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Growing Green Processes and Sustainable Business – Mapping Company-level Motives to Initiate Sustainable Practices Based on the Wood and Metal Industries in Estonia

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Abstract

Human-driven changes threaten environmental and economic stability, prompting the formulation of sustainability objectives and innovation efforts to mitigate the negative impacts of economic activities. However, the pace of this transition is often seen as slow, and businesses' commitment to sustainable development is frequently deemed insufficient. In this context, the current study explores the motivational factors that drive businesses to adopt and implement sustainable practices. The findings reveal significant differences in how companies approach social and environmental sustainability and balance it with economic goals. To capture the diversity of motivations behind sustainability initiatives, investments, and related preparatory planning, we propose a model of three types of existing development mindsets in companies, distinguishing between “a spreadsheet mindset”, “a mindset of strategic capabilities” and “a value-driven mindset”. This typology serves as a tool for companies to self-assess their motivations as well as for governments to fine-tune sustainability regulations and support mechanisms accordingly.

Keywords

Motivation, sustainable practices, metal industry, wood industry, qualitative studies

JEL Classification

Q01, M14, L21, Q56, D22, O32

Introduction

Human-driven changes, such as climate change, pose significant threats to environmental and economic stability (Steffen et al., 2015; Yang et al., 2023). This threat has spurred the development of innovative activities aimed at

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achieving sustainability objectives and reducing the negative environmental impacts of economic activities (Jakobsen & Clausen, 2016). However, the sustainability and circular economy (CE) agenda is often dominated by technical and economic narratives that can depoliticize sustainable growth and fall short of fully addressing sustainability challenges (Corvellec et al., 2022). While scientific literature underscores the importance of business model innovation in integrating sustainability into business practices, the commitment of organizations to sustainable development remains inadequate (Shakeel et al., 2020). Most research on sustainable and circular innovations has focused on the factors that drive, facilitate, or hinder the adoption of circular practices (Geissdoerfer et al., 2023; Ababio & Lu, 2023; Hina et al., 2022; Hussain & Malik, 2020; Sarja et al., 2021; Sinha, 2022). However, only a limited number of studies have delved into the underlying motivational forces driving this transformation, particularly from the perspective of motivation theory (Rovanto & Finne, 2023).

Previous research on sustainable and circular practices has identified various internal and external drivers for organizations, such as organizational resources, policy regulations, and market-related pressures (Hina et al., 2022; Geissdoerfer et al., 2023). These drivers are often categorized by function, including financial, legal, market, technical, and organizational factors (Geissdoerfer et al., 2023). Enablers of these practices operate at different systemic levels, from policy creation to market and stakeholder engagement (Ababio & Lu, 2023). Additionally, studies have shown that motivations are intertwined with attitudes, norms, and values, with intrinsic motivations often driving sustainable practices (de Lauwere et al., 2022; York et al., 2016). Also, motivations for implementing sustainable practices stemming from the Self-Determination Theory (Ryan & Deci, 2000; 2020) have been studied but to a limited extent, revealing that cultural contexts influence entrepreneurial motivations, with variations between intrinsic and extrinsic factors (Rovanto & Finne, 2023).

The complex interactions between different motivations, however, require further exploration. While individual motivations—such as financial, ethical, and social—have been studied, there remains a gap in understanding how these motivations interact and influence each other in decision-making processes and how these are related to values. For example, in a business context, how do ethical considerations balance against financial constraints in various scenarios? Additionally, recognizing that businesses function as complex systems (Serman, 2002; Fehrer & Wieland, 2021), more insights are needed into how different factors influencing decision-making, such as economic and environmental considerations, are shaped by broader societal systems and how these interact with internal factors. Moreover, decision-making is influenced by bounded rationality (Kahneman, 2003), where real-world choices are limited by cognitive constraints and the complexity of the surrounding environment.

This paper aims to explore how motivational theory can enhance our understanding of business models and development aims, particularly in the context of green and circular business practices. To achieve this, two research questions were formulated: (i) how can managers' motivations be characterised along the extrinsic-to-intrinsic motivational spectrum and what is the role of values in decision making? and (ii) what would be an effective way to categorize managers based on their sustainability-related motivation patterns?

This study focuses on incumbent manufacturing firms in Estonia's metal and machine building, as well as the wood and furniture industries as these contribute significantly to Estonian exports and are therefore open to external influences. Given Estonia's status as a small, open economy, local companies are often deeply involved in exporting and participating in global value chains (Masso & Vahter, 2023). This global engagement makes their experiences particularly valuable for study, as their actions are likely influenced by broader, not just local, considerations. The companies selected for the study were chosen based on their contribution to Estonian exports within their sector, specifically the top 80% of contributors, ranked by export volume. We employed a qualitative research method (Silverman, 2020), gathering data through focus group interviews with relevant managers and experts from the focal companies. In total, we conducted 20 interviews with representatives from 39 companies and utilized thematic analysis to interpret the data.

We found that motivations present spanned the full extrinsic-intrinsic spectrum, though purely value-based motives were relatively uncommon. To categorize companies based on their commitment to sustainability and value-driven decision-making, we propose to distinguish “a spreadsheet mindset,” “a mindset of strategic capabilities,” and “a value-driven mindset” as sub-areas in an entire possible external-internal motivation continuum. The “spreadsheet mindset” (type A) is primarily driven by financial motives, where green initiatives are evaluated mainly for cost efficiency and marketing potential, often necessitating external support for implementation. The “mindset of strategic capabilities” (type B) is characteristic of larger companies that perceive sustainability as a complex, interconnected challenge requiring transformative capabilities, risk management, and strategic agility. The “value-driven mindset” (type C) encompasses companies where sustainability is deeply embedded in their core values and business model, leading to actions that benefit a broader range of stakeholders. This model serves as a tool for companies to self-assess their sustainability approaches and offers policymakers insights into how businesses at different levels perceive and implement sustainability practices.

