgets, planning, staffing and organizing, and day-to-day problem-solving (House & Aditya, 1997). Leadership, in contrast, is more related to change management and involves empowering, motivating, and aligning people with a vision (Leal Filho et al., 2018). This research is aware that both concepts could be used simultaneously due to their complementary nature.

In addition, ‘leader’ and ‘leadership’ are also different concepts: while a leader is an individual who manages other people due to his position, leadership is the process of motivating or influencing individuals to achieve a common goal (Malik & Azmat, 2019; Kesting, Ulhøi, Song, & Niu, 2016). Furthermore, these conceptualizations could be used intertwined, which could be harmful to the validity.

5.6 Future research

This section provides suggestions for future research. First, due to difficulties in exploring how leadership styles were helpful in practice, quantitative research could be used. Quantitative methods can measure social phenomena, testing hypotheses by fixed variables, and could be used for larger sample sizes (Silverman, 2006). For example, a quantitative study could include authentic and servant leadership styles. Second, because local adaptation and execution of vision are often excluded, future research can investigate how integration units or senior coordination and leadership teams (Lambrechts et al., 2009; Mader et al., 2013), could be established in HEIs. Third, due to a lack of commitment among faculties (Aleixa et al., 2018), future research could focus on leadership, collaboration, or culture within faculties to optimize the implementation of SD. Fourth, due to an indication of a non-coherent approach to internal communication and a lack of access to information (Lambrechts et al., 2015), research can explore what the optimal internal communication mechanisms

are within HEIs to promote SD. Fifth, and surprisingly, students did not know whether the executive board was a role model, and it was suggested there was potential to be ‘an influencer’ on the executive board. In the future, research can be used to explore the potential of being a role model as high executives of HEIs to motivate students. Lastly, research is required to understand new processes of governance following from declarations, and research is needed to explore alternative futures to change the paradigm of HEIs (O’neill & Sinden, 2021).

6. Conclusion

The goal of this research was to explore how leadership can contribute to sustainability strategy implementation of HEIs. The results showed that besides elements of the situational and TL style, the authentic and servant leadership approach can also be helpful in SD in HEIs. Furthermore, data showed that decisiveness is helpful for leaders in SD, and actions related to SD were empowering, aligning, coaching, and facilitating the development of employees. Furthermore, data showed difficulties in obtaining the proper sustainability mindset, a lack of responsibility for sustainability, and failure in the execution of the sustainability strategy. Therefore, this research recognizes those difficulties that emerged due to a cultural problem for sustainability implementation in the HEI. Thereby, this research stresses the vital role of leadership in creating a suitable sustainability culture in HEIs. When creating the appropriate culture for SD, leaders can shape policy design by initiating procedures and practices to change the organizational mindset and facilitate cultural change. During this process, the complexity of sustainability and the different cultures in HEIs should be considered. Therefore, once a proper sustainability culture is established, leaders have the important tasks of maintaining, consolidating, and changing the sustainability culture if required. Finally, in the case of the current HEI, the HEI and leaders should be aware that also the foundation of the culture requires change for SD. Changing their paradigm by questioning the dominant Western practices as overconsumption and growth can be a driver for SD in HEIs.

7. References

- Adams, R., Martin, S., & Boom, K. (2018). University culture and sustainability: Designing and Implementing an enabling framework. *Journal of Cleaner Production*, 171, 434-445. doi:10.1016/j.jclepro.2017.10.032
- Albrecht, P., Burandt, S., & Schaltegger, S. (2007). Do sustainability projects stimulate organizational learning in universities? *International Journal of Sustainability in Higher Education*. doi:10.1108/14676370710823573
- Aleixo, A. M., Azeiteiro, U., & Leal, S. (2018). The implementation of sustainability practices in Portuguese higher education institutions. *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-02-2017-0016
- Ambrosini, V., Bowman, C., & Collier, N. (2009). Dynamic capabilities: An exploration of how firms renew their resource base. *British Journal of Management*, 20, S9-S24. doi:10.1111/j.1467-8551.2008.00610.x
- Amui, L. B. L., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., & Kannan, D. (2017). Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition. *Journal of Cleaner Production*, 142, 308-322. doi:10.1016/j.jclepro.2016.07.103
- Ansell, C., Sørensen, E., & Torfing, J. (2017). Improving policy implementation through collaborative policymaking. *Policy & Politics*, 45(3), 467-486. doi:10.1332/030557317X14972799760260
- Antonakis, J. E., Cianciolo, A. T., & Sternberg, R. J. (2004). *The nature of leadership*. Sage Publications, Inc.
- Arend, R. J. (2014). Entrepreneurship and dynamic capabilities: how firm age and size affect the 'capability enhancement–SME performance' relationship. *Small Business Economics*, 42(1), 33-57. doi:10.1007/s11187-012-9461-9
- Artigiani, R. (2005). Leadership and uncertainty: complexity and the lessons of history. *Futures*, 37(7), 585-603.
- Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative sociology*, 42(2), 139-160. doi:10.1007/s11133-019-9413-7
- Avery, G. C., & Bergsteiner, H. (2011). Sustainable leadership practices for enhancing business resilience and performance. *Strategy & Leadership*.
- Avolio, B. J., & Bass, B. M. (2004). Multifactor leadership questionnaire (TM). *Mind Garden, Inc. Menlo Park, CA*.
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. (2009). A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *The leadership quarterly*, 20(5), 764-784. doi:10.1016/j.leaqua.2009.06.006

