Circular ecosystem orchestration and institutional change in the fashion industry

Abstract

Transitioning towards a circular economy largely depends on lead firms' ability to orchestrate a circular ecosystem. Despite an ever-expanding literature on the orchestration mechanisms for delivering circular value, it remains unclear how these micro-level mechanisms interact with and drive macro-institutional change. This study addresses this gap by developing a circular ecosystem orchestration framework for institutional change. Initial mechanism dimensions—standardising, nurturing, and negotiating—and subsequent categories are deductively derived from extant literature, then enhanced inductively through an analysis of 15 leading fashion firms' sustainability reports, encompassing the fast fashion, luxury, and sportswear segments. Findings provide a more granular and conceptually holistic orchestration framework, revealing a novel 'building' dimension and highlighting the concurrent, mutually reinforcing interactions between mechanisms. At the institutional level, all dimensions directly target the normative pillar to foster shared circular norms and values, while nurturing and standardising dimensions additionally target the cognitive and regulatory pillars, respectively. The resulting framework bridges the existing micro-macro disconnect, lays the foundations for future cross-sectoral research, and provides strategic guidance for managers seeking to effect systemic change and advance circularity.

Keywords: Circular economy, ecosystem, orchestration, institutional theory, textile and apparel industry.

1. Introduction

The transition towards a circular economy calls for a paradigm shift in the ways in which actors within the textile and apparel supply chain collaborate – moving from linear, dyadic interactions to a more interconnected, ecosystem-based approach (Paavilainen et al., 2021; Köhler et al., 2022; Bressanelli et al., 2019). Ecosystems have become the dominant strategic response to overcoming the systemic challenges of the circular transition (Peçanha & Ferreira, 2025; Tabas et al., 2025), such as a lack of shared

knowledge, limited interactions, and insufficient support (Kanda et al., 2025). Central to this transition is the role of ecosystem orchestrators, often focal firms that foster collaboration across a network of autonomous, interdependent actors to achieve collective goals such as materialising circular value propositions (Parida et al., 2019; de Vasconcelos Gomes et al., 2023; Trevisan et al., 2022; Wellten et al., 2025). The set of network actors extends beyond traditional supply chain actors to include policymakers, competitors, startups, and non-governmental organisations, who possess complementary resources that are critical to making circular value tangible (Colucci and Vecchi, 2021; Coppola et al., 2023; Sandvik and Stubbs, 2019). This ecosystem approach is evident from the growing trend of focal firms orchestrating initiatives across diverse actors. For example, Kering is leading investments in resale platforms like Vestiaire Collective (Williams, 2021), while Burberry is engaging in upcycling through its ReBurberry Fabric program (Wightman-Stone, 2022). Similarly, Adidas and Stella McCartney are partnering with startups like Evrnu® to develop closed-loop recycling projects such as the Infinite Hoodie (Hetherington et al., 2021).

The concept of ecosystem orchestration, defined as the set of deliberate actions by a central firm (the orchestrator) to create and extract value from a network (Zucchella & Previtali, 2019), has gained significant traction in the academic literature (Parida et al., 2019; Trevisan et al., 2022; Aryee et al., 2025; Konietzko et al., 2020). Research in this domain has evolved along two prominent, yet insufficiently integrated streams, creating a conceptual gap that motivates this study.

The first research stream focuses on identifying the micro-level mechanisms of ecosystem orchestration. While a handful of studies approach this deductively using theoretical lenses like the dynamic capability view (Kanda et al., 2025; Kolagar, 2024), most of the literature has taken an inductive approach. The inductive work has built on a range of orchestration mechanisms, from standardising, nurturing, and negotiating (Parida et al., 2019) to specific collective activities such as brokering relationships (Miller et al., 2025), searching for innovation and knowledge (DiVito et al., 2025; Reim et al., 2025), and configuring digital technologies (Rossi & Srai, 2025). Empirical studies in the textile and apparel sector have further detailed these activities (DiVito et al., 2025; Saccani et al., 2023; Sandberg, 2023). While these studies provide an essential scaffold,

this body of work has two key limitations that motivate this study. First, the resulting typologies of orchestration often remain at a high level of abstraction. There is a need for a more granular understanding that captures the nuances of orchestration. Second, the literature on orchestration often takes a static view of what is inherently a dynamic process. While the literature recognises that orchestration mechanisms are mutually reinforcing, their synergic effects remain underexplored (Saccani et al., 2023; Sandberg, 2023; Kanda et al., 2025), hindering a holistic understanding of how different orchestration mechanisms interact and function as an integrated whole.

A second, parallel stream of research proposes that ecosystem orchestration has the potential to reshape the macro-institutional context (Dessaigne & Pardo, 2020; Konietzko et al., 2020). As the transition towards a circular economy requires a macro-level change for an ecosystem to emerge and stabilise, orchestrators are crucial in shaping new institutional norms (Dessaigne & Pardo, 2020). From an institutional theory perspective, orchestrators act as institutional entrepreneurs to engage in purposeful institutional work (Lawrence and Suddaby, 2006; Greenwood et al., 2014), enacting changes in the cognitive assumptions and behaviours of their ecosystem partners. This is particularly salient given that ecosystems are composed of heterogeneous stakeholders with divergent interests and power asymmetries (Civera et al., 2025; Wellten et al., 2025). While the circular economy literature broadly calls for institutional change across regulatory, normative, and cognitive pillars (see Moreau et al., 2017; Schulz et al., 2019; Awan et al., 2021; Awan et al., 2022), research is yet to show how orchestrators can deploy their mechanisms to enact these changes.

There is a disconnection between the micro-mechanisms of orchestration and the macro-level goal of institutional change, which creates a theoretical gap that this study aims to bridge. The literature identifies what orchestrators do and that institutional change is needed, but it fails to explain how the former leads to the latter. Without bridging this micro-macro divide, our theories of ecosystem management remain incomplete, offering little strategic guidance for effecting systemic change. To address these shortcomings, we pose the following two research questions (RQ):

RQ1: *Through which mechanisms do leading fashion firms orchestrate their ecosystems to facilitate the transition to a circular economy?*

RQ2: *How do the identified orchestration mechanisms unfold, interact, and affect the three pillars of the institutional system in this transition?*

To answer these questions, we draw on rich data from the sustainability reports of fifteen leading fashion firms across fast fashion, sportswear, and luxury segments, making several key contributions that provide a more granular understanding of circular ecosystem orchestration within the textile and apparel industry. *First*, we refine and expand the typology of orchestration mechanisms, building on the seminal work of Parida et al. (2019). We bring forth a distinct 'building' dimension, delineating critical activities of ecosystem formation that were previously subsumed within the well-established mechanisms of nurturing, standardising, and negotiating. Supported by the identification of 22 new categories, our framework provides a more granular understanding of the actions orchestrators employ. *Second*, we advance orchestration theory from a static view to a dynamic, systemic model. We reveal the interplay among these four dimensions, showing how they unfold and reinforce one another concurrently, rather than in a linear sequence. Third, and most significantly, we bridge the micro-macro divide between ecosystem orchestration and institutional theory. We challenge the prevailing focus on shared value creation by demonstrating how orchestration is a catalyst for institutional change. Building on prior work that linked orchestration to normative institutions (Dessaigne & Pardo, 2020), our framework provides a more holistic model, showing how specific mechanisms of orchestration shape all three institutional pillars: regulatory, normative, and cognitive.

The remainder of this paper is organised as follows. Section 2 presents a literature review, identifying a set of potential orchestration mechanisms from extant literature that leads to an initial framework. Section 3 describes the research method and data. Section 4 presents and discusses the results, including the newly developed framework of orchestration mechanisms and their connection to the institutional system. Finally, Section 5 provides the overarching conclusions, highlighting key implications, limitations, and future research directions.

2. Theoretical background and literature review

This section begins by providing a comprehensive overview of orchestration mechanisms as a strategic approach to managing circular ecosystems (Section 2.1). We

then highlight a critical need for institutional change in the circular economy and emphasise the under-explored, yet crucial, role of orchestration mechanisms in driving this change (Section 2.2).

2.1 Circular ecosystem orchestration

Originating in the work of Moore (1993), the concept of an "*ecosystem*" has gained significant traction in the analysis of inter-firm relationships. Defined as a set of interacting actors who depend on each other for joint value creation (Adner, 2017; Jacobides et al., 2018; Thomas & Ritala, 2022), the ecosystem has been useful in understanding complex phenomena like innovation, business models, and platform networks (Jacobides et al., 2018; Talmar et al., 2018; Adner, 2017; Gawer, 2014). More recently, its relevance has extended to the domain of the circular economy (e.g., Parida et al., 2019; Konietzko et al., 2020; Moggi & Dameri, 2021; Kanda et al., 2021; Trevisan et al., 2022; de Vasconcelos Gomes et al., 2023; Divito et al., 2025; Kanda et al., 2025). A circular ecosystem is defined as *"a group of interdependent, autonomous actors that collectively generate a circular value proposition"* (de Vasconcelos Gomes et al., 2023, p.2).

An ecosystem perspective is increasingly recognised as crucial for capturing the systemic property of circular transitions (Trevisan et al., 2022; de Vasconcelos Gomes et al., 2023; DiVito et al., 2025; Kanda et al., 2021; Peçanha & Ferreira, 2025; Tabas et al., 2025). Unlike firm-centric approaches, such as circular business models (Linder & Williander, 2017), or traditional hierarchical structures like supply networks—which often rely on arms-length transactions and centralised control—the ecosystem perspective emphasises two defining features essential for circular success: *interdependencies* and *shared goals*. The former underscores the symbiotic relationships among affiliated firms, which may span different sectors and may not be bound by formal contracts, but offer complementary resources (Jacobides et al., 2018). For example, circular ecosystem actors include startups offering disruptive solutions, NGOs providing community advocacy, policymakers establishing regulatory frameworks, and even competitors recognising the value of cooperation —all of whom play a complementary role in driving a circular transition (Köhler et al., 2022; Tuladhar et al., 2024). The latter ensures strategic alignments among these firms, fostering collective actions towards a shared goal (Adner,

2017), such as realising circular value propositions (de Vasconcelos Gomes et al., 2021; Parida et al., 2019) or transforming institutional systems to support circularity (Dessaigne & Pardo, 2020; Konietzko et al., 2020).

