

Cultivating a sustainable and circular economy: The role of institutional logics in manufacturing companies

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ABSTRACT

This paper aims to explore the institutional logic of manufacturing companies in the transition to a sustainable and circular economy. The paper follows abductive reasoning and uses a qualitative methodology encompassing primary data collected from 16 interviews with manufacturing companies and supplementary data from web-scan analysis, observation and 15 interviews with public institutions and environmental experts. We identify four specific co-existing logics of the circular economy of manufacturing companies and explain operating conditions of each logic. Compliance and commercial logics reflect instrumental thinking, while value chain and value creation logics are more based on integrative thinking. To illustrate opposites of instrumental thinking and integrative thinking, we propose an analytical framework of circular logics, that consists of three pillars, that is homogeneity vs heterogeneity, techno-centric vs system-centric perspectives, compliance vs ethical responsibility. The originality also relates to the prioritization among different logics.

1. Introduction

A circular economy (CE) as a multi-level resource use system (Figge et al., 2023), is often considered as a practical approach to contribute to sustainable development (Corvellec et al., 2021). CE is the opposite of linear open systems (Homrich et al., 2018) used to overcome resource scarcity problems (Guldmann and Huulgard, 2020), maximize ecosystem functioning and well-being economy (Murray et al., 2017; Shrivastava and Zsolnai, 2022).

By transitioning to CE organisations face a high degree of institutional complexity (Greenwood et al., 2011) because most environmental challenges involve a consideration of multiple, complex field- and company-level responses (Hoffman and Jennings, 2015). To reduce institutional complexity (Thornton et al., 2012) organizational researchers use logics as mental, cognitive frames. Previous studies explore institutional logics that are well established in a competitive business environment (Thornton et al., 2012), but may be new to the other contexts, such as healthcare, higher education or social enterprises (Pache and Santos, 2010). From the prevailing literature discourse, being more circular is very often based on commercial logic pursuing eco-efficiency (Fehrer and Wieland, 2021; Gusmerotti et al., 2019; Ghisellini et al., 2016). The majority of studies about positive and negative factors (drivers and barriers) that shift organisations to CE

(Guldmann and Huulgard, 2020; Gusmerotti et al., 2019; Vermunt et al., 2019; Kirchherr et al., 2018; Tura et al., 2019) present them with rather unrelated logic covered by multi-perspectives (country versus cities and organisations), the same factor can be a driver and a constraint, depending on the attribution (Dagilienė et al., 2023). Manufacturing companies are particularly important in the sustainable (circular) transition (Gusmerotti et al., 2019; Bjørnset et al., 2021), as product design and cleaner production have important implications for greening the value chains (Parida et al., 2019). Therefore, we seek to explore *what institutional logics manufacturing companies apply/use/adopt in transition to the circular economy?*

CE logics can be considered as societal logics. We discover four types of logic for CE and explain operating features of these logics. Compliance and commercial logics reflect anthropocentric assumptions, instrumental thinking and are unsurprisingly dominant in the current CE practices. Research results show that even companies with the best CE practices mostly follow this logic; however, from a sustainability management point of view, this is not enough to tackle global environmental challenges in the long run. Value chain and value creation logics are more related with integrative thinking. An integrative approach is not new to organizational sustainability scholars *per se* (for example, Gao and Bansal, 2013; Hahn et al., 2014, 2018; Hoffman, 2011). To illustrate opposites of instrumental thinking and integrative thinking, we propose

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an analytical framework of institutional CE logics, that consists of three pillars, that is homogeneity vs heterogeneity, techno-centric vs system-centric perspectives, compliance vs ethical responsibility. The originality also relates to the prioritization among different logics. Based on attributions of negative and positive factors, managers actually can prioritize CE logics based on integrative thinking in organizational behaviour. Attributions of CE factors provide a context for considering how social understanding of corporate behaviour in terms of going more circular, are rooted in the interpretations and knowledge by actors making decisions.

2. Theoretical background

2.1. The rising notion of the circular economy

The rising notion of CE has roots in reform environmentalism (Prasad and Elmes, 2005) and ecocentric management (Shrivastava, 1995) by emphasising restorative and regenerative economic system (Ranta et al., 2020), industrial conservation practices that minimise the use of natural resources (Geissdoerfer et al., 2017; Velenturf and Purnell, 2021). Reform environmentalism seeks to combine the limits of natural renewability with industrial decision-making processes (Prasad and Elmes, 2005) and associates with the Anthropocene focus on a ‘win-win’ situation between economic and environmental sustainability (Corvellec et al., 2021), human exemptionalism and belief in progress (Borland et al., 2016; Gao and Bansal, 2013). Ecocentric management (Shrivastava, 1995; Shrivastava and Zsolnai, 2022) is characterized by holism, integration, synthesis, and the assumption that nature ecosystems are inherently worthwhile for maintaining planetary stability and economic systems (Borland et al., 2016).

From the organizational perspective, CE belongs to an umbrella approach (Blomsma and Brennan, 2017) that covers many different but related topics such as eco-design, responsible resource management, circular business model, circularity-oriented innovation (Dagilienė et al., 2023). CE proponents also use the rhetoric of sustainable development (Schulz et al., 2019) and wellbeing economy (Shrivastava and Zsolnai, 2022) to facilitate changes towards the world’s ecological future (Ghisellini et al., 2016) by linking organisations in a circular manner and reducing the need for virgin raw material inputs (Geissdoerfer et al., 2017; Murray et al., 2017). CE emphasizes green growth and thus decouples economic growth from its environmental impact (Corvellec et al., 2021). At the company’s level, CE offers managers the opportunity to increase control over resources (Rovanto and Finne, 2022). In this paper we also consider CE as inherently ethical (Rovanto and Finne, 2022) and driven by the company’s ecological values.

Conceptually, CE is a “refreshed” concept (Reike et al., 2018) with roots in industrial ecology, which has been implemented for many years for economic benefits (Velenturf and Purnell, 2021). However, to address radical changes in institutions, infrastructure and markets, the role of governments is also important. No single actor can radically drive institutional change and innovate business models in isolation (Dagilienė et al., 2023). Therefore, institutions play an important role in enabling shorter loop value preservation, setting targets and steering economic activity towards greater circularity (Reike et al., 2018). CE connects organisations that are embedded in different institutional logics, a situation referred to as institutional complexity (Greenwood et al., 2011).

2.2. Institutional logics for sustainability and circular economy

Logics are considered as systems of coherent elements (regulations, norms, values and beliefs) by which actors and organisations make sense of and evaluate their everyday activities (Thornton, 2002) to create a sense of common purpose and unity within an organisation. The theory on institutional logics has identified key institutional logics – family, state, market, religion, economic system (Friedland and Afford, 1991),

and profession (Thornton et al., 2012) – that make up society and can conflict with each other (Greenwood et al., 2011; Arena et al., 2018). Elemental categories (Thornton et al., 2012) can be motivation and sources of legitimacy. Institutional logics and elemental categories may vary depending on the research context (Reay and Jones, 2016; Glynn and D’Aunno, 2022). In this study, we focus on “new” institutional logic that may emerge alongside the market logic when organisations move towards CE.

Logics for corporate sustainability and CE. The institutional logic of sustainability has been introduced quite recently and is inherently heterogeneous (Laasch, 2018; Arena et al., 2018) in contexts with multiple institutional logics (Battilana and Dorado, 2010; Pache and Santos, 2010). Typically business follows commercial market logic to ensure continuity and viability, but ‘may also be only partially commercial when simultaneously shaped by other institutional logics’ (Laasch, 2018, p.159). Previous research led us to identify a preliminary visual frame of dominant and emerging institutional logics for CE (Fig. 1).