- Barry, C., & Halfmann, K. (2016). The Effect of Mindset on Decision-Making. *Journal of Integrated Social Sciences*, 6(1), 49-74.
- Bass, B. M., & Bass Bernard, M. (1985). Leadership and performance beyond expectations.
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public administration quarterly*, 112-121.
- Bauer, M., Niedlich, S., Rieckmann, M., Bormann, I., & Jaeger, L. (2020). Interdependencies of culture and functions of sustainability governance at higher education institutions. *Sustainability*, 12(7), 2780. doi:10.3390/su12072780
- Bennis, W. (1982). *The art form of leadership. The Leadership Companion* Free Press.
- Bilodeau, L., Podger, J., & Abd-El-Aziz, A. (2014). Advancing campus and community sustainability: strategic alliances in action. *International Journal of Sustainability in Higher Education*. doi: 10.1108/IJSHE-06-2012-0051
- Blanchard Hersey, P., & Blanchard, K. H. (1977). Management of organizational behaviour.
- Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N. J., Moore, M. L., ... & Brown, K. (2018). The dark side of transformation: latent risks in contemporary sustainability discourse. *Antipode*, 50(5), 1206-1223. doi:10.1111/anti.12405
- Block, P. (1993). *Stewardship: Choosing service over self-interest*. San Francisco, CA: Berrett-Koehler Publishers.
- Boamah, S. A., Laschinger, H. K. S., Wong, C., & Clarke, S. (2018). Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nursing outlook*, 66(2), 180-189. doi:10.1016/j.outlook.2017.10.004
- Brinkhurst, M., Rose, P., Maurice, G., & Ackerman, J. D. (2011). Achieving campus sustainability: top-down, bottom-up, or neither?. *International Journal of Sustainability in Higher Education*. doi:10.1108/14676371111168269
- Broman, G., Robèrt, K. H., Collins, T. J., Basile, G., Baumgartner, R. J., Larsson, T., & Huisingh, D. (2017). Science in support of systematic leadership towards sustainability. *Journal of cleaner production*, 140, 1-9.
- Bryman, A. (2016). *Social research methods*. Oxford university press. Retrieved from <https://books.google.nl/books>
- Burns, J.M., 2003. *Transforming Leadership: A New Pursuit of Happiness*. Atlantic, London
- Burns, H., & Miller, W. (2012). The Learning Gardens Laboratory: Teaching sustainability and developing sustainable food systems through unique partnerships. *Journal of Agriculture, Food Systems, and Community Development*.
- Canning, E. A., Murphy, M. C., Emerson, K. T., Chatman, J. A., Dweck, C. S., & Kray, L. J. (2020). Cultures of genius at work: Organizational mindsets predict cultural norms, trust, and commitment. *Personality and Social Psychology Bulletin*, 46(4), 626-642. doi:10.1177 /0146167219872473

- Cebrián, G., Grace, M., & Humphris, D. (2013). Organisational learning towards sustainability in higher education. *Sustainability Accounting, Management and Policy Journal*.
- Chatterton, P., & Goddard, J. (2000). The response of higher education institutions to regional needs. *European Journal of Education, 35*(4), 475-496.
- Choi, S. B., Kim, K., Ullah, S. E., & Kang, S. W. (2016). How transformational leadership facilitates innovative behavior of Korean workers. *Personnel Review*. doi:10.1108/PR-03-2014-0058/0146167219872473
- Cicero, L., Pierro, A., & Van Knippenberg, D. (2010). Leadership and uncertainty: How role ambiguity affects the relationship between leader group prototypicality and leadership effectiveness. *British Journal of Management, 21*(2), 411-421.
- Cortese, A. D. (2003). The critical role of higher education in creating a sustainable future. *Planning for higher education, 31*(3), 15-22.
- Crews, D. E. (2010). Strategies for implementing sustainability: Five leadership challenges. *SAM Advanced Management Journal, 75*(2), 15.
- Davies, J., Hides, M. T., & Casey, S. (2001). Leadership in higher education. *Total Quality Management, 12*(7-8), 1025-1030. doi:10.1080/09544120120096197
- De Castro, R., & Jabbour, C. J. C. (2013). Evaluating sustainability of an Indian university. *Journal of Cleaner Production, 61*, 54-58. doi:10.1016/j.jclepro.2013.02.033
- Denman, B. D. (2009). What is a university in the 21st century?. *Higher education Management and policy, 17*(2), 9-28. doi:10.1787/17269822
- Diaz-Fernandez, M., Bornay-Barrachina, M., & Lopez-Cabrales, A. (2017). HRM practices and innovation performance: a panel-data approach. *International Journal of Manpower*. doi: 10.1108/IJM-02-2015-0028
- Di Fabio, A. (2014). Intrapreneurial self-capital: A new construct for the 21st century. *Journal of Employment Counseling, 51*(3), 98-111. doi:10.1002/j.2161-1920.2014.00045.x
- Di Fabio, A., & Saklofske, D. H. (2019). The contributions of personality traits and emotional intelligence to intrapreneurial self-capital: Key resources for sustainability and sustainable development. *Sustainability, 11*(5), 1240
- Disterheft, A., Caeiro, S., Azeiteiro, U. M., & Leal Filho, W. (2015). Sustainable universities—a study of critical success factors for participatory approaches. *Journal of Cleaner Production, 106*, 11-21. doi:10.1016/j.jclepro.2014.01.030
- Dlouhá, J., Barton, A., Janoušková, S., & Dlouhý, J. (2013). Social learning indicators in sustainability-oriented regional learning networks. *Journal of Cleaner Production, 49*, 64-73. doi:10.1016/j.jclepro.2012.07.023
- Dooris, M., Powell, S., Parkin, D., & Farrier, A. (2021). Health promoting universities: effective leadership for health, well-being and sustainability. *Health Education*. doi:10.1108/HE-12-2020-0121

