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Enhancing dynamic capabilities to improve sustainable competitiveness: insights from research on organisations of the Baltic region

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Abstract

Purpose – The research is aimed at elaborating a model in which dynamic capabilities affect sustainable competitiveness via organisational sustainability practices and the mediating role of organisational ambidexterity.

Design/methodology/approach – Emphasising the need for business sustainability in the face of technological breakthroughs, resource depletion and increasing expectations of stakeholders, it is necessary to reflect on a long-term organisational resilience that would enable sustainable competitiveness through dynamic capabilities. Hence, the paper provides insights on how an organisation can sustain its competitiveness by constantly balancing between the need for continuous improvement due to the pressure in economic, social and ecological environment, and the pursuit of continuous improvement of performance. The authors used structural equation modelling on data collected via a survey of 455 organisations from the Baltic region.

Findings – The results confirm the relationships between sensing and reconfiguring capabilities and sustainability practices, but reject them for scanning capabilities. They also confirm the impact of sustainability practices on some of the pillars of sustainable competitiveness. The research disclosed that ambidexterity was a mediator between dynamic capabilities and sustainable competitiveness.

Originality/value – The paper discloses the link between dynamic capabilities and sustainable competitive advantage by identifying the main characteristics of the constructs and revealing the linkage between them.

Keywords Dynamic capabilities, Sustainability practices, Ambidexterity, Sustainable competitiveness

Paper type Research paper

1. Introduction

A win-win strategy, embedded in the nature of sustainability (Jay *et al.*, 2017), encourages organisations to act as a catalyst for the sustainable development of the society. At the same time, however, organisations need to develop in a sustainable way to realise their potential and gain sustainable competitiveness. Numerous studies have sought to demonstrate the "business case for sustainability" (Sellitto *et al.*, 2019; Tounés *et al.*, 2019) by testing the relationship between corporate social performance and corporate financial performance, with mixed results, yet a prevailing frequency of positive relationships show up in meta-analysis

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(Margolis *et al.*, 2007) or literature reviews (Lu *et al.*, 2014). Drawing on the resource-based theory of the firm (Barney, 1991), most authors conclude that a sustainable change of the organisation will ultimately translate into its long-term economic viability and sustained competitive advantage (Ortiz-de-Mandojana and Bansal, 2016). This is not only related to increased competitiveness *per se*, but also leads to competitiveness in a sustainable way (van Kleef and Roome, 2007).

Organisations' long-term competitive advantage is rooted in the development of their dynamic capabilities to address external changes by purposely reconfiguring their internal resources and capabilities (Teece *et al.*, 1997). Many authors emphasise the role of dynamic capabilities (Sivusuo, 2019; Monteiro *et al.*, 2019); however, their potential to make sustainability more dynamic and integrated with strategies, transforming it into an organisational asset, has yet to be studied. This notwithstanding, although some researchers have already explored the way Teece's (2012) levels of dynamic capabilities can be applied to sustainability, research showed that more exploration is needed on sustainability issues using dynamic capability as the main theme (Amui *et al.*, 2017). Furthermore, few of the previous studies were devoted to sustainable competitiveness (Phornlaphatrachakorn, 2017).

Considering the discussion between sustainability and dynamic capabilities, the main questions of this study are: which dynamic capabilities for corporate sustainability affect the organisational practices? What is their impact on sustainable competitiveness? What is the influence exerted by organisational ambidextrous sustainability on sustainable competitiveness? By our research, we suggest a theoretical extension of the concept of dynamic capabilities into the context of sustainable competitiveness. Further, we make a theoretical extension of the concept of dynamic capabilities into the context of sustainable competitiveness by revealing the mediating mechanisms through which dynamic capabilities affect sustainable competitiveness. Thus, the paper is in line with the research stream that investigates sustainable competitiveness through dynamic capabilities. To the best of the authors' knowledge, this research is a leading effort to integrate dynamic capabilities with sustainable practices and sustainable competitiveness. The contribution to the scientific knowledge is twofold. First, the paper discloses the link between dynamic capabilities and sustainable competitive advantage by identifying the main characteristics of the constructs and revealing the linkage between them. Based on these insights, a coherent framework was developed to disclose a mechanism to link dynamic capabilities with sustainable competitiveness. Second, the paper provides empirical evidence on how certain dynamic capabilities, sustainability practices and particular pillars of sustainable competitiveness interact and explains how ambidexterity allows for better understanding of the role of this capability in shaping sustainable organisational competitiveness.

The paper is structured as follows. Sections 2 and 3 present the theoretical background of the study. We discuss the issues of dynamic capabilities in the context of sustainable development and the problem of sustainable competitiveness of organisations. Section 4 provides the rationale for hypothesis development. Section 5 presents the methodological aspect: research design, sample, and research tool. Finally, Section 6 contains the presentation and discussion of results.

2. Dynamic capabilities in the context of sustainable development

Zahra *et al.* (2006) distinguish between substantive (ordinary) capabilities (including abilities and resources that allow the company to solve a problem or to achieve an outcome) and dynamic capabilities (the ability to change and innovatively recombine substantive capabilities). The theory of dynamic capabilities (DCs) refers to an extension of the resource-based view (RBV), which suggests that organisations with resources that satisfy VRIN (valuable, rare, imperfectly imitable, non-substitutable) criteria allow them to attain competitiveness. Teece *et al.* (1997, p. 515) identified "dynamic" as the ability to

"renew competences so as to achieve congruence with the changing business environment" and "capabilities" as "the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competence to match the requirements of a changing environment". Dynamic capabilities focus on adapting to changes in dynamic environments by making adjustments to this resource base; hence, they illustrate a dynamic, rather than static, resource-based theory of the organisations (Schilke *et al.*, 2017). Generally, dynamic capabilities are treated as a multidimensional construct that allows for monitoring the constantly shifting environment, and sensing and seizing new business opportunities.

Seeing that authors have proposed different ways to classify dynamic capabilities, this raised the need to substantiate the choice of dynamic capabilities used in the study. Teece (2012) refers to the three main groups of dynamic capabilities: sensing, seizing and reconfiguring. Kareem and Alameer (2019) suggested sensing capabilities, learning capabilities and reconfiguration capabilities. According to Kurtmollaiev (2020, p. 5), "researchers across the field seem to agree upon the theoretical link between dynamic capabilities and organizational performance, even if their interpretations of dynamic capabilities as a construct differ". The explanation may lie in different contexts that presuppose the updating of certain characteristics of the dynamic capabilities. Wu (2017) also stresses the specific characteristics of dynamic capabilities in different environmental contexts and argues for the need to rethink the distinctive nature of the dynamic capabilities by extending their use in the research field of corporate sustainability.