The remainder of the paper is structured as follows: First, we present the theoretical and methodological considerations underlying the study. In the results section, we sequentially examine the various motives driving sustainability practices in both industries, followed by the introduction of a synthesized typology that categorizes

companies based on their sustainability-related motives. Finally, we conclude by discussing the theoretical and practical implications of the study and identifying areas for further research.

Literature review on motivational factors for sustainable practices

Sustainability, circular economy and green business model innovation

The growing recognition of the need for sustainability has prompted organizations to initiate a unique form of innovation aimed at achieving sustainability objectives (Jakobsen & Clausen, 2016). Various stakeholders, including industries, consumers, investors, and governments, are increasingly adopting and promoting sustainable practices across multiple domains. In recent years, also the concept of the circular economy (CE) has gained significant interest within the industrial sector as a key contributor to sustainability (Barros et al., 2021). CE aims to foster an environmentally sustainable and resource-efficient economy (Li et al., 2023). CE offers an alternative to the traditional "take-make-use-dispose" linear economy model (Blomsma et al., 2023), characterized by the R-imperatives, which range from 3R to 10R and are most guided by the 5R framework consisting of refuse, reduce, reuse, repurpose and recycle (Reike et al., 2018). According to Geissdoerfer et al. (2017, p. 766), CE is "a regenerative system in which resource input and waste, emissions, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops." This can be achieved through practices such as long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.

The transition to a more sustainable economic system can be facilitated through business model innovation, which can generate value at economic, environmental, and social levels (Geissdoerfer et al., 2018; Evans et al., 2017). 'Green' companies, as opposed to 'grey' ones, demonstrate a concrete commitment to sustainability, characterized by factors such as a distinctive organizational mindset, strong CEO commitment, dedicated sustainability reports and functions, links between sustainability performance and financial incentives, clear communication of sustainability responsibilities, and key performance indicators related to sustainability (Kiron et al., 2012; Ostermann et al., 2022). Despite the clear evidence that business model innovation is crucial for integrating sustainability into business practices, organizational commitment to sustainable development remains, in some respects, insufficient (Shakeel et al., 2020).

It is because achieving sustainability objectives requires rethinking existing business models as companies transition toward CE models (Bocken et al., 2016). Geissdoerfer et al. (2020) have mapped circular business model (CBM) innovation across two dimensions: affected business activities and corporate boundaries, identifying four types—CBM transformation, circular start-up, CBM diversification, and CBM acquisition. According to Johnson (2022), circular-oriented innovation can occur incrementally, allowing traditional manufacturing business models to integrate circularity without overhauling their core operations. However, viewing the circular economy through an instrumental logic has been criticized for focusing too heavily on business considerations and enabling only incremental changes within the unsustainable linear system (Rovanto & Finne, 2023). Conversely, integrative logic seeks to combine environmental, social, and economic sustainability, emphasizing the achievement of circularity as an end goal rather than merely seeking ways to benefit from CE and is therefore more challenging (Gao & Bansal, 2013; Dagilienė et al., 2024).

Motivation according to Self-Determination Theory

Motivation theories play a central role in psychology, as motivation is considered the driving force behind intentions and behaviours, potentially leading to significant outcomes (Ryan & Deci, 2000). Self-Determination Theory (SDT) is a psychological framework that delves into human motivation and personality development (Ryan & Deci, 2000; Ryan & Deci, 2020). According to SDT, humans have an inherent tendency toward growth, learning, and development, given the presence of supportive conditions (Ryan & Deci, 2020).

Self-Determination Theory (SDT) explores the different motivations that drive human behaviour, particularly focusing on extrinsic and intrinsic motivations (Ryan & Deci, 2000; Ryan & Deci, 2020). Extrinsic motivation involves engaging in activities for external rewards or to avoid punishment, such as working for external recognition, financial gain, or studying for grades. This type of motivation can be divided into four types (Ryan & Deci, 2020). External regulation is the most controlled and non-autonomous form of extrinsic motivation. Introjected regulation involves partially internalized motivation, where behaviour is influenced by internal rewards linked to self-esteem and the avoidance of anxiety, shame, or guilt. Identified regulation occurs when individuals consciously recognize and endorse the value of an activity, showing a relatively high level of willingness to engage. Integrated regulation, the most autonomous form of extrinsic motivation, aligns the value of an activity with one's core interests and values. In addition to these, there is amotivation, which indicates a lack of intentionality and may arise from a perceived lack of competence or interest. Amotivation strongly predicts disengagement, hindered learning, and decreased well-being.

Autonomous extrinsic motivations share a high level of volition with intrinsic motivation but differ in their basis. While intrinsic motivation arises from interest and enjoyment, identified and integrated motivations are rooted in perceived value, even if the activity is not inherently enjoyable. Intrinsic motivation is driven by internal factors such as personal interest, enjoyment, values, or a sense of purpose derived from the activity itself. It refers to engaging

in activities "for their own sake," driven by the inherent pleasure and interest they provide (Deci & Ryan, 2000). Examples of intrinsically motivated behaviours include play, exploration, and curiosity-driven pursuits, where satisfaction and joy are derived from within rather than from external incentives or pressure (Ryan & Deci, 2020).

According to SDT, intrinsic motivation generally leads to more sustained and fulfilling engagement with activities. Encouraging individuals' intrinsic motivations can enhance well-being and fulfilment compared to relying solely on external incentives. Fostering and maintaining intrinsic motivation is supported by meeting the needs for competence, relatedness, and autonomy (Ryan & Deci, 2000; Ryan & Deci, 2020). Autonomy involves feeling empowered and taking ownership of one's actions, driven by experiences that are personally meaningful and interesting. It diminishes when individuals feel externally controlled or directed, whether through rewards or punishments. Competence is about achieving mastery and feeling capable of success and growth. This need is nurtured in environments that provide appropriate challenges, positive reinforcement, and opportunities for development. Lastly, relatedness focuses on a sense of belonging and connection, which is strengthened through expressions of respect and genuine care.