- Dyer, G., & Dyer, M. (2017). Strategic leadership for sustainability by higher education: the American College & University Presidents' Climate Commitment. *Journal of Cleaner Production*, *140*, 111-116.
- Eacott, S. (2011). New look leaders or a new look at leadership?. *International Journal of Educational Management*. doi:10.1108/09513541111107560
- Farinha, C. S., Caeiro, S. S., & Azeiteiro, U. (2020). Universities speak up regarding the implementation of sustainable development challenges. *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-08-2019-0250
- Ferdig, M. A. (2007). Sustainability leadership: Co-creating a sustainable future. *Journal of Change Management*, *7*(1), 25-35.
- Ferguson, T., & Roofe, C. G. (2020). SDG 4 in higher education: Challenges and opportunities. *International Journal of Sustainability in Higher Education*, *21*(5) 959-975 doi:10.1108/IJSHE-12-2019-0353
- Ferrer-Balas, D., Buckland, H., & de Mingo, M. (2009). Explorations on the University's role in society for sustainable development through a systems transition approach. Case-study of the Technical University of Catalonia (UPC). *Journal of Cleaner Production*, *17*(12), 1075-1085. doi:10.1016/j.jclepro.2008.11.006
- Finnveden, G., Friman, E., Mogren, A., Palmer, H., Sund, P., Carstedt, G., ... & Svärd, L. (2020). Evaluation of integration of sustainable development in higher education in Sweden. *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-09-2019-0287
- Fuchs, P., Raulino, C., Conceicao, D., Neiva, S., de Amorim, W. S., Soares, T. C., ... & Guerra, A. (2020). Promoting sustainable development in higher education institutions: the use of the balanced scorecard as a strategic management system in support of green marketing . *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-02-2020-0079
- García, F. J. L., Kevany, K., & Huisingh, D. (2006). Sustainability in higher education: what is happening? doi:10.1016/j.jclepro.2005.12.006
- Gardner, W. L., Cogliser, C. C., Davis, K. M., & Dickens, M. P. (2011). Authentic leadership: A review of the literature and research agenda. *The leadership quarterly*, *22*(6), 1120-1145.
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory Chicago*. Aldine.
- Global University Network for Innovation (GUNI) (2012), *Higher Education in the World 4. Higher Education's Commitment to Sustainability: from Understanding to Action*, Palgrave Macmillan
- Greenleaf, R.K. (1977). *Servant leadership: A journey into the nature of legitimate power and greatness* (2nd ed). New York: Paulist Press.

- Guerrero, M., & Urbano, D. (2012). The development of an entrepreneurial university. *Journal of Technology Transfer*, 37(1), 43–74. doi:10.1007/s10961-010-9171-x.
- Gunasekara, C. (2006). The generative and developmental roles of universities in regional innovation systems. *Science and public policy*, 33(2), 137-150. doi:10.3152/147154306781779118
- Hall, S. (2016). *Cultural studies 1983: A theoretical history*. Duke University Press.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. G. (2009). *Dynamic capabilities: Understanding strategic change in organizations*. John Wiley & Sons.
- Hermann, R. R., & Bossle, M. B. (2020). Bringing an entrepreneurial focus to sustainability education: A teaching framework based on content analysis. *Journal of Cleaner Production*, 246, 119038. doi:10.1016/j.jclepro.2019.119038
- Hersey, P., Blanchard, K. H., & Natemeyer, W. E. (1979). Situational leadership, perception, and the impact of power. *Group & Organization Studies*, 4(4), 418-428. doi:10.1177/105960117900400404
- Hickel, J. (2019). The contradiction of the sustainable development goals: Growth versus ecology on a finite planet. *Sustainable Development*, 27(5), 873-884. doi:10.1002/sd.1947
- Hoffmann, T., & Siege, H. (2018). What is Education for Sustainable Development (ESD). *Human Development*, 1(8), 1-6. Retrieved from https://esd-expert.net/files/ESD-Expert/pdf/Was_wir_tun/Lehr-%20und%20Lernmaterialien/What_is_Education_for_Sustainable_Development.pdf
- Hoover, E., & Harder, M. K. (2015). What lies beneath the surface? The hidden complexities of organizational change for sustainability in higher education. *Journal of Cleaner Production*, 106, 175-188. doi:10.1016/j.jclepro.2014.01.081
- House, R. J., & Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis?. *Journal of management*, 23(3), 409-473. doi:10.1016/S0149-2063(97)90037-4
- Hurd, M. D., & Kapteyn, A. (1999). Anchoring and acquiescence bias in measuring assets in household surveys. In *Elicitation of Preferences* (pp. 111-138). Springer, Dordrecht.
- Iwaniec, D. M., Childers, D. L., VanLehn, K., & Wiek, A. (2014). Studying, teaching and applying sustainability visions using systems modeling. *Sustainability*, 6(7), 4452-4469. doi:10.3390/su6074452
- Kesting, P., Ulhøi, J. P., Song, L. J., & Niu, H. (2015). The impact of leadership styles on innovation-a review. *Journal of Innovation Management*, 3(4), 22-41. doi:10.24840/2183-0606_003.004_0004
- Kezar, A., & Eckel, P. D. (2002). The effect of institutional culture on change strategies in higher education: Universal principles or culturally responsive concepts?. *The journal of higher education*, 73(4), 435-460. doi:10.1080/00221546.2002.11777159