The circular economy literature has examined the behavioural process with which lead firms, acting as orchestrators, manage such ecosystem interdependencies to achieve shared goals (e.g., Parida et al., 2019). While much research focuses on the goal of realising "circular value propositions", e.g., recycling offerings and novel circular designs (Wellten et al., 2025; Trevisan et al., 2022; de Vasconcelos Gomes et al., 2023; da Costa Fernandes et al., 2020), the equally important goal of institutional change receives less attention. In the former realm, scholars have identified a range of orchestration actions that can be broadly categorised into three mechanism dimensions: standardising, nurturing, and negotiating. Specifically, standardising aims to create a harmonised regulatory framework with formal and informal standards and legislations (Parida et al., 2019; Saccani et al., 2023). Nurturing, such as securing funding and promoting knowledge sharing, creates fertile ground for the growth of the ecosystem (Parida et al., 2019). Finally, negotiating allows ecosystem actors to establish shared rules, define ecosystem boundaries, and cultivate a sense of collective ownership in pursuit of common goals (Blackburn et al., 2022; Parida et al., 2019). Table 1 provides an initial framework that includes these orchestration dimensions and subsequent categories deductively derived from our literature search, as described in Section 3.1.

[Take in Table 1]

As shown in the table, our search identified three main relevant sources that empirically addressed the identification of such orchestration mechanisms. In particular, two of these sources (Saccani et al., 2023; Sandberg, 2023) focused on textile and fashion but remained limited in scope to a single focal firm and supply chain, calling for further in-depth exploration of relevant mechanisms, as well as their interplay and potential synergies. Moreover, no prior literature has discussed the extent to which these mechanisms influence and drive institutional change within the circular ecosystem. We unpack this by examining the orchestration mechanisms through an ecosystem approach, considering a broader sample of fashion focal firms while addressing the institutional context.

2.2 Circular ecosystem orchestration and institutional theory

Institutional theory has been widely adopted for its explanatory power in understanding the paradigm shift from a linear to a circular economy (Närvänen et al., 2021; Ranta et al., 2018; Arranz & Arroyabe, 2023). This shift represents a profound economic and societal transformation, entailing not only technological innovation and a new circular business model, but also a fundamental shift in the institutional framework. While classical institutionalism emphasises how existing institutional structures—laws, regulations, norms, and shared beliefs—constrain or enable firm behaviour (DiMaggio & Power, 1983; Meyer & Rowan, 1977; Scott, 2008), circular economy literature often draws upon contemporary institutional theory. This perspective recognises the agency of firms in shaping and reshaping institutions during transitions (Lawrence & Suddaby, 2006; Greenwood et al., 2014). Instead of merely conforming to existing institutional pressures, firms can actively engage in institutional work to facilitate the shift towards circularity Närvänen et al., 2021; Konietzo et al., 2020; Schulz et al., 2019; Moreau et al., 2017). This means firms can modify, disrupt, and create institutions across three pillars: regulative (laws and rules), normative (shared norms), and cognitive (shared understandings) (Lawrence & Suddaby, 2006; Scott, 2008). For instance, Närvänen et al. (2021) identified how startups in circular food waste management actively shape regulative institutions by lobbying for policy changes that facilitate food waste collection and redistribution, while simultaneously influencing normative institutions by promoting social awareness campaigns to reduce food waste at the consumer level.

While the link between institutional work and the circular economy is well-established, the ecosystem perspective necessitates understanding how diverse interdependent actors—firms, competitors, startups, policymakers, and NGOs—contribute to engendering change at the broader institutional macro level, aligning cognitive understanding, norms and regulations to drive the shift towards a circular economy. Despite this need, research on collective institutional work within circular ecosystems remains scarce, with rare exceptions like Dessaigne and Pardo (2020), who examined the normative pillar of institutional theory. This significant gap underscores the need for a more nuanced understanding of how circular ecosystem orchestration drives

institutional change for effecting systemic transformation through micro-level orchestration mechanisms.

3. Research Method

The research process comprised of two main stages: (1) developing a circular ecosystem orchestration framework with relevant mechanisms for fashion from extant literature, and (2) expanding this framework through an empirical analysis of sustainability-related annual reports from a sample of leading fashion firms (RQ1), followed by an assessment of these mechanisms, their interactions, and their impact on institutional pillars (RQ2). The methodological steps are summarised in Figure 1 and subsequently presented and elaborated.

[Take in Figure 1]

3.1. Initial framework of circular ecosystem orchestration in fashion

The first stage was to develop an initial framework from extant literature, outlining the relevant mechanisms for circular ecosystem orchestration in fashion. A comprehensive literature search was conducted using Web of Science, focusing on papers containing 'circular economy' and 'orchest' in their title, keywords, and/or abstract (for publications up to June 2024). The inclusion criteria for screening were studies addressing orchestration mechanisms in cross-sectoral or fashion/textile focused studies. A total of 65 sources were obtained, closely examined and manually screened by two authors through direct reading, leading to three key studies being identified (Parida et al., 2019; Saccani et al., 2023; Sandberg, 2023). These studies were deemed particularly relevant to deductively deriving the mechanisms (see Section 2.1 and Table 1). The initial framework served as a pattern-matching template (Sinkovics, 2018) to develop the subsequent expanded framework.

3.2 Expanded framework and subsequent analysis

In the second stage, the initial framework was expanded through a qualitative and exploratory analysis of the most recent publicly accessible sustainability-related annual reports published by top fashion companies, as listed in the The FashionUnited Index (Fashion-United, 2022). The analysis focused on three segments: fast fashion, sportswear, and luxury fashion. This multiple case study approach was chosen for its

ability to explore contemporary events (Yin, 2009) and its suitability for inductive theory building by replication logic (Eisenhardt, 1989), enhancing the robustness and generalisability of qualitative results (Eisenhardt and Graebner, 2007; Eisenhardt, 2021).

3.2.1 Sample selection criterion

The sample selection criterion sought to identify large, influential brands in the fashion industry, i.e., the industry leaders and primary ecosystem orchestrators (Parida et al., 2019). This was guided by the The FashionUnited Index (Fashion-United, 2022). Three different fashion segments – fast fashion, luxury, and sportswear – were included to enhance the generalisability and applicability of the findings to the broader fashion industry landscape.

Each segment offers a different insight into the industry. Fast fashion companies, offering relatively low-cost trend-driven items, are particularly criticised for their consumerism-led business models and their environmentally and socially negative impacts (Garcia-Ortega et al., 2023). Luxury brands, renowned for their craftsmanship, high quality, durable products, and premium pricing, offer a sense of identity, status, and exclusivity (Cabigiosu, 2020), and their characteristics lend themselves particularly well to exploring new circular business models, such as access-based approaches. Meanwhile, sportswear firms usually emphasise aspects such as active and healthier lifestyles, performance, and innovation (Jhanji, 2021), although this segment is also far from exempt from scrutiny and criticism (e.g., Wells et al., 2021; Goswami and Brookshire, 2015).

The three segments face a series of common challenges in transitioning to a circular economy, including advancing towards more sustainable business models, the need for qualified personnel, development of materials, designs, technologies, processes, infrastructures, and reverse logistics, as well as favourable legislation or behavioural changes among users (Jia et al., 2020; Saccani et al., 2023; Fuchs & Hovemann, 2022). However, it is also acknowledged that their conventional business approaches and models represent different starting points that may influence this transition. Nonetheless, leading firms in these segments are expected to be particularly active in the adoption of circular ecosystem orchestration initiatives to address existing criticism, improve their image, and contribute to sustainability (Garcia-Ortega et al., 2023). In this

regard, firms not demonstrating signs of transitioning to a more circular model would have been excluded, a criterion that ultimately proved to be unnecessary.

Starting at the top, firms were chosen from the The FashionUnited Index that were active in these three segments and provided sufficient information on their websites to enable the subsequent analysis, e.g. sustainability-related reports. After an initial exploration, it was determined that theoretical saturation (Eisenhardt, 1989; Eisenhardt, 2021) was well achieved with a sample of five companies in each segment since the inclusion of more companies no longer provided additional insights that helped to answer our research questions. Table 2 displays the companies selected by segment, including their rank in the index and market capitalisation. The table also indicates the main source of secondary data for each organisation.

[Take in Table 2]

3.2.2 Data analysis

The analysis of secondary sources, particularly sustainability-related reports and associated documents referenced within them, is motivated by their comprehensive nature. These reports provided structured information on environmental, social, and governance initiatives (Morioka & Carvalho, 2016), facilitating the identification of circular approaches, initiatives, and practices. These reports are typically available on company websites for several years and are subject to public review and assessment, holding companies accountable for their disclosed information.

Considering the qualitative and exploratory nature of this research, aimed at enhancing existing theoretical foundations, the application of a flexible pattern-matching technique (Sinkovics, 2018) was deemed appropriate. This facilitates the comparing and contrasting of prior knowledge with empirical observations (Bouncken et al., 2021). This approach, successfully employed in similar research fields by Konietzko et al. (2020) and Lingens et al. (2022), facilitated an open matching process, aligning identified codes from the empirical analysis with the initial framework presented in Table 1 (Section 2.1). That is, the initial theoretical framework served as a pattern-matching template, enabling the assessment of its relevance and accuracy in defining orchestration mechanisms in the empirical data.

