Abstract: The present study proposes a model to emphasize the importance of the sustainability competencies in the executive-level leadership. More specifically, our model integrates the sustainability leadership competencies model with the principles of learning organization. Our premise is that sustainable transformation in organizations can only happen with the commitment of the top levels, and theoretical groundwork for facilitating this shift of mindset in organizational leaders can be built on the learning organization principles.

Keywords: learning organizations, sustainability, sustainability competencies, sustainable leadership.

I. BACKGROUND, MOTIVATION AND OBJECTIVE

The concept of sustainability has been part of the policy discussions and government actions since the late 1980s, and it was defined by the United Nations (UN) Brundtland Commission as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, un.org). With society’s growing awareness of climate change concerns, as well as challenges faced as regards poverty, inequality, access to clean resources, peace, and justice, pursuing the sustainable development goals (SDGs) put forward by the UN has become the mandate of all countries around the world.

While all parties have been trying to do their share in contributing to the SDGs, sustainable business practices have become no longer the exception but the norm. Inevitably, the main purpose for a business organization would be to survive and maintain a profitable existence; hence, companies around the world realized the need to develop various sustainability programs and practices, ranging from energy-saving measures to recycling programs, from reducing waste to using renewable energy sources, from lean manufacturing to flexible or hybrid work arrangements (Green Business Bureau, 2021; Raut et al., 2019).

While sustainability practices in business organizations can be identified and executed relatively easily, it may be a bit more intricate to define and implement sustainability competencies that would be needed to build sustainable leadership in organizations. With an increasing emphasis on sustainability education, scholars and researchers in academia, think tanks, and other transnational and research organizations explore and propose frameworks of sustainability competencies that should be developed in educational institutions (Bianchi, 2020; Borgonovi et al., 2022; Hallinger and Surijyankietkaew, 2018; Strandberg, 2015; UN Economic Commission for Europe, 2012).

According to Sustainability Leadership Institute, sustainable leaders are “people who inspire and initiate generative thinking and action with others aimed toward co-creating a better world—at home, in the workplace, and in local and global communities” (Sustainability Leadership Institute, sustainabilityleadershipinstitute.org). Conducting their research on leadership and sustainability with a wide range of business leaders, Visser and Courtice (2011) believe that leadership for sustainability is a special blend of leadership characteristics leading to action and inspiration to address sustainability challenges, and hence, to create significant change in the mindset of stakeholders, primarily in the business itself.

The importance of sustainability leadership lies in the vital role that leadership plays in any change effort in an organization. The widely known models of change management (e.g. Lewin’s force field analysis, Kotter’s 8-step
change model) presuppose the existence of a leader to initiate and lead the change action. Likewise, sustainable transformation in organizations, just like any other organizational change initiative, cannot happen without the commitment of the top levels, who are expected to model the way and lead by example (Liao, 2022).

In this line of thought, our paper places a particular emphasis on the role of executive level leadership’s competence in sustainability leadership. Our rationale is based on the seminal work of Hambrick and Mason (1984), laying the groundwork for the upper echelons theory. The authors argue that even though organizations do their best to analyze their environment and their competitive position while choosing their strategies, these analyses and choices are not completely independent of the human factor. Rather, the values, beliefs, and backgrounds of their leaders, especially those in powerful positions (“upper echelons”), make a big impact over organizational outcomes, particularly performance (Hambrick and Mason, 1984). Therefore, a thorough understanding of and a full commitment to sustainability will make all the difference for organizations to shift their mindset towards performing sustainably. Top management competences for effective organizational functioning has become even more important in today’s fast-changing, complex, and unpredictable world (Bucur, 2013; Wolanin, 2022).

Then the question becomes: “how to build sustainability leadership in organizations?” Starting from the second decade of the 2000s, the sustainability literature starts paying more attention to sustainability education. As early as 2011, Wiek, Withycombe, and Redman (2011) offered a synthesis of the various contributions on sustainability theory to lay the groundwork for sustainability education. The framework they proposed has been widely influential, and opened the doors for wider discussion in the world of academia and practice (Brundiers et al., 2021; Wiek, Withycombe and Redman, 2011).

