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**INTERNATIONALIZATION METHODS OF CIRCULAR ECONOMY
PRODUCTION COMPANIES WERROWOOL OÜ AND
WERROWOOL TECHNOLOGIES OÜ**

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I have prepared the work independently. All works of other authors used in compiling the work, fundamental views, data from literature sources and elsewhere are cited.

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ABSTRACT

The aim of this research is to contribute to existing theory in terms of proposing combinations of exporting methods in line with competitive advantage building, relying on the circular economy aspects and resource exploitation as well as institutions' recognition during the SMEs production companies' internationalization. This paper is based on the case study of two small production companies providing valuable empirical insight through the analysis of firms' internationalization while applying circular economy business models. The results suggest that the combination of export methods with regard to a company's resources tends to be rather specific, influenced by the institutional context and can only be validated during internationalization and gathering both experimental and experiential knowledge.

CERCS: S180; Keywords: Circular economy, internationalization, SMEs, resource, institution, eco-innovation

TABLE OF CONTENTS

ABSTRACT	3
TABLE OF CONTENTS.....	4
1. INTRODUCTION.....	5
2. REVIEW OF THE LITERATURE	7
2.1. INTERNATIONALIZATION THEORIES, GRADUAL MODELS, BORN GLOBAL LITERATURE AND ECO-INNOVATION CONTEXT	7
2.2. RESOURCE- AND INSTITUTION-BASED VIEW	14
2.3. CIRCULAR ECONOMY AND RELATED LITERATURE.....	18
3. METHODOLOGY.....	22
3.1. SELECTION OF METHODOLOGY	22
3.2. CHOOSING CASE STUDY OBJECTS	23
3.3. DATA COLLECTION AND THE METHODS OF ANALYSIS	24
4. ANALYSIS, RESULTS AND DISCUSSION	27
4.1. INTRODUCTION OF THE COMPANIES	27
4.2. INTERNATIONALIZATION ACTIVITIES AND OUTCOMES.....	30
4.3. CIRCULAR ECONOMY AND COMPETITIVE ADVANTAGE.....	35
4.4. DISCUSSION.....	38
5. CONCLUSIONS AND IMPLICATIONS	47
REFERENCES	50
NON-EXCLUSIVE LICENCE TO REPRODUCE THESIS AND MAKE THESIS PUBLIC.....	57

1. INTRODUCTION

The theoretical foundations of firms' internationalization are developed continuously and reflect the changes in the environment of business relations, from the gradual internationalization model explaining the behavior of multi-national companies (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977, 2009) to the born global firms literature applicable to SMEs (Knight and Cavusgil, 1996; Sheppard and McNaughton, 2012; Hennart, 2014; Pellegrino and McNaughton, 2017; Chandra and Wilkinson, 2017; Bagheri, 2019; San Emeterio et al., 2020). These substantial theoretical sources, relevant also in the context of the current article, have been put into practice in the case studies to research how SMEs behave during internationalization (e.g. Madsen et al., 2000). Resource-based approaches are applied to examine firm-specific factors (Barney, 1991; 2001; Xiao et al., 2018) and institutions-based approaches to implement foreign market factors (Meyer and Peng, 2005; 2015; Peng et al., 2008; 2009). These approaches facilitate explaining how firms exploit their resources while focusing on competitive advantages based on companies' growth during the internationalization (Porter, 1979; Barney, 2002; Knott, 2009; Nason and Wiklund, 2018; Lahiri et al., 2020).

As the circular economy (CE) features are becoming dominant in the discussion in relation to the Green Economy Action Plan to tackle climate change (European Commission, 2020), it is relevant to analyze and draw conclusions how these aspects affect a company's internationalization. CE represents the economic model, which aims to decouple business revenues and growth from the input of finite resources (EMF (b), 2015). Considering that production companies are in the focus of circular economy, it is essential to reduce research gaps about such companies' specificities during the respective firms' internationalization. Research is also needed on creating knowledge and raising awareness about CE concepts (Pieron et al., 2018; Blomsma and Brennan, 2019) among manufacturing SMEs and consumers in Europe (Ghisellini et al., 2016) in order to detect opportunities for enhanced competitiveness by firms and to facilitate sustainable consumer decisions (Iatridis and Kesidou, 2018; Garcia-Quevedo et al., 2020). Other research gaps to fill are reasons for the acceptance and rejection of firms applying CE strategies by global value chains, combining financing mechanisms and other resources while transforming to CE-based products and services, and building a systemic understanding about material loops and resource efficiency in terms of the

regional or local industrial symbiosis (Ghisellini et al., 2016; Aranda-Usón et al., 2020). As small production companies, especially micro-companies, are not often the objects of research and in-depth analyses yet (Katz-Gerro and López Sintas, 2019), decreasing this gap in research is required as well.