Previous studies of dynamic capabilities in the context of sustainable development focused on the issue of commitment and strategies (Borland *et al.*, 2016), stakeholder engagement (Dentoni *et al.*, 2016), green leadership (Chen and Chang, 2013), innovations for sustainability (Dangelico *et al.*, 2017) and inter-organisational relationship in a sustainable supply chain (Rauer and Kaufmann, 2015). However, there is a lack of research to explain how dynamic capabilities enable sustainable competitiveness. Dynamic capabilities for corporate sustainability are defined as the "firms' abilities to address rapidly evolving sustainability expectations of stakeholders by purposefully modifying functional capabilities for the simultaneous pursuit of economic, environmental and social competences" (Wu, 2017, p. 41).

In reference to sustainable development, Wu *et al.* (2014) show that dynamic capabilities enable organisations to monitor the emerging sustainability needs of various stakeholders, seize sustainable development opportunities from the rapidly changing stakeholders' expectations, and reconfigure the existing functional capabilities for corporate sustainability.

Linking dynamic capabilities with sustainability Gabler *et al.* (2015) highlighted (1) a shared sense among members about the benefits of sustainability; (2) provision of information to employees about the implemented sustainable programs; and (3) benchmarking of internal strategies with competitors.

Wu (2017) argue that the dynamic capabilities for corporate sustainability can be disaggregated into three distinctive, but related, capabilities: (1) scanning the emerging sustainable needs of various stakeholders; (2) identifying opportunities or threats from the rapidly changing sustainable expectations; and (3) reconfiguring the existing functional capabilities for sustainable development.

Scanning capabilities are crucial in the organisation's information-processing mechanism to sense and interpret the requirements of sustainability. Sensing capabilities should be utilised to analyse new sustainable knowledge and information, and systematically link them with the related organisational functions in various innovation activities. The last group deals with reconfiguring capabilities, which refer to the organisation's capability to discard, modify, or rebuild well-entrenched, albeit unsustainable, organisational routines and practices.

It should be noted that dynamic capabilities for corporate sustainability are interconnected. It means that they must be combined as a coherent mechanism to link external sustainable requirements with redeployment of internal resources and capabilities (Wu *et al.*, 2014).

Thus, in this paper we adopt the approach of Wu (2017), who revealed dynamic capabilities as three interrelated capabilities for organisations to systematically identify and leverage potential opportunities from emerging expectations of stakeholders, thereby gaining sustainable competitive advantage.

3. Sustainable competitiveness

Some scholars believe that dynamic capabilities are the key to competitive advantage (Li and Liu, 2014). Teece *et al.* (1997) suggest that they lead to sustained competitive advantage, and there is a direct relationship between the organisation's dynamic capabilities and competitiveness.

Although competitiveness is a ubiquitous term in economic research that is conducted at different (macro- and micro-) levels, there are still difficulties with understanding its meaning as well as with its measurement. This paper focuses on sustainable competitiveness at the organisational level, which is defined as an organisation' potentialities to produce the right products and services of the right quality at the right price and time (Balkyte and Tvaronaviciene, 2010). It explicitly represents responding to the customer needs, requirements and expectations more efficiently and effectively than commercial rivals do. In turn, on the operational level, sustainable competitiveness refers to the organisation's operations, practices and actions, which can ensure compliance with market demand and earn profits continuously by using more advanced capacity and production efficiency (Zhang and London, 2013). It generates positive impacts on Triple Bottom Line, which means being competitive through a low cost and creating value (economically), generating wellbeing (socially) and without compromising the environment (environmentally).

Bozikova and Snircova (2016) emphasise other differences between competitiveness and sustainable competitiveness. Typical features of achieving sustainable competitiveness include leadership with vision, integrity and inspiration, long-term contracts, building partnerships, sustainable management of quality, competitive strategies in line with CSR, customer orientation, developing the employees creativity, building good internal relations, transfer of experience, taking care of the quality of the non-working life of employees, investment in the future workforce, continuous product innovation, patents, a dynamic product line, building relationships with suppliers, continuous evaluation of suppliers, efficient use of materials and energy, investment in eco solutions in logistics, relevant labour costs, building relationships with stakeholders, truthful advertising, and product reliability etc. Typical features of achieving competitiveness include a focus on cost, short-term profits and leadership without a vision of winning. This results in a different orientation of the organisation: sustainable competitiveness emphasises economic competitiveness as a driver of prosperity and long-term growth, taking account of environmental and social concerns.

The level of competitiveness depends on a number of factors such as strategic management, human resources, technology and marketing (Porter, 1998). Definitely fewer publications are devoted to drivers of sustainable competitiveness. These papers indicate the importance of innovation, knowledge management (Phornlaphatrachakorn, 2017), change management practices (Gökan and Stahl, 2017), clean technology strategy, sustainability vision, product stewardship, pollution prevention strategy and green strategy (Sellitto and Hermann, 2019). Further, Lin and Chen (2017) explain that dynamic capabilities have a positive impact on green competitiveness. Qiu *et al.* (2020) confirmed these results.

Although Sivusuo (2019, p. 77) recognises the link between dynamic capabilities and sustainable competitive advantage, he does not disclose this relationship more broadly by simply stating that "if an organization does not have dynamic capabilities, it is more likely to lose than an organization with dynamic capabilities". However, is a similar conclusion justified in the case of sustainable competitiveness? In the next section, we try to reveal the insights of the DC theory to disclose how dynamic capabilities can affect sustainable competitiveness.

4. Hypothesis development

4.1 Scanning capabilities

The abundance of dynamic capability classifications leads to the fact that different groups of dynamic capabilities often overlap. Based on a systematic review of 53 selected studies, Bleady *et al.* (2018) state that there is no consensus on a commonly agreed-upon empirically-based definition of dynamic capabilities. The contents and scope of the dynamic capabilities' group depend on the context under consideration. In the context of sustainable competitiveness, the needs for sustainability of different stakeholder groups are emphasised; therefore, scanning capabilities are distinguished as a separate group in Wu's (2017) classification, whereas in other classifications, for instance Teece's (2012), they are covered by the sensing capabilities group. Sensing capabilities include organisational capabilities that aim at gaining knowledge about customer needs, competitors, exploring technological opportunities, probing markets, listening to suppliers, and scanning and exploring other elements of the business ecosystem. Meanwhile, Wu (2017, p. 43) extends the concept of sensing capacity by further generating scanning capability and defining it as "the ability of the firm to create an information processing mechanism composed of two different searching processes, one for direct stakeholders and the other for indirect stakeholders". Thus, the author not only emphasises the importance of direct stakeholders such as government/financial institutions, business partners and clients, but also highlights the relevance of local communities and non-governmental organisations, especially when they are concerned with sustainability issues. The ability to adapt to governmental regulations, especially in the field of ecology, to recognise the continuously changing and challenging customer requirements and to identify potential business partners for long-term partnerships allows for developing sustainable competitiveness. Sustainable development enables considering the expectations of both local communities and society; therefore, the capability to scan an external environment is critical for ensuring the coherence of the organisation and stakeholders. Moreover, scanning capability refers to the ability to prioritise in understanding the complexity and dynamics of the external environment. In the light of the above arguments, the following hypothesis can be proposed:

H1a. There is a positive relationship between scanning capabilities and deployment of sustainability practices.