The framework defines five sustainability competencies, namely, systems thinking competence, anticipatory (a.k.a. futures thinking) competence, normative (a.k.a. values thinking) competence, strategic thinking competence, and interpersonal (a.k.a. collaboration) competence (Wiek, Withycombe and Redman, 2011). A sixth competence that was later added to complement the model is integrated problem-solving competence. This model constituted the basis for developing of academic programs (e.g. Arizona State University’s School of Sustainability) as well as defining the competencies for sustainability professionals (Venn, Perez and Vandenbussche, 2022).

Since our paper’s outlook is geared towards building sustainability competencies at the top levels of an organization, we take an alternative approach, which is combining the framework of sustainability competences with the principles of learning organization as described by Peter Senge in his seminal work The Fifth Discipline (1990). As we argued earlier, sustainability efforts require a significant transformation in the organization which cannot be accomplished without the full commitment and guidance of the leaders. We believe that this process would inevitably necessitate the leaders to adopt a learning organization mindset, so that they can constantly rethink and revise their approaches and practices. Therefore, our purpose in this paper is to build a model that demonstrates and embeds sustainability leadership competencies in the principles of learning organization, namely the five disciplines as described by Senge (1990).

II. STATEMENT OF CONTRIBUTION/METHODS

A. Sustainable Leadership and the Learning Organization

The concept of a learning organization, as introduced by Senge (1990), emphasizes the importance of continuous learning and adaptation within an organizational context. Senge (1990: 3) defines learning organizations as:

“…organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.

Learning organizations support a culture of knowledge sharing and problem-solving, where employees at all levels
engage in reflective practices and collaborative learning processes. Sustainable leadership, on the other hand, is a leadership approach that highlights the long-term well-being of an organization, its stakeholders, and the environment (Avery, 2005; Visser and Courtice, 2011). It involves managing the complex nature of sustainability challenges and leading the organization in developing and implementing sustainable practices through a long-term lens. The relationship between the concepts of sustainable leadership and learning organization lies in their mutual reinforcement. Learning organizations enable the development of sustainable leadership by fostering the skills and mindset necessary for leaders to make informed, future-oriented decisions that balance the relationship between people, planet and profits.

In a learning organization, leaders are not just responsible for setting the direction and mobilizing the resources, but also for actively engaging in the learning process themselves. According to Fillion, Koffi and BooToo Ekionea (2015: 83), in a learning organization, leaders “are responsible for building organizations where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models – that is, they are responsible for learning…” They encourage a culture of inquiry and experimentation, which can lead to the identification of innovative and sustainable practices. Sustainable leadership, in turn, provides the guidelines necessary for organizations to direct the insights gained through their learning processes toward sustainable outcomes (Liao, 2022). By integrating sustainability concerns into their decision-making, leaders within learning organizations ensure that the organization’s growth and development are aligned with the principles of sustainable development, contributing to the long-term success of the organization in a rapidly evolving world.

B. Key Sustainability Competencies for Leaders

In their 2011 article titled "Key Competencies in Sustainability: A Reference Framework for Academic Program Development," Wiek et al. propose a comprehensive framework comprising five key sustainability competencies essential for addressing the complex challenges of sustainability. Ten years later, Brundiers et al. (2021) further the scope of the competencies in Wiek et al. (2011)’s framework using insights from a Delphi survey of field experts. The five competencies proposed in both studies jointly provide a robust foundation for individuals to effectively address sustainability challenges and to drive positive change. A competency can be defined as “a functionally linked complex of knowledge, skills and attitudes that enable successful task performance and problem solving” (Wiek et al., 2011: 204). The key sustainability competencies are briefly explained below. In our paper, we employ the terms used by Brundiers et al. (2021) to name key sustainability competencies.

- **Systems Thinking Competency**: Systems thinking competency involves the ability to make sense of the complexity of sustainability challenges by understanding and analyzing interrelated systems. Individuals with this competency can identify dynamic relationships within systems. They view issues holistically, recognizing that changes in one part of a system can have effects throughout the entire system. This competency enables leaders to develop integrated solutions that consider the whole system and to grasp the potential impacts of their decisions, making it an essential skill for addressing sustainability issues effectively.