- Klein-Banai, C., & Theis, T. L. (2011). An urban university's ecological footprint and the effect of climate change. *Ecological Indicators*, *11*(3), 857-860. doi:10.1016/j.ecolind.2010.11.002
- Klofsten, M., Fayolle, A., Guerrero, M., Mian, S., Urbano, D., & Wright, M. (2019). The entrepreneurial university as driver for economic growth and social change-Key strategic challenges. *Technological Forecasting and Social Change*, *141*, 149-158. doi:10.1016/j.techfore.2018.12.004
- Koester, R. J., Eflin, J., & Vann, J. (2006). Greening of the campus: a whole-systems approach. *Journal of cleaner production*, *14*(9-11), 769-779. doi:10.1016/j.jclepro.2005.11.055
- Kopnina, H. (2016). The victims of unsustainability: a challenge to sustainable development goals. *International Journal of Sustainable Development & World Ecology*, *23*(2), 113-121. doi:10.1080/13504509.2015.1111269
- Kouzes, J.M. (2003). *Becoming a leader*, Business Leadership a Jossey-Bass Reader, Jossey-Bass, San Francisco
- Lambrechts, W., Van den Haute, H., & Vanhoren, I. (2009). Duurzaam hoger onderwijs. Appel voor verantwoord onderrichten, onderzoeken en ondernemen. *Sustainable higher education. Appeal for responsible education, research and operations*. LannooCampus; Leuven.
- Lambrechts, W., Van Liedekerke, L., & Rymenams, S. (2015). Connecting sustainability initiatives with efficiency measures: an opportunity for business schools. *Central and Eastern European journal of management and economics*, *3*(2), 161-173.
- Larrasquet, J. M., & Pilnière, V. (2012). Seeking a sustainable future—the role of university. *International journal of technology management & Sustainable development*, *11*(3), 207-215. doi:10.1108/IJM-08-2019-0404
- Leal Filho, W. (2011). About the role of universities and their contribution to sustainable development. *Higher Education Policy*, *24*(4), 427-438.
- Leal Filho, W., Wu, Y. C. J., Brandli, L. L., Avila, L. V., Azeiteiro, U. M., Caeiro, S., & Madruga, L. R. D. R. G. (2017). Identifying and overcoming obstacles to the implementation of sustainable development at universities. *Journal of Integrative Environmental Sciences*, *14*(1), 93-108. doi:10.1080/1943815X.2017.1362007
- Leal Filho, W., & Dahms, L. M. (2018). Incorporating Sustainable Development Issues in Teaching Practice. In *Implementing Sustainability in the Curriculum of Universities* (pp. 323-330) . Springer, Cham.
- Leal Filho, W., Pallant, E., Enete, A., Richter, B., & Brandli, L. L. (2018). Planning and implementing sustainability in higher education institutions: an overview of the difficulties and potentials . *International journal of sustainable development & world ecology*, *25*(8), 713-721. doi:10.1080/13504509.2018.1461707

- Leal Filho, W., Raath, S., Lazzarini, B., Vargas, V. R., de Souza, L., Anholon, R., ... & Orlovic, V. L. (2018). The role of transformation in learning and education for sustainability. *Journal of cleaner production*, 199, 286-295. doi:10.1016/j.jclepro.2018.07.017
- Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L. V., Brandli, L. L., ... & Caeiro, S. (2019). Sustainable Development Goals and sustainability teaching at universities: Falling behind or getting ahead of the pack?. *Journal of Cleaner Production*, 232, 285-294. doi:10.1016/j.jclepro.2019.05.309
- Lee, K. H., Barker, M., & Mouasher, A. (2013). Is it even espoused? An exploratory study of commitment to sustainability as evidenced in vision, mission, and graduate attribute statements in Australian universities. *Journal of Cleaner Production*, 48, 20-28. doi:10.1016/j.jclepro.2013.01.007
- Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School effectiveness and school improvement*, 17(2), 201-227. doi:10.1080/09243450600565829
- Leih, S., & Teece, D. (2016). Campus leadership and the entrepreneurial university: A dynamic capabilities perspective. *Academy of Management Perspectives*, 30(2), 182-210. doi:10.5465/amp.2015.0022
- Li, H., Sajjad, N., Wang, Q., Muhammad Ali, A., Khaqan, Z., & Amina, S. (2019). Influence of transformational leadership on employees' innovative work behavior in sustainable organizations: Test of mediation and moderation processes. *Sustainability*, 11(6), 1594. doi:10.3390/su11061594
- Lopez-Cabrales, A., Bornay-Barrachina, M., & Diaz-Fernandez, M. (2017). Leadership and dynamic capabilities: the role of HR systems. *Personnel Review*.
- Lotz-Sisitka, H., Wals, A. E., Kronlid, D., & McGarry, D. (2015). Transformative, transgressive social learning: Rethinking higher education pedagogy in times of systemic global dysfunction. *Current Opinion in Environmental Sustainability*, 16, 73-80. doi:10.1016/j.cosust.2015.07.018
- Lovelock, J. (2007). *The revenge of Gaia: Why the Earth is fighting back and how we can still save humanity* (Vol. 36). Penguin UK.
- Lozano, R. (2006). Incorporation and institutionalization of SD into universities: breaking through barriers to change. *Journal of cleaner production*, 14(9-11), 787-796. doi:10.1016/j.jclepro.2005.12.010
- Lozano, R., Ceulemans, K., Alonso-Almeida, M., Huisingh, D., Lozano, F. J., Waas, T., ... & Hugé, J. (2015). A review of commitment and implementation of sustainable development in higher education: results from a worldwide survey. *Journal of cleaner production*, 108, 1-18. doi:10.1016/j.jclepro.2014.09.048