Win-win and *win-lose* (trade-offs) are dominant approaches in implementing corporate sustainability (Van der Byl and Slawinski, 2015). The *win-win* logic argues that organisations will carry out sustainability activities if they will benefit financially (e.g., by reducing industrial waste and saving on raw material costs). Meanwhile, the *win-lose* approach admits a ‘relatively small loss in corporate economic performance to generate a substantial social or environmental benefit’ (Hahn et al., 2010, p. 231). It also emphasizes the choice between economic and sustainability goals (Slawinski and Bansal, 2015), whereas the latter usually becomes of secondary importance. Both the *win-win* and the *win-lose* are examples of instrumental logics and actually put forward economic dimension over environmental or social areas. In contrast, the integrative logic seeks to balance three elements of sustainability together (Hahn et al., 2018) rather than inevitably chooses between environmental or society and economy (Van der Byl and Slawinski, 2015). As an example of integrative approach, Hoffman (2011) elaborates two competing institutional logics regarding climate change. Organisations that adopt ‘sceptical logic’ tend to undermine environmental risks to justify economic priorities. Those who adopt ‘convinced logic’ are inclined to recognise environmental risks (Hoffman, 2011).

Based on existing institutional logic and CE literature, we can

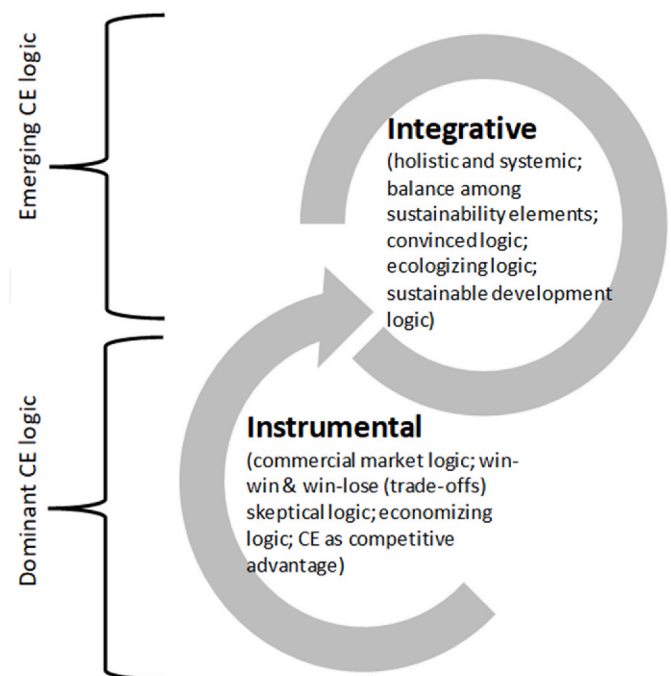


Fig. 1. Visual frame of institutional logics for sustainability and CE.

identify two coexisting types of prevalent institutional logic. Firstly, dominant CE logic is driven by global circular initiatives and legal requirements. When influenced by external pressures, organisations must adapt to rules and routines that are perceived as legitimate in society (Thornton et al., 2012). An exceptional feature of CE is that it has largely emerged from legislation (Murray et al., 2017). The examples of the EU CE institutionalization policies (such as the EU Green Deal, CE Action Plan, the new European industrial strategy) clearly impact business companies with new interpretations of ‘good’ managerial practices as well as the rise of new organizational forms (Kirchherr et al., 2018).

Secondly, CE is a concept that naturalises organizational discourse around a market logic (Gusmerotti et al., 2019) to achieve balance of the environment on the one hand and the market on the other hand (Barthold and Bloom, 2020). There are growing desires for organisations both to accept greater responsibility for the ecological damage they cause (Barthold and Bloom, 2020), and create competitive advantages (Gusmerotti et al., 2019; Tura et al., 2019). Therefore manufacturing companies seek to improve eco-efficiency (Schulz et al., 2019) by optimising logistics, reducing and recovering waste in their production (Gusmerotti et al., 2019) as resource scarcity is a driver for all companies developing circular solutions (Tura et al., 2019; Frishammar and Parida, 2019). Thus, instrumental logic through the approaches of *win-win* or *win-lose* dominates the CE.

Considering the CE concept as an ethical need for the development of integrative and innovative solutions (Rovanto and Finne, 2022), we seek to emphasise the importance of internal motivation as elemental category (Thornton et al., 2012) and organic integration of CE into a company’s strategy and daily operations. Here we refer to Gao and Bansal (2013) study about integrative logics that recognizes and embraces the contradictions among the financial, social and environmental dimensions of business and seeks solutions for the system of interrelated elements. This integrative CE logic is more related to ecocentric management assumptions (Borland et al., 2016; Tashman, 2021), environmental sustainability (Bocken et al., 2014; Ranta et al., 2020), integrative approach (Hahn et al., 2014, 2018; Hoffman, 2011) and goes beyond legitimacy and eco-efficiency motivation and relates rather to a sufficiency approach (Schulz et al., 2019), wellbeing economy (Shrivastava and Zsolnai, 2022) and ecologically dominance (Rovanto and Finne, 2022). One of the examples from previous research is a circular value exchange logic identified by Bocken et al. (2014), that aims to reduce the continuous demand for virgin resources, by closing material loops and using waste streams as useful inputs to other products and processes. Through integration of economizing and ecologizing logics, Tashman (2021) explains how organisations seek to reduce their reliance on natural resources. Ranta et al. (2020) reveal four value creation logics (resurrect, share, optimize, replace value) based on different innovations, circular value propositions and enhanced collaboration with customers and broader ecosystem. Rovanto and Finne (2022) also suggest that the motivation of some entrepreneurs to develop CE is not based on instrumental logic, and that some entrepreneurs may consider it an end in itself.

Studies have also shown the dynamic aspect of institutional logics (Ingstrup et al., 2021; Olsson et al., 2023). Logics have similarities and shared features as evidenced by Ingstrup et al. (2021) in their research about institutional logics of academia and practitioners in collaborative settings. Olsson et al. (2023) demonstrate how the differences in logic characteristics interact with the sustainability logic in diverse ways, leading to various barriers and enablers across the business model changes for sustainability. We seek to emphasise the dynamic aspect among institutional logics, i.e. it is possible to move from one logic to another (prioritization). We particularly focused on actors (in our case, managers) that might “represent” and import into the organisation the meanings and norms of the logics they have encountered (Greenwood et al., 2011).

2.3. Organizational responses

To reflect responses to institutional complexity in CE, we draw on a review by Greenwood et al. (2011) of empirical studies that discuss institutional logic. Institutional complexity refers to the situation in which organisations “confront incompatible prescriptions from multiple institutional logics” that “provide guidelines on how to interpret and function in social situations” (Greenwood et al., 2011, p.317).

Companies in the same field tend to react differently to the introduction of any new institutional logic, resulting in multiple forms of institutional logic (Pache and Santos, 2010; Battilana and Dorado, 2010). While some companies will willingly adapt to newly established expectations (e.g. creating new products because of a ban on single plastic items), some will only partially adopt a new way of thinking, and others will seek to find ways to avoid adopting that logic entirely (Greenwood et al., 2011). Institutional logics change and modify during collaboration (Ingstrup et al., 2021). The institutional logic spans the fields of organisations and is influenced by various attributes of the organisation itself (Glynn and D’Aunno, 2022) in particular the organisation’s position in the field, its structure, ownership and governance, and identity (Greenwood et al., 2011). These attributes determine how organisations experience, perceive and respond to institutional logics.