Motivation for implementing sustainable practices

A significant body of research has explored the drivers, enablers, and barriers to sustainable and circular practices (Geissdoerfer et al., 2023; Ababio & Lu, 2023; Hina et al., 2022; Hussain & Malik, 2020; Sarja et al., 2021; Sinha, 2022; de Vass et al., 2023; Hagedorn et al., 2022; Oliveira et al., 2018; Ostermann et al., 2021; Wübbecke & Heroth, 2014; Urbinati et al., 2021). These drivers are typically categorized as either internal or external to the organization. Internal drivers include organizational resources, financial considerations, and product and process development, while external drivers encompass policy and regulation, supply chain dynamics, societal and environmental pressures, stakeholder influence, and infrastructure (Hina et al., 2022). Geissdoerfer et al. (2023) identified specific drivers within these categories, such as financial (e.g., new business development, cost reduction), legal (e.g., regulatory compliance), market-related (e.g., customer satisfaction), technical (e.g., digitalization), and organizational (e.g., integration of values into corporate strategy). Enablers of sustainable practices are also discussed at different systemic levels: macro-level policies and legislation, meso-level market creation and collaboration, and micro-level financing and stakeholder engagement (Ababio & Lu, 2023).

The approach to understanding sustainability motivations has increasingly been integrated with the internal and external drivers of organizations (Gajanayake et al., 2023). For instance, a study on Australian businesses concluded that the primary motivation for adopting circular business practices was the ethical drive to "do the right thing," provided these activities were also financially viable. Additionally, motivation has been examined as a key factor influencing intentions and behaviour, alongside attitudes, norms, abilities, and knowledge (de Lauwere et al., 2022), and as part of identity creation (York et al., 2016). De Lauwere et al. (2022) found that Dutch farmers' decisions towards circular agriculture were influenced by both intrinsic and extrinsic motivations, with social and environmental values playing a more significant role than economic ones. York et al. (2016) observed that environmental entrepreneurs in the renewable energy sector were motivated by identities rooted in both commercial and ecological logic, reflecting a complex set of priorities.

In contrast, the specific motives driving company-level decision-makers to implement sustainable practices by using Self-Determination Theory have been less extensively studied, with notable research by Rovanto & Finne (2023). Their comparative study found that Finnish entrepreneurs in an individualistic culture showed more intrinsic motivations towards sustainability, whereas Japanese entrepreneurs in a collectivistic culture exhibited a broader range of motivations, from intrinsic to a lack of awareness of the concept.

It follows that although individual motivations—such as financial, ethical, and social—have been explored, there is still a lack of understanding regarding how these motivations interact and affect decision-making processes and how these are related to values. For instance, in a business setting, how do ethical considerations weigh against financial limitations in various situations? Furthermore, acknowledging that businesses operate as complex systems (Serman, 2002; Fehrer & Wieland, 2021), it is important to gain more insights into how various factors, like economic and environmental considerations, are influenced by the broader societal context and how it is internalised into managerial decision-making.

Methodology

The study employed a qualitative design to gain a deeper understanding of relevant social phenomena by describing them in context, interpreting processes and meanings, and seeking comprehensive insights (Silverman, 2020). We used purposive sampling, focusing on two export-intensive manufacturing sectors—the metal and machine building industry, and the wood and furniture industry. In the selection of industrial sectors, we relied on the data of Statistics Estonia, setting the selection criteria as sales revenue, sector-specific number of companies and export volume. As a result of these criteria, these two industries were distinguished from the branches of the processing industry. Both industrial sectors had the highest sales revenues, the most companies in the sector and the highest export volumes (Statistics Estonia_a). In 2023, the main export countries for metal and machine building sectors consisted of Finland, Sweden, Germany, Latvia, Lithuania and Turkey, and for wood and furniture industries

these were Norway, Sweden, Denmark, Germany, Finland and UK (Statistics Estonia_b). In addition to them, the food industry also had similar results, but we excluded it to simplify the comparison of industrial sectors.

Our sampling strategy consisted of selecting companies that represented 80% of exports in the metal and machine building industry, and the wood and furniture industry. Invitations to participate in focus group interviews were sent to all companies that met the predetermined criteria (124 companies). This approach resulted in 20 focus group or individual interviews conducted between March and April 2023. In total, 39 companies participated: 20 from the metal and machine building industry, and 19 from the wood and furniture industry.

Most of the companies in both sectors were medium-sized, with 50 to 249 employees (Appendix 1). In the metal and machine building industry, the average number of employees was 163, ranging from a minimum of 13 to a maximum of 508. In the wood and furniture industry, the average was 183 employees, with a range from 36 to 558. These manufacturing companies have generally been in operation for several decades, with an average of 20 years in the metal and machine building industry (ranging from 7 to 29 years) and 24 years in the wood and furniture industry (ranging from 8 to 28 years). Companies in the metal and machine building industry were primarily located in Harju County, surrounding Tallinn, the capital of Estonia, while those in the wood and furniture industry were more geographically dispersed across the country. The interviewees were either CEOs or managers responsible for key business processes such as production, quality management, human resources, and sustainability.

