Gradus Vol 13, No 2 (2026)
ISSN 2064-8014
Article no. 2026.2.ECO.021

Why Firms Implement Circular Economy Differently: A Typology of Motivation and Commitment

Anita Boros[1], Dávid Tőzsér[2], Eszter Szólik[3], Garry Kuan Pei Ern[4]*

[1]Institute of Economic and Social Science, Hungarian University of Sports Science, Hungary, https://orcid.org/0000-0001-5330-9050
[2]Department of Ecology, Faculty of Science and Technology, University of Debrecen, Hungary, https://orcid.org/0000-0002-7627-9496
[3]Greenology Green Innovation Sustainability Knowledge Center, Hungary, https://orcid.org/0009-0003-6596-7669
[4]School of Health Sciences, Universiti Sains Malaysia, Malaysia, https://orcid.org/0000-0003-1103-3871

https://doi.org/10.47833/2026.2.ECO.021

Keywords:
Circular economy
Voluntary corporate initiatives
Organizational culture
Sustainable business models
ESG

Article history:
Received 29 June 2026
Revised 20 November 2026
Accepted 23 November 2026

Abstract

Although the circular economy (CE) has become a central pillar of sustainability research and corporate strategy, companies continue to differ considerably in how they implement circular practices. Existing research has largely explained these differences through technological capabilities and regulatory pressures, while the organizational and behavioural processes shaping long-term commitment remain comparatively underexplored. Against this background, this study investigates the behavioural determinants of voluntary CE implementation in large corporations, focusing on the roles of motivation, organizational culture, and strategic commitment in supporting lasting organizational change beyond formal regulatory requirements. To address this issue, the study develops a conceptual typology and illustrates it through a comparative analysis of ten multinational corporations using secondary data from corporate sustainability reports, CDP disclosures, and external sustainability assessments. The analysis identifies four distinct implementation types, defined by the interaction between motivation (extrinsic–intrinsic) and organizational commitment (compliance–transformation). The findings suggest that the long-term effectiveness of voluntary CE initiatives depends not only on external institutional pressures but also on the alignment between internal motivational drivers, organizational culture, and the coherence of the business model with circular economy objectives. By integrating behavioural perspectives into circular economy research, the proposed framework complements prevailing technological and regulatory explanations and offers a theoretically grounded approach for understanding why firms operating under similar external conditions often follow markedly different implementation trajectories.

* Corresponding author.
Email: boros.anita@uni-nke.hu; This paper was supported by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences.

1 Introduction

The circular economy (CE) has become one of the defining paradigms in sustainability research and corporate strategy. Originally rooted in ecological economics, it has evolved into a broader framework for rethinking resource use, value creation, and long-term competitiveness. As the limitations of the traditional "take–make–dispose" model have become increasingly apparent [1] [2], the circular economy has been promoted as a systemic alternative based on resource efficiency, closed material loops, and the preservation of value throughout product life cycles [3] [4]. Despite growing policy support, increasing corporate engagement, and a rapidly expanding body of research, companies continue to differ markedly in how deeply they integrate circular economy principles into their operations. Existing theoretical frameworks only partially explain this variation.

Previous research has examined corporate CE adoption from several complementary perspectives. Much of the literature has focused on technological innovation and eco-design [5] [6], business model transformation [7] [8], and institutional or regulatory drivers [9] [10]. Together, these perspectives have considerably advanced our understanding of the structural conditions supporting circular transitions. At the same time, they leave an important question unanswered: why do organizations operating under broadly similar external conditions often demonstrate fundamentally different levels of commitment to circular economy principles? As Jabbour et al. [11] argue, the "human side" of the circular economy– including organizational culture, managerial attitudes, employee motivation, and behavioural change – remains comparatively underdeveloped both theoretically and empirically.

This omission has important practical implications. Voluntary sustainability initiatives, including CE programmes, frequently fail to generate lasting organizational transformation even when firms possess the technical capabilities and financial resources required for implementation [12] [13]. Behavioural research offers a compelling explanation for this inconsistency. Lasting change depends not only on external incentives but also on intrinsic motivation, value alignment, and organizational commitment [14] [15]. Viewed from this perspective, differences in CE implementation are unlikely to be explained by structural factors alone. Instead, they appear to reflect the interaction between motivational orientation, organizational culture, and leadership commitment.

Building on these observations, this study investigates the behavioural determinants of voluntary circular economy implementation among large corporations. More specifically, it addresses three closely related research questions. The first asks which organizational and behavioural factors shape the depth of voluntary CE adoption. The second examines how different forms of motivation – extrinsic and intrinsic—influence organizational commitment to circular economy principles. The third explores whether distinct patterns of CE implementation can be identified across large corporations and what these patterns reveal about the conditions under which voluntary initiatives lead to genuine organizational transformation.

To answer these questions, five hypotheses are developed. First, firms driven primarily by intrinsic, value-based motivation are expected to exhibit stronger organizational commitment to circular economy principles (H1). Second, this commitment should be reflected in the strategic integration of CE practices under supportive managerial leadership (H2). Third, a sustainability-oriented organizational culture is expected to strengthen the operational embeddedness of CE practices, although this relationship may be moderated by differences between formal corporate values and actual organizational behaviour (H3). Fourth, transformative implementation is expected to be more likely where the business model is structurally aligned with sustainability objectives (H4). Finally, CE implementation is expected to follow identifiable patterns that can be captured through a motivation–commitment typology capable of explaining divergent corporate trajectories under comparable external conditions (H5).

The study adopts a conceptual-comparative research design based on secondary evidence drawn from corporate sustainability reports, CDP disclosures, and independent external benchmarks covering ten multinational corporations from different industries and regions. Rather than developing another technology- or business model-oriented classification, the proposed framework explains differences in CE implementation through the interaction between motivational orientation and organizational commitment. The resulting four-type typology extends existing circular economy

research by introducing a behavioural perspective that helps explain why firms facing similar institutional pressures often pursue markedly different implementation pathways.

2 Literature Review

2.1 Theoretical foundations of the circular economy

The circular economy (CE) has evolved from a concept rooted in ecological economics into one of the most influential frameworks for addressing contemporary sustainability challenges. Rather than viewing economic growth and environmental protection as competing objectives, CE proposes a systemic approach in which materials, products, and resources are retained within productive cycles for as long as possible. This perspective has fundamentally reshaped debates on sustainable production and consumption, resource efficiency, and long-term value creation.

The intellectual foundations of the circular economy can be traced to the work of Pearce and Turner [1], who first framed economic systems within the ecological constraints of natural capital and material cycling. Building on these ideas, Stahel [2] introduced the concept of the *performance economy*, arguing that economic value can increasingly be generated through extending product lifecycles rather than maximizing material throughput. Similarly, McDonough and Braungart's [16] *Cradle to Cradle* philosophy challenged the traditional concept of waste by proposing production systems in which materials continuously circulate within either biological or technical cycles.

Although the concept has gained widespread acceptance, no single definition of the circular economy has emerged. Instead, the literature reflects considerable conceptual diversity. Kirchherr et al. [4], in their review of 114 definitions, demonstrated that most interpretations emphasize environmental and economic objectives, while behavioural and social dimensions receive substantially less attention. Geissdoerfer et al. [3] further position CE as a broader sustainability paradigm that integrates resource efficiency, business model innovation, and long-term value creation, whereas Korhonen et al. [10] adopt a more critical perspective, arguing that many existing CE frameworks underestimate both systemic complexity and the practical challenges associated with implementing circular principles across entire value chains. Together, these studies suggest that although the circular economy is widely accepted as a strategic direction, important questions remain regarding how it should be conceptualized and operationalized within organizations.

At the corporate level, research has increasingly shifted from defining the circular economy toward understanding how firms can translate its principles into practice. A substantial body of work identifies product design and business model innovation as central enablers of this transition. Bocken et al. [5] argue that slowing, narrowing, and closing resource loops require coordinated changes in both product development and organizational strategy. Likewise, Lewandowski [7] and Nußholz [8] emphasize that circular business models involve far more than technological improvements, requiring firms to rethink value propositions, customer relationships, and partner networks. Lieder and Rashid [6] similarly conclude that technological innovation alone cannot ensure successful implementation unless it is accompanied by corresponding organizational change.

Taken together, these contributions demonstrate that circular economy implementation is inherently multidimensional. Technological capabilities, product design, and business model innovation undoubtedly play critical roles, yet they do not fully explain why organizations facing comparable market conditions and regulatory pressures often achieve markedly different implementation outcomes. Much of the existing literature continues to emphasize structural and technological determinants, while the organizational and behavioural processes that shape long-term commitment remain comparatively underexplored. This unresolved issue provides an important point of departure for the present study, which argues that understanding differences in CE implementation requires greater attention to motivation, organizational culture, and behavioural commitment alongside technological and institutional factors.