3. Methods

Overall Methodological Approach. This research applies abductive reasoning that begins with an existing and partially explanatory conceptual model of the phenomenon (Fig. 1), and uses qualitative methods. Following Locke et al. (2008, p. 907) abductive reasoning encompasses: 1) ‘deduction proves that something must be’ – we introduced institutional logics for sustainability and CE from literature analysis; 2) ‘induction shows that something actually is operative’ – we interviewed manufacturing companies to determine adopted CE logics; 3) ‘abduction merely suggests that something may be’ – by including other stakeholders’ views, observing CE roadmap creation, and by analysing all results, which lead to the emergence of CE logics. This reasoning fitted our research problem very well, given the wide range of literature that could potentially inform the factors leading to decision-making logics for the CE, combined with a general lack of conceptual and empirical attention of manufacturing companies. The research methodology is presented in Fig. 2.

Data sampling. This study is based on one small open economy country in the EU – Lithuania, which has a fast-growing and largely linear economy. Concentrating on one institutional environment enables a better understanding of manufacturing companies’ adopted logics towards CE.

We selected the manufacturing sector as our research context and manufacturing companies as main units of analysis. Therefore, we assume that interviewed respondents represent the company directly. Manufacturing companies contribute to jobs, growth, innovation, exports and overall economic stability. In addition, manufacturing is a resource-intensive industry and is therefore very important in the context of the CE. Based on publicly available information, we focused on companies that perform certain CE innovative practices, but as Lithuania is more on the linear economy path, the selected companies do not belong to a specific cluster. We aimed to interview different types of manufacturing companies (Table 1) from industries such as textiles, plastics and packaging, furniture, and food products and beverages (16 interviews) to better understand their logics for implementing CE practices.

As informants for semi-structured interviews, we chose the founder/CEO or a top management from a manufacturing company, taking into account their experience. The average duration of the interviews was 72 min, and the longest interview lasted for 110 min.

To inform our sampling and for triangulation purposes, we also collected complementary data from the field research, which included

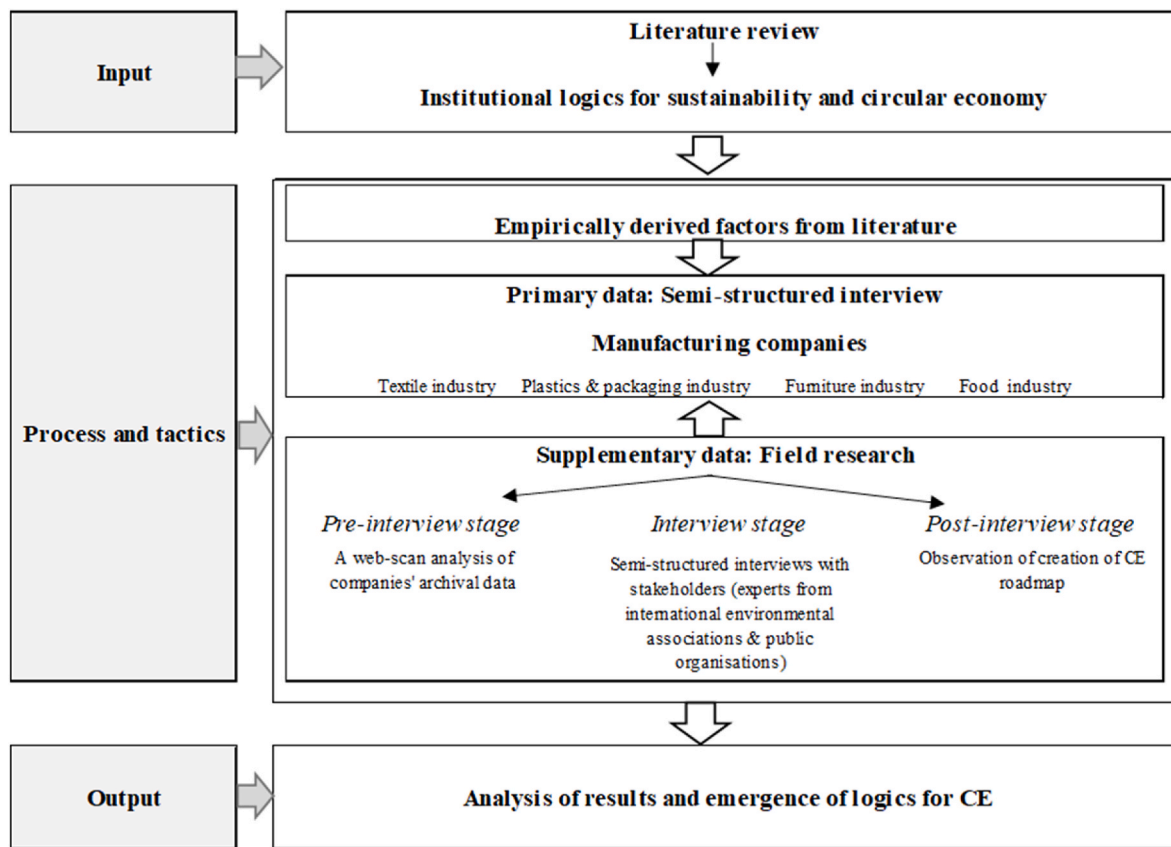


Fig. 2. Detailed research methodology.

Table 1
Summary of sample of interviewees.

Type of organisation	Number of organisations	Number of interviewees	Experience of interviewees, years	Duration of recorded interviews, min	Transcript pages
Manufacturing companies	16	19	6–50	1144	242

web-scan analysis (companies' websites, social media posts and public releases), semi-structured interviews with stakeholders and observation (Table 2).

First, in line with the overall research context, only manufacturing companies focused on the CE activities were selected. We searched these companies in the media by looking at social media posts and public

releases. As 16 manufacturing companies fulfilled our sampling criteria, we accessed their websites.

Second, we interviewed public organisations (such as regional waste management centres and municipalities; 9 interviews) as they make an important contribution in waste management, infrastructure creation and local regulation. Their view is important to develop a broader

Table 2
Summary of sample of complementary data.

Type of organisation	Number	Number of interviewees	Experience of interviewees	Duration of recorded interviews, min	Transcript pages
A web-scan analysis					
Companies' websites	16 websites	–	–	–	–
Social media posts & public releases	About 35 posts & public releases				
Semi-structured interviews with stakeholders					
Public organisations	9 interviews with 20 organisations	31	5–15+	931	115
Professional experts from international environmental associations	6 interviews	6	2–23	439	68
Observation					
Events	8 events				
Strategic sessions with the demonstration sectors	5 demonstration manufacturing sectors, including textile industry, furniture industry, food industry, plastics (packaging) industry, construction industry				
CE Roadmap Coordination Group	50 representatives from government, industry, business, NGOs, municipalities, the waste management sector, consumers, academia and educational institutions, and experts. The Coordination Group, based on voluntary participation, consisted of representatives of 2 political parties, 8 ministries, 16 associations, 7 industry, 5 scientific and educational institutions, 2 non-governmental sector, 1 municipality, 5 public sector, 3 experts and 1 consumer representative				

understanding of the drivers and barriers that face manufacturing companies. Finally, to enhance data triangulation and not be over focused only on the national environment, we reached international experts (6) from prominent environmental associations, acting as facilitators for implementing environmental policies between businesses and policy. These stakeholders (representatives from public organisations and experts from international associations) were selected by using convenient sampling, as it was our supplementary data source to gather initial insights on potential patterns and trends related to CE practices in the manufacturing sector. Even though the international experts and public organisations are not involved in the corporate decision-making process directly, favourable local environment settings are important to shift manufacturing companies to the CE. Due to this, the views of different stakeholders on manufacturing companies' transition processes give a deeper understanding of the research object.