The interviews, which lasted between 1.5 to 2 hours, were primarily conducted online. A semi-structured interview guide was used to facilitate the discussions. The interviews explored companies' experiences, decision-makers' motivations, and relevant attitudes across several areas: sustainability activities and change initiatives from a cost and investment perspective, advancements in resource utilization efficiency, the impact of changing legal frameworks on internal changes and investments, supply chain performance considerations such as material availability and pricing, competitiveness and market pressures, peer pressure within supply chains and business networks, company reputation, broader customer awareness and accompanying trends, new product development and related motivations, emerging business opportunities and changes in business models, innovation and innovation capabilities within the company, the role of company values, and the perceived relationship between environmental conservation and economic performance.

The interviews were recorded and subsequently transcribed for analysis. The data were analysed using thematic analysis, employing analytical categories, themes, and codes as outlined by Gioia et al. (2013) (Appendix 2). The primary codes were generated directly from the interview data, while the themes were initially derived from previous research (Rovanto & Finne, 2023; Geissdoerfer et al., 2023) and then adapted during the analysis to include new themes relevant to the study's context. The four analytical categories were based on the Self-Determination Theory (SDT) motivational scale from previous research (Ryan & Deci, 2000; 2020). Due to the low number of responses that could be classified under amotivation or pure intrinsic motivation, these categories were consolidated at both extremes of the scale. As a result, the categories analysed were: 1) amotivation and external regulation (merged), 2) introjected motivation, 3) identified motivation, and 4) integrated and intrinsic motivation (merged).

To mitigate researcher subjectivity, two researchers independently coded the interviews, and the final code allocations were compared and harmonized. The coding process was facilitated using MAXQDA software (version 22.5.0).

Results

Amotivation and external regulation in wood and metal industries

In the wood and metal industries, the influence of laws and regulations at both the EU and national levels is widely acknowledged, encompassing both risks and opportunities: "... in our company's SWOT analysis, legislative changes related to the environment are considered a risk, but it is also seen as an opportunity in our SWOT, as it provides the potential for new products, new markets, and innovation" (Int_metal_4). At the EU level, managers perceive regulations as being systematically applied in a more comprehensive and harmonized manner, such as the requirement to extend product life along with the extension of the product guarantee period. However, perceived obstacles and risks tend to arise at the national level, where some regulations impose obligations that are expected to necessitate rapid implementation of new processes, such as data gathering and analytics for various reporting purposes.

Sustainability-themed regulations were also, to some extent, sector-specific. The wood and furniture industry exemplifies a regulatory conundrum, where forecasting future outcomes and impacts becomes challenging due to numerous unpredictable side effects. Beyond the overarching sustainability standards and expectations, the industry faces national constraints, such as limits on the allowed volume of harvest, transnational sanctions related to war-induced crises, and various state-level subsidies. These conditions are perceived to create uneven competition, making it unclear how and to what extent the sector is progressing towards greater sustainability: "...we are starting to get bogged down in legislation and the fragmentation of expectations across markets" (Int_wood_2).

In the metal and machine building industry, the companies are engaged in preparation for future regulations. The mix of evolving regulatory changes consists of waste handling, emissions, carbon footprint and neutrality, material compliance, ethical supply chain standards, green energy, green requirements in public procurement, and sustainable reporting. Since sustainability is a global challenge, managers in metal industry tend to focus their monitoring on the EU level regulations, but also regional level (such as Scandinavia). Companies engaged in close business relationships with Scandinavian countries pointed out that the regulations there are notably more stringent, leading to a more vigilant and proactive planning activities to anticipate and mitigate risks.

Some exporters are hesitant to take advantage of various support measures, viewing the application process for subsidies as overly bureaucratic, involving costly and time-consuming preparations, with the added risks of wasted efforts and lengthy audit periods. Additionally, managers have criticized the green requirements' applied indicators, such as mandates to increase the share of labour, while producers may prefer to automate processes and move away from low value-added jobs. Overall, while managers recognize the necessity of adhering to regulations, it is uncommon to find companies that are enthusiastic about regulatory changes related to the green transition. Even when direct support is available, it is not perceived as a particularly motivating factor.

Introjected motivation in wood and metal industries

We classified motives that directly impact a company's bottom line as introjected motivation. Companies are more likely to pursue initiatives that achieve multiple objectives simultaneously, such as reducing costs, improving efficiency, increasing value creation, enhancing reputation, expanding expertise, and contributing to a more sustainable social impact. However, because investment opportunities with such multifaceted benefits are limited, decisions often hinge on economic considerations, particularly return-on-investment estimates, with a preference for tangible changes that offer shorter payback periods. On the one hand, the interviews revealed numerous examples of sustainability initiatives that are locally profitable and can be justified purely on financial grounds (e.g., energy use reduction, waste optimization). This indicates that even companies focused solely on profit can become more sustainable. On the other hand, the next two subsections will explore cases where companies are motivated to advance sustainability even when it is not directly profitable.

Given the turbulent and volatile business environment, most managers in both sectors are focused on achieving resilience and efficiency gains. Although the companies in this study were larger and financially stronger, and thus not crippled by recent crises such as Covid-19, the Russian aggression in Ukraine, and the local energy crisis, they nonetheless experienced significant negative impacts. In response, a common pattern emerged: companies are actively pursuing further efficiency and productivity improvements, recognizing that these efforts also contribute to greater resilience. We observed instances where efforts to enhance efficiency simultaneously led to increased resilience and positive environmental impacts. While there are inevitable trade-offs among these goals, it is encouraging to note that these trade-offs are not absolute. As a result, the classic profit-driven motive to seek continuous efficiency improvements often inadvertently drives sustainable development, even if sustainability is not the primary intention.

The volatile environment has created opportunities for some companies to innovate products and services, although their connection to sustainability is often indirect. The Covid-19 pandemic spurred the development of innovative ideas, but some of these were later hindered by raw material supply challenges caused by global shortages or war-related sanctions. Managers highlighted the importance of innovation as a key factor in maintaining competitiveness, not necessarily driving significant growth but ensuring they do not fall behind in the market. While some product innovations do directly contribute to sustainability, this motive was not as strong as one might expect. One explanation offered was the difficulty in increasing customers' willingness to pay for more sustainable products and services. Consequently, while volatility has fuelled innovation and, in turn, enhanced competitiveness, the role of sustainability-driven innovation in this dynamic appears to be secondary.