2.2 Behavioral and psychological dimensions of sustainability

While technological innovation and institutional support provide the structural foundations for the circular economy, they do not fully explain why organizations respond differently to similar external conditions. Increasingly, researchers argue that successful CE implementation also depends on behavioural processes operating at both the individual and organizational levels. These processes influence how sustainability objectives are interpreted, translated into everyday practice, and ultimately embedded within organizational routines.

At the individual level, several behavioural theories help explain pro-environmental decision-making. The Theory of Planned Behavior [17] remains one of the most widely applied frameworks, proposing that environmentally responsible behaviour is shaped by attitudes, subjective norms, and perceived behavioural control. Yuriev et al. [18], in a comprehensive review of TPB-based studies, confirmed the framework's explanatory value for organizational sustainability while highlighting that favourable attitudes alone rarely translate into consistent behaviour without supportive institutional conditions. Complementing this perspective, Kahneman's [19] dual-process theory suggests that sustainability-related decisions are often influenced by cognitive shortcuts and contextual framing rather than purely rational evaluation. This insight is particularly relevant where organizations must balance short-term economic pressures against long-term sustainability goals.

Behavioural processes become even more complex at the organizational level, where leadership, culture, and shared values shape collective decision-making. Research consistently shows that organizational culture influences both the willingness to adopt sustainability initiatives and the extent to which these initiatives become embedded in everyday operations. Linnenluecke and Griffiths [20] demonstrated that differences in organizational culture explain a substantial proportion of variation in sustainability performance across firms, while Ketprapakorn and Kantabutra [21] argue that sustainability becomes institutionalized only when organizational values are consistently communicated and reinforced by senior management. In this context, transformational leadership plays a particularly important role because leaders influence not only strategic priorities but also employee motivation, behavioural norms, and organizational learning, thereby affecting the depth of sustainability integration [20] [21].

Among the available behavioural frameworks, Self-Determination Theory (SDT) provides perhaps the most compelling explanation for differences in voluntary CE implementation. Rather than focusing solely on behaviour itself, SDT distinguishes between the quality of motivation underlying that behaviour. According to Deci and Ryan [14] and Deci et al. [22], actions driven by autonomous, internalized motivation are considerably more likely to produce lasting behavioural change than those motivated primarily by external rewards or regulatory pressure. Applied to organizational settings, this distinction suggests that the long-term success of circular economy initiatives depends less on formal adoption than on whether sustainability principles become genuinely integrated into organizational values and strategic priorities. Teixeira et al. [23] similarly argue that durable behavioural change requires internal commitment rather than continued external reinforcement. The concept of behavioural relapse offers a useful analogy in this context: organizational practices introduced primarily in response to external pressure may weaken once those pressures diminish, whereas internally supported behaviours are considerably more resilient over time.

Recent research increasingly supports this interpretation. Bertassini et al. [15] propose a comprehensive framework in which mindset, organizational values, behaviours, capabilities, and competencies interact to determine the success of circular transitions. Their work suggests that no single element is sufficient in isolation; instead, successful implementation depends on the alignment of these dimensions within a supportive organizational culture. A complementary perspective is provided by behavioural economics. Houdek [24] demonstrates that carefully designed choice architectures can encourage sustainable behaviour without fundamentally changing individual attitudes, while Steg and Vlek [25] emphasize that information alone rarely leads to behavioural transformation unless supported by institutional and organizational environments that reinforce desired practices.

Taken together, this body of research points to a consistent conclusion. Although technological capabilities remain essential, they cannot fully explain why some organizations successfully embed circular economy principles while others achieve only limited or temporary progress. Behavioural factors—including intrinsic motivation, organizational culture, leadership, and value alignment—appear to be equally important in determining whether circular economy initiatives evolve into lasting organizational capabilities. These insights provide the theoretical foundation for the present study, which places motivational orientation and organizational commitment at the centre of its explanation of corporate CE implementation.

2.3 Voluntary corporate initiatives and institutional frameworks

Voluntary corporate initiatives have become an increasingly important component of the circular economy transition, particularly in areas where regulatory frameworks remain incomplete or continue to evolve. Rather than replacing mandatory environmental regulation, these initiatives typically complement formal policy instruments by encouraging organizations to adopt sustainability practices that extend beyond minimum legal requirements [26]. As a result, voluntary programmes are often viewed as mechanisms through which firms can experiment with new approaches, strengthen stakeholder relationships, and demonstrate environmental leadership.

Despite their growing popularity, the effectiveness of voluntary sustainability initiatives remains widely debated. Evidence suggests that participation alone does not necessarily translate into meaningful organizational change. In their meta-analysis of voluntary environmental programmes, Tashman et al. [12] found that firms' decisions to participate are influenced by a combination of institutional pressures, organizational resources, and programme design. However, initiatives motivated primarily by external pressures rarely generate sustained improvements in environmental performance. This finding suggests that participation should not be equated with commitment and highlights the importance of understanding the motivational drivers underlying voluntary corporate engagement.

Institutional theory provides an important perspective for interpreting these dynamics. DiMaggio and Powell [27] argue that organizations often adopt similar practices because of coercive, mimetic, and normative pressures rather than because those practices necessarily improve organizational performance. From this viewpoint, participation in voluntary environmental initiatives may sometimes reflect a search for legitimacy rather than a commitment to substantive organizational transformation. Nevertheless, institutional pressures should not be viewed exclusively as constraints. Delmas and Toffel [28] demonstrate that well-designed self-regulatory frameworks can complement traditional regulation and, under appropriate conditions, stimulate innovation and accelerate sustainability transitions.

The literature on greenwashing illustrates the limitations of voluntary approaches when organizational commitment remains weak. Several studies argue that sustainability initiatives may be adopted primarily as reputational tools without leading to fundamental operational change. Vogel [13] describes voluntary programmes as important sources of organizational legitimacy, while Fatemi et al. [29] show that sustainability communication is not always accompanied by measurable environmental improvements. Delmas and Burbano [30] further explain that greenwashing frequently results from inconsistencies between organizational motivation, internal capabilities, and external sustainability commitments. More recently, Flankova et al. [31] demonstrated that the effectiveness of voluntary environmental programmes depends not only on participation itself but also on the quality of programme governance. Their findings suggest that rigorous institutional mechanisms, transparent monitoring, and credible accountability systems substantially increase the likelihood that voluntary initiatives produce genuine environmental improvements.

Taken together, these studies indicate that voluntary corporate initiatives cannot be evaluated solely on the basis of programme participation. Their effectiveness depends on the interaction between external institutional pressures, internal organizational capabilities, and the motivational foundations of corporate decision-making. This distinction is particularly relevant for circular economy implementation, where firms frequently adopt similar voluntary commitments while achieving markedly different organizational outcomes. Understanding these differences therefore requires moving beyond institutional explanations alone and examining how organizational motivation shapes the depth and durability of voluntary CE implementation.

2.4 The behavioral turn in CE research

In recent years, behavioural perspectives have moved from the periphery to the centre of circular economy research. While earlier studies primarily explained CE implementation through technological innovation, business model design, and institutional pressures, a growing body of evidence suggests that these factors alone cannot account for the considerable variation observed across organizations. Increasingly, researchers argue that successful circular transitions depend on the interaction between organizational capabilities and the behavioural mechanisms that shape managerial decision-making, employee engagement, and strategic commitment.

Recent empirical studies consistently point toward the importance of these behavioural dimensions, although they approach the issue from different theoretical perspectives. Hofmann and Jaeger-Erben [32] argue that organizations frequently remain locked into linear business models because established routines, cognitive frameworks, and organizational incentives reinforce existing patterns of behaviour. Their findings suggest that technological capability and regulatory support are necessary but insufficient conditions for successful circular transitions if behavioural barriers remain unchanged.

Similar conclusions emerge from research examining organizational capabilities and managerial cognition. Using structural equation modelling, Eikelenboom and de Jong [33] demonstrate that the successful implementation of circular business models depends largely on how organizational leaders perceive circular economy initiatives. Firms in which managers view CE as a strategic opportunity rather than merely a regulatory obligation are considerably more likely to integrate circular principles into their long-term business strategies. Network relationships further reinforce this process by facilitating organizational learning and capability development.