Hundreds of pages of reports and associated information were coded following Krippendorff (2018) through a direct, interpretive and iterative close reading approach to qualitative content analysis in order to identify the orchestration mechanisms addressed. The study formed an abductive reasoning approach (Ketokivi & Choi, 2014), moving back and forth between the framework and the data grounded in these reports. This methodological approach has been acknowledged as an effective tool for theory building through qualitative secondary data analysis (Vila-Henninger et al., 2024) and has also been adopted in recent research on ecosystem orchestration (Shen et al., 2024; Burström et al., 2023). This helped to identify matches with the initial framework, matches that require editing, no matches, and new emerging codes for the construction of the enhanced framework.

The coding process was undertaken independently by two researchers to increase reliability, following the intercoder reliability approach recommended by O'Connor and Joffe (2020). Any discrepancies were discussed until an agreement was reached. In addition, and to particularly address our second research question, the enhanced framework of orchestration mechanisms was examined through the lens of their interactions and institutional change theory, thus elucidating how these mechanisms contribute to institutional change in the context of circular economy transitions.

4. Results and Discussion

To answer RQ1 - *Through which mechanisms do leading fashion firms orchestrate their ecosystems to facilitate the transition to a circular economy?* - an enriched framework is presented in Table 3, stemming from the initial deductively obtained framework (Table 1) and the inductive process resulting from the qualitative and exploratory study.

[Take in Table 3]

The enhanced framework delineates the orchestration mechanism dimensions, primary categories, and subcategories. The case analysis inductively confirmed the presence of all deductively identified orchestration mechanisms from the initial framework, enabling a refined and nuanced understanding of them, and led to the identification of a number of new mechanisms across various levels. The shaded

mechanisms in Table 3 are the new ones inductively incorporated through case analysis. Specifically, the new framework comprises four dimensions, with the newly identified "building" dimension added to the three existing ones in the initial framework. It includes ten primary categories, with four newly identified ones: 'aligning strategically,' 'driving innovation,' 'pursuing best practices and building trust,' and 'managing ecosystem configuration, partnerships, and collaborations.' Additionally, there are forty-four subcategories, twenty-one of which are newly identified and span across all dimensions. Importantly, most of these mechanisms were consistently evidenced across the cases. Illustrative quotes to support the new framework are provided in Table 4.

The new framework structure is elaborated below, following the dimensions identified: standardising, nurturing, negotiating, and building. Additionally, for each dimension and category, RQ2 - *How do the identified orchestration mechanisms interact and affect the three pillars of the institutional system in this transition?* - is addressed and discussed.

[Take in Table 4]

4.1 Standardising dimension

Within this dimension, two primary categories were outlined: 'promoting the formulation and establishment of industrial standards and regulations' and 'establishing own standards of practice'. The former, also contained in the initial framework, involves lobbying efforts at both peer (eleven out of fifteen firms) and institutional levels (ten firms), as exemplified in Table 4 by Kering's and Next enrolling in initiatives aimed at advancing discussions on circular economy principles. This reaffirms the need to advance standards and regulatory schemes that incentivise and promote circular solutions, as highlighted by Saccani et al. (2023) and Tura et al. (2019). According to Scott (2008), by promoting the adoption of specific standards, or regulations within the circular ecosystem, these mechanisms particularly influence the regulative pillar of institutional change.

The latter category, as included in the initial framework, involves fashion firms setting their standards of practice, by establishing codes of conduct as a newly identified subcategory evident in fourteen out of fifteen firms (e.g., Richemont), or establishing

metrics and audit protocols and seeking formal certification, adopted by all firms, such as Louis Vuitton developing an eco-design score (e.g., Louis Vuitton-LMVH), or planning third-party audits and certification (e.g., Fast Retailing). Hence, most firms explicitly demonstrate their attention to these orchestration mechanisms without a substantially different behavioural pattern being observed across segments. These mechanisms affect the normative institutional pillar when establishing informal rules, and the regulative pillar when seeking formal certification. Moreover, apart from the direct influence on the regulative and normative pillars, the standardising dimension may also indirectly affect the cognitive pillar via its potential to shape perceptions of legitimacy.

4.2 Nurturing dimension

Our qualitative analysis enabled the revelation of a significantly more comprehensive structure within the nurturing dimension compared to the initial framework. The primary categories identified were strategic alignment (new), knowledge facilitation, innovation driving (new), operational enhancement, and financial support provision.

'Aligning strategically' to promote a collective effort among various stakeholders has been identified in the textile and apparel industry as an essential aspect for developing circular economy initiatives (Saha et al., 2022). Its first four subcategories add to the last three subcategories that were already part of the initial framework. Aligning strategically involves the need to provide a vision for the ecosystem and persuade its various actors to behave consistently through a common motivation in the absence of strong hierarchical ties or formal contracts (Autio, 2022). As exemplified in various quotes in Table 4, thirteen out of the fifteen companies undertake the task of defining a circular vision, mission, purpose, and strategy, which delineates the overarching direction for circular initiatives (e.g., H&M or Kering), establishing specific circular targets accordingly (e.g., Next or Nike). Nine of the examined firms explicitly rely on culture and values to drive strategic direction (e.g., H&M or Dick's), while all examined firms rely on flexibility or adaptability to accommodate the dynamic nature of circular practices and address necessary changes and solutions for their implementation, as exemplified by Inditex. In line with previous findings, all of the firms delineate roles, responsibilities, and interdependences among ecosystem actors (Sandberg, 2023), and twelve out of fifteen endeavour to establish strong, meaningful, and lasting relationships with different

partners (Saccani et al., 2023; Sandberg, 2023) to engage with them in circular initiatives (e.g., H&M and Dick's).

Additionally, to encourage engagement and overcome resistance to change (Saccani et al., 2023), fourteen companies strive to raise awareness about circular needs and opportunities inherent in the required transformation. By defining a vision, purpose, and strategy, and by raising awareness about circular needs and opportunities, focal firms may influence the perceptions and beliefs of ecosystem participants about the desirability and legitimacy of circular practices, thereby addressing the cognitive institutional pillar. Moreover, both relying on culture and values, and defining new roles, responsibilities, and interdependences relate to the normative institutional pillar – by shaping socially shared norms and values that guide behaviour.

Table 4 also provides examples of the orchestration mechanisms within the second category, showing how companies prioritise "*facilitating know-how*" as an intangible resource to address circular solutions. This includes various subcategories such as providing guidance and training, sharing core knowledge and sensitive data and information, informing consumers or enabling information access, for example through digital product passports (Langley et al., 2023), seeking feedback and fostering dialogue to facilitate knowledge acquisition, co-designing products, and seeking or attracting talent. Notably, informing consumers or enabling information access, and seeking feedback and fostering dialogue, are newly identified subcategories, although they were highlighted as necessary practices for the circular economy in earlier literature (Stewart & Niero, 2018). Sharing sensitive data and information (six firms) and seeking or attracting talent (three firms) are the mechanisms that are least focused upon by the sampled firms, whereas providing guidance and training are the most emphasised mechanisms (see Table 3).

Moreover, as identified by Konietzko et al. (2020), '*driving innovation*' represents another key intangible asset for achieving circularity, consistently addressed by most companies (thirteen out of fifteen), that strived to promote and scale innovation through collaboration with selected partners (e.g., C&A and H&M). This orchestration mechanism adds to the initial framework. In the categories of '*facilitating know-how and talent*' and '*driving innovation*', mechanisms such as providing guidance, sharing core

knowledge, and promoting and scaling innovation can directly impact the cognitive institutional pillar by reshaping perceptions and understanding of circular practices. Additionally, more indirect connections can also be inferred. For instance, raising awareness, providing guidance, training, or sharing core knowledge may foster the establishment of industry standards or best practices (regulative pillar), or have an effect on socially shared norms and values (normative pillar).

Furthermore, '*enhancing operational capabilities*' within the ecosystem is another important category, with all of its subcategories already present in the initial framework. It predominantly involves the development of technology and solutions (fourteen out of fifteen firms), the development of information management and digitalisation (twelve firms), alongside the expansion of processes and activities and the development of new routines (fourteen firms). This outcome aligns with the recently published work of Civera et al. (2025). Infrastructure and logistics development are less common (seven firms), especially in the luxury segment (one out of five firms), and vertical integration is found in only three luxury fashion cases.

The final aspect identified within the nurturing dimension pertains to '*providing financial support or economic incentives*' to facilitate the joint development of circular solutions, with orchestration mechanisms are randomly adopted by the examined fashion firms. Our qualitative assessment inductively unveiled additional orchestration mechanisms being adopted by some of the firms and illustrated by quotes in Table 4, such as adopting fair financial practices with partners (one firm only), establishing purchase agreements to grant partner business stability (four firms), co-sponsoring research (two firms), and granting awards for circular advancements (9 firms), which could be benchmarked by other firms. This underscores the multiple strategies adopted by focal fashion firms to address the high investment and financial risks associated with the development of circular initiatives (Saccani et al., 2023). Moreover, when focal firms deal with the development of operational capabilities or the provision of financial support and economic incentives, the need for regulatory changes to support these mechanisms may naturally emerge, thereby affecting the regulatory institutional pillar.

4.3 Negotiating dimension

The negotiating dimension is comprised of two primary categories of orchestration mechanisms. The first category, '*seeking relational interdependence and complementarity*', involves negotiating rules for value co-creation and sharing (embraced by all companies), equity participation (two out of fifteen firms), along with newly identified subcategories such as sharing of responsibility with partners (twelve firms), and seeking feedback and fostering dialogue for rule negotiation (twelve firms). In the examples provided in Table 4, H&M advocates for joining forces behind shared goals, while LMVH emphasises joint progress and mutual benefit. Inditex highlights its equity investment in startups, Fast Retailing aims to extend responsibility upstream, and PUMA underscores the importance of dialogue with stakeholders to address sustainability challenges. Equity participation is infrequently addressed likely due to its implementation being a one-time action.