In both industries, a major driving force behind sustainable practices is the need to maintain competitiveness in key markets. As competitiveness is rooted in service offerings, pricing, and product quality, manufacturers recognize that advancing towards sustainability is essential to avoid falling behind competitors from neighbouring countries: "...in order to manage our footprint, to meet environmental requirements, to be able to say in the market that we are green enough, it's a 'do-or-die' situation" (Int_wood_5). Pressure from B2B clients and influential business partners is a significant motivator for most companies operating in international markets. This influence can manifest either through the strict enforcement of specific initiatives or more flexible, collaborative approaches. Interviews revealed that companies do not view this pressure from B2B markets merely as "another obstacle to overcome" but as an opportunity to open new avenues, strengthen their position in value chains, and enhance existing supplier and customer relationships. The drive for sustainability originating from B2B markets is perceived as both stronger and more impactful than local regulatory pressures and is seen as an opportunity rather than an obligation.

In terms of company reputation, large firms in both sectors recognize a moderately strong connection between marketing communications that highlight sustainability initiatives and the potential to increase sales. Managers note that having a green image—and the ability to substantiate it—is increasingly becoming an essential criterion for

competing in international markets: "Absolutely, [sustainability] has to be in the marketing material. ... as we are now closing in on the Greentech strategy. Based on that, we will also create marketing for it" (Int_metal_6). The development and use of various verification methods, such as sustainability reports, certifications, and eco-labels, enhance transparency and bolster a company's overall competitiveness. However, it is clear that "greenness" alone is not a definitive selling point; only in select cases do higher levels of sustainable practices lead to increased prices and revenue. As a result, while green practices can offer a competitive edge and may help increase sales, significant price hikes to cover substantial sustainability advancements are not widely accepted in the market.

Identified motivation in the wood and metal industries

In both industries, most managers emphasized the importance of striking a balance between environmental concerns and economic well-being. In the wood and furniture industry, this balance is often achieved through contracts and supplier audits—such as ensuring that raw materials are sourced from sustainably managed forests—or via the implementation of environmental management systems. One interviewee even suggested prioritizing environmental well-being as a goal with equal importance to profit. However, there seems to be some ambiguity regarding what "sustainability" actually means to the companies interviewed: "Green has many shades as well—it can be light green, green, or dark green. You definitely have to be green in some way, but how green—that is so undefined" (Int_wood_5). The prevailing understanding is that sustainability involves balancing financial and environmental outcomes, with both needing to be met to a certain degree. In contrast, a minority view dismisses sustainability entirely, framing it in a negative light as the domain of "mindless tree-huggers," leaving little room for a balanced perspective.

For large enterprises, research and development (R&D) is a common focus area, often with potential synergies related to sustainability. The drive to research and innovate may be directly linked to profit, but sustainability can also emerge as a valuable by-product. Additionally, investing in innovation capabilities can lead to further developments, some of which may not be explicitly anticipated but could significantly contribute to sustainability. Similarly, sustainability initiatives often make processes more efficient, transparent, and data-driven, paving the way for future process improvements. Some interviewees specifically highlighted this synergetic potential, noting that sustainability motives are integrated into their overall approach to continuous development.

Knowledge transfer and exchange also fits within this category. Sustainability-related changes often provide learning opportunities, which sometimes serve as a motivating factor for these changes. Furthermore, sustainability advancements are linked to stronger supplier relationships, which, in turn, enhance access to valuable information: "[We are] a large company and definitely have more resources than smaller partners with whom we also collaborate. We hear the needs and expectations of our clients and then pass them along the supply chain to our suppliers" (Int_metal_4). While this dynamic may not apply to all companies, it illustrates how a company within a supply chain might "aim to be chained," as this position offers greater stability and easier access to best practices.

Most interviewees recognize that sustainable developments at both societal and organizational levels are accompanied by shifts in attitudes and perspectives. These changes are generally seen as a consequence of sustainable initiatives rather than a driving force behind them. However, some managers highlighted that evolving employee attitudes and organizational culture can, in turn, spark new developments in products, processes, and sustainability efforts. While most organizations have not undergone a complete cultural transformation—particularly as blue-collar workers are often viewed as more conservative—office employees have experienced a noticeable shift, with environment-related attitudes becoming more normalized. In companies where sustainability is a core value and the organizational culture aligns with these values, a new level of motivation is achieved, accelerating various aspects of the green transition and sustainability.

Additionally, some managers observed that cultural transformation is not solely a top-down process but also has significant bottom-up elements. Peer pressure to embrace "green" values can come from younger employees, some of whom may be reluctant to join companies they perceive as misaligned with environmental values: "[There is] a large number of young people who still read sustainability reports, and they still want to work for a company that is exemplary. I think this will become increasingly decisive in determining where young people choose to work" (Int_metal_3). While societal peer pressure is not as influential as B2B partner pressure or regulatory demands, it is a factor in the mix of motives. This suggests that the transformation of organizational cultures is ongoing and may continue to strengthen over time.

Integrated and intrinsic motivation in wood and metal industries

The motive of value-driven decisions was discussed in the previous section, but it's important to emphasize that when a decision is predominantly value-driven, it should be considered at a higher level, as it closely aligns with intrinsic motivation—it's about doing something because it is perceived as "the right thing to do." In this category, we examined the pursuit of new green entrepreneurial opportunities, and industry and societal leadership, acting as a role model. However, examples of these motives were relatively scarce. In the wood and furniture industry, managers primarily consider the companies green in terms of raw materials and low-waste production, but the motive of being a role model or driving industrial or cultural transformation was largely absent. Similarly, in the metal and machine building industry, responses more often focused on being a role model in terms of technology

or process/business model innovation, rather than fostering cultural transformation.