Other studies broaden this perspective by highlighting the interaction between organizational, cultural, and institutional influences. Assmann et al. [34], in a systematic review of circular business model adoption, conclude that organizational culture represents one of the most influential determinants during the early stages of circular transformation. Likewise, Luthra et al. [35] show that attitudes, subjective norms, and perceived behavioural control significantly influence CE adoption in small and medium-sized enterprises, while Centobelli et al. [36] identify environmental commitment, social pressure, and economic incentives as mutually reinforcing drivers of organizational change. Jain et al. [37] similarly demonstrate that institutional pressures improve circular economy performance primarily when organizations possess sufficient flexibility and effective environmental management systems to translate external expectations into operational practice.

Viewed collectively, these studies reveal a clear shift in the evolution of circular economy research. Rather than treating behavioural, organizational, and institutional explanations as competing perspectives, recent scholarship increasingly recognizes them as complementary dimensions of the same transition process. External pressures may encourage firms to adopt circular practices, yet the depth and durability of implementation depend largely on internal organizational conditions, including leadership, motivation, organizational culture, and strategic commitment.

Despite these important advances, the literature remains fragmented. Existing studies typically examine individual behavioural factors - such as leadership, organizational culture, attitudes, or institutional pressures - in isolation. Comparatively little attention has been devoted to understanding how these dimensions interact to produce distinct patterns of corporate circular economy implementation. In particular, the relationship between motivational orientation and organizational commitment has received limited conceptual integration, despite its potential to explain why firms

operating under similar institutional conditions frequently follow markedly different implementation trajectories.

The present study addresses this gap by integrating insights from circular economy research, organizational behaviour, and behavioural psychology into a single analytical framework. Rather than examining behavioural determinants independently, it proposes a motivation–commitment typology that explains how different combinations of internal motivation and organizational commitment shape voluntary CE implementation across large corporations. This behavioural perspective provides the conceptual bridge to the framework developed in the following section.

3 Conceptual framework: the behavioral dimensions of CE implementation

The literature reviewed in the previous section suggests that existing explanations of corporate circular economy implementation remain fragmented. Technological innovation, business model design, institutional pressures, and behavioural factors have each been examined extensively, yet they are rarely integrated into a common analytical perspective. Building on these insights, the present study proposes a conceptual framework that explains voluntary CE implementation through the interaction between two fundamental dimensions: organizational motivation and organizational commitment. Rather than treating these dimensions independently, the framework assumes that their interaction shapes both the depth and durability of circular economy implementation.

The framework is grounded in three complementary theoretical perspectives. The first is Self-Determination Theory [14], which distinguishes between extrinsic and intrinsic forms of motivation. The second draws on organizational change theory, particularly the distinction between surface-level compliance and deep organizational transformation [15] [38]. The third originates from the circular economy business model literature, which emphasizes that lasting sustainability transitions require coherence between value creation logic and sustainability objectives [5] [39]. Together, these perspectives provide a coherent theoretical foundation for understanding why organizations facing similar institutional conditions often follow markedly different implementation trajectories.

The first dimension of the framework concerns organizational motivation. Corporate sustainability initiatives rarely emerge from a single motivational source. Some organizations adopt circular economy practices primarily in response to external pressures, including regulatory requirements, market expectations, or reputational concerns. Such extrinsic motivations often encourage relatively rapid organizational responses but may also result in implementation that remains largely compliance-oriented. By contrast, intrinsically motivated organizations integrate sustainability because it reflects internal values, strategic priorities, or organizational identity. Consistent with Self-Determination Theory, behaviour driven by internalized motivation is generally more stable and durable than behaviour sustained primarily through external control [14] [22]. Recent organizational research supports this distinction. Johnstone and Beusch [40] argue that lasting organizational behaviour is shaped more effectively by internal commitment than by external control mechanisms, while Bocken and Geradts [39] demonstrate that successful business model innovation depends on organizational capabilities that enable sustainability objectives to become embedded within core strategic processes rather than remaining peripheral initiatives.

The second dimension concerns the depth of organizational commitment. Here, the framework distinguishes between compliance and transformation. Compliance refers to the formal adoption of circular economy practices in response to external expectations without fundamentally altering organizational routines or business model logic. Transformation, by contrast, involves embedding sustainability principles into strategic decision-making, operational processes, and value creation itself. This distinction closely reflects Schein's [38] understanding of organizational change, according to which enduring transformation requires changes in underlying assumptions rather than merely observable behaviours. Bertassini et al. [15] similarly argue that successful circular transitions depend on the coherent alignment of organizational mindset, values, behaviours, capabilities, and competencies rather than on isolated sustainability initiatives.

Bringing these two dimensions together creates a two-dimensional analytical space in which organizations can be positioned according to both their dominant motivational orientation and the depth of their organizational commitment. The framework therefore moves beyond explanations

based exclusively on technology, regulation, or business model innovation by recognising that similar external conditions may give rise to very different organizational responses depending on internal behavioural dynamics [33] [41]. Rather than viewing motivation and commitment as separate explanatory variables, the framework treats their interaction as the primary mechanism shaping voluntary CE implementation.

This interaction gives rise to four conceptually distinct implementation types. Organizations characterized by predominantly extrinsic motivation and compliance-oriented commitment are classified as Type 1 (Legitimacy-Seeking). Firms that remain primarily externally motivated but pursue deeper organizational change represent Type 2 (Strategic Adaptation). Organizations driven by intrinsic values while maintaining relatively limited organizational transformation correspond to Type 3 (Values-Led Incrementalism). Finally, firms combining intrinsic motivation with transformative organizational commitment represent Type 4 (Value-Creation Integration). Rather than constituting fixed categories, these four types should be understood as ideal analytical constructs that help explain variation in corporate circular economy implementation across different organizational contexts.

The proposed framework provides the theoretical foundation for the comparative analysis presented in the following sections (Figure 1). It also constitutes the principal conceptual contribution of this study by integrating insights from behavioural psychology, organizational change theory, and circular economy research into a single explanatory model capable of accounting for divergent implementation trajectories among firms operating under broadly similar external conditions.

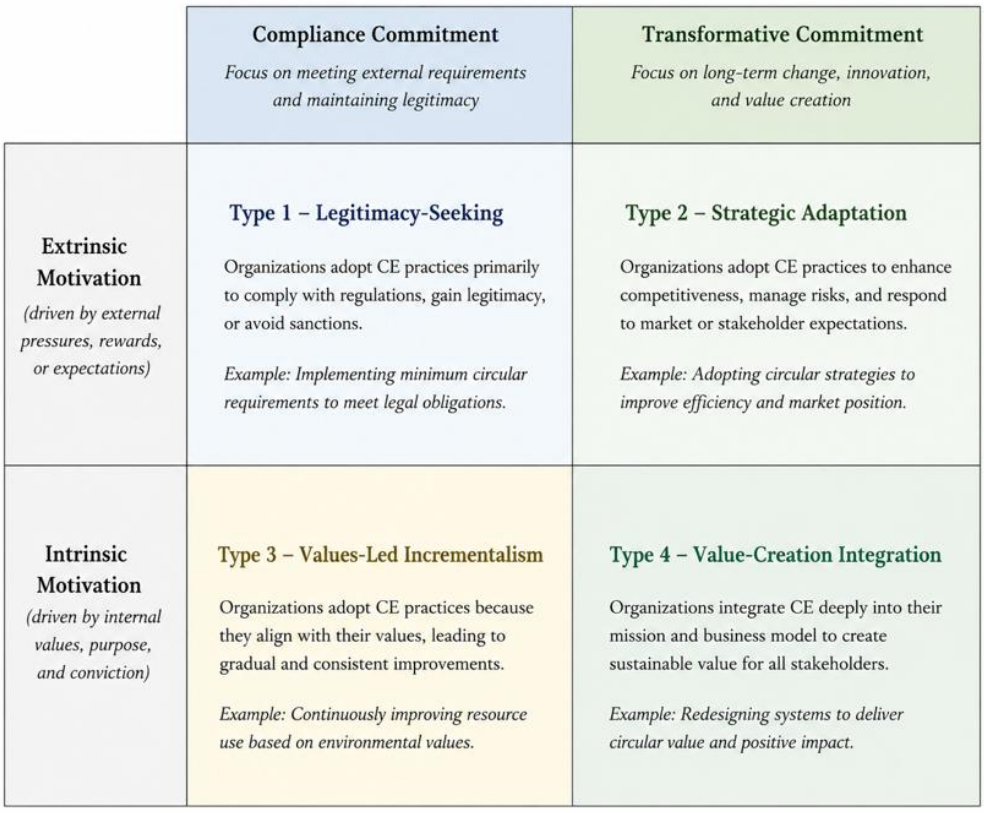

Figure 1. Two-dimensional typological framework for CE implementation. Source: Own elaboration based on [5] [14] [15]

4 Materials and Methods

4.1 Research design

This study adopts a conceptual-comparative research design based on theoretically structured case analysis. This approach is appropriate for examining complex organizational phenomena, such as circular economy implementation, where the relevant mechanisms are not easily captured through purely quantitative indicators [42] [43]. The purpose of the analysis is therefore not to estimate statistically representative patterns across all corporations, but to identify analytically meaningful differences in how firms translate circular economy principles into organizational practice.