4.2 Sensing capabilities

Sensing capabilities can be equated with monitoring capabilities and knowledge acquisition, because they allow for sensing, learning and interpreting the signals reflecting the emerging environmental changes in the activities of companies. Johnson (2017) indicates that sustainability-oriented knowledge is assimilated due to internal capabilities. These capabilities, including the top management support, shared vision and room for learning, provide the necessary infrastructure for developing knowledge on environmental and sustainability-related issues. Sehnem (2016) points to the relationship between awareness, knowledge and sustainability practices. She indicates that lack of knowledge and awareness impede the adoption of sustainability practices. Souto and Rodriguez (2015) show that the

lack of information on markets and environmental technology are the main barriers companies encounter when innovating towards sustainability. The low level of information absorption results in the lack of awareness, which is a barrier to the adaptation of some sustainability practices for environmental audits in production processes and management of effluents and waste, hiring indigenous and tribal employees, communicating sustainable performance to stakeholders via specific reports, monitoring of risks and opportunities for the organisation's activities due to climate change.

On the other hand, the ability to accumulate knowledge helps managers to channel investments towards R&D efforts that help develop sustainability practices. Pinkse and Dommisse (2009) indicate that companies, which actively gather information from external sources, are more likely to innovate for sustainability. Chakrabarty and Wang (2012) emphasise that new knowledge gained from R&D and learning allows the organiations to achieve strategic synergy that facilitates the development and sustenance of sustainability practices. Albort-Morant *et al.* (2016) argue that dynamic capabilities influence sustainable performance by reconfiguring relationship-learning activities. Relationship-learning consists of ongoing joint activities between an organisation and its customers, aimed at sharing information, making sense of information and integrating the acquired information. Hence, the following hypothesis is proposed:

H1b. There is a positive relationship between sensing capabilities and deployment of sustainability practices.

4.3 Reconfiguring capabilities

From the point of view of the ability to make changes, reconfiguring capabilities are the most important, enabling the renewal and orchestration of resources and competencies to match the requirements of the changing environment (Teece, 2012). In the context of sustainable development, reconfiguring capabilities determine an organisation's ability and willingness to implement changes in their processes to contribute to transitions toward sustainability (Darmani *et al.*, 2017). Seebode *et al.* (2012) argue that for successful management of sustainable innovations, companies often need to renew their organisational routines and practices to deal with the changing context they face. These renewal activities based on reconfiguring capabilities allow for quick responses to a variety of unpredictable contingencies by making process changes. The influence of reconfiguration capabilities on chosen organisational practices and processes was shown by Wu *et al.* (2013). In their opinion, these capabilities underlie the relevance of measuring and monitoring of the sustainable performance of business operations against pre-set criteria; implementing standard environmental management systems; and working closely with external business partners. Once more, such capabilities are clearly required for sustainable innovation. At all levels of organisation, people must integrate sustainable thinking into their practices and their proposals to change the organisation. In the light of the above arguments, the following hypothesis can be proposed:

H1c. There is a positive relationship between reconfiguring capabilities and deployment of sustainability practices.

4.4 Sustainable competitiveness

A number of studies have argued that a dynamic capability is an antecedent of rents that bring competitive advantage in a dynamic market, because it plays a critical role in adapting and even capitalising on rapidly changing environments. According to Bleady *et al.* (2018), the DC theory was developed from the RBV theory to solve the latter's shortcomings and explain the assumptions of sustainable competitive advantage in a dynamic environment. One of the ways in which organisations seek to maintain competitiveness is the search for

sustainability practices (Klewitz and Hansen, 2014). Sustainability practices help organisations to develop opportunities and manage economic, environmental, and social risks, creating value over the long term (Chakrabarty and Wang, 2012). Iles and Martin (2013) contend that companies are most capable of bringing new technologies and products for sustainability to market effectively when they develop and mobilise their dynamic capabilities around sustainability concerns. D'heur (2015) introduces the integrated management concept of "sustainable value creation", which states that corporate management that includes an environmentally and socially sustainable perspective leads to economic, environmental and social growth. Reuter *et al.* (2010) determine that despite the diffusion of sustainability capabilities within the industry, they have the potential to serve as a source of competitive advantage, depending on the configuration of the process and the sustainability contents covered by it. The value of dynamic capabilities for gaining competitive advantage lies in the resource configuration it creates. They can help improve the use of the resources and create the conditions to get a competitive advantage (Falle *et al.*, 2016).

Earlier empirical research concerning the relationship between sustainability practices and competitiveness focused mainly on pro-ecological practices. Some authors note that environmental practices are important in maintaining competitiveness, seeing that they are a consequence of competitive behaviours and practices, meeting international demands and seeking a level of excellence required in developed countries (De Abreu, 2009). Competitiveness could be reached by the adoption of environmental practices such as energy saving, water saving, selective collection of solid residues, and use of ecological products. Simultaneously, the findings of previous studies substantiate a positive impact of social orientation (employee relation) on operational and business performance. These works relate to potential competitiveness determined by the prism of technological development, long-term price and cost effectiveness (Buckley *et al.*, 1992). We assume that sustainability practices also contribute to competitive performance and process. Competitive performance is a performance outcome relative to that of competitors. Eccles *et al.* (2011) found that high-sustainability organisations significantly outperform their counterparts in the long-term, both in terms of stock market and accounting performance. Research of 100 companies around the word showed that 16 of the 18 industries with the sustainability-oriented businesses outperformed their competitors by 15% (Kearney, 2009).

In turn, process dimensions of competitiveness include closeness to customer, investment strategy, commercialisation of technology, and management attitude to internalisation. As a long-term objective, improved competitiveness may manifest by increased customer loyalty, new customers, and an enhanced image and reputation of the organisation (de Burgos Jimenez *et al.*, 2013). Ju and Chang (2016) suggest that sustainability practices present a good image to customers and increase the awareness of valuable contributions that benefit the customer as well as the community. Jay *et al.* (2017) found that the enterprises, which had adopted social and environment practices, noted low levels of financial volatility, high levels of growth and higher rate of survival over a 15-year period.