Third, the Ministry of Economy and Innovation of Lithuania and the Agency for Science, Innovation and Technology organized the project, with the aim of building a roadmap for the transition of Lithuanian industry to CE (MITA, 2021). This project focussed on the extent to which Lithuanian manufacturing industry is circular and what breakthrough areas or topics are most relevant. The project involved parallel initiatives and stakeholders in the creation of a roadmap. It enabled and defined the role of public authorities and created real capacity to make the transition to CE. Different actors were involved in this project, including manufacturing companies from key industries. Companies that engaged in developing this roadmap are considered more advanced in terms of the CE. As the roadmap creation period was from 2020 October to 2021 December (15 months), the systematic dialogue process with key actors of the industrial value chain was organized through a session of 8 events (MITA, 2021).

Data collection and analysis. We collected data between 2020 and 2021. In this study, we relied on semi-structured interviews with manufacturing companies as our primary source of data. Before and after conducting interviews, we triangulated with data from supplementary sources to increase data quality, richness and trustworthiness.

We proceeded through four main steps. In step one, we performed a **web-scan analysis** of different companies that we would like to include in the sample. It was performed by reviewing their archival data (i.e. websites, reports, public releases). This was done in 2020 to prepare for the interviews and have initial information on CE practices in the manufacturing companies. After the web-scan analysis, the researchers discussed the main insights gained.

In step two, we approached respondents from different manufacturing companies for interviews, with which we continued to a point where adding interviews did not appear to alter or enrich the emerging theory (Strauss and Corbin, 1990). The **semi-structured interviews** (in 2020) with manufacturing companies were conducted. During the face-to-face and virtual (mainly through the Zoom platform) interviews, a copy of the interview protocol was given to the respondents. A minimum of two researchers participated in each interview to ensure the quality. In addition, after the interview, the researchers discussed the main insights gained. All the interviews were recorded and transcribed with prior permission (oral or written) from the respondents. The interviews were conducted in the local language (Lithuanian) and English. We also took detailed notes during the interviews that were not recorded. All names of the companies were encoded to ensure anonymity. Interview data were stored on an external storage medium, encrypted, and password protected.

The interview protocol (Table 3) for manufacturing companies was prepared after the literature analysis, which is related to the main concepts (such as raw (secondary) materials and eco design; cleaner production; consumption, use, reuse, repair; waste management) of the CE following principles of qualitative research. Respondents were asked about the company's strategy, structure, operations and relationship with key stakeholders across the value chain. Afterwards, interview questions became more focused on drivers and barriers leading to CE.

Table 3
The interview protocol.

Topic	Main Interview Questions
Company's strategy, structure & operations	What are the core products/services? What is the market orientation? Please indicate your company's total revenues? Please indicate your company's age? How are the CE issues connected to your organisation's vision and strategy? How are the CE issues connected to your organisation's operations?
Relationship with key stakeholders across the value chain	What is the relationship with key stakeholders across the value chain in terms of CE?
Drivers and barriers leading to CE	Why your company should move to the CE? What (and why) are the most important drivers that shift your organisation to CE? What (and why) challenges have you faced? How have you addressed them? What (and why) are the largest changes that are needed to achieve CE?

The semi-structured interview instrument was pre-tested (February–April 2020) by 5 participants with the CE background and methodological experience in preparing research instruments. The pre-test was carried out to assess the validity and relevance of the questions, as well as to check that the instrument was capturing the necessary information. Furthermore, the feedback from this pre-test was used to refine the research instrument.

In step three, to better understand the context of CE institutional logics, the *semi-structured interviews with stakeholders* were conducted. But it should also be noted that during the interviews with other stakeholders, they were not asked to answer the questions in a general sense, but rather from the perspective of the manufacturing companies, due to this the same instrument was used.

In the fourth step, we had the opportunity to observe the process through a collective sharing of knowledge about the manufacturing industry transition to CE, as researchers were involved in the project of creation of a roadmap for the transition of Lithuanian industry to CE. *Observation* data were gathered by taking detailed notes during the project's events and by analysing information provided on each event on the project's website. After the observation, the researchers discussed the main insights gained.

Analytical procedure. The detailed data analysis took place after the data collection, but in order to prepare for the next interviews, we took detailed notes during the interviews and discussed the main insights gained. The researchers analysed interview transcripts/observation notes separately by using a systematic process of coding grouping similar concepts using the Maxqda program. The codebook (Table 4) included both deductive (from literature analysis) and inductive (content-driven; from interviews data) codes, which are related to the attributions for prioritization of institutional CE logics in manufacturing companies. Subsequently, relationships of open codes were observed by grouping open codes into second-order codes (Lee, 1999). In addition, we scanned supplementary data for preliminary insights that were further explored through the interviews.

Although only 16 interviews with manufacturing companies were conducted, it can be argued that the results obtained are rich and comprehensive. The research saturation has been achieved by two steps (Hennink et al., 2017). The first step was to assess code saturation, for which we documented the process (including the code name, definition, type, any other notes) of code development by analysing data in the order in which they were conducted. Our results showed that code saturation and meaning or data saturation, which means that new data repeat what was expressed in previous data was reached. In addition, most of the companies involved in the project to develop a CE roadmap for the Lithuanian industry were also interviewed for our study.

Table 4
The coding and description.

Code		Sub-code	Description
Instrumental approach	Compliance logic	Environmental education	Environmental education.
		Public infrastructure	(Lack of) municipal infrastructure, lack of regional infrastructure, waste management infrastructure.
		Regulation	State strategy towards CE, tax system, strategic documents, environmental taxes, penalties, green public procurement, government/local expenditure, (future/uncertainty of/lack of) regulation.
		Technological	Technological solutions (platforms, process innovation, manufacturing technologies, RPA, mobile & digital technologies), technological uncertainty.
		Organizational	Information systems, communication, (lack of) competencies, fit of organizational strategy.
	Commercial logic	Financial (financial sources)	Higher upfront costs and investment, favourable financial conditions, funding difficulties.
		Economic (costs)	Low price of raw materials, cost optimisation, cost transfer, (lack of) profit, resource scarcity.
		Social	(Lack of) maturity of society, training/knowledge, social inequity, collaboration with government/NGOs/society, etc.
		Product's environmental characteristics	packaging, lack of warranty, life cycle prolonging, certification, waste to energy, (low) quality, features of recycled materials, environmental footprint.
		Value chain	Requirements across supply chain, (lack of) information sharing, lack of recycling network, (lack of) collaboration.
Integrative approach	Value chain logic	Market	Expectations from value chain partners, primary and secondary markets.
		Product's design	Product design (its complexity), product innovation.
		Consumer's behaviour	(Lack of) consumer's motivation, consumerism.
		Social network	Focal companies, (lack of) openness for information sharing, collaboration with government/NGOs/society.
		Values	(Lack of) maturity of society, training/knowledge, environmental responsibility, irresponsibility.

For the inter-coder reliability index calculation, we used Percent agreement (the percentage of data units on which researchers agree (Feng, 2014)) as it is the most commonly used measure of intercoder reliability because it is easy to calculate and intuitive. The intercoder reliability was performed manually by tabulating assigned codes in a spreadsheet that would make the intercoder comparison more efficient. In order to determine inter-coder reliability, two researchers coded the same portion of a transcripts, then compared the results. According to Miles and Huberman (1994), a standard is 80% agreement on 95% of codes. The result of our first iteration (half of one interview) was 65% agreement, while the result of our second iteration (other half of one interview) was 88% agreement. In addition, it is needed to notice that only two researchers were involved in the coding process, and they had previous shared coding experience in the coding process. The issues of inter-coder comparability were addressed through a discussion of the entire research team.