The research design follows the logic of analytical generalization. Rather than treating the selected companies as a representative sample, the cases are used to examine how different combinations of motivation and commitment appear in real corporate settings. This makes the approach suitable for developing and refining a theoretically grounded typology, while also allowing the framework to be assessed against empirical evidence from diverse organizational contexts. In this sense, the study aims to contribute to theory-building in the behavioural circular economy literature rather than to provide population-level generalization.

4.2 Case selection

The cases were selected through purposive sampling, following a maximum variation logic [44]. The aim was not to construct a statistically representative sample of multinational corporations, but to identify cases that could capture different patterns of circular economy implementation across sectors, regions, and business model contexts. This sampling strategy is particularly suitable for typology-building research, where the objective is to observe variation in theoretically relevant dimensions rather than to estimate the prevalence of each type in a larger population.

Three selection criteria guided the case selection. First, companies had to be large multinational enterprises with sufficient publicly available data to support systematic comparison. Second, they had to demonstrate documented engagement with circular economy initiatives, evidenced by at least one of the following: CDP disclosure, membership in the Ellen MacArthur Foundation Global Commitment, or a published sustainability report containing explicit circular economy targets, indicators, or programmes. Third, the sample had to include variation across industry sectors and geographic regions in order to avoid limiting the analysis to a single institutional or market context. On this basis, ten companies were selected: Patagonia, Interface, Natura, IKEA, Philips, Unilever, H&M, Zara (Inditex), Nestlé, and Tata Group.

4.3 Data sources and triangulation

The analysis is based on three categories of secondary data. The primary source material consists of corporate annual reports, sustainability reports, and integrated reports published between 2020 and 2025. These documents provide information on each company's stated circular economy initiatives, strategic priorities, performance indicators, and reported progress. Because such reports are produced by the companies themselves, they are useful for identifying how firms frame and present their CE commitments, but they cannot be treated as neutral evidence of implementation depth.

To reduce the risk of relying solely on self-reported corporate information, the analysis also incorporates CDP climate and environmental disclosures. These disclosures provide a more standardized basis for comparison across companies, particularly with respect to climate governance, target-setting, transparency, and supply chain-related practices. They therefore serve as an external reference point for evaluating whether reported sustainability commitments are supported by broader governance and performance structures [45].

A third source category consists of independent external assessments, including Ellen MacArthur Foundation-related benchmarks, NGO reports, and investigative analyses. These sources were particularly important in cases where corporate sustainability claims have been publicly questioned or where discrepancies between self-reported performance and external evaluations

have been documented, such as in the fast-fashion sector. Combining these three types of evidence made it possible to compare corporate claims with external indicators and critical assessments. This triangulation strategy was essential for assessing the depth of CE implementation, since a methodology based only on corporate reports would risk overstating the extent to which circular economy principles are genuinely embedded in organizational practice.

4.4 Coding and evaluation protocol

Each company was assessed against five analytical criteria derived from the conceptual framework and the literature on circular economy implementation. These criteria were: (1) external sustainability indicators, operationalized primarily through CDP rating bands; (2) the presence and depth of circular economy activities, including waste reduction, product take-back, material recovery, repair, reuse, or lifecycle extension programmes; (3) the availability and quality of CE-related performance indicators, with particular attention to whether targets were quantified, time-bound, and externally verified; (4) the level of organizational and strategic embeddedness, defined as the extent to which circular economy principles were integrated into business model design, executive priorities, product development, or operational routines; and (5) the degree of tension between the firm's core revenue logic and circular economy objectives. This final criterion was included because firms whose business models depend on high-volume consumption may face structural constraints that cannot be captured by sustainability indicators alone.

Each criterion was coded on a three-point ordinal scale: Low, Medium, or High. The purpose of the scale was not to generate a numerical score, but to support systematic comparison across cases. A Low score indicated limited evidence, vague commitments, or primarily symbolic CE activity. A Medium score indicated documented initiatives and measurable targets, but only partial organizational integration. A High score indicated substantial evidence of strategic embedding, measurable performance, and alignment between circular economy objectives and core business practices. This ordinal coding approach follows the logic of qualitative case research, where theoretically relevant variation is assessed through structured comparison rather than statistical measurement [43] [44].

The typological classification was conducted in two steps. First, the five-criterion matrix was used to evaluate the observable depth of CE implementation in each company. Particular weight was given to the depth of CE activities, the quality of KPIs, organizational embeddedness, and business model coherence, since these indicators provide direct evidence of whether circular economy practices remain peripheral or are integrated into the organization more substantively. Second, the dominant motivational orientation of each company was inferred from the strategic framing of CE initiatives in corporate reports and external assessments. References to regulatory compliance, market expectations, reputational positioning, or risk management were interpreted as evidence of predominantly extrinsic motivation, whereas references to organizational identity, long-term value creation, mission alignment, and strategic integration were treated as indicators of more intrinsic motivation. Motivation was therefore not interpreted as an individual psychological state, but as an observable organizational orientation reflected in corporate strategy, reporting language, and implementation patterns.

Initial coding was conducted independently by two members of the research team. Disagreements were resolved through discussion and, where necessary, by returning to the underlying source material. Intercoder reliability for the five-criterion matrix was assessed using Cohen's κ, yielding a value of $\kappa = 0.74$, which indicates substantial agreement [46]. Cases involving borderline classifications were reviewed by the full research team before final assignment to one of the four types defined in the conceptual framework. This procedure was designed to reduce interpretive bias and ensure that the resulting typology reflected systematic cross-case comparison rather than isolated judgments about individual companies.

The final classification was based on the combined interpretation of motivational orientation and commitment depth. Companies with predominantly extrinsic motivation and limited organizational embeddedness were classified as Type 1, Legitimacy-Seeking. Firms with external motivational drivers but stronger evidence of strategic transition were classified as Type 2, Strategic Adaptation. Companies showing internally grounded sustainability values but only incremental

organizational transformation were classified as Type 3, Values-Led Incrementalism. Finally, firms combining intrinsic motivation with deep strategic and operational integration were classified as Type 4, Value-Creation Integration.

5 Multi-indicator comparative analysis of corporate CE practices

Table 2. Multi-indicator evaluation matrix of the examined companies

Company	External indicator	CE activity depth	KPI presence	Org. embeddedness	Model tension	Assigned type
Patagonia	High	High	Medium	High	Low	Type 4
Interface	High	High	High	High	Low	Type 4
Natura	High	High	Medium	High	Low	Type 4
IKEA	High	Medium	High	Medium	Medium	Type 2
Philips	High	Medium	High	Medium	Low	Type 2
Unilever	High	Medium	High	Medium	Medium	Type 2
H&M	Medium	Medium	Medium	Low	High	Type 1
Zara	Medium	Low	Medium	Low	High	Type 1
Nestlé	Medium	Medium	High	Medium	Medium	Type 1
Tata Group	Medium	Medium	Medium	Medium	Low	Type 3

Source: Own elaboration based on corporate sustainability reports, CDP disclosures, and external evaluations (2020–2025).

The matrix in Table 2 should be read as an analytical bridge between the conceptual framework and the subsequent case-based interpretation. It does not rank companies according to overall sustainability performance. Rather, it identifies patterns in how circular economy initiatives are embedded within corporate strategy, performance measurement, and business model logic. The comparison suggests that the four implementation types differ not simply in the number of CE initiatives reported, but in the relationship between motivational orientation, organizational embeddedness, and business model coherence. Companies classified as Type 4 combine strong CE activity with high organizational embeddedness and low business model tension, whereas Type 1 companies display weaker embeddedness and greater tension between circular economy commitments and the dominant revenue model. Type 2 represents an intermediate transition pattern, while Type 3 captures internally motivated but still incremental forms of implementation.