Recently, studies have also emerged that revealed links between dynamic capacity and sustainability practices ensuring sustainable competitiveness. For example, Song and Choi (2018) suggest that the implementation of the green supply chain practice with dynamic capabilities enables a firm to achieve successful organisational economic and environmental performance. In the light of above, we presume that:

H2a. There is a positive relationship between deployment of sustainability practices and sustainable competitive potential.

H2b. There is a positive relationship between deployment of sustainability practices and sustainable competitive performance.

H2c. There is a positive relationship between deployment of sustainability practices and sustainable competitive process.

4.5 Ambidexterity

Organisational ambidexterity refers to the organisation's ability to both explore new possibilities and exploit the existing resources and certainties (March, 1991). A number of authors pay attention to the interdependencies between the concepts of dynamic capability and ambidexterity (O'Reilly *et al.*, 2008; Popadiuk *et al.*, 2018). For example, Maijanen and Virta (2017) understand it as the operationalisation of capabilities and contemplate it within the scope of dynamic capabilities. However, this is not an explicit idea. DCs focus more strongly on strategies and resources, while ambidexterity emphasises organisational contexts and arrangements. According to Jurksiene and Pundziene (2016, p. 8): "While dynamic capabilities imply capabilities to absorb and adapt or modify, organisational ambidexterity ensures capabilities to learn, optimise, and balance". Ambidexterity is based on exploration and exploitation processes. In the context of sustainable development, these processes indicate the organisation's ability to balance resources in terms of sustainability.

To be competitive, a company has to absorb specific knowledge and understand the customer needs. These capabilities support the managers when sensing new opportunities. Exploration of new knowledge, especially based on organisational learning, is one of the main sub-processes of ambidexterity. In the context of scanning capabilities, ambidexterity refers to the search for new resources, assets, sources of knowledge and innovation (O'Reilly and Tushman, 2008). Sensing encompasses taking advantage of opportunities and it is synonymous with exploitation. Further, reconfiguring capabilities apply to the company's capability to organise itself to attain the improvements required by exploitation.

In the literature, it has been argued that allocation of resources through finding a balance between exploitation and exploration results in improved organisational performance (Smith and Umans, 2013). Thus, ambidexterity determines the ability to be efficient in current operations and simultaneously adaptive and flexible to changes in the environment (Maletič *et al.*, 2016).

The analysis of scientific literature disclosed paradoxical practices at the individual level that can advance the understanding of ambidexterity (Paprachroni *et al.*, 2020). Swart *et al.* (2016) provide empirical evidence on HRM practices which enable ambidexterity through individual actions. Venugopal *et al.* (2017) stress that organisational ambidexterity can be strengthened with a behaviourally integrated top management team. However, these studies focus more on the impact of HRM practices and individual behaviour on organisational ambidexterity. Meanwhile, no evidence of correlation between sustainability practices and organisational ambidexterity was found.

Referring to sustainable development, Chen *et al.* (2014) showed empirically that ambidexterity increases green radical and incremental innovation performance. Maine and Svensson (2018) developed the concept of ambidextrous sustainability, pointing out that ambidextrous orientation of "sustainability resources" positively affected sustainability performance. However, Turner *et al.* (2015, p. 186) emphasised that "the wider literature is vocal about the merits of ambidexterity, but largely silent on how it is achieved in practice". They noted that the expression of ambidexterity could vary depending on the sector and the context in which it was considered. Thus, ambidexterity lies behind our focus to understand its mediating role between dynamic capabilities and sustainable competitiveness in the context of sustainable development.

Thus, the following hypothesis can be proposed:

H3. Ambidexterity is a mediator between dynamic capabilities and sustainable competitiveness (see Figure 1).

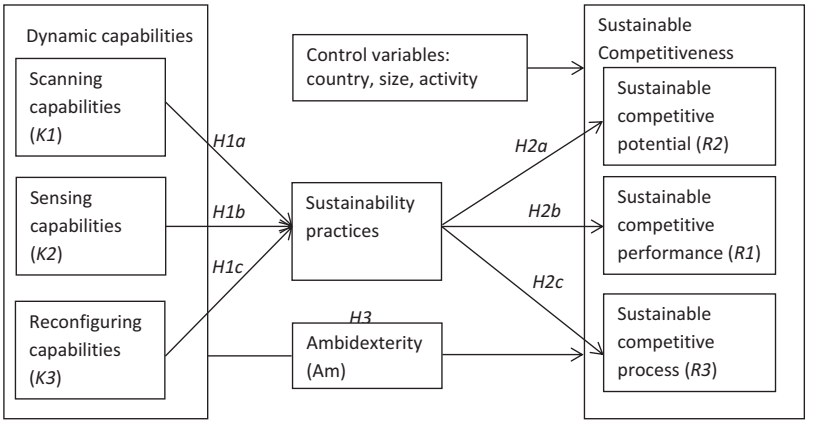

Figure 1.
Research model

5. Research methods

5.1 Measures

A questionnaire-based survey was conducted from June to September 2019. A structured questionnaire included a total of 85 statements. The questionnaire constituted a new tool developed specifically for the study. Variables used in the study and the method of their measurement are presented in Table 1.

The studied variables included 4 groups related to dynamic capabilities, sustainability practices, sustainability competitiveness, and organisational ambidextrous sustainability. A five-point Likert scale was used in the survey asking the respondents to indicate to which degree they agreed or disagreed with the statements.

Variables related to dynamic capabilities were divided into three groups (Table 1): scanning, sensing and reconfiguring capability. For their operationalisation, we used the questions used by Wu (2017) and Wu *et al.* (2013).

Sustainability practices, according to Sehnem (2016), were divided into three dimensions. Environmental practices focused on clean production, waste management, and reverse logistics. Social practices included a wide range of employee-oriented practices, e. g. career development paths, and local community-oriented practices, such as social responsibility and local employment. The last group – economic – contained items concerning driving local economies, performance results and reporting.

The dimensions of competitiveness sustainability are based on the dimensions of traditional competitiveness, i.e. competitive potential, process and performance (Buckley *et al.*, 1992). Competitive potential refers to the resources used to generate (superior) performance, while competitive performance is the performance outcome relative to that of competitors. Competitive process relates to the management (administration) of the company. The variables and items used in the study to measure sustainable competitiveness are presented in Table 1.

Organisational ambidextrous sustainability was conceptualised through two measures of exploration and exploitation of resources linked to sustainability (Smith and Umans, 2013). This variable indicates the organisations' ability to balance the resources in terms of sustainability.

As control variables, we used organizational size, sector (activity) and geographical localisation (country).