The aim of this article is to contribute to existing theory in terms of internationalization methods in line with competitive advantage building relying on circular economy aspects. This article discusses also the reasons why researching the internationalization methods of circular economy companies is valuable and what the causes behind some of these methods failing are.

In the author's point of view, applying circular economy strategies will be a cross-sectorial innovation challenge. As the theory surrounding it is being shaped in the present and the process is ongoing, case studies on small production companies could provide valuable empirical reach which can later be generalized. The companies under research in this paper, Werrowool OÜ and Werrowool Technologies OÜ, are independent, with different business models and internationalization patterns defined by the Sheppard and McNaughton (2012) visualization tool. The circular economy (CE) aspect is strongly present in both companies' business models but in a different way, requiring a systemic analysis to understand the connections.

The current COVID-19 initiated economic crisis halted business activities in many sectors and postponed development plans, the long-term impact and perspectives are yet to be revealed. As the deficit in countries' budgets is unexpectedly significant, governments have intervened monetarily and are expected to take fiscal measures as well. At the same time, the context of change creates opportunities for firms. Although small companies will be supported by the measures less because of their low impact, their small size enables flexibility to adapt and to implement CE-strategies based competitive advantages.

2. REVIEW OF THE LITERATURE

2.1. *Internationalization theories, gradual models, born global literature and eco-innovation context*

Several drivers of the internationalization have been defined and researched, including: a) exploiting the monopolistic position where established advantages are used on foreign markets at small or no additional costs (Caves, 1982); b) firms go abroad to protect their existing markets of mature products (Vernon, 1966); c) international production moves eclectically while seeking opportunities based on location-specific elements, favorable cost-levels (i.e. labor costs), higher or lower trading barriers and difference in delivery costs (Dunning, 1988); d) knowledge-based business service companies seeking a competitive advantage by establishing mutually supportive interactions (O'Farrell et al. 1998); e) transaction cost theory based (Williamson, 1985) performance allows higher efficiency where the growth and control over ownerships on the international markets are dependent of the least-cost policy; etc.

One model that explains internationalization is the gradual model which suggests that firms' international operations gradually (step by step) increase as a firm acquires additional knowledge, becomes more experienced internationally and establishes relationships beyond national boundaries (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). According to this model, firms should internationalize like "rings in the water", meaning their market knowledge grows over time step by step, bringing about a reduction in psychic distance, uncertainty and risks regarding each foreign market they would enter.

One of the central implications of the theories of Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977) was that experiential knowledge enables decision-makers to perceive opportunities for consecutive business activities, and knowledge about these opportunities could serve as input for decision-making processes leading to a commitment decision (Johanson and Vahlne, 1977). In this model (Uppsala model), the authors presented knowledge change as a key factor for decision-makers accepting new risks and launching new ventures. According to this dynamic, the Uppsala model is visualized as a state and change loop. Several decades later, the authors of the Uppsala model are still convinced of its relevance as the model was revisited in the context of business networks where the recognition of opportunities translates into a company committing to a certain relationship, enabling the

company to grow through learning and trust-building regarding their new position in the network (Johanson and Vahlne, 2009). Focusing on direct export as an early mode of low-investment entry to foreign markets, the aforementioned gradualists suggested that it mainly relies on external resources and is impacted by domestic institutions. In contrast, Lindsay et al. (2017) indicated in their research of SMEs foreign market entry modes that the use of resources and institutions while exporting without intermediators resembles higher-commitment and capital-intense entry modes. The same authors explained this distinctness with an earlier accumulation of experience and resources, which in turn encouraged faster direct exporting, but did not necessarily result in higher commitments to a specific market.

According to critics (Oviatt and McDougall, 1994; Knight and Cavusgil, 2004), classical internationalization theories and gradual models ignored new types of business actors emerging and endeavoring to deploy foreign markets early in addition to domestic ones. Several theories emerged discussing companies even skipping the domestic phase, launching a global business from inception and achieving superior international performance.