5.1 Type 4: Value-Creation Integration –The Transformative Model

The first and most deeply embedded implementation pattern is Value-Creation Integration. Firms in this category do not treat circular economy practices as isolated sustainability programs or reputational instruments. Instead, circularity becomes closely connected to how the company defines value creation, competitive positioning, and long-term organizational identity. This does not mean that circular models fully replace all linear business practices. Rather, the defining feature of Type 4 is that CE principles are strategically embedded and supported by a relatively strong alignment between motivation, organizational culture, and business model logic.

This pattern corresponds closely to the notion of embedded sustainability described by Eccles et al. [47] and to Bertassini et al.'s [15] argument that circular transitions require the alignment of mindset, values, behaviors, capabilities, and competencies. In the companies classified as Type 4, circular economy initiatives are not merely added to existing operations. They are used to strengthen

brand identity, deepen customer relationships, redesign material flows, and support longer-term strategic differentiation. The combination of intrinsic motivation, high organizational embeddedness, and relatively low business model tension distinguishes this group from the other implementation types.

Patagonia illustrates this pattern through its long-standing emphasis on product durability, repair, reuse, and customer engagement. Its Worn Wear program, launched globally in 2017, had accepted more than 137,000 product returns by 2025, including approximately 71,000 items linked to warranty and return claims. The company's North American repair center processes around 50,000 items annually, supported by a wider network of repair centers across global markets [48]. Although repair and resale currently account for only a small share of total annual revenue, they play a much larger strategic role in shaping the company's brand identity and customer loyalty [49]. Patagonia's SBTi-validated climate targets, including an 80% reduction in Scope 1–2 emissions, a 55% reduction in Scope 3 emissions by 2030, and a net-zero target for 2040, further indicate that sustainability is integrated into the company's broader strategic orientation rather than confined to a peripheral CSR function.

Interface provides the most quantitatively demonstrable case of transformative CE integration in the sample. Through its Mission Zero strategy, launched in 1994, the company substantially reduced the environmental footprint of its carpet tile production and progressively reoriented its business model around recycled and bio-based materials. By the mid-2020s, Interface had reduced the carbon footprint of its carpet tiles by 74% compared with the 1996 baseline. Its ReEntry take-back program had processed 31,750 tons of reclaimed carpet tiles since 2016, and 60% of product materials were derived from recycled or bio-based sources [50] [51]. The introduction of carbon-negative carpet tiles and the decision to phase out carbon offsets in favor of direct decarbonization further suggest that circularity has become part of the company's core value proposition rather than a separate environmental initiative.

Natura represents a third version of the Value-Creation Integration model, in which circularity is closely linked to packaging design, biodiversity, and the Amazonian bio-economy. By 2023, 86.2% of the company's packaging was recyclable, reusable, or compostable, compared with 82.3% in 2022, with a stated target of reaching full coverage [52]. In 2024, Natura collaborated with 46 Amazonian agro-extractive communities and distributed R$48.51 million in total resources, including R$24.52 million in direct raw material purchases benefiting more than 10,000 families [53]. The issuance of a biodiversity-linked bond raising BRL 1.3 billion to finance the sustainable use of Amazonian bioactive materials further illustrates how environmental objectives are connected to value creation, supply chain design, and financial strategy.

Taken together, Patagonia, Interface, and Natura show how circular economy implementation can move beyond compliance and become part of a firm's strategic identity. Their approaches differ in sectoral focus: Patagonia emphasizes repair and product longevity, Interface focuses on material recovery and low-carbon production, while Natura connects circularity with biodiversity and inclusive sourcing. What they share is a relatively high level of organizational embeddedness and a comparatively strong fit between circular economy objectives and the logic through which the firm creates value. For this reason, they provide the clearest examples of the transformative model in the present sample.

5.2 Type 2: Strategic Adaptation – The Innovation-Driven Transition Model

The second implementation pattern, Strategic Adaptation, captures firms that have moved beyond symbolic or compliance-oriented circular economy engagement but have not yet fully integrated circular logic into the dominant structure of value creation. In these cases, CE initiatives are visible, measurable, and often strategically important, yet they remain unevenly embedded across the organization. The defining feature of this type is therefore not a lack of ambition, but an incomplete transition between circular innovation and business model transformation.

This pattern is particularly relevant for large corporations operating in sectors where circular solutions require substantial changes in infrastructure, customer behaviour, procurement systems, or revenue models. In such contexts, external pressures — including regulation, investor

expectations, market competition, and reputational considerations — often help accelerate circular initiatives. At the same time, the companies in this group show evidence of genuine strategic adaptation rather than mere legitimacy-seeking. Their CE programmes are supported by measurable targets, pilot projects, and dedicated innovation efforts, but these initiatives have not yet become the dominant organizational logic.

Philips provides the clearest example of this transition pattern. The company has developed one of the more advanced circular revenue frameworks among the firms examined, including as-a-service models, refurbished medical equipment, lifecycle extension services, and circularly designed products. In 2023, circular revenue accounted for 20% of total revenue and was externally verified against the Ellen MacArthur Foundation's Circular Transition Indicators methodology [54] [55]. By 2025, this share had reportedly increased to 27.9% [56]. Philips has also maintained a strong CDP performance record and achieved zero waste to landfill across its industrial sites. Nevertheless, the wider scaling of service-based models remains constrained by the financial and procurement structures of healthcare systems, where the shift from capital expenditure to operating expenditure can slow the adoption of circular business models. Philips therefore illustrates a relatively advanced but still incomplete transition toward circular value creation.

IKEA represents a different version of Strategic Adaptation. Its Buy-Back & Resell programme, launched in 2019, had expanded to 33 markets by 2023, with more than 211,000 participating customers and 263,000 products sold through the Second-Chance platform. The company has also made measurable progress in material sourcing: in FY2024, 16.2% of the wood used in its products came from recycled sources, while 97.8% was either FSC-certified or recycled [57]. The 2025 investment by Ingka Investments in recycling ventures further indicates a strategic intention to strengthen circular capabilities. Yet IKEA's case also shows the difficulty of scaling circularity within a high-volume global retail model. Circular services are expanding, but they still operate alongside a dominant business logic based on large-scale production, distribution, and consumption. For this reason, IKEA is best understood as a company in transition rather than as a fully integrated circular business model.

Unilever also fits the Strategic Adaptation type, although its circular economy activity is more concentrated in packaging than in the broader redesign of value creation. The company has made progress in recycled plastic use and virgin plastic reduction, and it has introduced refill and reuse pilots across multiple markets. In 2023, recycled plastic content reached 22%, while virgin plastic use had fallen by 18% compared with the 2019 baseline [58] [59]. These developments show that circularity has become a visible part of Unilever's sustainability strategy. However, repeated target revisions and the limited integration of refillable models into the core business architecture suggest that circular innovation remains only partially embedded. The company therefore illustrates the tension between ambitious sustainability commitments and the practical difficulties of transforming a global fast-moving consumer goods business model.

Overall, Type 2 firms occupy an important intermediate position in the typology. They differ from legitimacy-seeking firms because their circular economy initiatives are supported by measurable programmes, strategic investments, and some degree of organizational learning. At the same time, they differ from value-creation integration firms because circularity has not yet become the central logic of competitive advantage or revenue generation. Strategic Adaptation should therefore be interpreted as a transitional model: it reflects meaningful progress, but also reveals the organizational, financial, and business model constraints that limit the pace of circular transformation.

5.3 Type 1: Legitimacy-Seeking – The Compliance-Oriented Model

The third implementation pattern, Legitimacy-Seeking, refers to firms whose circular economy initiatives are primarily shaped by external regulatory, market, or reputational pressures. In this model, CE activities are present and often publicly visible, but they remain weakly embedded in the core business model. The defining feature of Type 1 is therefore not the absence of circular economy engagement, but the limited extent to which such engagement alters the underlying logic of value creation.

This pattern is closely related to institutional explanations of corporate sustainability behaviour. From the perspective of institutional theory, firms may adopt similar sustainability practices in response to coercive, mimetic, or normative pressures, even when these practices do not lead to deeper organizational transformation [27]. In the context of voluntary environmental programmes, this creates a familiar tension: participation may improve legitimacy without necessarily producing substantive performance change [12]. The Legitimacy-Seeking type captures precisely this tension. Circular initiatives exist, but they tend to operate alongside business models that continue to generate strong pressure for linear production, high throughput, or short product lifecycles.