4. Results: institutional logics for the circular economy

We discover four types of CE logic: compliance logic, commercial logic, value chain logic and value creation logic. Each institutional logic is based on data from interviewed experts who emphasised the importance of factors included in any logic.

4.1. Compliance logic

Manufacturing companies are keen to implement the CE actions to adhere to legal regulations and take advantage of external financial support. A series of EU directives and national legislation related to waste management issues, recycling, packaging, and product safety enforced or encouraged companies to change their business process proactively (e.g., refusal of single-use plastic items because of a ban or the development of new packing systems leading to preventive waste reduction). The government uses its power to stimulate the companies to implement strategies toward cycling resources. In this logic, the strategy of closing resource loops is selected because of waste management and recycling requirements, resulting in a circular flow of resources.

"[...] we are bound by European Union directives [...]" (food manufacturer)

"[...] directives are very important. Legislation on recycled plastics strongly influences circular decisions in the market [...]" (food manufacturer)

Proper infrastructure is a supporting driver of compliance logic.

"[...] the advantage of small economies and centralised governing, like Lithuania, is that it is relatively easier to draft waste treatment plans and develop relevant waste infrastructure projects. One successful waste infrastructure project can make a real difference in the waste treatment picture of the whole country [...]" (international environmental associations)

We identified that waste management and treatment infrastructure, including a pet deposit system, sorting containers, mechanical sorting equipment, scrap collection sites and incineration plants (as an alternative for landfilling where energy could be obtained from non-recyclable waste), are distinguished as motivating factors towards CE. Moreover, economic infrastructure such as eco-parks and the creation of new businesses alongside non-virgin material supply points could boost new circular economic activities.

Our findings underscore that all our respondents are interested in government actions in the context of circular transformation, as all expressed strong concerns or stressed the importance of legal regulation and financial support on CE. Notably, many of our respondents actively engaged in the collaborative development of the Roadmap for Lithuania's Industrial Transition to a Circular Economy, signalling their

deep commitment to the cause. This demonstrates that the compliance logic and the decisions taken by the government are of particular importance to manufacturing companies. Even more, transition to CE became important for manufacturing companies because of government efforts and strategic decisions to introduce the CE concept to businesses and involve them in legislative processes.

The compliance logic might be related to a defence of the existing way of doing business, and profit maximisation dominates all aspects of behaviour towards sustainability. Companies implement circular actions because they are obliged by legal regulations and norms.

4.2. Commercial logic

The other type of instrumental thinking that emerged from the research is based on the assumption that decisions on CE are made basically for profitability reasons. In other words, CE commitments should lead to higher financial gains in various forms, for example, reputation, cost reduction, additional revenues. This logic encompasses cost leadership or best-cost strategies that could be reached by creating closed-loop designs or implementing new technological solutions to ensure processes efficiency through cleaner production.

“[...] the company's employees create innovations. People who know patents work with methods of product invention, cooperation with laboratories, exclusive manufacturers [...]” (textile manufacturer)

“[...] the available competence of the employee is very helpful in moving towards that sustainability [...]” (furniture manufacturer)

Manufacturing companies are innovative, invest in new (mobile, digital and platform) technologies and seek to be more resource-efficient, energy-efficient and finally cost-efficient. Such drivers as innovative technological solutions highly support the implementation of CE activities but also lead to higher upfront costs or a lack of human resources, which could slow the transition to CE. Companies seek clear financial outcomes (benefits), orient on a rather shorter period of time and usually have a more passive role in educating and changing the minds of consumers. The emphasis is on short-term value creation (first of all) for the customer and for the company itself through profit generation. To sum, the commercial logic clearly shows anthropocentric assumptions and prefers environmental protection as a way to a higher efficiency and profitability.

4.3. Value chain logic

Companies that apply integrative approach through value chain logic, deliberately look beyond just commercial logic, but also seek to create long-standing relations with their partners and co-create value with them. Following the focal companies in the value chain, companies design products with higher environmental performance that could possibly enable the strategy of narrow loops.

“[...] we take a very responsible approach to the choice of our suppliers and customers. We regularly audit existing suppliers and also have strict requirements for new suppliers. To be sure that our product will travel to responsible manufacturers, we have created our own customer verification procedure [...]” (furniture manufacturer)

„[...] the market is such that you have a lot to choose from, so that kind of pressure is like-if you don't have, you won't be on the shelf. You can call it pressure, or a recommendation, or just a demand [...]” (food manufacturer)

Products, components and materials are sourced worldwide, due to this, value chains become highly globalized supply chains. Companies must collaborate with their strategic partners in the value chain by integrating their resources and competences.

“[...] companies that collect, sort and shred plastic waste must be involved in the cooperation [...]” (plastics manufacturer)

Hence, managers' decisions largely depend on the focal company's behaviour. It means that companies are 'forced' to implement more circular actions (usually to prove the higher environmental performance of their products) to stay in that particular value network. Following the results of [Ashraf et al. \(2017\)](#), a cross-sector partnership's highest probability of survival occurs when partners rely on each other's resources without being able to impose exchange conditions, that is, when they are more dependent. Because the tension between the commercial and value chain logics is low, partners are more open to adapting to heterogeneous institutional logics. In this situation, value chain logic gains a more passive role from the management decision-making position and begins to resemble compliance logic. The difference is that legal regulation in compliance usually sets up the minimal requirements, although the industry requirements may be higher.

“[...] We are always looking for innovative solutions, we always try to offer our customers innovation and a sustainable product because all our customers are from developed countries. They really set high enough standards in terms of sustainability [...]” (textile manufacturer)

4.4. Value creation logic

Companies that apply value creation logic, typically seek to be change agents and create environmental values for their customers. This logic encompasses the creation of a closed loop through ecocentric product design strategies followed by innovative supportive product-service systems. Manufacturing companies design long lasting products by using more secondary raw materials or easily recycled at the end of product's life.

“[...] this can be achieved through eco-design solutions, product reuse and repair, refurbishment, recycling, sustainable consumption and innovative business models that offer, for example, renting, lending or sharing products as an alternative to buying them [...]” (textile manufacturer)

The most important drivers to adapt the value creation logic are ecological leadership, information sharing and collaboration, essential to prolong a product's lifecycle in the market.

“[...] this requires a lot of upfront thinking, and it requires consortia with many members from different parts of the value chain to make sure that we do everything as efficiently as possible. ... Realistically, it is all on the shoulders of the industry, on the shoulders of the market. We ourselves have to form consortia, we have to apply to the European Commission, we have to do the research, we have to collect the data, we have to do the reports and we have to prove that this technology meets the legal requirements, and then we have to wait for a law, for a regulation, that defines this chemical recycling and its benefits for the preservation of the fossil plastics raw material [...]” (plastic manufacturer)

„[...] information access and sharing between different industries, maybe not between different industries, but between members of our value chain, which means that our suppliers share information with us, with our customers, and then the whole value chain works better. [...]” (plastic manufacturer)

Lack of partnerships, recycling networks and difficulties to change product's design are widespread barriers to integrating circularity more than only eco-efficiency or reputation building. Hence, ecological responsibility and the leadership role of fostering other companies and educating consumers towards sustainable consumption are at the heart of value creation logic.

By applying this logic, the focus lies on ecocentric product creation strategies first, including the product's innovativeness and quality, sustainable packaging, and product life cycle prolonging with the ability to reuse or remanufacture. Importantly, to create closed-loop product-

service systems, decisions must be made with other companies as well. Companies must also find ways to activate partners in the circular value chains, share resources, risks, and responsibilities (Parida et al., 2019). Corporate decision-making becomes more dependent on the settings of the industrial ecosystem when applying integrative thinking based CE logics. The value creation logic is more related with a change in social and environmental values, coopetition with partners across value chain and leadership.