Initially, an English version of the survey items was developed and pre-tested for content validity in two stages. In the first stage, we asked three experienced researchers to review the

Factor	Item	Description	Factor loading
*K*1 scanning capability	*K*101	Formal and informal communication channels with external stakeholders	0.579
	*K*102	Active dialog with external stakeholders regarding sustainability issue	0.758
	*K*103	Explain organization's strategic sustainability plans and asking for the feedback from external stakeholders	0.763
	*K*104	Steer new sustainable development strategies through public consultation process	0.776
	*K*105	Sense the most relevant and significant environmental issues	0.763
	*K*106	Use the information about the emerging customer preference to guide the development of green market strategy	0.675
	*K*107	Analyse the environment for the development of sustainable innovations	0.720
*K*2 sensing capability	*K*201	Look for new knowledge regarding sustainable development	0.728
	*K*202	Identify new sustainable development opportunities from emerging social expectations and environmental regulation	0.649
	*K*203	Provide adequate trainings to our employees regarding sustainable development	0.769
	*K*204	Experiment new clean technologies	0.761
	*K*205	Supporting employees to share good practices and new sustainable ideas	0.727
	*K*206	Cooperate with external partners in developing sustainable innovations	0.803
	*K*207	Acquire of machinery, facilities and software to realize sustainable innovation projects	0.766
	*K*208	Design strategic plans to systematically navigate the development of new sustainability initiative	0.820
	*K*209	Create dedicated teams to guide sustainability projects	0.759
*K*3 reconfiguring capability	*K*301	Evaluate the sustainable performance of our business operations	0.752
	*K*302	Improve our processes, products and systems for sustainability	0.811
	*K*303	Balance our short-term economic benefits with long-term sustainable development goals	0.776
	*K*304	Managing internal factors that cause negative sustainable impacts	0.755
	*K*305	Perform auditing and risk analysis about the potential factors that cause environmental impacts	0.753
	*K*306	Increase our flexibility to increase the possibility of introducing new sustainability-oriented solutions	0.792
*L*1 environmental practices	*L*101	Reverse logistic	0.591
	*L*102	Cleaner production	0.604
	*L*103	Water recycle	0.504
	*L*104	Improving eco-efficiency	0.636
	*L*105	Eco-design	0.582
	*L*106	Recycling	0.535
	*L*107	Clean energy	0.566
	*L*108	Zero waste	0.613
	*L*109	Cycle assessment of product life	0.502
	*L*110	Composting	0.634
	*L*111*	Process technology that reduces material consumption	0.368
	*L*112	Use reduction technologies gas emissions	0.644

(*continued*)

Table 1. Items, factor loadings

Factor	Item	Description	Factor loading
L2 Social practices	*L*201	Local employment	0.827
	*L*202	Privacy and responsibility in Internet	0.606
	*L*203	Report the formal procedures for complaints and claims	0.537
	*L*204*	Trainee program, financial in graduation and postgraduate	0.354
	*L*205	Career development paths	0.512
	*L*206	Code of ethical conduct	0.622
	*L*207	Carrying workers' satisfaction	0.468
	*L*208	Sponsorship: educational, cultural and sporting projects	0.439
	*L*209	Social responsibility	0.641
	*L*210	Eco-labelling	0.402
	*L*211*	Corporate anti-corruption policy and standard	0.359
	*L*212	Ecological marketing	0.542
L3 economic practices	*L*301	Cost of monitoring per unit produced	0.432
	*L*302	Monitoring of risks and opportunities for the organization's activities due to climate change	0.465
	*L*303	Investment in information security, IT solutions and human resource	0.607
	*L*304	Adaptation to new economical context	0.537
	*L*305	Monitoring the loss ratio in the process in real	0.406
	*L*306	Possibility of generating jobs	0.494
	*L*307	Strategic planning	0.586
	*L*308	Focus on local suppliers	0.581
	*L*309	Social and environmental reporting	0.562
	*L*310*	Driving local economies	0.374
*R*1 performance dimension	*R*101*	Eco- efficiency (production value/ negative impact on environment)	0.378
	*R*102*	Market share	0.397
	*R*103	Production efficiency	0.572
	*R*104	Material efficiency	0.591
	*R*105	Energy efficiency	0.532
	*R*106	Labour productivity	0.578
	*R*107	The value of sales of pro-ecological products in the total value of sales	0.530
R2 potential dimension	*R*201	The company is reputed as environmental friendly	0.660
	*R*202	The social and ecological image of organization is better than that of its competitors	0.725
	*R*203	New products are perceived by consumers as more ergonomic than those of competitors	0.601
	*R*204	The company has better managerial capability than its competitors	0.556
	*R*205	The organization has a high ability to cooperate with external entities	0.572
	*R*206	The technological development of the organization allows to achieve the desired level of environmental protection	0.638
R3 process dimension	*R*301	Expenditure for products and process innovations which provide social/ecological benefits	0.708
	*R*302	Developing new products which provide social/ecological benefits	0.769
	*R*303	Developing logistics innovations (which provide ecological benefits) with suppliers	0.640
	*R*304	The scope of activities for environmental protection or for local communities in relation to the activities undertaken by competitors	0.630

Table 1. (*continued*)

Factor	Item	Description	Factor loading
Am organisational ambidextrous sustainability	Am101	Looking for sustainable novel technological ideas by thinking "outside the box"	0.856
	Am102	Basing its success on its ability to explore new sustainable technologies	0.888
	Am103	Creating products or services that are sustainable to the firm	0.853
	Am104	Looking for sustainable ways to satisfy its customers' needs	0.857
	Am105	Aggressively ventures into new sustainable market segments	0.896
	Am106	Actively targeting new sustainable customer groups	0.855
	Am201	Committing to quality improvement and cost lowering in sustainability	0.843
	Am202	Continuously improving the reliability of its sustainable products and services	0.929
	Am203	Increasing the levels of automation in its sustainable operations	0.918
	Am204	Constantly surveying existing customer sustainability satisfaction	0.909
	Am205	Fine-tuning of sustainable products to keep its current customers satisfied	0.860
	Am206	Penetrating more deeply into its existing sustainable customer base	0.876

Note(s): *Items removed from the model

Table 1.

survey items for appropriateness and ambiguity. After feedback was received, the questionnaire was revised to improve the measurement appropriateness. Then, the questions were translated into national languages by native speakers. In the next stage, the survey questionnaires were sent to 9 practitioners. They reviewed whether the questionnaire items were relevant for their current business situation. The pilot study involved a group of 9 purposefully selected organisations, which presented themselves as SD-oriented and consented to participate in the pilot. The pilot was conducted by authors in the premises of the organisations. Respondents completed the questionnaire independently, and subsequently commented on ambiguities and uncertainties. Suggestions expressed by the respondents were discussed with an expert on survey methodology. As a result, the final version of the questionnaire was developed. The survey was carried out using the platform SurveyMonkey.