Moving to the second (and newly incorporated) category within the negotiating dimension, *'pursuing best practices and building trust*', fourteen out of the fifteen examined companies focus on providing accountability and transparency, in line with Civera et al. (2025) (e.g., Adidas disclosing supplier factory names), and twelve firms pursue best-practice frameworks and procedures (e.g., Richemont, C&A, Lululemon, and LMVH). Eight firms align action plans with standards (e.g., Puma), without distinct segment-wise patterns. Conversely, there appears to be a more widespread concern for seeking dialogue to achieve trust-building in the fast fashion segment (all of the firms), likely due to its inherently more controversial nature (Garcia-Ortega et al., 2023).

In relation to institutional pillars, '*seeking relational interdependence and complementarity*' involves establishing norms and principles of cooperation and reciprocity within the ecosystem, thereby influencing the normative framework. Likewise, mechanisms within the category of '*pursuing best practices and building trust*' entail embedding norms and expectations for excellence, integrity, or accountability within the ecosystem, also impacting the normative framework. For example, when companies adhere to established standards in their action plans, they reinforce socially shared norms and values within the ecosystem.

Connections with the cognitive pillar may also be inferred. Through negotiating rules for value co-creation and value sharing, ecosystem partners may recognise the mutual benefits of implementing circular economy practices and change their perceptions accordingly. Similarly, trust-building encourages movement in this direction. Lastly, links with the regulative pillar may also be established through mechanisms related to rule negotiation, aligning action plans with standards, and pursuing best practices and frameworks.

4.4. Building dimension

In addition to enriching the initial framework with new primary categories and subcategories, the analysis revealed a fourth orchestration mechanism dimension, termed 'Building'. One of its components – the control of new partner inclusion – was categorised within the negotiation mechanism by Parida et al. (2019). The building dimension comprehends the notion of partnership and relationship portfolio management, an orchestration capability identified by Sandberg (2023). The building dimension is proposed as a distinct dimension from the others due to its specific focus on managing the configurational and collaborative aspects of circular ecosystem orchestration. While it is interconnected with the other dimensions, it possesses its own identity and mechanisms. It entails *'managing ecosystem configuration, partnerships, and collaborations'* as its primary category, which integrates three subcategories of orchestration mechanisms: identifying and prioritising ecosystem partners, deciding partnerships and collaborations within the ecosystem, and supporting and fostering collaborative initiatives.

Collaborations vary in nature according to the orchestration mechanisms identified and involve a diversity of groups and actors configuring the ecosystem (Adner, 2017), including sectorial and non-sectorial platforms and initiatives, industry peers, leader companies from other sectors, start-ups and companies with specific technologies, such as recyclers or shredders, traditional manufacturers and suppliers of raw materials, farmers, service providers, consumers, external consultants and auditors, technological centres and academic institutions, NGOs, trade unions, community organisations, and government entities. Such an extensive and diverse blend of actors reflects the participant heterogeneity that extends beyond industry boundaries, a

characteristic of ecosystems pointed out by previous studies (e.g., Trevisan et al., 2022; Thomas and Autio, 2020). Furthermore, as shown through several excerpts in Table 4, collaborations involve not only bilateral but also multilateral relations (Adner, 2017).

The examined focal firms stress the need to forge robust and enduring partnerships, alliances, and collaborations as a crucial aspect for tackling the rest of the dimensions. There is a particular emphasis on deciding partnerships and collaborations within the ecosystem – in some instances materialised through joint venturing (e.g., Kering) or company acquisition (as in the case of Richemont) – along with supporting and fostering collaborative initiatives (thirteen out of fifteen firms, e.g., C&A, Next, Chanel, and H&M). Six firms also underscore the importance of identifying and prioritising ecosystem partners (e.g., C&A). Consistent with most categories and subcategories, no distinctive patterns were identified across the segments.

The new building dimension mainly contributes to the normative pillar by setting norms and expectations for organising, structuring, and coordinating partnerships and collaborations within the ecosystem. In addition, considering the vertebral role of the building dimension and its relations with the other dimensions, corresponding associations may also be established with the regulative and cognitive institutional pillars.

4.5 Relationship between dimensions

Orchestrating the transition to a circular economy is not a linear process; rather, the dimensions of orchestration dynamically interact and reinforce each other, as illustrated in Figure 2.

[Take in Figure 2]

Nurturing vs. standardising dimensions: The findings show how nurturing activities pave the way for standardisation and, in turn, how standardisation fosters an environment conducive to further nurturing. Specifically, nurturing efforts, such as raising awareness and fostering collaboration, establish the foundation for developing industry-wide standards and practices. Simultaneously, the presence of standardised practices can create a supportive environment for further nurturing initiatives, including

driving innovation, enhancing operational capabilities, and providing economic incentives for circular solutions.

Negotiating vs. standardising dimensions: The negotiation of rules for value co-creation and value sharing can have a significant impact on the standardisation process. Additionally, through the building dimension, this can facilitate collaborative relationships, which in turn support standardisation mechanisms. Conversely, standardisation mechanisms lay the groundwork for negotiating rules for value co-creation and value sharing. They serve as a reference for aligning action plans among different actors and may establish conditions for accountability and transparency.

Negotiating vs. nurturing dimensions: Negotiating and nurturing mechanisms exhibit a reciprocal relationship in circular ecosystem orchestration. By establishing shared goals, fostering strong relationships, and aligning interests, nurturing activities lay the groundwork for effective negotiation. For example, a clear circular vision, mission, and strategy provide a common setting that facilitates discussions on value co-creation and sharing. Conversely, negotiation mechanisms, such as establishing rules for value co-creation (and sharing) and ensuring accountability and traceability, contribute to the success of nurturing initiatives. In addition, both dimensions together contribute to stakeholder engagement and collaboration as key aspects in circular transitions identified by contemporary research (Civera et al., 2025). According to these scholars, developing technologies and stakeholder engagement mutually reinforce one another. This dynamic interplay, where different orchestration dimensions and categories strengthen and complement one another, highlights their synergies in achieving circularity.

Building vs. standardising and nurturing dimensions: Building orchestration mechanisms play a pivotal role in fostering collaboration within the circular ecosystem, thus supporting both standardising and nurturing efforts, as evidenced by the excerpts in Table 4. For instance, focal firms leverage collaborative initiatives to influence regulations and shape industry practices, as exemplified by Kering and Next's involvement in collective actions aimed at promoting circular economy-friendly regulations. Similarly, building mechanisms are crucial for nurturing initiatives such as knowledge sharing and innovation, evidenced by C&A’s and H&M's emphasis on

partnerships to develop technologies and solutions. In the opposite direction, both nurturing and standardising mechanisms contribute to the success of building activities. Nurturing efforts, like aligning strategically and facilitating knowledge, create a fertile ground for collaboration, while standardising mechanisms establish a common framework that guides interactions and strengthens partnerships within the ecosystem.

Building vs. negotiating dimension: Building and negotiating mechanisms are deeply intertwined in circular ecosystem orchestration. Building activities, such as thoughtfully selecting partners (C&A) and fostering collaboration (H&M), lay the groundwork for effective negotiation (Parida et al., 2019). Conversely, negotiating mechanisms, such as establishing rules for value co-creation and sharing, ensuring accountability, and building trust through dialogue, are essential for formalising and solidifying these partnerships (Parida et al., 2019). This interplay demonstrates a reciprocal relationship, where each dimension strengthens the other to advance the circular transition.

In summary, the diverse orchestration mechanisms identified suggest that focal firms adopt a hybrid orchestration approach, blending top-down strategic direction with bottom-up collaboration and negotiation (Reypens et al., 2021; Autio, 2022). This finding, coupled with the observation that the orchestration dimensions develop concurrently and interdependently, challenges the sequential model proposed by Parida et al. (2019), highlighting the dynamic and iterative nature of circular ecosystem orchestration.

4.6 Interactions with the institutional pillars

The orchestration mechanisms employed by fashion firms to facilitate the transition towards circularity not only drive practical implementation but also exert a significant influence on institutional change. The analysis reveals a complex interplay with the three institutional pillars, as summarised in Table 5.

[Take in Table 5]

The normative pillar, encompassing shared norms and values, is directly influenced by all four dimensions of orchestration—standardising, nurturing, negotiating, and building—emphasising the importance of establishing a collaborative foundation in the nascent circular ecosystem and demonstrating how orchestration actions contribute to

value co-creation through common norms (Dessaigne & Pardo, 2020). In contrast, the impact on the regulative pillar (rules and regulations) is primarily indirect, only directly occurring through standardising mechanisms like lobbying for industry standards or adjusting operations to meet new requirements. Similarly, the cognitive pillar (shared beliefs and meanings) is largely shaped indirectly, with the nurturing dimension, through knowledge sharing and awareness-raising, playing a particularly prominent role. These findings suggest that establishing shared norms is a precursor to enabling harmonised regulations and shared cognitive beliefs, ultimately driving broader change within the circular ecosystem.

In this way, the connection between the micro-level orchestration mechanisms and the macro-level goals of institutional change becomes evident. Figure 3 provides a holistic framework depicting how the orchestration mechanisms employed by fashion firms drive institutional change across the regulative, normative, and cognitive pillars.

[Take in Figure 3]

By unpacking the structural complexity and dynamic interplay between orchestration mechanisms and how they shape the institutional pillars, with a particular emphasis on the normative pillar, this research contributes to a deeper understanding of how fashion firms navigate the complexities of institutional change while orchestrating their circular ecosystems.