Table 5 summarizes results of CE logics, that are presented in previous sections, by taking into account drivers, barriers and ambivalent factors, which in turn makes it possible to determine the innovation type, specifics of the collaboration, period for decision and focus of decisions for CE.

4.5. Prioritization of CE logics

We are guided by the idea that actors (in our case, managers) “represent” and import into the organisation the meanings and norms of the logics they have first encountered (Greenwood et al., 2011). This proposition reinforces the experience of the institutional complexity of the organisation, but also influences its possible reactions through actors’ attributions.

From our data we discover some attributions (whether the factor is a driver or barrier) that explain how companies make sense of CE-logics and prioritize them (Fig. 3).

Interestingly, factors related to the redesign of internal company processes and motivation were attributed as more positive. For example, moving towards integrative thinking based logics is helped by environmental values, information sharing in a broad sense, or assessment of product lifecycle already in product design and production stages. In contrast, external factors, which are generally beyond the control of companies, were attributed as more negative. For example, companies often tended to “pass the responsibility” to consumers or society, claiming that by producing products they were simply satisfying the wishes of existing, not always mature, consumers. This prioritization shows some dynamic aspects for CE logics.

External negative attributions and instrumental thinking. Taking

into account that organisations are not passive recipients of institutional pressures, but interpret and translate institutional complexity (Greenwood et al., 2011) we discover that instrumental thinking driven CE logic are more related to the external attributions, which are perceived as obstacles and encourage to do business as usual. Interestingly, factors that „keep“ manufacturing companies in the linear industrial ecosystems are consumer behaviour (willingness to buy cheaper, less sustainable products or increasing consumersim), market (the secondary markets are not well developed for circular activities), financial (concerns to incur additional costs), environmental education (manufacturing companies are not very interested in promoting environmental education, because on the one hand they believe that it is the task of public organisations such as municipalities and on the other hand that it costs a lot of money). Companies often have negative attributions due to the consumer behaviour towards circular products. For example, in most cases managers tend to assume that a product manufactured from secondary raw materials might be of lower quality and not in demand.

“[...] we do not produce from secondary raw materials, as this immediately affects the quality of the product. The ton is asked by the consumer, and there is no demand for secondary raw materials in their sector. Re-generated cotton - will not create a good product, the quality decreases significantly during processing. Actually, downcycling, processing to a lower production level [...]” (textile manufacturer).

Moreover, negative attributions are typically associated with temporal proximity, that is economic, financial and even technological issues, which might raise costs in the short run.

“[...] everyone wants to be socially responsible, environmentally friendly, everyone definitely wants to be here, but not many people want to pay more for it. In any case, next to all this, there is also economic utility, or at least that ecological, circularity, so that it does not cost a lot extra [...]” (plastics manufacturer).

“[...] implementing a separate system for the collection of textile waste is an insane amount of money. The first thing is that there is a lack of funding and targeted programs from state policy [...]” (textile manufacturer).

Table 5
Aspects of differentiating CE institutional logics.

	Instrumental (emphasis of economic benefits over environment)		Integrative (emphasis of economic benefit equal environment)	
	Dominant CE logic		Emerging CE logic	
	Compliance	Commercial	Value chain	Value creation
Greening approaches	Environmental legitimacy	Eco-efficiency	Eco-centric	Eco-centric
Strategies toward the cycling of resources (Bocken et al., 2016)	Closing resource loops, narrowing resource flows: regulation for waste management, pollution law	Closing resource loops: design for a technological cycle	Narrowing resource flows: optimising resources per product and location	Slowing resource loops: creating long-life products
Innovation type	Usually no innovation but the implementation of a legal norm	Process	Product	Product - Service
Key driver (s)	State strategy & fostering actions towards CE	Technological solutions (manufacturing technologies, RPA)	Products’ life cycle; Collaboration across value chain	Openness for information sharing
Supporting drivers	Waste management infrastructure; environmental tax	Resource scarcity, fit of organizational structure	Certification; Product environmental footprint; Requirements across value chain	Environmental values; Collaboration with society; Maturity of society
Key barriers	Uncertainty of regulation, lack of regulation	Funding difficulties; higher upfront costs	Features of recycled materials	Lack of consumer’s & society’s maturity; Lack of recycling network; Design complexity
Ambivalent factors	Regulation (the uncertainty of regulation, lack of regulation, future regulation); Infrastructure	Profit, funding (less expressed) Technologies (technological solutions, technological uncertainty)	Features of the product (Product environmental footprint; features of the recycled materials)	Maturity of society
Collaboration	External (with the government) Fragmented across companies’ operations	More holistic across companies’ operation but less holistic across the value chain	Holistic across the value chain: strategic partners, recycling companies, suppliers	Holistic across the value chain Social networking
Period for decision	In line with regulation (short term)	In line with profit maximisation (short-medium term)	In line with environmental quality (long term)	In line with environmental values (long term)
Focus of decisions for CE	Waste management	Cleaner production	Product eco-design	Product supporting circular system

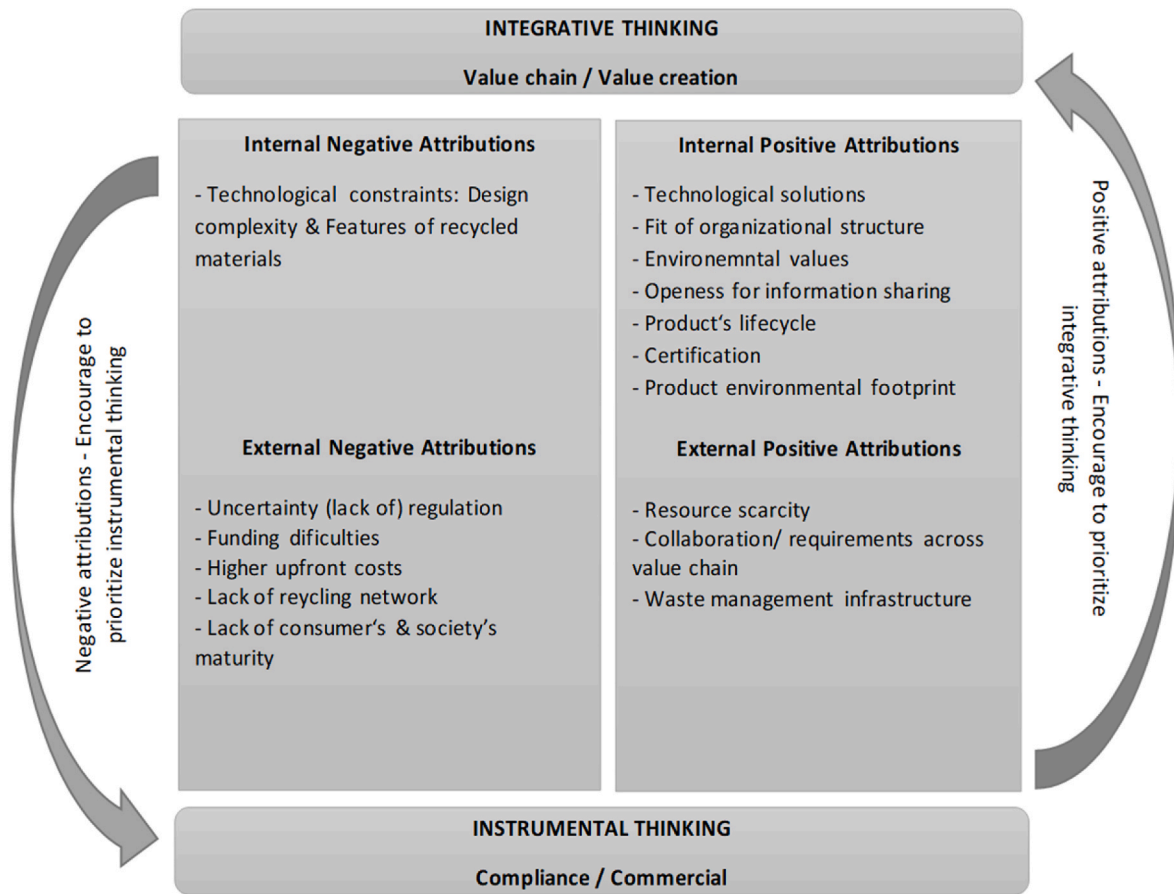


Fig. 3. Analytical framework of prioritization among CE logic in manufacturing companies.