In contrast, interviewees were more forthcoming about viewing their developments as seizing new green entrepreneurial opportunities. However, upon closer examination, the examples provided tended to be about process-level improvements (e.g., reducing energy and resource consumption) and incremental product development (e.g., reducing waste through new product designs, enhancing product functionality) rather than creating entirely new business models. One exception was the growing business opportunities in recycled materials, particularly in the furniture industry and construction. Other notable areas of growth mentioned included pellet production from waste and other waste recycling solutions. Despite this, a recurring theme was that the current volatile business environment makes launching something fundamentally new more financially challenging.

As a result, managers were generally more inclined to respond to changing environmental attitudes and values rather than proactively shaping their cultural environment. However, several interviewees expressed a willingness to share their knowledge and experiences on various sustainability aspects (excluding confidential business model details). There is potential for these companies to become role models: "We are ahead in this journey, and our clients are even further ahead, and I believe we must be a role model and think about sustainability, not just from an environmental perspective but also from a societal one" (Int_metal_4). Nevertheless, these companies seem to lack encouragement and platforms for knowledge sharing. Typically, the companies in our sample placed higher value on acquiring knowledge than on sharing it, which is pragmatic and reflects the economic reality, as many local industry members are in relationships with larger companies operating in more advanced markets.

Discussion

Based on the patterns observed in managerial motives, we developed a model of three types of dominant motives to categorize companies according to their commitment and intentions towards sustainability across the underlying external-internal motivation spectrum. We identified three clusters of managerial mindsets according to the expressed motives: "a spreadsheet mindset," "a mindset of strategic capabilities," and "a value-driven mindset" (Figure 1). The diagonal pattern on Figure 1 is aimed to reconcile two perspectives. The horizontal axis is a descriptive perspective across the motivational spectrum. The vertical axis adds a normative perspective – namely that "a value-driven mindset" can be seen as superior in terms of possible sustainability progress trajectories, and it would be socio-economically favorable to have a larger share of organizations embrace such a mindset. However, we would hold back from making the statement that ideally all companies would need to achieve this (as a "top layer" or "final form"), as this would be unrealistic due to many global considerations. Furthermore, while the movement from type A to type B and from type B to type C would be favourable, it is also possible for organizations to "fall back" over time.

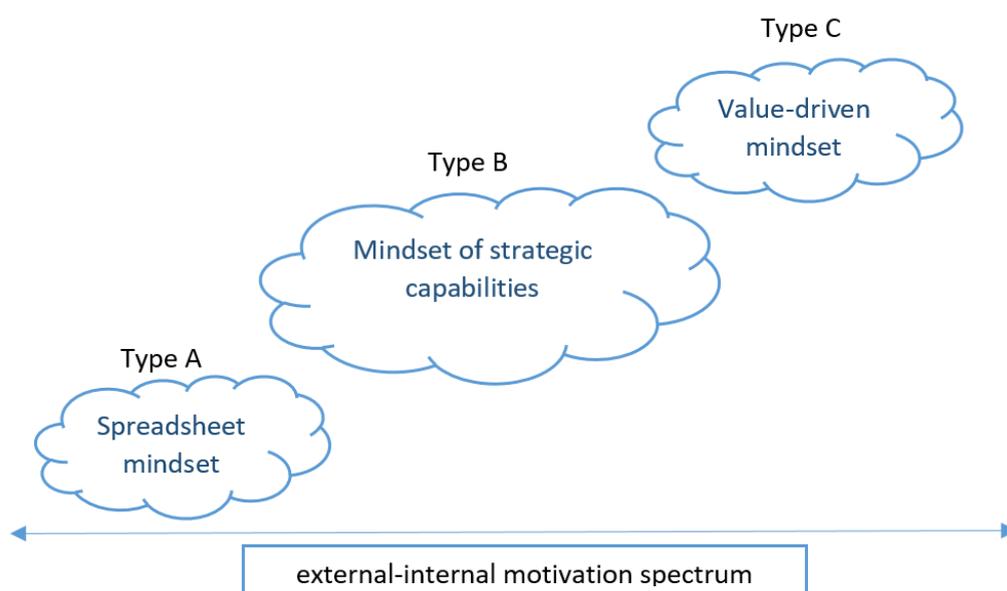


Fig. 1. The three types of companies along external-internal motivation spectrum.

Source: Compiled by the authors

We recognize that businesses are complex systems (Sterman, 2002; Fehrer & Wieland, 2021), and managerial decisions result from a combination of external and internal influences. Descriptively, managers exhibiting amotivation or external regulation typically align with the type A of spreadsheet mindset, while those with a stronger element of introjected and identified motivation would be categorized into type B. Managers of type C companies are driven by societal value shifts and are most actively integrating and balancing environmental and economic

goals in their development plans. In other words, managers with heavy emphasis on integrated and intrinsic motivation are forming the value-driven mindset group. However, one must keep in mind that decision-making is affected by bounded rationality (Kahneman, 2003), where real-world choices are constrained by cognitive limitations and environmental complexity. Therefore, while the motivations driving managers are crucial, they are just one of many factors that shape the direction a business pursues.

What primarily characterises the mindsets is that for Type A managers, financial motives are primary. Green initiatives here can be present and they would be focusing on more directly profitable aspects of cost efficiency, waste reduction, value creation, and marketing potential. While some green initiatives may be locally profitable and can be implemented without external support, others may be held back by obstacles such as long return-on-investment periods or environmental uncertainties. External interventions, justified through socio-economic impact analysis, can help overcome these barriers.