- Lozano, R., Lukman, R., Lozano, F. J., Huisingh, D., & Lambrechts, W. (2013). Declarations for sustainability in higher education: becoming better leaders, through addressing the university system. *Journal of Cleaner Production*, 48, 10-19. doi:10.1016/j.jclepro.2011.10.006
- Lozano-García, F. J., Huisingh, D., & Delgado-Fabián, M. (2009). An interconnected approach to incorporate sustainable development at Tecnológico de Monterrey. *International Journal of Sustainability in Higher Education*.
- Lumby, J. (2012). *What do we know about leadership in higher education?*. Leadership Foundation for Higher Education.
- Luthans, F., & Avolio, B. J. (2003). Authentic leadership development. *Positive organizational scholarship*, 241, 258.
- Mader, C., Scott, G., & Razak, D. A. (2013). Effective change management, governance and policy for sustainability transformation in higher education. *Sustainability Accounting, Management and Policy Journal*, 4(2), 264-284. doi:10.1108/SAMPJ-09-2013-0037
- Malik, M. A., & Azmat, S. (2019). Leader and Leadership: Historical Development of the Terms and Critical Review of Literature. *Annals of the University of Craiova for Journalism, Communication and Management*, 5(1), 16-32.
- Mayring, P. (2003). *Qualitative Inhaltsanalyse: Grundlagen und Techniken (Qualitative content analysis: basics and techniques)*, 8th edn. Beltz.
- McCann, J. T., & Holt, R. A. (2010). Defining sustainable leadership. *International Journal of Sustainable Strategic Management*, 2(2), 204-210.
- Menon, S., & Suresh, M. (2020). Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: a literature review. *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-03-2020-0089
- Metcalf, L., & Benn, S. (2013). Leadership for sustainability: An evolution of leadership ability. *Journal of business ethics*, 112(3), 369-384.
- Missimer, M., & Connell, T. (2012). Pedagogical approaches and design aspects to enable leadership for sustainable development. *Sustainability: The Journal of Record*, 5(3), 172-181. doi:10.1089/sus.2012.9961
- Moore, J. (2005). Is higher education ready for transformative learning? A question explored in the study of sustainability. *Journal of transformative education*, 3(1), 76-91. doi:10.1177/1541344604270862
- Morsing, M., & Oswald, D. (2009). *Integrating Sustainability into Business Practice*. In *Mainstreaming Corporate Responsibility: Cases and Text for Integrating Corporate responsibility across the Business School Curriculum* (pp. 142-166). Wiley.
- Mula, I., Tilbury, D., Ryan, A., Mader, M., Dlouha, J., Mader, C., ... & Alba, D. (2017). Catalysing change in higher education for sustainable development. *International Journal of Sustainability in Higher Education*. doi:10.1108/IJSHE-03-2017-0043

- Muriisa, R. K. (2014). Rethinking the role of universities in Africa: Leadership as a missing link in explaining university performance in Uganda. *Journal of Higher Education in Africa/Revue de l'enseignement supérieur en Afrique*, 12(1), 69-92. doi:10.2307/jhigheducafri.12.1.69
- Murphy, M. C., & Reeves, S. L. (2019). Personal and organizational mindsets at work. *Research in Organizational Behavior*, 39, 100121. doi:10.1016/j.riob.2020.100121
- Ni, Y., Yan, R., & Pounder, D. (2018). Collective leadership: Principals' decision influence and the supportive or inhibiting decision influence of other stakeholders. *Educational Administration Quarterly*, 54(2), 216-248. doi:10.1177/0013161X17723427
- Oliveira, K. C. C. D. (2017). *Relacionando liderança transformacional e inovação na educação* (Doctoral dissertation).
- O'Neill, K., & Sinden, C. (2021). Universities, sustainability, and neoliberalism: Contradictions of the climate emergency declarations. *Politics and Governance*, 9(2), 29-40. doi:10.17645/pag.v9i2.3872
- O'Neil, I., & Ucbasaran, D. (2016). Balancing “what matters to me” with “what matters to them”: Exploring the legitimation process of environmental entrepreneurs. *Journal of Business Venturing*, 31(2), 133-152. doi:10.1016/j.jbusvent.2015.12.001
- O'Reilly, C. A., & Chatman, J. A. (1996). Culture as social control: Corporations, cults, and commitment.
- Owens, R.G. (2004), *Organizational Behaviour in Education: Adaptive Leadership and School Reform*, 8th ed., Pearson Education, Boston.
- Oxtoby, B., McGuinness, T., & Morgan, R. (2002). Developing organisational change capability. *European Management Journal*, 20(3), 310-320.
- Parris, D.L., & Peachey, J.W. (2013). A Systematic Literature Review of Servant Leadership Theory in Organizational Contexts. *Journal of Business Ethics*, 113(3), 377–393. doi:10.1007/s10551-012-1322-6
- Patterson, J. G. (1994). *Fundamentals of Leadership*. American Society for Training and Development.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, Cal.: Sage Publications, 4.
- Pelonis, P. (2021). Courageous leadership: Transitions to sustainability by empowering institutional excellence. In *Handbook of Research on K-12 Blended and Virtual Learning Through the i²Flex Classroom Model* (pp. 205-215). IGI Global.
- Peterlin, J., Pearse, N. J., & Dimovski, V. (2015). Strategic Decision Making for Organizational Sustainability: The Implications of Servant Leadership and Sustainable Leadership Approaches. *Economic & Business Review*, 17(3). doi:10.15458/85451.4