Majority of attributions leading companies to adopt instrumental CE logics relates to above-mentioned external barriers.

Internal positive attributions and integrative thinking. Majority of internal factors are attributed as positive (drivers), like ecological values embedded in the corporate strategy, integrating product life cycle approach, and certification through environmental quality management standards, organizational structure, technological solutions. Integrative logic is more related to the internal organizational actions and initiatives that encourage manufacturing companies to take more actions on their part to be more circular. As managers usually make decisions on behalf of the company, they are motivated to assign causes to their actions and behaviours. An emerging institutional logic enhances institutional ambiguity because of the lack of clearly defined practices and routines. Hence, we also consider how managers' subjective attributions about the CE can enhance to stay in the dominant logic such as commercial or compliance one. We found that in such situations managers apply attributions, typically staying with conventional decisions that hinder the shift to the integrative thinking based CE.

5. Discussion and contribution

5.1. Discussion

Theorising from our results, we propose key pillars for an analytical framework of CE logic for manufacturing companies. Fig. 4 shows critical angles of each pillar across instrumental and integrative thinking. Homogenous, compliance driven and techno-centric driven CE-logics most likely reflect instrumental thinking. Meanwhile ethical responsibility driven and system-centric heterogeneous CE-logics are driven by integrative thinking. We understand that these are extreme dimensions and in practice there are variations between the two angles

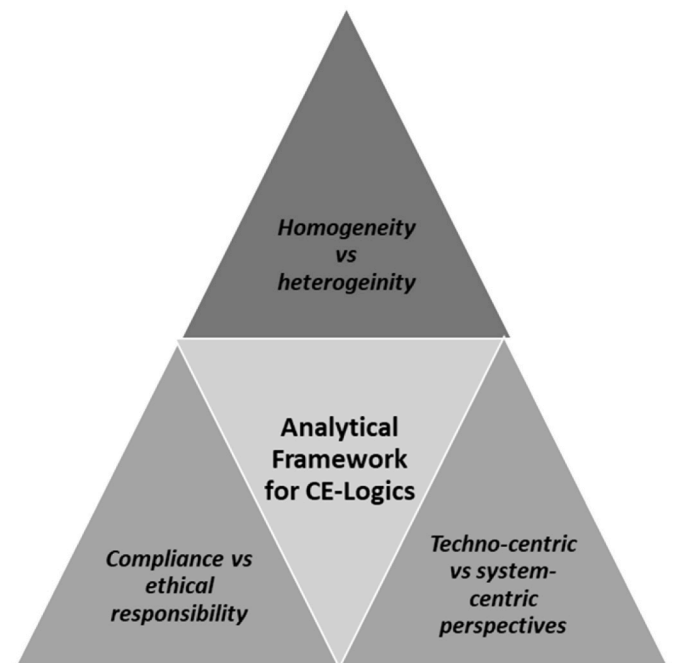


Fig. 4. Key pillars for analytical framework for CE logics of manufacturing companies.

in each pillar, but this conceptualization helps to organize our discussion of CE logics and show some dynamics. Previous research (e.g., [Ingstrup et al., 2021](#)) indicate how institutional logics can change and modify during collaboration. In our study, evidence was found for introducing actors' (managers) attributions about meanings and norms of logics and how they can possibly enable change of institutional logics. This is based on the institutional approach that actors "represent" and import into an organisation the meanings and norms of the logics they have first encountered ([Greenwood et al., 2011](#)). This proposition reinforces the experience of the institutional complexity of the organisation, but also influences its possible reactions through actors' attributions.

Homogeneity vs heterogeneity of CE logics emerged as one of the key angles related also to the dynamics between the logics, since in practice logics are often intertwined (e.g. compliance and commercial), but there are still differences between instrumental logic and integrative logic. When manufacturing companies follow just one, homogeneous logic, usually it is just a commercial one. However, the complexity of the institutional environment in which companies operate, open opportunities to more heterogeneous responses simultaneously ([Laasch, 2018](#); [Ashraf et al., 2017](#)). For example, there is a growing consumer group preferring sustainable and eco-friendly products. Companies adopting CE practices can choose to strategically meet this demand, enhancing their brand reputation and customer loyalty. This shift can also open up new market opportunities, such as the development of innovative, sustainable products or services.

CE regulation aligned with enabling infrastructure also might influence manufacturing companies to develop CE innovations, or choose to implement only at the minimum of the regulation depending on their ecological values. Noteworthy, some companies tend to implement environmental initiatives incrementally, i.e. as much as regulations require, or as a temporary adjustment to the requirement ([Greenwood et al., 2011](#)), and quite often with the support of external funding, which obviously reflects instrumental thinking.

Therefore if managers attribute external environmental regulations negatively, i.e. they translate institutional pressures (regulation, market) only as additional costs, it is unlikely that decisions will be integrated across all departments or value chain with the priority on CE issues. This is an important observation taking into account that the CE is very much regulation driven in the EU, however, sustainability and circular transitions are qualified as far too slow.

Techno-centric and system-centric perspectives in CE logics. Using low-carbon technologies in production processes, logistics and waste management are currently the clearest solution for acting-best practices companies in the CE. Although we interviewed companies that do certain activities in the CE, very often they only emphasised the usage of solar energy, other renewables, cleaner production or zero waste technologies. Therefore, if companies orientate only on technological solutions such as recycling technologies, their path will be very close to environmental legitimacy and eco-efficiency ([Gusmerotti et al., 2019](#); [Schulz et al., 2019](#)). Manufacturing companies that approach the CE only from a techno-centric perspective ([Slawinski and Bansal, 2015](#)), may reduce the attributes of solutions and take a narrow approach to implement CE activities. Meanwhile, the systemic-centric perspective, which in no way denies the importance of technological innovations, emphasizes the need for product design and product development in systems with the help of technologies (i.e. digital platforms) and consumer engagement. Using a system-centric perspective, uniformity of certain principles and standardised practices are also important to be scalable and replicable. Common standards and indicators for measuring circularity are essential for comparing performance and sharing best practices.

Government compliance, market compliance and ethical responsibility. Interestingly, we also found that market compliance (as replacement of regulatory compliance) can act as a stronger driver towards adopting integrative types of logic. Notably, market compliance and the demands of ethical responsibility propel manufacturing

companies to aspire to higher standards than mandated by legal regulations. In highly fragmented industries characterized by informally organized interests, manufacturing companies actively seek the approval and validation of their partners within the value chain. This pursuit of alignment and approval highlights the pivotal role that market dynamics and collaborative value chain relationships play in shaping organizational strategies. Adopting CE principles demonstrates a commitment to ethical responsibility, enhancing a company's need to balance between environmental or society and economic issues ([Hahn et al., 2018](#)). This can also strengthen stakeholder relationships, including with employees, customers, and the community.