The "mindset of strategic capabilities" (type B) involves managers that recognize sustainability as a complex and interconnected challenge. Especially for larger and internationally active companies, various green and sustainability advancements offer synergies but also present challenging trade-offs. Unlike type A approach, where initiatives are treated in a more isolated manner, type B companies must navigate across broader transformations, often with limited managerial visibility. Here, sustainability efforts would involve or even emphasise developing underlying capabilities such as resilience, knowledge transfer, innovation capability, and strategic agility. In type B, sustainability initiatives are expected to create a synergetic cycle, where sustainable developments reinforce underlying capabilities, leading to greater transparency and the ability to seize new emerging opportunities.

In type B, a more substantial element of managerial ambiguity can be accepted—sustainability-themed changes are seen as unlocking future progress, even if the exact outcomes are not yet clear. While financial considerations remain important, sustainability is in this section treated in a broader, more integrated manner compared to type A.

A company reaches the "value-driven mindset" (type C) when sustainability is deeply embedded in its core values, influencing company development and benefiting a wider group of external stakeholders. Managers at this level naturally seek to communicate their practices and lead by example. Type C is not limited to companies operating in "green-themed" market niches. It can easily companies with traditional business models that have recognized the intrinsic importance of sustainability, leading to a cultural shift within the organization. Our study suggests that this reflects a broader normalization of sustainability-infused values across diverse B2B markets, indicating that sustainability is increasingly becoming a mainstream priority.

We'd like to point out two further aspects of the visualisation on Figure 1. Firstly, there are no clearly defined boundaries between A and B and between B to C, as organizational transformation is always a complex matter and the essence of motivation is not fully quantifiable. So certain overlap in the clouds is intended. Secondly, the middle cloud is intentionally the largest as it reflects what we perceived in our study. It appears rather bold (at least in the current context of this study) for companies to declare themselves fully type C. However, similarly, it also appears bold for companies to declare themselves solely type A. Therefore the majority of companies would fall into the middle category.

This A-B-C typology serves as a practical tool for managers to self-assess and plan their sustainable development, while also offering insights for governments and regulators to understand how companies at different levels perceive and approach changes, particularly those related to the green transition. While it can be said that type B mindset is the dominating majority, we would emphasize the vast difference between type A and type C companies. The conclusion here is that to approach sustainability transformation with a simplistic assumption "every company thinks and acts the same way" would not provide the best results.

Conclusion

Our paper aimed at exploring how motivational theory can enhance our understanding of business models, particularly in the context of green and circular business practices. To achieve this, two research questions were formulated: (i) how can managers' motivations be characterised along the extrinsic-to-intrinsic motivational spectrum and what is the role of values in decision making? and (ii) what would be an effective way to categorize managers based on their sustainability-related motivation patterns?

As to theoretical implications, we have advanced the theoretical understanding of managerial and organizational motivations by building on the framework developed by Rovanto & Finne (2023) and introducing a typology of sustainability-related mindsets consisting of the "spreadsheet mindset," "mindset of strategic capabilities," and "value-driven mindset." This typology bridges two key research streams: the extrinsic-intrinsic motivation scale from psychology (Ryan & Deci, 2020) and the literature on green business model innovation (Geissdoerfer et al., 2023; Johnson, 2022). The model integrates a value-driven approach with economic considerations, proposing that motivations for sustainable practices can range from one-dimensional (focused primarily on maximizing economic benefit) to multidimensional (where environmental and societal concerns are systematically balanced alongside economic goals). It contrasts short-term perspectives with long-term views and compares the focus on internal

stakeholder groups versus the integration of both internal and external stakeholders. The role of external stakeholders is particularly significant for exporting companies, whose value chains span across national, institutional, and organizational boundaries.

This model offers a more nuanced understanding of sustainability-related motivations, moving beyond the binary classification of businesses into 'green' and 'grey' (Kiron et al., 2012; Ostermann et al., 2022) categories and by including values into decision-making considerations. Besides the relevance of single business organisations and individual managers, the findings of our current study also highlighted the importance of a more holistic 'value chain thinking'. Many of the investigated Estonian companies belong either to international corporate business groups or are dependent to a high degree on the decisions of value chain partners (customers, suppliers, R&D organisations, government etc., which are located outside Estonia).

Regarding policy and managerial implications, the policy support measures should correspond to the needs of the companies. Companies with a spreadsheet mindset (type A) can be effectively supported by aligning with their existing motives—such as through regulatory thresholds or new order qualifier criteria set by their supplier and customer markets. While these mechanisms introduce new values, these values do not need to be seen as deeply ingrained beliefs. To complement regulatory "stick" methods, investment support mechanisms can serve as "carrot" incentives, effectively engaging type A companies by "speaking their language" through financial metrics and spreadsheets.

In contrast, companies with a value-driven mindset (type C) require different approaches to encourage further contributions to sustainability. These companies are internally motivated, and traditional external motivation mechanisms may be less effective and could even create friction. Type C companies are more likely to be motivated by opportunities to share their practices, teach others, and address major societal challenges. Motivating these companies is more complex and requires a more individualized approach, which could be a blind spot for policymakers. A key challenge in engaging type C companies is meeting their higher expectations of integrity; for these companies, "we expect trust-building" can be a more compelling message than "we expect more funding." If regulators assume that all companies are driven purely by profit, they risk alienating proactive sustainability pioneers who may feel their perspectives are undervalued, potentially hindering dialogue and cooperation.