- Pietsch, M., Tulowitzki, P., & Koch, T. (2019). On the differential and shared effects of leadership for learning on teachers' organizational commitment and job satisfaction: A multilevel perspective. *Educational Administration Quarterly*, 55(5), 705-741. doi:10.1177/0013161X18806346
- Pizzutilo, F., & Venezia, E. (2021). On the maturity of social responsibility and sustainability integration in higher education institutions: Descriptive criteria and conceptual framework. *The International Journal of Management Education*, 19(3), 100515. doi:10.1016/j.ijme.2021.100515
- Pole, C. J., & Lampard, R. (2002). *Practical social investigation: Qualitative and quantitative methods in social research*. Pearson Education.
- Radinger-Peer, V., & Pflitsch, G. (2017). The role of higher education institutions in regional transition paths towards sustainability. *Review of Regional Research*, 37(2), 161-187. doi:10.1007/s10037-017-0116-9
- Rakic, B., & Rakic, M. (2015). Holistic management of marketing sustainability in the process of sustainable development. *Environmental Engineering & Management Journal (EEMJ)*, 14(4).
- Rok, B. (2009). "Ethical context of the participative leadership model: taking people into account", *Corporate Governance*, Vol. 9 No. 4, pp. 461-72. doi:10.1108/14720700910985007
- Ryan, A. (2011), Education for Sustainable Development and Holistic Curriculum Change: A Review and Guide, *Higher Education Academy*
- Sabogal, A., Schorr, B., Schweigel, K., Berg, F., & Cuentas, M. A. (2020). *Universities as change makers: Sustainability initiatives from across the globe*. doi:10.17169/refubium-27617
- Sáez de Cámara, E., Fernández, I., & Castillo-Eguskitza, N. (2021). A Holistic Approach to Integrate and Evaluate Sustainable Development in Higher Education. The Case Study of the University of the Basque Country. *Sustainability (2071-1050)*, 13(1). doi:10.3390/su13010392
- Salleh, M., & Grunewald, D. (2013). Organizational leadership—the strategic role of the chief exec. *Journal of leadership, Accountability and Ethics*, 10(5), 9-20.
- Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 2). John Wiley & Sons. Retrieved from <https://books.google.nl/books>
- Schein, S. (2017). *A new psychology for sustainability leadership: The hidden power of ecological worldviews*. Routledge.
- Schoemaker, P. J., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California Management Review*, 61(1), 15-42.
- Sedlacek, S. (2013). The role of universities in fostering sustainable development at the regional level. *Journal of cleaner production*, 48, 74-84. doi:10.1016/j.jclepro.2013.01.029
- Seeber, M., Lepori, B., Montauti, M., Enders, J., De Boer, H., Weyer, E., ... & Reale, E. (2015). European universities as complete organizations? Understanding identity, hierarchy and

- rationality in public organizations. *Public Management Review*, 17(10), 1444- 1474.
doi:10.1080/14719037.2014.943268
- Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text and interaction*. Sage Publications Limited.
- Silverman, D. (2015). *Interpreting qualitative data*. Sage. Retrieved from <https://books.google.nl/books>
- Sørensen, J. B. (2002). The strength of corporate culture and the reliability of firm performance. *Administrative science quarterly*, 47(1), 70-91. doi:10.2307/3094891
- Spears, L.C. & Lawrence, M. (2002). *Focus on leadership: Servant–leadership for the 21st century*. New York, NY: Wiley.
- Srivastava, A. P., Mani, V., Yadav, M., & Joshi, Y. (2020). Authentic leadership towards sustainability in higher education—an integrated green model. *International Journal of Manpower*.
- Sterling, S. (2004). Higher education, sustainability, and the role of systemic learning. In *Higher education and the challenge of sustainability* (pp. 49-70). Springer, Dordrecht.
- Stolze, A., & Sailer, K. (2021). Advancing HEIs' third-mission through dynamic capabilities: the role of leadership and agreement on vision and goals. *The Journal of Technology Transfer*, 1-25. doi:10.1007/s10961-021-09850-9
- Strauss, A., & Corbin, J. M. (1997). *Grounded theory in practice*. Sage.
- Suriyankietkaew, S., & Avery, G. (2016). Sustainable leadership practices driving financial performance: Empirical evidence from Thai SMEs. *Sustainability*, 8(4), 327. doi:10.3390/su8040327
- Swaffield, J. (2016). After a decade of critique: Neoliberal environmentalism, discourse analysis and the promotion of climate-protecting behaviour in the workplace. *Geoforum*, 70, 119-129. doi:10.1016/j.geoforum.2016.02.014
- Sweet, S., Roome, N., & Sweet, P. (2003). Corporate environmental management and sustainable enterprise: the influence of information processing and decision styles. *Business Strategy and the Environment*, 12(4), 265-277. doi:10.1002/bse.365
- Sylvestre, P., Wright, T., & Sherren, K. (2013). Exploring faculty conceptualizations of sustainability in higher education: Cultural barriers to organizational change and potential resolutions. *Journal of Education for Sustainable Development*, 7(2), 223-244. doi:10.1177/0973408214526491
- Szekely, E., & Mason, M. (2019). Complexity theory, the capability approach, and the sustainability of development initiatives in education. *Journal of Education Policy*, 34(5), 669-685. doi:10.1080/02680939.2018.1465999
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, 28(13), 1319-1350.