5. Conclusions

Our findings advance research on ecosystem orchestration in the transition towards a circular economy by providing rich empirical insights into orchestration mechanisms whilst addressing their critical, yet underexplored, role in driving institutional change within the circular ecosystem. Specifically, we expand on existing orchestration frameworks by uncovering four distinct mechanism dimensions and their separate categories that signal the required actions, many of which are newly identified or reclassified. Our analysis reveals the dynamic, interdependent, concurrent, and mutually reinforcing relationships among these mechanisms, reflecting a hybrid top-down and bottom-up orchestration approach. Crucially, we illuminate how circular ecosystem orchestration shapes institutional change by demonstrating its impact on the

three institutional pillars, with the normative pillar emerging as the most directly influenced. By grounding these empirical patterns in institutional change theory, we provide a nuanced understanding of how leading fashion companies strategically orchestrate their ecosystems to navigate the transition to a circular economy. This understanding has significant implications for both theory and practice, offering valuable insights for scholars, ecosystem actors, and other stakeholders alike.

5.1 Theoretical contributions

This study makes three key contributions to the theory of circular ecosystem orchestration in the fashion industry, specifically addressing the lack of sector-wide empirical studies that extend beyond a single focal firm and a particular supply chain setting. The first contribution is to develop a more granular and conceptually holistic framework of orchestration, moving beyond the abstract, high-level typology of prior work. Conceptually, we introduce a distinct *building* mechanism—delineating the critical activities of ecosystem formation that were often overlooked or subsumed within foundational mechanisms like negotiating (see Parida et al., 2019). Empirically, we provide new depth by specifying 22 distinct, grounded categories of activities across all four dimensions. Together, this refined structure and empirical richness offer enhanced theoretical precision, providing a more accurate and comprehensive map of the actions employed by orchestrators in practice.

The second contribution responds directly to calls for a more nuanced understanding of orchestration interactions (Saccani et al., 2023; Sandberg, 2023; Kanda et al., 2025). Prior studies often imply a linear or sequential interaction among orchestration mechanisms (Parida et al., 2019). In contrast, we reveal that orchestrations need to be deployed concurrently by the focal firms, combining top-down and bottom-up approaches in a complementary manner. This finding aligns with recent work suggesting the simultaneity of relational strategies required to evolve circular ecosystems (Civera et al., 2025). By conceptualising orchestration as a set of concurrent and synergistic mechanisms, we nuance sequential models and offer an integrated, process-based perspective that more accurately reflects how firms manage these complex ecosystems in practice.

Third, and most significantly, our study forges a critical theoretical bridge between the micro-level actions of orchestration and the macro-level process of institutional change. We frame orchestration as a form of *institutional work*—the purposive actions aimed at creating, maintaining, and disrupting institutions (Lawrence & Suddaby, 2006). This allows us to advance the research avenue initiated by Dessaigne and Pardo (2020) and Konietzko et al. (2020) on the link between orchestration and institutional change. We show how orchestrators act as institutional entrepreneurs (DiMaggio, 1988), actively working to dismantle the dominant institutional logic of the linear economy and construct a new, circular one (Thornton et al., 2012). We map the specific pathways of influence between orchestration mechanisms and the three institutional pillars. Specifically, our findings reveal a clear pattern of direct influence: (i) the 'standardising' dimension primarily targets the regulative pillar through the promotion of industry standards and certifications; (ii) the 'nurturing' dimension directly shapes the cognitive pillar by defining a shared vision, raising awareness, and facilitating knowledge creation; and finally, (iii) we find that all four orchestration dimensions exert a direct influence on the normative pillar, highlighting that the process of building shared norms, trust, and values is a pervasive and fundamental outcome of all orchestration activities. We also found evidence of indirect influences, showing how orchestrations create ripple effects in the institutional environment. By providing this granular, multi-layered framework, we offer the concrete micro-foundations for institutional change that the literature has been missing

5.2 Practical implications

The findings of this study have significant implications for senior managers in the fashion industry, particularly for those initiating or in the early stages of circular ecosystem orchestration. Understanding the structure, breadth, and interconnections of orchestration mechanisms is essential for effectively managing operations and advancing towards circularity. The enriched orchestration framework, which delineates orchestration mechanisms into a more nuanced set of dimensions, categories, and subcategories—revealing their interplay, complementarities, and influence on institutional pillars—enables practitioners to develop a deeper and more comprehensive

understanding of how orchestration unfolds in practice, to assess organisational performance, and to identify specific areas for strategic intervention and improvement.

By acknowledging the four dimensions, i.e., standardising, nurturing, negotiating, and building, the specific orchestrating categories and subcategories within each dimension, and their interconnections and complementarities, managers of focal fashion firms can more effectively coordinate and capitalise on strategies, capabilities, resources, and efforts. This is crucial for addressing the challenging endeavour of transitioning to a circular economy in the fashion industry (Jia et al., 2020; Saccani et al., 2023), enabling firms to shape and build their circular ecosystems, thereby fostering more sustainable outcomes and enhancing overall performance. The number of mechanisms identified, their multiple connections and synergies, and impact on institutional pillars indicate that orchestrating a circular ecosystem is a particularly complex task that requires deep knowledge and a holistic view to activate the required strategies, and the newly proposed framework paves the way towards this goal.

Policymakers, NGOs, and other influential stakeholders interested in facilitating the transition to a circular economy can also leverage these findings to support business orchestration mechanisms. For instance, regulators might streamline certification schemes (standardising) while funding shared innovation platforms (nurturing); NGOs and trade associations could host multi-stakeholder forums (negotiating) to build consensus on best practices; and investment bodies could target partnership development initiatives (building) to strengthen the ecosystem's infrastructure.

Hence, the study's importance is underscored by its novel approach to circular ecosystem orchestration, its provision of new empirical evidence from the fashion sector, and its notable theoretical advancements. It provides a robust framework with instrumental potential to guide future scholarly inquiry and industry practices as firms grapple with the complexities of transitioning to a circular economy. By bridging theoretical gaps, facilitating understanding of circular ecosystem orchestration, and offering practical implications, this study stands as a cornerstone for future research and strategic decision-making in the challenging yet crucial journey towards a circular economy.

5.3 Limitations and future research

The qualitative nature of this study introduces potential bias, which we have sought to mitigate through a robust coding and analysis process that involved two researchers. Our reliance on secondary data from sustainability-related reports, while complemented by sources referenced in these reports, represents another limitation. That is, the framing and disclosure choices of firms may bias the results. Future studies could therefore triangulate the information through primary data collection.

The analytical dissection of circular ecosystem orchestration mechanisms and their interplay provides a foundation for deeper investigation into the dynamic capabilities and practices that underpin ecosystem orchestration. Drawing on contemporary studies such as Coppola et al. (2023), Castillo-Ospina et al. (2025), and Kanda et al. (2025), future research could use our framework to facilitate and enrich the identification and systematic examination of how these capabilities and practices are developed and deployed across circular transitions.

Another fruitful future research direction is to explore the perspectives of diverse actors within circular ecosystems, such as suppliers, consumers, and community groups, in perceiving and engaging with orchestration mechanisms. This exploration could consider the specific challenges and opportunities associated with different circular ecosystems, such as those focused on circular design, rental, resale, and closed-loop recycling. Temporal dimensions also warrant exploration. This study provides a snapshot of orchestration and institutional change. Future research could adopt a longitudinal approach to examine how these orchestration mechanisms and their institutional impacts develop to provide insights into the dynamics of institutional change and the effectiveness of orchestration mechanisms, considering the evolving nature of circular transitions (Civera et al., 2025).

Finally, future studies could conduct cross-sectoral comparisons to assess the transferability of our findings beyond the fashion sector (Pietrulla, 2022). This would provide a more comprehensive understanding of the generalisability of our orchestration framework and identify sector-specific nuances in driving institutional change for circularity.

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Table 1. Initial framework deductively derived from the literature

		Parida et al. (2019)	Saccani et al. (2023)	Sandberg (2023)
Standardising	Promoting the formulation and establishment of industrial standards and regulations. Lobbying at an institutional level and among actors	x	x	
	Pursuing technological standard co-development with selective partners	x		
	Seeking formal certification through broader adoption	x		
Nurturing	Raising awareness about circular needs and opportunities (consumers)			x
	Developing competences (training)	x		x
	Developing new routines and processes	x		x
	Sharing core knowledge and intellectual property	x		x
	Greater information exchange		x	
	Vertical integration		x	
	Traceability through digital technologies		x	
	Attracting talent		x	
	Co-designing products		x	
	Offering incentives to consumers		x	x
	Developing technology and solutions			x
	Developing logistics			x
	Bearing early investment to reduce uncertainty	x		
	Financing phase suppliers		x	
	Defining roles and interdependences			x

Negotiating	Establishing give-and-take rules for ecosystem orchestration	x		
	Reducing likelihood of conflicts through relational interdependences	x		
	Long term agreements, lasting relationships		x	
	Equity participation		x	x
	Joint venturing			x
	Alternatives for capacity saturation		x	
	Seeking feedback and fostering dialogue (consumers)			x
	Providing accountability and transparency			x
	Controlling or managing the inclusion of new partners	x		x

Source: Authors' own elaboration from the literature review

Table 2. List of companies and data sources (Companies selected from FashionUnited, 2022)