5.2 Research sample

The information of National business registers was used to draw a random sample. In order to avoid bias and ensure robustness of the results, stratified sampling was carried out based on the number of employees according to three strata (small, medium, large) and geographical region. The total sample size of 750 was calculated according to the random selection. From the three Baltic States (Latvia, Lithuania, Poland) included in the Registrations, 250 organisations from each country were selected. An electronic letter was sent to a randomly selected group of organisations inviting to participate in the research. It explained the purpose of the research, ethical issues and contained instructions on how to complete the survey. A reminder letter was sent after one month.

We received 460 responses, out of which 455 questionnaires were valid, of which 22% were from Latvia, 27% from Lithuania, and 49% from Poland. The response rate was 60.6%. The respondents were usually people performing managerial functions (88.8%), related to management (59%) or administration (9.9%). The number of respondents from the remaining functions did not exceed 5%.

Manufacturing organisations dominated in the sample group (61.1%). The surveyed group included a small percentage of service (16.9%), trade (5.9%) and education (3%) companies. Eight per cent of respondents did not indicate the sector of activity. For the purposes of analysing the impact of this variable, in further analyses the research group was divided into manufacturing and services. Taking into account the size, the most returns were obtained from medium-sized companies (39.8%), followed by large companies employing 250–500 people (21.1%), and small companies with 11–50 employees (19.3%). Other responses were distributed between very large enterprises (over 500 people).

5.3 Data analysis

In the first part of the study, exploratory factor analysis (EFA) was conducted to determine the factor loadings. Discriminant validity was evaluated through inter-construct correlation coefficients. In the second part of the study, structural equation modelling (SEM) was used. In this stage, path analysis was deployed to verify the hypothetical causal relationship between exogenous and endogenous latent variables. SEM is considered as the most appropriate analytical method for this study due to the following reasons. First, the research considers complex relationships between dynamic capabilities, sustainable practices and sustainable competitiveness. Therefore, a single measure or indicator is unlikely to reflect the underlying construct entirely. To this point SEM enables using several observed indicators to measure a single latent variable. Second, by using SEM, various causal relationships can be measured between the exogenous latent variables at dynamic capabilities' side and the endogenous latent variables at competitiveness' side.

The SEM was performed using Amos software.

The Kolmogorov-Smirnov test indicated that the results do not have a normal distribution. Therefore, normalisation was performed (logarithmic transformation). To evaluate the fit of the model, the maximum likelihood estimation method was used. The obtained indexes indicate an acceptable but moderate fit $\chi 2 = 3.1$; df = 455; RMSEA = 0.070; GFI = 0.810; CFI = 0.831; TLI = 0.819; SRMR = 0.081.

Following the modification of the model (see 6.1. Measurement model), the result showed a small improvement $\chi 2 = 2.9$; df = 455; RMSEA = 0.06; GFI = 0.83; CFI = 0.85; TLI = 0.81; SRMR = 0.07. The obtained indicators suggest that the model is acceptable (moderate fit) with a deviation from optimal value (0.05) in the case of RMSEA. This notwithstanding, some authors indicate that the RMSEA value below 0.08 suggests a good fit (MacCallum *et al.*, 1996). Consequently, there is no good theoretical rationale for changing the model. This has also been confirmed by the R^2 value (see section 6.2).

Descriptive statistics for the constructs, including means and standard deviations, are provided in the Table A1.

6. Results

6.1 Measurement model

Unidimensionality was ascertained through exploratory factor analysis (EFA) to determine the factor loadings. EFA is generally invoked when the researcher has some uncertainties pertaining to the dimensionality of a scale or when necessary to identify the minimum number of factors that the observed variables are linked to. The evaluation process starts with assessing the reliability of indicators. As can be seen in Table 1, some of the indicator loadings were below the acceptable level, i.e. 0.40 (Hair *et al.*, 2010). Seeing that indicators with low loadings are problematic and might be considered as candidates for elimination, after a careful review of the relevant item contents, *R*101, *R*102, *L*111, *L*204, *L*211 and *L*310 were removed from the model.

Then, composite reliability (CR) was used to assess the reliability of the constructs. AVE and CR values were calculated according to the following equations proposed by Fornell and Larcker (1981).

For internal consistency of the constructs, the CR values exceeding 0.70 and preferably 0.80 (Hair *et al.*, 2010), and AVE values exceeding 0.50 (Wu, 2017), are regarded to be acceptable.

The composite reliability values, ranging between 0.74 and 0.89, indicate that all variables (constructs) have a sufficient level of internal consistency reliability. Moreover, AVE values are higher than the critical threshold value of 0.50. The AVE values were compared with the squared correlation between constructs to test the discriminant validity. Table 2 contains AVE of each construct calculated on the diagonal and correlation coefficients between the latent variables. The results indicate that every squared correlation between constructs was greater than AVE of each construct, respectively.

6.2 Results of the structural equation model

To test the structural model and hypotheses, first, we assessed whether the estimation fit. The estimations fit the data well, as the R2 value for the key target construct (sustainable competitiveness) had a high value of 0.743 ($F = 49.15$; $p < 0.000$). A model explaining 74% of variation should be considered as well-fitted.

The SEM approach was used to examine the hypothesised relationships as outlined in the theoretical model. The results of the structural model are presented in Table 3 and illustrated in Figure 2. To assess the structural model relationships and hypotheses, the path coefficients and their significance levels were evaluated. Thus, results of this analysis indicated support for Hypothesis 1b with sensing capabilities positively related to sustainability practices ($\beta = 0.21, p < 0.05$). Hypothesis 1c stating that reconfiguring capabilities were positively and significantly associated with sustainability practices ($\beta = 0.21, p < 0.05$) was also supported. This study did not provide confirmation for Hypothesis H1a, indicating a significant positive relationship between scanning capabilities and practices ($\beta\ p = 0.065$). Taking into account the sustainability practices, they were positively and significantly related to all types of sustainability competitiveness. Thus, hypotheses H2a for sustainability practices and potential competitiveness ($\beta = 0.16$, $p < 0.05$), H2b for practices and performance competitiveness ($\beta = 0.14$, $p < 0.05$) and H2c for practices and process competitiveness ($\beta = 0.10$, $p < 0.05$) were supported. Regarding Hypothesis 3, there was an indirect effect between 2 constructs via the construct of ambidexterity. If we analysed the direct effect of dynamic capabilities on sustainable competitiveness (which is calculated as a sum of direct and indirect effect), we could confirm the relevance of ambidexterity towards