- **Futures Thinking Competency**: Futures thinking competency (a.k.a. anticipatory competency, as Wiek et al. (2011) put it) focuses on the ability to foresee and anticipate future trends and key uncertainties within the context of sustainability. It involves the ability to identify driving forces, opportunities and threats around sustainable efforts. Leaders with futures thinking competency utilize scenario planning and other futures thinking tools in order to respond to evolving sustainability challenges proactively.

- **Values Thinking Competency**: Values thinking competency (a.k.a. normative competency, as per Wiek et al. (2011)) focuses on understanding and engaging with the diverse values and normative principles of concepts such as justice, equity, social-ecological integrity, and ethics that shape sustainability decisions and practices. It involves the ability to take diverse perspectives into account. This competency enables leaders to know what should be done. Leaders with values thinking competence can guide their decision-making towards more socially and environmentally responsible outcomes.

- **Strategic Thinking Competency**: Strategic thinking competency (a.k.a. strategic competency, as per Wiek et al. (2011)) emphasizes the capacity to formulate effective strategies and plans for realizing sustainability goals. It
involves setting clear objectives, prioritizing actions, and aligning resources to achieve desired sustainability outcomes. Leaders with strategic thinking competency can formulate sustainability transition strategies, develop implementation plans. They are also able to adapt to changes in the organizational environment. This competency enables leaders to translate their sustainability visions into practice.

- **Interpersonal Competency:** Interpersonal competency highlights the importance of effective communication, collaboration, and relationship-building in the efforts towards sustainability. It involves the ability to engage with diverse stakeholders and cultivate dialogue and collaboration to address sustainability challenges collectively. Leaders with interpersonal competency are skilled in facilitating dialogue, negotiating conflicts, and building trust within sustainability initiatives. This competency is essential for fostering cooperation and creating shared visions for a more sustainable future, as sustainability inherently involves multiple actors and perspectives.

C. **Embedding Key Sustainability Competencies in the Learning Organization Principles**

As suggested before, we aim to provide a link between the principles of the learning organization with key sustainability competencies to propose an agenda towards sustainable leadership. The basic premise of a learning organization is to actively promote and support continuous learning and adaptability among the members of the organization. Through linking five disciplines of the learning organization to five key sustainability competencies, we propose that a learning organization mindset can increase the effectiveness of sustainable leadership through facilitating the adoption of key sustainability competencies. Figure 1 depicts our proposed model that associates the five disciplines of a learning organization (Senge, 1990) to five key sustainability competencies (Wiek et al., 2011; Brundiers et al., 2021).

**Systems Thinking Discipline and Systems Thinking Competency:** According to Senge (1990), systems thinking is the cornerstone of the learning organization, integrating the other disciplines. Systems thinking emphasizes the ability to see the interconnected and interdependent nature of components within a system, and to see the system from a holistic view. This concept resonates seamlessly with the systems thinking competency, which is one of the key competencies in Wiek et al. (2011)’s framework. A holistic perspective is crucial for addressing sustainability challenges, as these issues encompass social, ecological, and economical systems. A leader would not be able to make sense of complex sustainability problems without a systems thinking competency.

**Shared Vision Discipline and Futures Thinking Competency:** Senge (1990: 9) suggests that when leaders are capable of unearthing shared “pictures of the future” from organization’s members, a shared vision, which is internalized and owned by everyone, can be created. This increases inspiration, motivation and enthusiasm in the organization towards the desired future. According to Senge (1990), a shared vision is a prerequisite for a learning organization. Futures thinking competency enables individuals and organizations to anticipate future trends and uncertainties in the context of sustainability. Wiek et al. (2011) also use the term “pictures of the future” to demonstrate “an open notion to include qualitative information, quantitative information, narratives, imagery, etc. (p.208)”. This term aligns closely with the concept of a shared vision. When anticipating sustainability challenges and opportunities, leaders with futures thinking competency can utilize the shared vision to develop action plans that contribute to the desired sustainable future.