Segment	Company	Rank	Market cap.	Main secondary data source
Fast fashion (F)	FF1. Inditex	#6	$67.2 b	'Statement of non-financial information 2022' (373 pages)
	FF2. F. Retailing	#15	$55.4 b	'Integrated Report 2022' (90 pages)
	FF3. H&M	#18	$15.4 b	'Sustainability Disclosure 2022' (90 pages)
	FF4. Next	#34	$7.4 b	'Corporate Responsibility Report to January 2023' (36 pages)
	FF5. C&A	#37	$7.0 b	'Sustainability Report 2022' (82 pages)
Luxury fashion (L)	LF1. LVMH	#1	$308.9 b	'2022 Social and Environmental Responsibility Report' (160 pages)
	LF2. Hermès	#3	$130.4 b	'2022 Universal Registration Document' (588 pages)
	LF3. Kering	#8	$59.3 b	'2022 Universal Registration Document' (454 pages)
	LF4. Chanel	#9	$57.5 b	'Chanel Mission 1.5º + Chanel Performance update 2022' (42 pages)
	LF5. Richemont	#11	$51.2 b	'ESG Report 2023 (135 pages)
Sportswear (S)	SP1. Nike	#2	$133.8 b	'FY22 Impact Report (225 pages)
	SP2. Lululemon	#12	$37.2 b	'Impact Report 2022 (93 pages)
	SP3. Adidas	#15	$23.1 b	'Annual Report 2022 (317 pages)
	SP4. Dick's	#29	$8,7 b	'2022 Purpose Playbook' (73 pages)
	SP5. Puma	#35	$7,2 b	'Annual Report 2022 Sustainability' (148 pages)

Source: Authors' own elaboration

Table 3. New orchestration mechanisms framework and substantiation from analysis

Dimension	Orchestration mechan. - primary categories	Orchestration mechanisms - subcategories	Deductive (from Table 1)			Inductive																
						FAST FASHION					LUXURY FASHION					SPORTSWEAR						
			Par.	Sac.	San.	FF1	FF2	FF3	FF4	FF5	LF1	LF2	LF3	LF4	LF5	SP1	SP2	SP3	SP4	SP5
a) Standardising	a.1 Promoting the formulation and establishment of industrial standards and regulations	a.1.1 Lobbying with peers and ecosystem partners	X	X		YES	NO	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES	YES	NO	YES
		a.1.2 Lobbying at an institutional level	X	X		YES	NO	YES	YES	YES	YES	YES	YES	NO	NO	YES	YES	NO	NO	YES
	a.2 Establishing own standards of practice	a.2.1 Establishing code of conduct				YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		a.2.2 Establishing metrics and audits and seeking formal certification	X			YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
b) Nurturing	b.1 Aligning strategically	b.1.1 Defining a circular vision, mission, purpose and strategy				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
		b.1.2 Setting circular targets				YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES
		b.1.3 Relying on culture and values				YES	YES	YES	NO	YES	YES	YES	NO	NO	NO	YES	YES	NO	YES	NO
		b.1.4 Relying on flexibility or adaptability				YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		b.1.5 Defining roles, responsibilities, and interdependences			X	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		b.1.6 Creating and cultivating strong and lasting relationships		X	X	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	NO	YES	YES	YES	YES
		b.1.7 Raising awareness about circular needs and opportunities		X	X	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
	b.2 Facilitating know-how	b.2.1 Providing guidance	X			YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		b.2.2 Providing training	X			YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
		b.2.3 Sharing core knowledge	X			YES	YES	YES	NO	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO	YES
		b.2.4 Sharing sensitive data and information		X		YES	NO	YES	NO	YES	YES	NO	YES	NO	NO	NO	NO	YES	NO	NO
		b.2.5 Informing consumers or enabling information access				YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	NO	YES	YES	YES	YES
		b.2.6 Seeking feedback and fostering dialogue (knowledge acquisition)				NO	YES	YES	YES	NO	YES	YES	NO	NO	NO	YES	YES	YES	YES	YES
		b.2.7 Co-designing products		X		YES	NO	YES	NO	YES	NO	NO	NO	YES	NO	YES	YES	YES	YES	NO
		b.2.8 Seeking or attracting talent		X		NO	NO	YES	NO	NO	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO
	b.3 Driving innovation	b.3.1 Promoting and scaling innovation				YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
	b.4 Enhancing operational capabilities	b.4.1 Developing technology and solutions			X	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
		b.4.2 Developing information management and digitalisation		X		YES	NO	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES
		b.4.3 Developing infrastructure/logistics			X	YES	NO	YES	NO	YES	NO	NO	YES	NO	NO	YES	YES	YES	NO	NO
		b.4.4 Expanding processes and activities and developing new routines	X		X	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
		b.4.5 Vertical integration of processes and activities		X		NO	NO	NO	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO
	b.5 Providing financial support and economic incentives (for joint development of circular solutions)	b.5.1 Providing financial support to partners		X		YES	NO	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES	NO	NO	YES
		b.5.2 Adopting fair financial practices with partners				NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
		b.5.3 Investing in partner development or bearing early partner investment	X			YES	NO	YES	NO	NO	NO	YES	YES	YES	NO	NO	YES	NO	NO	YES
		b.5.4 Granting partner business stability				YES	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	YES
		b.5.5 Cosponsoring research				YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
		b.5.6 Offering awards				NO	NO	YES	NO	YES	YES	YES	YES	NO	NO	YES	YES	YES	NO	YES
		b.5.7 Offering incentives for consumers		X	X	YES	NO	YES	YES	YES	NO	NO	YES	NO	NO	YES	YES	NO	NO	YES
c) Negotiating	c.1 Seeking relational interdependence and complementarity	c.1.1 Negotiating rules for value co-creation and value sharing	X			YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
		c.1.2 Arranging equity participation		X		YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO
		c.1.3 Sharing responsibility				YES	YES	NO	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES
		c.1.4 Seeking feedback and fostering dialogue (rule negotiation)				YES	NO	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	NO	YES
	c.2 Pursuing best practices and building trust	c.2.1 Providing accountability and transparency				YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES
		c.2.2 Aligning action plans with standards				YES	NO	NO	YES	YES	YES	YES	NO	NO	NO	NO	YES	NO	YES	YES
		c.2.3 Pursuing best frameworks and practices				YES	NO	YES	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
		c.2.4 Seeking feedback and fostering dialogue (trust building)				YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO
d) Building	d.1 Managing ecosystem configuration, partnerships and collaborations	d.1.1 Identifying and prioritising ecosystem partners				YES	NO	YES	NO	YES	NO	YES	YES	YES	NO	YES	YES	YES	NO	NO
		d.1.2 Deciding partnerships and collaborations within the ecosystem	X		X	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES
		d.1.2.1 Joint venturing				NO	NO	YES	NO	NO	NO	NO	YES	YES	NO	NO	NO	NO	YES	NO
		d.1.2.2 Acquiring third companies				NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO
		d.1.3 Supporting and fostering collaborative initiatives				YES	NO	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES

Source: Authors' own elaboration from the assessment

Table 4. Quotes supporting orchestration mechanisms

Dimension	Category	Example evidence
Standardising	**a.1.1**	*'We will keep our engagement with AFIRM and Federation of the European Sporting Industry (FESI) as a platform to engage with policy makers in different regions and countries such as the EU and the US, so standards are achievable by the industry, while protecting consumers, workers and the environment.'* (Puma, Annual Report 2022 Sustainability – p.109)
	a.1.2	*'We're also deepening our work with policymakers to help shape a legislative environment that will support a net-zero, circular industry that contributes to reversing the loss of nature.'* (H&M, Sustainability Disclosure 2022 – p.24)
	a.2.1	*'Our Group is committed to minimising our environmental footprint as outlined in our Standards of Business Conduct and in the Richemont Environmental Code of Conduct. We adopt a risk-based approach to environmental management, focusing on topics identified as most material: climate, emissions & energy, circular economy…'* (Richemont, ESG Report 2023 – p.25)
	a.2.2	'*Louis Vuitton, for its part, has developed an eco-design score for accessories based on each component's environmental profile. The rating reflects the nature of the materials used, supplier certification and manufacturing process, product repairability and recyclability rates, and whether or not the packaging contains single-use plastic.*' (LMVH, Social and Environmental Responsibility Report 2022 – p.82)
Nurturing	**b.1.1**	*'United by our values, we have an ambition to lead the change towards a circular fashion industry with net-zero climate impact, while being a fair and equal company.*' (H&M, Sustainability Disclosure 2022 – p.4) '*Circularity ambition: "coming full circle" Moving away from the conventional model of "take, make, waste" is not only about recycling. Transitioning to a truly circular economy requires a complete rethink of the way we produce and use resources as well as the way we extend the life of products. A circular economy provides the opportunity not only to move towards a positive impact on resources, but also to innovate in order to better serve clients and to further advance its sustainability goals.*' (Kering, Universal Registration Document 2022 – p.251)
	b.1.2	'*Scaled progress will require the footwear and apparel industry to come together to develop pre-competitive solutions for the toughest barriers, including textile-to-textile recycling, cost-efficient reverse logistics and technology systems to unlock our ability to close the loop for a truly circular ecosystem. From setting up internal operations to enable circularity to learning how to offer compelling takeback services to consumers and working with marketplace partners to innovate how we recycle product back into new out-of-the-box solutions, our work continues to both excite and challenge us…*' (Nike, FY22 Impact Report – p.118)
	b.1.3	'*United by our values, we have an ambition to lead the change towards a circular fashion industry with net-zero climate impact, while being a fair and equal company*.' (H&M, Sustainability Disclosure 2022 – p.4) '*We work with our vertical brand manufacturers to meet our high standards of product quality and safety, as well as ethical, social, and environmental principles. By engaging our partners and cultivating strong relationships…*' (Dick's. 2022 Purpose Playbook – p.41)
	b.1.4	'*We believe that in order to drive the industry's transformation, it is not enough to apply the current paradigms, but rather an innovative approach is necessary, one that strives for new solutions.*' (Inditex, Statement of non-financial information 2022- p.129)
	b.1.5	'*Scaled progress will require the footwear and apparel industry to come together to develop pre-competitive solutions for the toughest barriers, including textile-to-textile recycling, cost-efficient reverse logistics and technology systems to unlock our ability to close the loop for a truly circular ecosystem. From setting up internal operations to enable circularity to learning how to offer compelling takeback services to consumers and working with marketplace partners to innovate how we recycle product back into new out-of-the-box solutions, our work continues to both excite and challenge us…*' (Nike, FY22 Impact Report – p.118)
	b.1.6	'*We are committed to developing long-term, meaningful relationships with customers as they engage in repair, rental and resell services, and we will continue to scale infrastructure to enable used products to have a new life through reuse as product, material or recycling.*' (H&M, Sustainability Disclosure 2022 – p.53) '*We work with our vertical brand manufacturers to meet our high standards of product quality and safety, as well as ethical, social, and environmental principles. By engaging our partners and cultivating strong relationships…*' (Dick's, 2022 Purpose Playbook – p.41)
	b.1.7	*'Scaled progress will require the footwear and apparel industry to come together to develop pre-competitive solutions for the toughest barriers, including textile-to-textile recycling, cost-efficient reverse logistics and technology systems to unlock our ability to close the loop for a truly circular ecosystem. From setting up internal*