H&M and Zara illustrate this pattern most clearly. Both companies have introduced sustainability and circularity-related initiatives, including take-back schemes, recycled material commitments, and sustainability-labelled product lines. However, these initiatives operate within a fast-fashion business model that depends heavily on rapid product turnover, frequent collection renewal, and large-scale consumption. This creates a persistent tension between circular economy objectives and the dominant revenue logic of the sector. In H&M's case, public criticism has focused on the credibility and transparency of sustainability claims, including concerns raised by the Norwegian Consumer Authority in 2019 and later scrutiny of environmental scoring practices linked to the Higg Index [60]. Zara and its parent company Inditex have faced similar concerns, including criticism of the Join Life product line and broader questions about the substantiation of sustainability claims in the fast-fashion industry. The Changing Markets Foundation [61] found that a substantial share of sustainability claims made by European fashion companies lacked sufficient evidence, reinforcing the need to distinguish between visible sustainability communication and deeper circular transformation.

Nestlé represents a different, less sectorally extreme form of the same implementation type. Unlike fast-fashion firms, its business model is not defined by rapid product turnover in the same way, and the company has developed measurable circular economy initiatives, particularly in packaging. In 2023, 83.5% of Nestlé's plastic packaging was designed for recycling, and virgin plastic use had declined by 14.9% from the 2018 baseline, although both indicators remained below the company's stated targets. The company has also piloted refill and reuse models in multiple markets and has been recognized within the Ellen MacArthur Foundation Global Commitment framework. Nevertheless, Nestlé's circular economy activity remains concentrated mainly in packaging, while broader questions of product portfolio design, consumption patterns, and consumer interaction have not been transformed to the same extent [62]. For this reason, Nestlé is classified as Type 1, although it represents a more advanced and less visibly contested variant of legitimacy-oriented implementation than the fast-fashion cases.

Overall, Type 1 firms demonstrate why the presence of circular economy initiatives should not be equated with transformative implementation. These companies may report measurable activities and participate in voluntary sustainability frameworks, yet the organizational embeddedness of CE principles remains limited when circularity does not substantially alter the core revenue model. The central issue is therefore not whether circular programmes exist, but whether they are capable of changing the structural conditions that produced linear value creation in the first place. In this respect, the Legitimacy-Seeking model highlights the limits of voluntary CE engagement when external legitimacy pressures are stronger than internal organizational transformation.

5.4 Type 3: Values-Led Incrementalism –The Efficiency-Driven Model

The fourth implementation pattern, Values-Led Incrementalism, captures firms in which circular economy practices are supported by internal organizational priorities, but where implementation remains uneven or primarily focused on efficiency improvement rather than full business model transformation. In contrast to Legitimacy-Seeking firms, the motivation behind circularity is not merely reputational or compliance-oriented. At the same time, these firms do not yet exhibit the deep strategic integration characteristic of Value-Creation Integration. Type 3 therefore represents an internally motivated but still incremental pathway of CE implementation.

In the present sample, this type is represented by Tata Group. The classification should therefore be interpreted with some caution: Type 3 is analytically relevant within the proposed framework, but it is less empirically populated than the other categories and requires further

validation in future research. Nevertheless, Tata Group illustrates an important implementation pattern, particularly for diversified conglomerates operating across sectors with different material, energy, and regulatory constraints.

Tata Group's circular economy activity is closely linked to resource efficiency, material recovery, and operational optimization. Its group-wide Aalingana sustainability programme, launched in 2022 across major subsidiaries including Tata Steel, Tata Power, Tata Motors, Jaguar Land Rover, Tata Chemicals, TCS, and Tata Consumer Products, sets a Net Zero target for 2045 [62]. The programme indicates that sustainability has become a recognized strategic priority at the group level. However, circular economy objectives remain unevenly developed across subsidiaries, reflecting the complexity of implementing a unified CE strategy within a highly diversified corporate structure.

Several subsidiary-level initiatives demonstrate measurable circular progress. Tata Steel aims to achieve 99% material efficiency at its Indian steelmaking sites by 2025 and plans to develop a steel recycling business with a capacity of 5 MTPA by 2030 [63]. Tata Motors' TATVA circular framework organizes plant-level action across materials, energy, and product lifecycles, while the Re.Wi.Re programme operates collection centres for end-of-life vehicle dismantling with a combined annual capacity of 25,000 vehicles [64]. Tata Chemicals has also developed lithium-ion battery recycling operations capable of recovering lithium, cobalt, and manganese at purity levels exceeding 99% [65]. These examples show that circular economy practices are present in operationally significant areas and are supported by measurable performance objectives.

At the same time, Tata Group differs from the Type 4 firms because circularity has not yet converged into a unified value-creation logic across the corporation. The strongest evidence of CE implementation appears at the subsidiary and operational levels, particularly in areas where material efficiency, recycling, and resource recovery generate clear economic and environmental benefits. This suggests an internally grounded orientation toward sustainability and resource optimization, but one that remains closer to incremental capability-building than to full strategic transformation.

For this reason, Tata Group is classified as Values-Led Incrementalism. The case demonstrates that intrinsic or internally grounded motivation does not automatically lead to transformative CE integration. Organizational scale, sectoral diversity, and uneven subsidiary-level capabilities can limit the extent to which circular economy principles become embedded across the entire corporate group. Type 3 therefore adds an important nuance to the typology: internally motivated CE implementation may produce substantial operational progress while still falling short of integrated circular value creation.

6 Discussion

The comparative analysis supports the central proposition of this study: corporate circular economy implementation does not follow a single or uniform trajectory. Firms exposed to broadly similar institutional pressures may adopt CE principles in markedly different ways, even when they possess comparable technical and financial capabilities. This variation cannot be fully explained by technological readiness, regulatory pressure, or market incentives alone. The findings suggest that motivational orientation, organizational culture, and the depth of strategic commitment play a decisive role in shaping whether CE initiatives remain peripheral or become embedded in the logic of value creation.

The identification of the Value-Creation Integration model (Type 4) is particularly important from a theoretical perspective. The cases of Patagonia, Interface, and Natura show that circular economy implementation becomes transformative when CE principles are closely linked to organizational identity, business model design, and competitive differentiation. This finding is consistent with Eccles et al.'s [47] concept of embedded sustainability and Bertassini et al.'s [15] argument that circular transitions require the alignment of mindset, values, behaviours, capabilities, and competencies. In these cases, CE is not treated primarily as a compliance requirement or reputational device. Instead, it functions as part of the firm's value proposition, brand logic, and long-term strategic orientation.

The Strategic Adaptation model (Type 2) reveals a different but equally important pattern. Philips, IKEA, and Unilever demonstrate that firms may show genuine circular innovation without yet achieving full business model transformation. These cases illustrate the gap between strategic intent and organizational embedding. Consistent with Hofmann and Jaeger-Erben's [32] discussion of cognitive and organizational lock-in, circular initiatives may advance through pilots, measurable targets, and dedicated innovation programmes while still being constrained by existing routines, financial models, procurement systems, or revenue structures. Bocken and Geradts' [39] emphasis on dynamic capabilities is especially relevant here: the transition from circular innovation to circular value creation depends not only on ambition, but also on the organization's ability to reconfigure its structures and capabilities over time.

The Legitimacy-Seeking model (Type 1) highlights the limits of voluntary CE engagement when circularity remains weakly connected to the core business model. The fast-fashion cases are particularly illustrative, as circular initiatives such as take-back schemes or sustainability-labelled collections operate within a business logic that continues to depend on rapid product turnover and high-volume consumption. This does not imply that such initiatives are irrelevant, but it does suggest that their transformative potential is limited when the underlying revenue model remains largely unchanged. The findings therefore align with Tashman et al. [12] and Vogel [13], who caution that participation in voluntary sustainability programmes does not necessarily lead to substantive environmental performance improvement. Delmas and Burbano's [30] concept of motivational incongruence is also useful in this context: where external legitimacy pressures dominate and internal commitment remains limited, voluntary sustainability initiatives may improve symbolic positioning without fundamentally altering operational architecture.

The Values-Led Incrementalism model (Type 3) adds an important nuance to the typology. Tata Group shows that internally grounded motivation does not automatically produce transformative circular economy integration. In this case, CE implementation is closely linked to material efficiency, resource recovery, and operational optimization, particularly at the subsidiary level. The pattern is therefore more substantive than legitimacy-seeking, but it remains less integrated than the value-creation model observed in Type 4 firms. This finding is relevant for diversified conglomerates and resource-intensive sectors, where circular economy progress may emerge first through efficiency-driven capability-building rather than through a unified transformation of the entire business model. Since Type 3 is represented by a single case in the present sample, however, this category should be treated as analytically suggestive and in need of further empirical validation.