We found that Lithuanian manufacturing companies attribute ethical responsibility to their focal companies in the value chain, i.e. by manufacturing products according to obliged environmental requirements for their products. A typical example is giant furniture company IKEA and their suppliers (many of which are from Lithuania) that must fulfill higher environmental requirements regarding emissions and use of sustainable materials. We focused on a positive impact to illustrate the potential benefits of effective power dynamics in the context of our analysed companies, all of which were actively engaged in CE practices. While our sample did not provide an example of a negative impact, our theoretical framework was constructed using broader research indicating the relevance of power imbalances in sustainability outcomes. In addition, manufacturers are constantly monitored and supervised by third-party environmental audits. They also place strong emphasis on their ethical commitment to meet and even exceed the expectations outlined in the responsibility policies of their focal companies. This proactive stance toward ethical responsibility stands out, especially considering that government regulation does not compel such actions.

5.2. Theoretical contribution

This research extends knowledge about institutional logics specifically applied in the CE context. Four types of institutional logics for the CE emerged from our abductive research. Compliance and commercial logics reflect anthropocentric assumptions, which was evident from the analysis of previous research. We also discover two emerging CE logics that are closer to the integrative approach. Previous research frame integrative approach rather as a balanced system among social, economic and environmental elements ([Gao and Bansal, 2013](#); [Hahn et al., 2018](#); [Hoffman and Jennings, 2015](#); [Van der Byl and Slawinski, 2015](#)). However, we discover that the value chain logic gains a more passive role from the management decision-making position as corporate decisions largely depend on focal companies or other more powerful actors in the value chain. Based on [Ashraf et al. \(2017\)](#) results, mutual dependence can have a positive impact on the implementation of the logic and the survival of the partnership in the value chain, and thus leading to successful sustainability practices (example of IKEA). As we have not experienced a specific example of a negative impact of power imbalances within our sample, it is crucial to recognise the existence of such risks. Thus, power imbalances between partners can have a negative impact on the survival of the partnership ([Ashraf et al., 2017](#)) and sustainability outcomes. Less powerful actors (as Lithuanian contractual manufacturers) just follow (higher or less) environmental requirements from focal companies and brands. Hence, the idea of the CE might be even reduced to a set of standards and certifications for managing reputation, quality, and value chain risk. The focal company is their buyer and they often have less freedom to experiment with products, so the value chain logic leads to a more passive role. Theoretically, this logic might reflect a weak CE model, because the responsibility is shifted to industry leaders, whereas smaller companies try to adapt to the requirements of the supply chain.

Value creation logic emphasizes culture of knowledge exchange and learning across society ([Velenturf and Purnell, 2021](#)), and the need for greater integration of social aspects such as consumer education and

sufficiency (Bocken et al., 2014). Value creation logic might reflect a strong CE model that prioritises circular-by-design issues, including waste prevention, reuse, repair and remanufacturing (Ranta et al., 2020; Velenturf and Purnell, 2021). This approach requires far-reaching changes in product design and consumption modes. Our observation has provided evidence of value creation logic as our respondents not only participated actively in learning collaboration within the value chain but also volunteered in the creation process of the CE Roadmap. Their collective experiences led to a unanimous perspective—they strongly affirmed that the transition to a CE is only achievable through united efforts and shared learning across society.

Another theoretical contribution relates to how organisations might prioritize CE logics and help to shift towards integrative thinking. According to Greenwood et al. (2011) attributes determine how organisations experience institutional complexity (in this case CE) and how they perceive and construct the responses available to them. Organizational decisions are influenced by managers, who bring their interpretation of priorities and desired outcomes into the decision-making process (Pache and Santos, 2010). Indeed, our results show that managers bring their attributions in circular transformation. Positive factors and outcomes tend to be attributed to oneself, whereas negative issues tend to be attributed to the outside, i.e. external environment. To our knowledge, that aspect connecting attributions and CE logics has been little explored before. Specifically, we got that managers focus on the external environment while explaining their instrumental approach towards CE. Understanding attributions is valuable, because they might explain how organisations translate and interpret institutional complexity. We support this with our data by claiming that attributions occur while deciding to move to the CE because of high institutional complexity.

5.3. Managerial contribution

For managers it is challenging to navigate ambiguity and complexity. Managers tend to allocate their attributions to the familiar instrumental frames that favour financial benefits (Van der Byl and Slawinski, 2015). As the majority of external attributions (such as lack of recycling networks or uncertainty of regulation) were not motivating towards the CE, it is important to take clearer action to build recycling networks or to remove regulatory uncertainty to promote the CE. It is important for managers to link CE practices to positive implementable attributions, e. g. reusing materials can help save costs and reduce their dependence on raw materials, the prices of which often fluctuate.

Finally, the CE is as much an industrial approach as it is a social choice. Although the lack of maturity of society (including consumers) is emphasised, our results indicate that business companies tend not to see their proactive role in educating consumers or changing their mindset by guiding them to more sustainable choices. This could be because most of the companies interviewed are in business-to-business sectors rather than business-to-consumer trade. Indeed, managers might have difficulty seeing the interconnections among the complex elements of the CE and fail to recognise the potential opportunities in integrating strategic management and social and environmental commitments (Gao and Bansal, 2013).

6. Conclusion

Our results answered the research question, which leads to the understanding of institutional logics in the context of transition to the CE by identifying four types of CE logics, including compliance, commercial, value chain, and value creation logics. This categorisation provides a better understanding of how organisations approach CE and what practices they tend to adopt when implementing sustainable business strategies. It is evident that CE implementation often involves the coexistence of several logics, highlighting the dynamic nature of CE strategies. Manufacturing companies, in response to external regulations

and influenced by instrumental thinking, tend to adopt CE initiatives incrementally and are able to move into different logics at different times.

Additionally, managers are facing the challenges of implementing CE principles and strategies. The exploration of managers' perceptions of external factors influencing their CE strategies, highlighted the importance of attributions in navigating complexity and ambiguity. It emphasizes the need for clearer actions to promote the CE, such as building networks and reducing regulatory uncertainty.

Limitations. Our findings are based on a specific set of manufacturing companies that had already implemented some good CE practices. Companies with remanufacturing activities could not be reached because of a lack of information about such companies in the media. This approach excludes companies which may have unique perspectives and challenges. Furthermore, the paper did not extensively explore start-ups and small enterprises, which are often more agile in implementing CE principles. This could be a reference for future research and the differences between the priorities of non-motivating drivers from different types of organisations. Besides, our sample did not provide negative impacts of power imbalances within partnerships engaged in CE practices while such existence is recognised by the broader literature. This issue could be related to the specifics of our sample. In addition, a potential limitation is that our research instrument was tested at the pre-test stage (a questionnaire with both closed and open-ended questions), but the reliability assessment of the research instrument for the semi-structured interview was not performed. However, the research group discussion, and triangulation were used to ensure the reliability of the research.

Future research. Given that the CE logics are discovered based on manufacturing companies with extensive experience in the sector and across the value chain it is essential to explore whether similar patterns and logics emerge in different contexts. Future research could investigate CE logics in companies from diverse industries, countries and government authority levels. Considering that the selected respondents had basic knowledge about the CE concept, further studies could delve into the perceptions and behaviours of organisations with varying levels of CE awareness and expertise.

There is an opportunity for future research to explore the paradoxes and tensions inherent in the CE context. Investigating how organisations navigate these challenges and identifying empirically grounded solutions could contribute to a deeper understanding of sustainable business practices and offer practical insights.

CRedit authorship contribution statement

Lina Dagilienė: Writing – review & editing, Writing – original draft, Supervision, Conceptualization. **Viktorija Varaniūtė:** Visualization, Methodology, Investigation. **Justina Banionienė:** Writing – original draft, Investigation.

Data availability

We created our own database. All the interviews were recorded and transcribed with prior permission. Interview data were stored on an external storage medium, encrypted, and password protected.

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