	operations to enable circularity to learning how to offer compelling takeback services to consumers and working with marketplace partners to innovate how we recycle product back into new out-of-the-box solutions, our work continues to both excite and challenge us…' (Nike, FY22 Impact Report – p.118)
b.2.1	'*We have developed waste management guidelines to help our suppliers improve waste segregation in manufacturing, prioritizing, recycling and reuse for non-hazardous waste*. (Adidas, Annual Report 2022 – p.87)
b.2.2	'*We begin our journey with product design. Building on our Circular Design training with Circular Economy, we rolled out an e-learning tool on circularity…*' (Puma, Annual Report 2022 Sustainability– p.129)
b.2.3	'*C&A joined the Cradle to Cradle® Product Innovation Institute user group in 2022. This group of brands shares knowledge about certification to drive innovation and collaboratively address challenges…*' (C&A, Sustainability Report 2022 – p.36)
b.2.4	'*In addition, we disclose the names of the factories of suppliers that process materials for our primary suppliers and subcontractors, where the majority of wet processes are carried out.*' (Adidas, Annual Report 2022 – p.77)
b.2.5	'*Pursuing Traceability and Improving Transparency: We are working to establish full traceability and promote information disclosure so customers have constant access to the information they need to be able to select products properly.*' (Fast Retailing, Integrated Report 2022 – p.54) *'Chloé is at the cutting edge of technology, developing a unique digital ID powered by EON and Trust Place. This innovative solution allows users to scan product labels (or QR code or NFC chips) with their smartphones, tracing the item's journey from field to finished piece. Additionally, users gain access to a certificate of authenticity, enabling instant resale through Vestiaire Collective and providing product care and repair information.*' (Richemont, ESG Report 2023 – p.38)
b.2.6	'*With a live event in London including 200 external guests that was streamed live to over 2,000 viewers around the globe, this format allowed us to have an open conversation about the most critical sustainability challenges, such as circularity and climate change with Generation Z representatives, as well as industry experts and peers during five discussion panels.*' (Puma, Annual Report 2022 Sustainability – p.39)
b.2.7	'*We are supporters of the Amsterdam-based start-up Fashion For Good, launched in 2017. It connects brands, producers, retailers, suppliers, non-profit organisations, innovators and funders to work together to make the fashion industry more restorative and regenerative by design.*' (Chanel, Performance update 2022 – p.22)
b.2.8	'*In line with our holistic approach to circular and climate impact we're increasing our focus on jobs in a circular fashion industry.*' (H&M, Sustainability Disclosure 2022 – p.51)
b.3.1	'*We remain dedicated to exploring innovative solutions and best practices that promote reuse, recycling and responsible disposal of textile items alongside like-minded organizations that share our commitment to building a circular economy.*' (C&A, Sustainability Report 2022 – p.37)
b.4.1	'*To meet our ambitions for a circular, regenerative fashion future, we invest in, develop and scale new materials, regenerative practices, recycling innovations, technology and infrastructure. We achieve this by partnering with industry experts and innovators including winners of H&M Foundation's Global Change Award…*' (H&M, Sustainability Disclosure 2022 – p.43)
b.4.2	*'Chloé is at the cutting edge of technology, developing a unique digital ID powered by EON and Trust Place. This innovative solution allows users to scan product labels (or QR code or NFC chips) with their smartphones, tracing the item's journey from field to finished piece. Additionally, users gain access to a certificate of authenticity, enabling instant resale through Vestiaire Collective and providing product care and repair information.*' (Richemont, ESG Report 2023 – p.38)
b.4.3	'*We are committed to developing long-term, meaningful relationships with customers as they engage in repair, rental and resell services, and we will continue to scale infrastructure to enable used products to have a new life through reuse as product, material or recycling.*' (H&M, Sustainability Disclosure 2022 – p.53)
b.4.4	'*Scaled progress will require the footwear and apparel industry to come together to develop pre-competitive solutions for the toughest barriers, including textile-to-textile recycling, cost-efficient reverse logistics and technology systems to unlock our ability to close the loop for a truly circular ecosystem. From setting up internal operations to enable circularity to learning how to offer compelling takeback services to consumers and working with marketplace partners to innovate how we recycle product back into new out-of-the-box solutions, our work continues to both excite and challenge us…*' (Nike, FY22 Impact Report – p.118)
b.4.5	'*The level of integration of the Textile division through all processing operations (weaving, printing, finishing and manufacture) ensures that the raw materials supplied are used as frugally as possible.*' (Hermès, 2022 Universal Registration Document – p.121)

	b.5.1	'*In May 2020, Gucci and Italian bank Intesa SanPaolo launched the Sviluppo Filiere partnership program… These loans can be used, among others, towards energy efficiency and saving, development of renewable energy production facilities, adaptation of business models to facilitate the development of a circular economy…*' (Kering, 2022 Universal Registration Document – p.207)
	b.5.2	'*Brands use fair financial practices with suppliers…*' (Puma, Annual Report 2022 Sustainability – p.55)
	b.5.3 & **b.5.4**	'*Inditex makes a venture investment in CIRC, an innovative start-up that promotes a disruptive recycling technology with the aim of generating new sustainable fibres for use in the textile industry. This investment comes in addition to the three-year commitment to purchase 30% of the production volume of Infinna™, a fibre created entirely from textile waste…*' (Inditex, Statement of non-financial information 2022 – p.112)
	b.5.5	'*…we are cosponsoring research into outcome measurement best practices for regenerative agriculture, led by Textile Exchange.*' (Lululemon, Impact Report 2022 – p.56)
	b.5.6	'*To meet our ambitions for a circular, regenerative fashion future, we invest in, develop and scale new materials, regenerative practices, recycling innovations, technology and infrastructure. We achieve this by partnering with industry experts and innovators including winners of H&M Foundation's Global Change Award…*' (H&M, Sustainability Disclosure 2022 – p.43)
	b.5.7	'*Scaled progress will require the footwear and apparel industry to come together to develop pre-competitive solutions for the toughest barriers, including textile-to-textile recycling, cost-efficient reverse logistics and technology systems to unlock our ability to close the loop for a truly circular ecosystem. From setting up internal operations to enable circularity to learning how to offer compelling takeback services to consumers and working with marketplace partners to innovate how we recycle product back into new out-of-the-box solutions, our work continues to both excite and challenge us.*' (Nike, FY22 Impact Report 2022 – p.118)
Negotiating	**c.1.1**	'*By joining forces behind shared goals, we can build on our diverse strengths. Dialogue drives accountability and transparency.*' (H&M, Sustainability Disclosure 2022 – p.15) '*In this way, LVMH seeks to create a virtuous circle involving joint progress and mutual benefit from each stakeholder's achievements, in all territories in which it operates.*' (LMVH, 2022 Social and Environmental Responsibility Report – p.30)
	c.1.2	'*We have also made our first equity investments in startups. The investment in CIRC17 stands out. It promotes a disruptive recycling technology which will solve one of the challenges facing the textile industry…*' (Inditex, Statement of non-financial information 2022- p.185)
	c.1.3	'*In the future, we intend to extend our scope of responsibility further upstream. We want to ensure an even higher degree of traceability through in-house checks of factory working environments, third-party audits, and third-party certification all the way back to the procurement of raw materials…*' (Fast Retailing, Integrated Report 2022 – p.14) '*We remain dedicated to exploring innovative solutions and best practices that promote reuse, recycling and responsible disposal of textile items alongside like-minded organizations that share our commitment to building a circular economy.*' (C&A, Sustainability Report 2022 – p.37)
	c.1.4	'*With a live event in London including 200 external guests that was streamed live to over 2,000 viewers around the globe, this format allowed us to have an open conversation about the most critical sustainability challenges, such as circularity and climate change with Generation Z representatives, as well as industry experts and peers during five discussion panels.*' (Puma, Annual Report 2022 Sustainability – p.39)
	c.2.1	'*Pursuing Traceability and Improving Transparency: We are working to establish full traceability and promote information disclosure so customers have constant access to the information they need to be able to select products properly.*' (Fast Retailing, Integrated Report 2022 – p.54)
	c.2.2	'*PUMA has had a long-lasting program to ensure compliance with industry standards*.' (Puma, Annual Report 2022 Sustainability – p.109)
	c.2.3	'*Our Group is committed to minimising our environmental footprint as outlined in our Standards of Business Conduct and in the Richemont Environmental Code of Conduct. We adopt a risk-based approach to environmental management, focusing on topics identified as most material: climate, emissions & energy, circular economy…*' (Richemont, ESG Report 2023 – p.25) '*…we are cosponsoring research into outcome measurement best practices for regenerative agriculture, led by Textile Exchange.*' (Lululemon, Impact Report 2022 – p.56)