Companies with a strategic capabilities mindset (type B) represent the middle ground and encompass in the context of the current study a majority of businesses. These companies can mostly use support in developing proactive capabilities, which range from research and development to sector cooperation initiatives and improving their visibility in international markets and networks. Encouragingly, support systems for such needs already appear to exist locally, as they are not solely a product of the green transition paradigm shift. However, these entrepreneurship support mechanisms may still require fine-tuning. Furthermore, an area demanding attention is sustainability reporting, where interviewees expressed strong uncertainty about "what and how to report." There is a clear need for more mechanisms to assist companies with the specifics of reporting and more forums for sharing best practices and experiences. On one hand, it may be pragmatic for regulators to assume that most companies operate with a type B mindset. However, our study emphasizes the importance of also recognizing the existence of type C companies, even if they represent a relatively limited space on the markets, and providing relevant support to foster growth in this segment. Failing to leverage the higher tiers of motivation for stronger local leadership and more extensive change can turn out to be a major missed opportunity. It is likely that while the government needs to lead the sustainability transition for some companies, in other cases, it is rather more advisable to follow and support the pioneers to allow them to drive progress confidently.

Our study has limitations, particularly the use of both focus group and individual interviews, which may impact the methodological clarity. However, this approach allowed us to engage a larger number of participants. Additionally, the study is confined to the Estonian context and focuses on export-intensive manufacturing companies. In the current literature on Circular Economy (CE) and sustainable innovation (e.g., Prokop et al., 2023), Estonia is frequently mentioned as a significant Central/Eastern European and post-Soviet "catching-up economy." Future studies should aim to be broader in several dimensions: employing a mixed methods approach that combines qualitative and quantitative data, conducting internationally comparative studies, and exploring both exporting and domestic companies, as well as incumbents and start-ups.

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Appendices

Table A-1. Overview of interview participants by location, size, sector and area of activity.

Metal and machine building industry	No. of comp.	Wood and furniture industry	No. of comp.
250+ employees	3	250+ employees	4
Harju county	1	Harju county	1
Production of lightweight metal packaging	1	Manufacturing of prefabricated wooden structures (saunas, cottages, houses) and their components	1
Ida-Viru county	1	Tartu county	1
Manufacturing of other metal structures and their components	1	Manufacturing of prefabricated wooden structures (saunas, cottages, houses) and their components	1
Tartu county	1	Viljandi county	1
Manufacture of other fabricated metal products not elsewhere classified	1	Manufacturing of wooden doors, windows, shutters, and their frames (including gates)	1
		Võru county	1
		Manufacturing of other wood-based panels	1
<250 employees	14	<250 employees	14
Harju county	9	Harju county	3
Mechanical metal processing	1	Manufacturing of prefabricated wooden structures (saunas, cottages, houses) and their components	2
Metal forging, pressing, stamping, and rolling; powder metallurgy	1	Manufacturing of furniture not elsewhere classified	1
Manufacturing of metal structures and parts	3	Järva county	1
Manufacturing of metal doors and windows	1	Timber production	1
Manufacturing of other metal structures and their components	2	Lääne-Viru county	1
Manufacturing of steel tanks and similar containers	1	Manufacturing of furniture parts	1
Pärnu county	3	Pärnu county	2
Mechanical metal processing	1	Manufacturing of wooden doors, windows, shutters, and their frames (including gates)	1
Metal forging, pressing, stamping, and rolling; powder metallurgy	1	Production of plywood and veneer	1
Manufacturing of wire products, chains, and springs	1	Tartu county	3
Saare county	1	Manufacturing of prefabricated wooden structures (saunas, cottages, houses) and their components	1
Metal processing and coating of metal surfaces	1	Manufacturing of other wood processing products, including wood chips, wood wool, etc.	1
Tartu county	1	Manufacturing of wooden utility and decorative items and other wooden products	1
Mechanical metal processing	1	Viljandi county	4
		Manufacturing of furniture not elsewhere classified	1
		Timber production	3
<50 employees	3	<50 employees	1
Harju county	3	Harju county	1
Manufacturing of fasteners and threaded products	1	Manufacturing of furniture not elsewhere classified	1
Manufacturing of prefabricated metal structures	1		
Manufacturing of other metal structures and their components	1		
Total	20	Total	19

Source: Compiled by the authors

Table A-2. Coding tool for interview data.

Analytical categories	Themes	Codes
Integrated and intrinsic motivation	New entrepreneurial opportunities	Business models; growth
	Responsibility and sustainable values	Mission and vision; trainings and guidelines; employee attitudes; recruitment and onboarding; altruism
	Leadership and influence	Impact on suppliers; training and influencing customers; sector cooperation
Identified motivation	Technological innovation and knowledge transfer	R&D capability; collaboration with research institutions;
	Culture and cultural change	Societal values; green transition; youth attitudes, employee attitudes
	Balance between economic and environmental performance	Commercial viability; triple-bottom line; profit; return of investment, stakeholder expectations; ESG
	New products, process and quality development, improved design	Materials; value potential; quality management; legacy products; product lifespan; safety; new materials
	Effective use of resources	Production waste; defective products; waste minimization; quality management
	Influence of supply chain partners	Suppliers; tenders; customer expectations and satisfaction; order qualifiers and winners; cooperative potential
	Digitalisation and analytical visibility	Automation; supply chain performance; transparency; data analysis; sustainability accounting
Introjected motivation	Company reputation	Visibility to customers; client pressure; the evolution of market qualifiers; sustainability reporting
	Profit and growth opportunities	Profit; return on investments; efficiency and cost savings
	Resource prices and access to materials	Availability and stockouts; supply market capability; cost volatility (materials, energy); opportunities of changing suppliers
	Increased sales	Demand; visibility; added value; willingness to pay
	Increased market competitiveness	Differences between markets and segments; source of competitive advantage; order winning criteria
Amotivation and external regulation	Laws and regulations	Legislation; public procurement; certification and labels; grants; sustainability accounting

Source: Compiled by the authors based on Ryan & Deci (2000; 2020), Rovanto & Finne (2023), Geissdoerfer et al. (2023)