- Teece, D. J. (2018). Managing the university: Why “organized anarchy” is unacceptable in the age of massive open online courses. *Strategic Organization*, 16(1), 92-102. doi:10.1177/1476127017732760
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Tran, L. T., & Nghia, T. L. H. (2020). Leadership in international education: leaders’ professional development needs and tensions. *Higher Education*, 1-17. doi:10.1007/s10734-019-00494-1
- Ulrich, D., & Smallwood, N. (2013). Leadership sustainability: What's next for leadership improvement efforts. *Leader to Leader*, 2013(70), 32-38.
- UNESCO (2005), *United Nations Decade of Education for Sustainable Development (2005-2014): Draft International Implementation Scheme*, UNESCO, retrieved from: http://portal.unesco.org/education/en/file_download.php/e13265d9b948898339314b001d91fd01draftFinalpIIS.pdf
- United Nations (2012). *The Future We Want: Outcome Document Adopted at Rio+20*, Retrieved from www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf
- United Nations. (2015). *Sustainable Development Goals*. United Nations. Retrieved from <https://sdgs.un.org/goals>
- University of British Columbia (2007), *The UBC Sustainability Report 2006-2007*, Retrieved from www.sustain.ubc.ca/
- Vare, P., Arro, G., De Hamer, A., Del Gobbo, G., De Vries, G., Farioli, F., ... & Zachariou, A. (2019). Devising a competence-based training program for educators of sustainable development: Lessons learned. *Sustainability*, 11(7), 1890. doi:10.3390/su11071890
- Velazquez, L., Munguia, N., Platt, A., & Taddei, J. (2006). Sustainable university: what can be the matter?. *Journal of cleaner production*, 14(9-11), 810-819.
- Verhulst, E., & Lambrechts, W. (2013). *Fostering the incorporation of SD into the university system. Lessons learned from a change management perspective*. In Proceedings of the 7th Conference of the Environmental Management for Sustainable Universities (EMSU).
- Verhulst, E., & Lambrechts, W. (2015). Fostering the incorporation of sustainable development in higher education. Lessons learned from a change management perspective. *Journal of Cleaner Production*, 106, 189-204. doi:10.1016/j.jclepro.2014.09.049
- Viebahn, P. (2002). An environmental management model for universities: from environmental guidelines to staff involvement. *Journal of cleaner production*, 10(1), 3-12. doi:10.1016/S0959-6526(01)00017-8
- Viegas, C. V., Bond, A. J., Vaz, C. R., Borchardt, M., Pereira, G. M., Selig, P. M., & Varvakis, G. (2016). Critical attributes of Sustainability in Higher Education: a categorisation from literature review. *Journal of Cleaner Production*, 126, 260-276. doi:10.1016/j.jclepro.2016.02

- Viinamäki, O. (2009). Intra–organizational challenges of values–based leadership. *Electronic Journal of Business Ethics and Organization Studies*, 14(2), 6–13. Retrieved from <http://ejbo.jyu.fi>
- Viinamäki, O. (2012). Why Leaders Fail in Introducing Values–Based Leadership? An Elaboration of Feasible Steps, Challenges, and Suggestions for Practitioners. *International Journal of Business and Management*, 7(9), 28–39. doi:10.5539/ijbm.v7n9p28
- Visser, W., & Courtice, P. (2011). Sustainability leadership: Linking theory and practice. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1947221
- Wals, A. E. (2012). *Shaping the education of tomorrow: 2012 full-length report on the UN decade of education for sustainable development*. Unesco.
- Wang, H. U. I., Sui, Y., Luthans, F., Wang, D., & Wu, Y. (2014). Impact of authentic leadership on performance: Role of followers' positive psychological capital and relational processes. *Journal of Organizational Behavior*, 35(1), 5-21. doi:10.1002/job.1850
- Warburton, K. (2003). Deep learning and education for sustainability. *International Journal of Sustainability in Higher Education*. doi:10.1108/14676370310455332
- Wilden, R., Gudergan, S. P., Nielsen, B. B., & Lings, I. (2013). Dynamic capabilities and performance: strategy, structure and environment. *Long range planning*, 46(1-2), 72-96. doi: 10.1016/j.lrp.2012.12.001
- Williams, M., & Moser, T. (2019). The art of coding and thematic exploration in qualitative research. *International Management Review*, 15(1), 45-55.
- Wolverton, M., Gmelch, W. H., Montez, J., & Nies, C. T. (2001). *The Changing Nature of the Academic Deanship*. ASHE-ERIC Higher Education Report, (28), 1. Jossey-Bass Higher and Adult Education Series. Jossey-Bass Publishers
- Yukl, G.A. (1998). *Leadership in Organizations*, Prentice Hall: Upper Saddle River
- Yukl, G. (1999). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *The leadership quarterly*, 10(2), 285-305. doi:10.1016/S1048-9843(99)00013-2
- Yukl, G. (2010), *Leadership in Organizations*, 7th ed., Pearson, Upper Saddle River
- Zaleznik, A. (2004). Managers and leaders: are they different?. *Clinical leadership & management review: the journal of CLMA*, 18(3), 171-177.
- Zhu, W., Newman, A., Miao, Q., & Hooke, A. (2013). Revisiting the mediating role of trust in transformational leadership effects: Do different types of trust make a difference?. *The Leadership Quarterly*, 24(1), 94-105. doi:10.1016/j.leaqua.2012.08.004