	c.2.4	'*It is also important to underscore our commitment to maintaining a constant flow of communication with our customers on any issues related to our garments.*' (Inditex, Statement of non-official information 2022 – p.215)
Building	**d.1.1**	'*We remain dedicated to exploring innovative solutions and best practices that promote reuse, recycling and responsible disposal of textile items alongside like-minded organizations that share our commitment to building a circular economy.*' (C&A, Sustainability Report 2022 – p.37)
	d.1.2	'*To meet our ambitions for a circular, regenerative fashion future, we invest in, develop and scale new materials, regenerative practices, recycling innovations, technology and infrastructure. We achieve this by partnering with industry experts and innovators including winners of H&M Foundation's Global Change Award…*' (H&M, Sustainability Disclosure 2022 – p.43)
	d.1.2.1	'*Creation of Kering Ventures, with the purpose of investing in innovative new technologies, brands and business models for the future of the luxury sector.*' (Kering, 2022 Universal Registration Document – p.254)
	d.1.2.2	'*This strategic shift began with the acquisition of Watchfinder & Co. a company at the forefront of the circular economy, focusing on the preowned luxury goods market.*' (Richemont, ESG Report 2023 – p.38)
	d.1.3	'*Signatory to Textiles 2030, collaborating on carbon, water and circular textile targets to support the development of solutions which help to limit the impact clothing and home textiles have on climate change.*' (Next, Sustainability Report 2022 – p.18) '*We are supporters of the Amsterdam-based start-up Fashion For Good, launched in 2017. It connects brands, producers, retailers, suppliers, non-profit organisations, innovators and funders to work together to make the fashion industry more restorative and regenerative by design.*' (Chanel, Performance update 2022 – p.22)

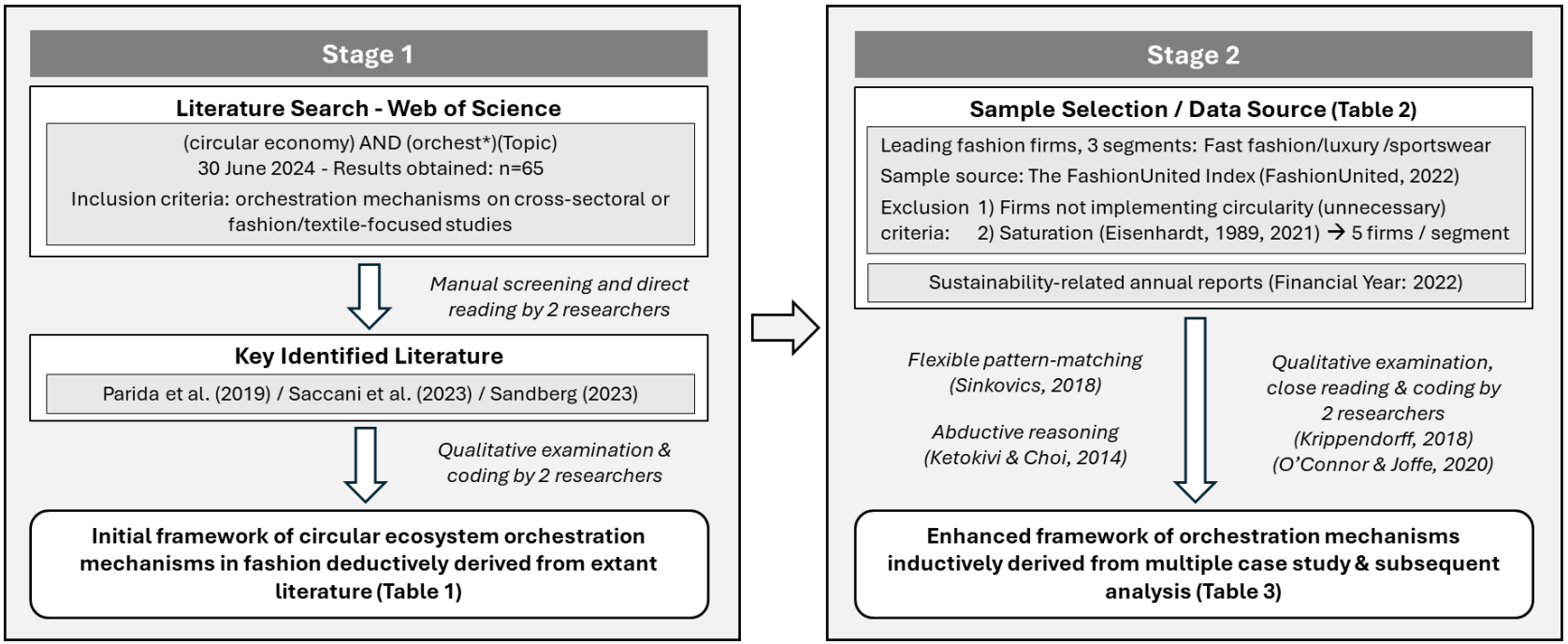
Source: Authors' own elaboration from the assessment

Table 5: Interplay between orchestration mechanisms and institutional pillars

		Institutional Pillars		
		Regulative Pillar (Rules & Regulations)	**Normative Pillar (Shared Norms & Values)**	**Cognitive Pillar (Shared Beliefs & Meanings)**
Orchestration Mechanism Dimensions	**Standardising**	**Direct influence**: through promoting industry standards; seeking formal certification; lobbying.	**Direct influence**: through setting own codes of conduct and metrics.	**Indirect influence:** by shaping perceptions of legitimacy.
	Nurturing	**Indirect influence**: operational enhancements; financial incentives may lead to regulatory changes.	**Direct influence**: by relying on culture and values, and by aligning strategies, vision, and roles. **Indirect influence**: through knowledge sharing and raising awareness.	**Direct influence**: by defining a vision, purpose, and strategy, raising awareness, knowledge facilitation, and innovation.
	Negotiating	**Indirect influence**: through rule negotiation, aligning action plans with standards, and pursuing best practices and frameworks.	**Direct influence**: by establishing norms of cooperation, reciprocity, and trust.	**Indirect influence**: by changing perceptions about collaboration and trust.
	Building	**Indirect influence**: formalising partnerships and collaborations that may require regulatory frameworks.	**Direct influence**: by setting norms for collaboration and partnership management.	**Indirect influence**: through shared understanding of ecosystem roles and goals.

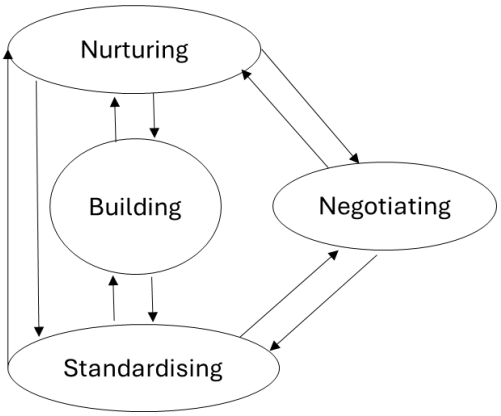
Source: Authors' own elaboration from the assessment

Figure 1. Methodological steps followed in this research: Stages 1 and 2



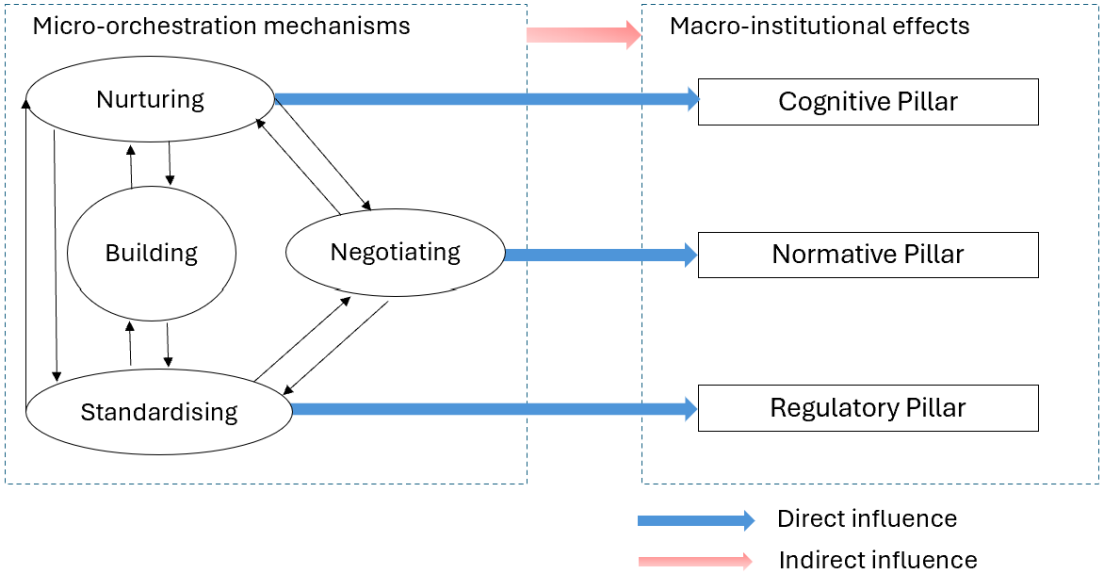
Source: Authors' own work

Figure 2. Orchestration mechanism dimensions and their relationships



Source: Authors' own elaboration from the assessment

Figure 3. Circular ecosystem orchestration framework for institutional change



Source: Authors' own elaboration from the assessment