**Mental Models Discipline and Values Thinking Competency:** Mental models are “deeply ingrained assumptions, generalizations, or even pictures and images that influence how we understand the world and how we take action” (Senge, 1990: 8). Mental models shape how individuals perceive the world, influencing their ethical and values framework. Leaders with strong values thinking competencies are aware of the underlying assumptions influencing their sustainability-related decisions. Realizing
one’s own potential biases may lead to more ethical and conscious decisions. Understanding others’ potential biases, on the other hand, may lead to more open dialogue and foster inclusive decision making. Therefore, leaders with values thinking competency can build a common ground and bring everyone on the same page as regards the values around sustainability practices.

*Personal Mastery Discipline and Strategic Thinking Competency:* Personal mastery highlights the importance of aligning one’s actions with their aspirations. According to Senge (1990), personal mastery entails recognizing what matters most to one’s self. Personal mastery requires self-reflection and a commitment to lifelong learning and improvement, which entail constant adaptation and change embedded in self-development. This discipline aligns with the strategic thinking competency as both concepts rely on ongoing learning and the ability to adapt strategies to the changes in the environment. Leaders who engage in personal mastery may gain the ability to evaluate the effectiveness of their sustainability strategies critically, and help their strategies adapt and evolve on a continual basis.

*Team Learning Discipline and Interpersonal Competency:* “Dialogue” is the main pillar in both team learning and interpersonal competency concepts. Senge (1990) outlines team learning as the collective process of a group to develop its capacity to create desired results. The discipline of team learning starts with dialogue, an open and transparent communication, that facilitates dealing with complex issues. Interpersonal competency in sustainability also emphasizes effective communication among diverse stakeholders. As Wiek et al. (2011) put it, interpersonal competency includes “advanced skills in communicating, deliberating and negotiating, collaborating, leadership, pluralistic and trans-cultural thinking and empathy” (p.211). These skills are especially important for effective stakeholder engagement in solving sustainability problems.

**III. RESULTS, DISCUSSIONS AND CONCLUSIONS**

With our model, we aimed to demonstrate how the principles of learning organization can be intertwined, and hence, they can help achieve sustainability competencies for a leader. According to the findings of Bucur (2013),
managerial competencies needed for different levels of management are different from one another, and top management does indeed require competencies such as strategic thinking, collaboration, learning, and self-assessment of learning capacity, all of which highly aligned with our conceptualizations.

According to Senge (1990), people are “active participants in shaping their reality” (p.69). Therefore, if we need sustainability leaders, we have to create a shift in the mindsets, so that they can design a new sustainability-oriented (sustainability-aware) culture. Traditional business practices underestimate the complex and interconnected nature of sustainability. It is not possible to address sustainability challenges if leaders do not see sustainability as a holistic concept comprising interconnected and interdependent parts.

In light of the above discussion, we propose the following agenda for the future to endorse the development of leaders towards gaining key sustainability competencies:

- **Management education:**
  - Sustainability courses can be added in business school curricula with specific focus on each functional area (sustainability in marketing, finance, accounting, human resource management, etc.)
  - Program learning outcomes can be built around key sustainability competencies specifying the assessment criteria and expected behavioral changes

- **Sustainable organization:**
  - Models and teachings of organizational change processes can be implemented, starting with sound leadership
  - Learning organization principles can be infused throughout the organization to get everyone on the same page about sustainability initiatives

- **Human resource management (HRM) practices:**
  - Leaders can be selected on the basis of their ability to adopt and model key sustainability competencies
  - Leaders can lead the way in the training and development efforts to build key sustainability competencies in teams of employees, spreading throughout the organization
  - Leaders’ assessment of employee performance can be based on performance indicators as regards the acquisition and display of key sustainability competencies. For example, modeling the balanced scorecard approach, individualized sustainability impact scorecards can be developed

The main belief that constituted the starting point of our paper is that sustainable organizations cannot be built without the commitment and effort of leaders to make it a reality. This, for the most part, requires a shift in mindset in the way in which organizations are being managed, that is, a shift in mindset of their leaders. Sustainable transformation in organizations, just like any other organizational change initiative, cannot happen without the commitment of the top levels, who are expected to model the way and lead by example (Liao, 2022).

**REFERENCES**