Taken together, the four models indicate that the quality of motivation matters as much as the formal presence of CE initiatives. The findings support the Self-Determination Theory-based argument developed in the conceptual framework: circular practices are more likely to become durable when they are supported by internalized motivation, organizational commitment, and business model coherence [14] [22]. This conclusion also resonates with the empirical findings of Luthra et al. [35] and Eikelenboom and de Jong [33], who emphasize the importance of managerial cognition, attitudes, and internal organizational orientation in CE adoption. The present study extends these insights by showing how motivational orientation and commitment depth combine to produce distinct implementation pathways.

The hypothesis assessment should be interpreted in light of the study's conceptual-comparative design. The findings do not provide statistical hypothesis testing, but they offer case-based support for the theoretical expectations developed earlier. H1 is supported insofar as firms with stronger evidence of intrinsic or internally grounded motivation generally show deeper organizational commitment to CE principles. H2 is also supported, as strategic leadership and managerial commitment appear closely associated with the extent to which circular practices are integrated into corporate strategy. H3 receives partial support: sustainability-oriented culture facilitates operational embeddedness, but the Tata Group case suggests that cultural or value alignment alone is not sufficient to produce full transformation. H4 receives strong support across the cases, as coherence between business model logic and sustainability objectives appears to be the clearest predictor of transformative CE implementation. Finally, H5 is supported by the comparative evidence: the motivation–commitment framework provides a structured explanation for why firms operating under broadly similar external conditions follow different circular economy implementation trajectories.

Overall, the discussion reinforces the value of a behavioural perspective on corporate circular economy implementation. Technological capability, regulation, and market pressure remain important, but they do not fully explain why some firms integrate CE principles into value creation while others adopt them primarily as compliance or reputational tools. The proposed typology therefore contributes to circular economy research by shifting attention from the question of whether firms adopt CE practices to the more theoretically significant question of how and why they commit to them differently.

7 Conclusions and Implications

This study examined why large corporations implement circular economy (CE) principles in markedly different ways despite facing broadly similar institutional pressures and having access to comparable technological and organizational resources. The analysis suggests that the depth of CE implementation cannot be explained by technological capability or regulatory pressure alone. Instead, the findings point to the importance of behavioural, cultural, and strategic factors, particularly motivational orientation, organizational commitment, and the degree of coherence between circular economy objectives and the firm's underlying value creation logic.

The conceptual framework developed in this study contributes to circular economy research by integrating motivation and commitment into a four-type typology of voluntary corporate CE implementation. The typology helps explain why some firms adopt circular practices primarily as compliance or legitimacy-oriented responses, while others embed circularity more deeply into strategy, operations, and business model design. In doing so, the study responds to calls for greater attention to the "human side" of the circular economy [11] and offers a behavioural perspective that complements existing technological, regulatory, and business model explanations.

For management scholarship, the framework provides a basis for further theory development and empirical testing. It suggests that corporate CE trajectories may evolve over time as firms move from externally driven compliance toward more strategic and internally embedded forms of implementation. For example, firms may shift from Legitimacy-Seeking to Strategic Adaptation when institutional pressure, stakeholder expectations, or competitive dynamics stimulate more systematic circular innovation. Similarly, firms may move from Strategic Adaptation toward Value-Creation Integration when circular business models become commercially viable and organizational capabilities mature. These proposed transitions remain theoretical and require longitudinal validation, but they offer a useful agenda for future research on the dynamics of CE implementation.

For corporate managers, the findings highlight that circular economy implementation should be treated as a strategic transformation process rather than as a specialized sustainability or ESG function. The cases of Patagonia, Interface, and Natura suggest that deeper CE integration requires more than the introduction of individual circular programmes. It depends on aligning circular objectives with organizational identity, leadership priorities, incentive structures, product development, customer relationships, and revenue models. Managers seeking to move beyond compliance-oriented adoption should therefore focus not only on technical solutions, but also on the cultural and motivational conditions that enable circular practices to become organizationally durable.

For policymakers and regulators, the typology points to the limits of policy instruments that rely exclusively on external compliance incentives. Such instruments may encourage firms to participate in voluntary programmes or disclose circular economy commitments, but they do not necessarily generate substantive organizational transformation. Effective transition support should therefore combine regulatory pressure with mechanisms that strengthen internal learning, transparency, and credible performance improvement. These may include independently verified benchmarking systems, knowledge-sharing platforms, sector-specific transition pathways, and incentives that reward demonstrated circular performance rather than programme membership alone.

The study also has several limitations. First, the analysis relies on secondary data, including corporate sustainability reports, CDP disclosures, and external assessments. While triangulation helped reduce the risk of relying exclusively on self-reported corporate information, the methodology cannot fully capture internal decision-making processes, managerial attitudes, informal

organizational cultures, or employee-level behavioural dynamics. Future studies should therefore complement this approach with interviews, surveys, and organizational culture assessments to test the framework more directly.

Second, the sample is limited to large multinational corporations with substantial public data availability. This choice was appropriate for developing and illustrating the typology, but it limits the extent to which the findings can be generalized to small and medium-sized enterprises, which often operate under different resource constraints, governance structures, and institutional pressures. Future research should examine whether the four-type framework applies to SMEs, family firms, public-sector organizations, and firms in emerging markets.

Third, the study is cross-sectional and therefore cannot observe how companies move between types over time. The proposed typology implies possible transition pathways, but these remain theoretical at this stage. Longitudinal case studies would be particularly valuable for examining whether firms progress from compliance-oriented adoption toward deeper strategic integration, or whether some remain locked into legitimacy-seeking patterns despite increasing external pressure.

Overall, the study shows that the key question is not simply whether firms adopt circular economy practices, but how and why they commit to them differently. By placing motivation, organizational commitment, and business model coherence at the centre of the analysis, the proposed framework offers a behavioural explanation for divergent CE implementation trajectories and provides a foundation for future research on the organizational conditions under which circular economy initiatives become genuinely transformative.

References

[1] Pearce, D. W., & Turner, R. K. (1990). Economics of natural resources and the environment. Johns Hopkins University Press.

[2] Stahel, W. R. (2016). The circular economy. Nature, 531(7595), 435–438. https://doi.org/10.1038/531435a

[3] Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The circular economy: A new sustainability paradigm? Journal of Cleaner Production, 143, 757–768. https://doi.org/10.1016/j.jclepro.2016.12.048

[4] Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. Resources, Conservation and Recycling, 127, 221–232. https://doi.org/10.1016/j.resconrec.2017.09.005

[5] Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. Journal of Industrial and Production Engineering, 33(5), 308–320. https://doi.org/10.1080/21681015.2016.1172124

[6] Lieder, M., & Rashid, A. (2016). Towards circular economy implementation: A comprehensive review in context of manufacturing industry. Journal of Cleaner Production, 115, 36–51. https://doi.org/10.1016/j.jclepro.2015.12.042

[7] Lewandowski, M. (2016). Designing the business models for circular economy — Towards the conceptual framework. Sustainability, 8(1), 43. https://doi.org/10.3390/su8010043

[8] Nußholz, J. L. K. (2017). Circular business models: Defining a concept. Sustainability, 9(10), 1810. https://doi.org/10.3390/su9101810

[9] Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. Journal of Cleaner Production, 114, 11–32. https://doi.org/10.1016/j.jclepro.2015.09.007

[10] Korhonen, J., Honkasalo, A., & Seppälä, J. (2018). Circular economy: The concept and its limitations. Ecological Economics, 143, 37–46. https://doi.org/10.1016/j.ecolecon.2017.06.041

[11] Jabbour, C. J. C., Sarkis, J., de Sousa Jabbour, A. B. L., Renwick, D. W. S., Singh, S. K., Grebinevych, O., Kruglianskas, I., & Filho, M. G. (2019). Who is in charge? A review and a research agenda on the 'human side' of the circular economy. Journal of Cleaner Production, 222, 793–801. https://doi.org/10.1016/j.jclepro.2019.03.038