8. Appendix

Appendix A.1: Coding Schemes

Table A.1

Groups

◇◇ 2) Leadership CVB - General	7
◇◇ 2) Leadership CVB - Sustainability	7
◇◇ 2) Leadership Division - General	11
◇◇ 2) Leadership Division - Sustainability	6
◇◇ 3) a) Leadership Facilitation Sustainability Implementation	5
◇◇ 3) b) Leadership Enhancement/Development	8
◇◇ 3) c) Sustainability Leadership Concept	16
◇◇ 3) d) Sustainability Leadership Actions	6
◇◇ 3) e) Barriers Implementation General	9
◇◇ 4) a) Culture	3
◇◇ 4) b) Policy Execution	4
11 Group(s)	

Table A.2

Current leadership executive board in general




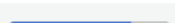
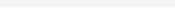
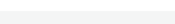
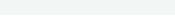
● Leadership CVB General - Authentic		2
● Leadership CVB General - Caring		2
● Leadership CVB General - Decisive		2
● Leadership CVB General - Personal attention		3
● Leadership CVB General - Role Model		1
● Leadership CVB General - Set vision		1
● Leadership CVB General - Supportive		4

Table A.3

Current leadership executive board for sustainable development




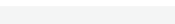
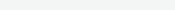
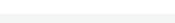
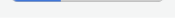
● Leadership CVB Sustainability - Decisive		5
● Leadership CVB Sustainability - Encourage		12
● Leadership CVB Sustainability - Integrity		1
● Leadership CVB Sustainability - Potential		3
● Leadership CVB Sustainability - Role model		5
● Leadership CVB Sustainability - Set vision		4
● Leadership CVB Sustainability - Supportive		9

Table A.4*Leadership division directors in general*

● Leadership Division - General - Bureaucratic		1
● Leadership Division - General - Cooperation		1
● Leadership Division - General - Distribute resources		1
● Leadership Division - General - Less vision		3
● Leadership Division - General - No direct answer		2
● Leadership Division - General - Sensing		1
● Leadership Division - General - Set vision		3
● Leadership Division - General - Social		2
● Leadership Division - General - Supportive		3
● Leadership Division - General - Task content		11
● Leadership Division - General - Transparant		4

Table A.5*Leadership division directors for sustainable development*

● Leadership Division - Sustainability - Lack of vision		1
● Leadership Division - Sustainability - Policy making		1
● Leadership Division - Sustainability - Provide vision		4
● Leadership Division - Sustainability - Seizing		1
● Leadership Division - Sustainability - Task content		1
● Leadership Division - Sustainability - Transparant		1

Table B.1*Facilitation of current leadership in contribution to sustainability strategy implementation*

● 3) Facilitate - No		6
● 3) Facilitate - No direct answer		1
● 3) Facilitate - Yes - CVB		6

Table B.2*Leadership enhancement/development*

● 3) Enhance/Develop Leadership - Academic Substantiation Sustainability		1
● 3) Enhance/Develop Leadership - Balance Vision vs Action		2
● 3) Enhance/Develop Leadership - Creativity		2
● 3) Enhance/Develop Leadership - Leadership development		13
● 3) Enhance/Develop Leadership - Listening to bottom-up		3
● 3) Enhance/Develop Leadership - Role model		3
● 3) Enhance/Develop Leadership - Systemetic / Coherent		17

Table C.1*Sustainability leadership concept*

◇ ●	7) Authentic Leadership		3
◇ ●	7) Decisive		11
◇ ●	7) Discussing		5
◇ ●	7) Informal		2
◇ ●	7) Sensing		4
◇ ●	7) Servant Leadership		9
◇ ●	7) Situational Leadership Concept		19
◇ ●	7) Transformational Leadership		34

Table C.2*Sustainability leadership actions*

●	Sustainability Action - Aligning		2
●	Sustainability Action - Facilitating mobility		3
●	Sustainability Action - Interventions		2
●	Sustainability Action - Procurement		3
●	Sustainability Action - Seduction		1

Table D.1*Barriers implementation sustainability strategy*

●	Barrier - Accessibility Organization		2
●	Barrier - Bureaucratic		2
●	Barrier - Capabilities / Capacities		4
●	Barrier - Communication		4
●	Barrier - Mindset		19
●	Barrier - Responsibility		8
●	Barrier - Strategic Operations		16
●	Barriers - Work load		10

Table E.1*Cultural category*

●	4) Mindset/ way of thinking		21
●	4) Responsibility		31

Table E.2*Policy execution*

● 4) Systematic / Coherent execution		16
● 4) Follow-up processes		12
● 4) Execution Vision (based on strategy)		14