	AVE	CR	*K*1	*K*2	*K*3	*L*1	*L*2	*L*3	*R*1	*R*2	*R*3	Am
*K*1	0.63	0.77	*0.80*									
*K*2	0.54	0.82	0.16	*0.74*								
*K*3	0.55	0.83	0.22	0.10	*0.75*							
*L*1	0.58	0.84	0.13	0.15	0.09	*0.76*						
*L*2	0.57	0.72	0.17	0.11	0.17	0.08	*0.76*					
*L*3	0.56	0.72	0.08	0.28	0.15	0.19	0.12	*0.75*				
*R*1	0.77	0.87	0.29	0.18	0.21	0.31	0.21	0.11	*0.88*			
*R*2	0.55	0.79	0.17	0.33	0.20	0.16	0.19	0.16	0.13	*0.75*		
*R*3	0.57	0.80	0.13	0.44	0.25	0.16	0.38	0.18	0.13	0.08	*76*	
Am	0.78	0.91	0.18	0.59	0.28	0.28	0.21	0.18	0.18	0.14	0.21	*0.89*

Note(s): Elements in italic (diagonal) are square root of the AVEs

Table 2.
Discriminant validity

Table 3.
Results of hypotheses testing using structural model-path coefficients

Hypotheses	Relationship	β	t values	p	Rejected/ supported
H1a	Scanning→practices	0.065	1.84	0.059	Rejected
H1b	Sensing→practices	0.21	2.22	0.001	Supported
H1c	Reconfiguring→practices	0.21	2.08	0.000	Supported
H2a	Practices→potential	0.16	2.96	0.000	Supported
H2b	Practices→performance	0.14	7.04	0.001	Supported
H2c	Practices→process	0.10	2.53	0.012	Supported
H3	Capabilities→ ambidexterity → competitiveness (total effect)	0.19	10.64	0.000	Supported
Control variable	Country→ competitiveness	0.35	3.27	0.000	Significant effect
Control variable	Size→ competitiveness	0.07	1.14	0.000	Significant effect
Control variable	Activity→ competitiveness	0.07	1.12	0.021	Significant effect

Note(s): β- standardised regression weight; p- probability value

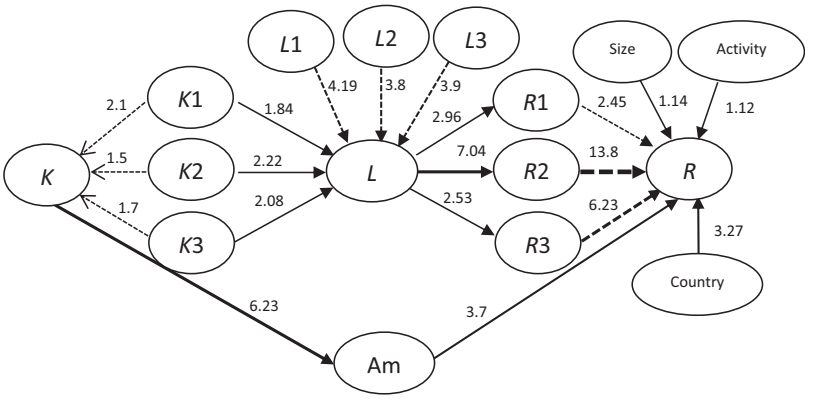

Figure 2.
Diagram of structural model

competitiveness. Accordingly, it was found that the total effect ($\beta = 0.19$, $p < 0.05$) was accepted as significant with the significance level of 0.1%.

6.2.1 The meaning of ambidexterity variable. To assess whether the ambidexterity variable was a mediator, the result of the Sobel test was analysed. The Sobel test confirmed the presence of a mediator (Sobel = 9.82; $p = 0.000$). The introduction of ambidexterity resulted in an increase in the variance explained by the model and R-squared values (from 0.728 to 0.743). For assessing the strength of these mediations, the Variance Accounted For (VAF) was calculated (Hair *et al.*, 2013). In this case, 41.3% of dynamic capabilities' effect on sustainable competitiveness was explained via the sustainable ambidexterity mediator (Table 4). As the VAF level was between 20 and 80%, the variable could be considered as partial mediator. Accordingly, Hypothesis 3 was supported.

6.2.2 Significance of control variables. To determine the impact of control variables (country, size, activity) for independent samples on sustainable competitiveness, a Kruskal-Wallis test was performed. In order to further refine the results, the Mann–Whitney U test was performed. The distribution of competitiveness was the same for Lithuania and Latvia

($U = 857.0$, $p = 0.000$), but different for Poland. The distribution was also different for manufacturing and service enterprises ($p = 0.000$).

Considering the size, differences were observed between small companies as well as medium and large ones. In the case of medium-sized enterprises, i.e. those employing 50–250, the hypothesis 0 with the same distribution of the sustainability competitiveness variable should be adopted.

6.3 Discussion

The paper was aimed at exploring the impact of dynamic capabilities on sustainable competitiveness via organisational sustainability practices.

The research revealed that scanning capability does not have a positive impact on sustainability practices while sensing capability and reconfiguration capability positively affect the sustainability practices. Although researchers (Dentoni *et al.*, 2016; Wu, 2017) in their theoretical studies focus on understanding the expectations and needs of different stakeholder groups in order to argue for the importance of scanning capabilities for sustainability practices, our findings have not yet demonstrated these relationships. However, this result is not exceptional. Kareem and Alameer (2019) investigated the impact of dynamic capabilities' constructs, i.e. sensing capability, learning capability and reconfiguration capability on organisational effectiveness in the context of selected Iraqi public universities. The hypothesis that scanning capability has a significant impact on organisational effectiveness has been rejected. As mentioned earlier, the scanning capability can be distinguished as a separate part of the sensing capability. Thus, the results of both surveys indicate that the expectations of different stakeholder groups, unlike other dynamic capabilities, do not have a positive impact on sustainability practices and organisational effectiveness. Kareem and Alameer (2019) concluded that the reason underlying this may be that sensing capability (covering the scanning capability as well) indirectly affects the organisational effectiveness; unfortunately, they did not provide deeper insights. These relations were tested by Wu's (2017) who stated that the development of scanning capability positively impacts the development of sensing capability for corporate sustainability; the development of sensing capability in turn positively impacts the development of reconfiguration capability for corporate sustainability.

In all Baltic countries under this study, sensing capabilities were evaluated higher or at the same level compared to other capabilities, providing a good incentive for indirect influence on sustainability practices. A strong emphasis on formal and informal communication with external stakeholders and analysis of the environment for the development of sustainable innovations suppose good opportunities for identifying relevant business opportunities and threats. Unfortunately, as the study reveals, creation of teams for sustainability projects was the lowest-evaluated sensing capability. Low ability to cooperate for sustainable development limits organisational ability to implement sustainability practices.