[12] Tashman, P., Flankova, S., van Essen, M., & Marano, V. (2022). Why do firms participate in voluntary environmental programs? A meta-analysis. Organization & Environment, 35(1), 3–29. https://doi.org/10.1177/1086026621990063
[13] Vogel, D. (2010). The private regulation of global corporate conduct. Business & Society, 49(1), 68–87. https://doi.org/10.1177/0007650309343407
[14] Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
[15] Bertassini, A. C., Ometto, A. R., Severengiz, S., & Gerolamo, M. C. (2021). Circular economy and sustainability: The role of organizational behavior in the transition journey. Business Strategy and the Environment, 30(7), 3160–3193. https://doi.org/10.1002/bse.2796
[16] McDonough, W., & Braungart, M. (2002). Cradle to cradle: Remaking the way we make things. North Point Press.
[17] Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T
[18] Yuriev, A., Boiral, O., Francoeur, V., & Paillé, P. (2020). Pro-environmental behaviors through the lens of the theory of planned behavior: A scoping review. Resources, Conservation and Recycling, 155, 104660. https://doi.org/10.1016/j.resconrec.2019.104660
[19] Kahneman, D. (2011). Thinking, fast and slow. Farrar, Straus and Giroux.
[20] Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. Journal of World Business, 45(4), 357–366. https://doi.org/10.1016/j.jwb.2009.08.006
[21] Ketprapakorn, N., & Kantabutra, S. (2022). Toward an organizational theory of sustainability culture. Sustainable Production and Consumption, 32, 638–654. https://doi.org/10.1016/j.spc.2022.05.020
[22] Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. Annual Review of Organizational Psychology and Organizational Behavior, 4, 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108
[23] Teixeira, P. J., Carraça, E. V., Markland, D., Silva, M. N., & Ryan, R. M. (2012). Exercise, physical activity, and self-determination theory: A systematic review. International Journal of Behavioral Nutrition and Physical Activity, 9, 78. https://doi.org/10.1186/1479-5868-9-78
[24] Houdek, P. (2024). Nudging in organizations: How to avoid behavioral interventions being just a façade. Journal of Business Research, 182, 114781. https://doi.org/10.1016/j.jbusres.2024.114781
[25] Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review. Journal of Environmental Psychology, 29(3), 309–317. https://doi.org/10.1016/j.jenvp.2008.10.004
[26] Gunningham, N. (2009). The new collaborative environmental governance: The localization of regulation. Journal of Law and Society, 36(1), 145–166. https://doi.org/10.1111/j.1467-6478.2009.00461.x
[27] DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American Sociological Review, 48(2), 147–160.
[28] Delmas, M. A., & Toffel, M. W. (2008). Organizational responses to environmental demands: Opening the black box. Strategic Management Journal, 29(10), 1027–1055. https://doi.org/10.1002/smj.701
[29] Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. Global Finance Journal, 38, 45–64. https://doi.org/10.1016/j.gfj.2017.03.001
[30] Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. California Management Review, 54(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64
[31] Flankova, S., Tashman, P., van Essen, M., & Marano, V. (2024). When are voluntary environmental programs more effective? A meta-analysis of the role of program governance quality. Business & Society, 63(6), 1340–1379. https://doi.org/10.1177/00076503231202018

[32] Hofmann, F., & Jaeger-Erben, M. (2020). Organizational transition management of circular business model innovations. Business Strategy and the Environment, 29(6), 2770–2788. https://doi.org/10.1002/bse.2542
[33] Eikelenboom, M., & de Jong, G. (2022). The impact of dynamic capabilities and circular orientation on circular business model implementation: Evidence from Dutch SMEs. Business Strategy and the Environment, 31(4), 1688–1708. https://doi.org/10.1002/bse.2982
[34] Assmann, I. R., Rosati, F., & Morioka, S. N. (2023). Determinants of circular business model adoption — A systematic literature review. Business Strategy and the Environment, 32(6), 6008–6028. https://doi.org/10.1002/bse.3470
[35] Luthra, S., Kumar, A., Sharma, M., Garza-Reyes, J. A., & Kumar, V. (2022). An analysis of operational behavioural factors and circular economy practices in SMEs. Journal of Business Research, 141, 321–336. https://doi.org/10.1016/j.jbusres.2021.12.014
[36] Centobelli, P., Cerchione, R., Del Vecchio, P., Oropallo, E., & Secundo, G. (2021). Blockchain technology for bridging trust, traceability and transparency in circular supply chain. Information & Management, 59(7), 103508. https://doi.org/10.1016/j.im.2021.103508
[37] Jain, N. K., Panda, A., & Choudhary, P. (2020). Institutional pressures and circular economy performance: The role of environmental management system and organizational flexibility. Business Strategy and the Environment, 29(8), 3509–3525. https://doi.org/10.1002/bse.2593
[38] Schein, E. H. (2010). Organizational culture and leadership (4th ed.). Jossey-Bass.
[39] Bocken, N. M. P., & Geradts, T. H. J. (2020). Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities. Long Range Planning, 53(4), 101950. https://doi.org/10.1016/j.lrp.2019.101950
[40] Johnstone, L., & Beusch, P. (2025). Motivating sustainable behaviour in the workplace through control. Journal of Management Control. https://doi.org/10.1007/s00187-025-00390-z
[41] Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. Journal of Social Issues, 56(3), 407–424. https://doi.org/10.1111/0022-4537.00175
[42] Eisenhardt, K. M. (1989). Building theories from case study research. Academy of Management Review, 14(4), 532–550. https://doi.org/10.5465/amr.1989.4308385
[43] Yin, R. K. (2018). Case study research and applications: Design and methods (6th ed.). SAGE Publications.
[44] Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative data analysis: A methods sourcebook (3rd ed.). SAGE Publications.
[45] Berg, F., Koelbel, J. F., & Rigobon, R. (2022). Aggregate confusion: The divergence of ESG ratings. Review of Finance, 26(6), 1315–1344. https://doi.org/10.1093/rof/rfac033
[46] Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. Biometrics, 33(1), 159–174. https://doi.org/10.2307/2529310
[47] Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. Management Science, 60(11), 2835–2857. https://doi.org/10.1287/mnsc.2014.1984
[48] Patagonia. (2025). Work in Progress 2025 Report. Patagonia, Inc. https://www.patagonia.com/our-footprint/
[49] Patagonia. (2021). Our quest for circularity. Patagonia Stories. https://www.patagonia.com/stories/planet/our-footprint/our-quest-for-circularity/story-96496.html
[50] Interface, Inc. (2024). 2023 Integrated Annual Report & Sustainability Data. Interface, Inc. https://www.interface.com/US/en-US/sustainability/sustainability-overview.html
[51] UNFCCC. (2020). Momentum for Change: From Mission Zero to Climate Take Back — How Interface is transforming its business. UNFCCC. https://unfccc.int/sites/default/files/resource/Fact%20Sheet%202020%20_Interface.pdf
[52] Natura &Co. (2023). Integrated Annual Report 2023. Natura &Co Holding S.A. https://2023ar.naturaeco.report/
[53] Natura &Co. (2024). Integrated Annual Report 2024. Natura &Co Holding S.A. https://2024ar.naturaeco.report/
[54] Philips. (2023). Annual Report 2023. Royal Philips N.V. https://www.results.philips.com/publications/ar23

[55] KPMG International. (2024). Driving circularity in a multinational: Lessons from Philips. KPMG International. https://assets.kpmg.com/content/dam/kpmg/nl/pdf/2024/services/philips-circular-revenue.pdf
[56] Philips. (2025). Annual Report 2025 Key Results. Royal Philips N.V. https://www.results.philips.com/
[57] IKEA. (2024). IKEA FY2024 Sustainability Report. Inter IKEA Systems B.V. https://www.ikea.com/global/en/our-business/sustainability/
[58] Unilever. (2024). Annual Report and Accounts 2023. Unilever PLC. https://www.unilever.com/investor-relations/annual-report-and-accounts/2023/
[59] Resource Recycling. (2026). Unilever shifting focus to flexibles targets. https://resource-recycling.com/plastics/2026/03/23/unilever-shifting-focus-to-flexibles-targets/
[60] Quartz. (2022). H&M showed bogus environmental scores for its clothing. https://qz.com/2180075/hm-showed-bogus-environmental-higg-index-scores-for-its-clothing
[61] Changing Markets Foundation. (2021). Synthetics anonymous: Fashion brands' addiction to fossil fuels. Changing Markets Foundation. https://doi.org/10.2307/2095101
[62] Nestlé S.A. (2023). Creating Shared Value and Sustainability Report 2023. Nestlé S.A. https://www.nestle.com/sustainability/responsible-business/sustainability-report
[63] Tata Steel. (2024). Integrated Annual Report 2023–2024: ESG Goals. Tata Steel Ltd. https://www.tatasteel.com/investors/integrated-report-2023-24/esg-goals.html
[64] Tata Motors. (2023). Sustainability Factsheet FY2023. Tata Motors Ltd. https://www.tatamotors.com/corporate-responsibility/sustainability-strategy/
[65] Tata Chemicals. (2019). Tata Chemicals launches li-ion battery recycling operations. https://www.tatachemicals.com/media/newsroom/press-releases/tata-chemicals-lion-battery-operations