The management of internal factors that cause negative sustainable impacts was one of the best-evaluated reconfiguring capabilities, which suggests that companies are socially

Relationships	Direct effect (t value)	Indirect effect (β)	t value (ind)	VAF (ind/total effect)
Capabilities→ competitiveness (without mediator)	0.15 (9.03)	–	–	–
Capabilities→ ambidexterity → competitiveness	–	0.08	7.84	41.3

Table 4. Mediator analysis result

responsible. This is in line with the results of other studies indicating that corporate social responsibility is the main tool in the sustainable development implementation on the organisational level in the Baltic states even under unfavourable macroeconomic conditions (Krajnakova *et al.*, 2018). Also important are the reconfiguring capabilities that enable organisations to align and orchestrate internal and external resources and competencies to sustainably innovate. These abilities are necessary for strategic renewal of resources as confirmed by earlier research (Mousavi *et al.*, 2019).

The research also provides support on the impact of sustainability practices on sustainable competitiveness, especially for the performance dimension. However, a paradox can be discerned here, as in the Baltic states the focus is on labour productivity and production efficiency (Druzhinin and Prokopyev, 2018). Compared to Western European countries, labour productivity and production efficiency in the Baltic countries are lagging. Thus, the emphasis on the economic component of sustainability is understandable, but it can lead to tensions as one goal can be detrimental to another (Sonderstrom and Heinze, 2019). In the area of process dimension of competitiveness, it is important to develop new products, which provide social/ecological benefits. These processes create potential for future profits. Organisations also emphasise the importance of the social and ecological image of the organisation. The results of our research show that the environmental actions involving products and processes represent a source of differentiation advantage for the firm and may improve the corporate image. Thus, they broaden the paper of Dangelico and Pontrandolfo (2015) regarding the positive impact of dynamic capabilities (via sustainable practices) on an organisation's image. In fact, dynamic capabilities build the potential sustainable competitiveness of the organisation.

The research disclosed that ambidexterity is a mediator between dynamic capabilities and sustainable competitiveness. Many scholars (Jurksiene and Pundziene, 2016; Maijanen and Virta, 2017) highlight the interdependencies between the concepts of dynamic capability and ambidexterity, while the results of our study suggest that in Baltic companies ambidexterity for sustainable competitiveness can be linked to the search for sustainable ways to satisfy their customer needs and continuous improvement of the reliability of sustainable products and services.

The paper contributes to the knowledge on dynamic capabilities in several ways. First of all, based on the assumption that a different context under investigation supposes specific characteristics of dynamic capabilities, the paper provided the scope of dynamic capabilities that are appropriate in the research field of corporate sustainability. Secondly, the rapidly changing and competitive environment faced by the organisations calls for the development of organisational practices that result in competitive advantages that would be sustainable in the long term. This study confirms a significant relationship between some of the dynamic capabilities, sustainability practices and specific pillars of sustainable competitiveness. Dynamic capabilities were proposed as antecedent of successful sustainability practices implementation, which in turn affects the organisational competitiveness. Thirdly, this paper provides a methodological contribution by identifying the pillars of sustainable competitiveness as well as their operationalisation. A proposal in this regard may form the basis for further research. Fourth, the paper addresses the problem of sustainability ambidexterity and presents a proposal on how it could be measured. The results regarding ambidexterity allow for better understanding of the role of this capability in shaping the organisational competitiveness.

From a managerial point of view, our study offers guidance concerning the most important dynamic capabilities and sustainable practices for sustainable competitiveness.

It was found that sensing capabilities were the most important for sustainable practices. It is suggested that looking for new knowledge regarding sustainable development, cooperating with external partners in developing sustainable innovations and encouraging

the employees to share good practices and new sustainable ideas help improve economic and environmental practices. This suggestion is in line with Kneipp *et al.* (2019) who showed that significant positive associations existed between sustainable innovation and corporate performance. With regard to reconfiguring, our findings show that by engaging in improving processes/products for sustainability, balancing short- and long-term goals and increasing flexibility to introduce new sustainability-oriented solutions, organisations could strengthen their competitiveness. Finally, our study confirmed the importance of efficiency and classical economic measures (market share), development of logistics innovations and green products as well as a positive impact of sustainable practices on managerial capabilities and ability to cooperate. Therefore, the development of sustainable practices should lead to improvements in performance, potential and process dimensions of competitiveness.

7. Limitations

Despite the insights gained, this study has its limitations. First, this study operationalised dynamic capabilities as something that is similar across organisations and comparable. Meanwhile, dynamic abilities are unique and organisation-specific. We adopted the approach that although dynamic capabilities are of a firm-specific nature, they also have more generic aspects, which can be distinguished, categorised, standardised, and measured. This approach was used in earlier studies, which operationalised dynamic capabilities; however, this indicates that the results should be interpreted with great caution. Secondly, it is argued that when surveying individuals there might be a respondent bias. Correspondingly, the results should be confirmed by using both perceptual and objective data, e.g. content analysis of annual reports. Third, the quantitative research method does not allow for revealing the phenomenon, how an employee could enhance organisational ambidexterity through certain practices. Thus, despite a large number of constructs under investigation and the complex model explaining how dynamic capabilities can improve sustainable competitiveness, a qualitative study would reveal the phenomenon of interactions between internal links – organisational ambidexterity and sustainability practices.

8. Future research directions

Future research could investigate sustainability practices for sustainable competitiveness through objective data, for example included in financial reports or sustainability reports. This could give a better insight into their effect on competitive advantage in the context of sustainable development. Further empirical research could also be conducted to identify the determinants of effective deployment of dynamic capabilities as well as the sources of these capabilities for organisational competitiveness. With regard to ambidexterity, the research might relate to the following questions: is there a difference in organisational ambidexterity and organisational ambidextrous sustainability? How can the different types of organisational ambidexterity influence sustainability practices? How can individual behaviour strengthen organisational ambidexterity and sustainability practices? Given the fact that our research covered countries with similar market characteristics, it would also be interesting to test whether the relationships formulated in our propositions hold true in countries with different regulatory and competitive conditions.

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Appendix

Table A1. Descriptive analysis, inter-construct correlations

	Mean	SD	*K*1	*K*2	*K*3	*L*1	*L*2	*L*3	*R*1	*R*2	*R*3
*K*1	3.37	0.80									
*K*2	3.14	0.88	0.68								
*K*3	3.34	0.86	0.622	0.604							
*L*1	3.29	0.88	0.303	0.404	0.424						
*L*2	3.67	0.74	0.464	0.494	0.431	0.547					
*L*3	3.68	0.75	0.496	0.503	0.512	0.585	0.680				
*R*1	3.39	0.64	0.514	0.533	0.518	0.317	0.431	0.490			
*R*2	3.34	0.87	0.610	0.660	0.686	0.284	0.445	0.528	0.606		
*R*3	3.11	0.86	0.607	0.660	0.634	0.286	0.468	0.486	0.655	0.692	
Am	3.21	0.83	0.646	0.714	0.714	0.286	0.478	0.505	0.601	0.711	0.668

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