Oviatt and McDougall (1994) offered a definition to ambitious business entities as companies that are looking to gain significant competitive advantages by deploying its resources and selling products and services in multiple countries, calling them international new ventures (INV). Further, the speed of internationalization was taken into consideration as an additional attribute, and firms realizing their global presence fast were called born global (BG) firms. A definition for being born global was suggested by Knight and Cavusgil (1996) according to the following criteria: a firm is a born global if it has a share of foreign sales of 25% or higher and has started exporting within three years after its formal founding.

According to Bell et al. (2001), for a traditional company committed only to the domestic market, after gathering sufficient knowledge, an opportunity may present itself for setting-off a fast and comprehensive internationalization. In this case by Bell et al. (2001), this company becomes a born-again international company and may also share a similar phenomenon of BGs in terms of internationalization. Differing from BGs born-again internationals have usually operated for longer, have gained a large market share domestically and are larger employers (Sheppard and McNaughton, 2012). According to the same authors, despite BGs are younger, they tend to act faster in more innovation-oriented manner and tend to be globally ambitious.

These firms aim at their domestic market only to establish reference clients and test products, services and the marketing mix.

Several authors (McNaughton, 2003; Rialp et al., 2005) have also proposed that born global firms exploit superior technological resources by selling knowledge-intensive products and their international sales growth stems from their international orientation, marketing skills, innovativeness and market orientation as a part of their international business competencies (Knight and Kim, 2009). Furthermore, Bagheri et al. (2019) proposed a research model based on technological innovation while analyzing of SMEs in the United Kingdom and concluded that there are clear positive relationships between the international orientation of the firm (while utilizing inward and outward aspects simultaneously) and the superior international performance of the firm. These statements were opposed by Hennart (2014) who called INVs/BGs accidental internationalists (due to an equal effort needed for domestic and foreign sales) and argued that these firms do not differ from others in terms of superior technological intensity in products and services, but with regard to different business models based on low-cost information and delivery methods.

Madsen et al. (2000) conducted a study on Danish born global SMEs where the organizational structure of a BG company was described as usually rather complex, because activities on foreign markets are more complex than on domestic markets, requiring more employees and organizational support. Other authors have found, based on internationalization research on Nordic SMEs that the structural complexity issue does not manifest itself among smaller SMEs and emphasize that small companies are linked to large companies via the business networks of subcontractors in the respective industry (Boter and Holmquist, 1996).

Pellegrino and McNaughton (2017) studied how rapidly and incrementally internationalizing companies acquire knowledge and concluded that rapid firms learn about foreign markets, industry and their own products just prior to or while setting up their business abroad, relying on the networks where they belong. According to the same authors, in this way the most knowledgeable key persons in the companies, such as the founders, enable the companies to deliver novel products to international niche-markets faster, while incrementally internationalizing companies using largely an experiential way of learning needed to succeed on the domestic market and to transfer this knowledge to a foreign market. According to entrepreneur-centric research, the perception is that born global entrepreneurs are more positive

about overcoming the barriers they meet during international market entries, they perceive more opportunities, and tend to think they are acting less risky (Chetty and Campbell-Hunt, 2004; Dimitratos et al., 2012). In addition, they also perceive that the first foreign sales was fast, and that the speed of broadening the company's presence abroad and the speed of geographical expansion was slow (Hsieh et al., 2019). Another recent study similarly confirmed, while analyzing BGs' and traditional companies' internationalization models empirically, that there is complementarity between BGs and gradualist models, meaning BGs can often move to foreign markets fast after founding, but later they develop gradually (San Emeterio et al., 2020). Thus, more commitment-building activities after market-entries would be recommended.

In addition to the descriptions and attributes above, network-centric perspectives have been presented in the literature. While Chandra and Wilkinson (2017) focus on the specific network-centric internationalization perspective, they criticize earlier retrospective explanations on firms' performance correlated with managers' perceptions about the firms. The same authors emphasize the bias where managers' perception about the firm is formed by the company's current position and they do not find it relevant for the company's learning process. Building on the foundations of networks and relationships from the incremental internationalization models (Johanson and Vahlne, 1977, 2009), Chandra and Wilkinson (2017) conceptualize these as driving companies towards better opportunities so that the firm could aim to become an "insider" to gain access to a network's benefits. In this way, a company can overcome the liability of outsidership (Johanson and Vahlne, 2009). Based on their research, Chandra and Wilkinson (2017) found that two properties underlie the membership of a network: a) collective intelligence to identify market opportunities, b) collective capability to exploit opportunities. Succeeding in terms of network would allow a firm to implement also intermediators avoiding strategy while entering the market, relying on firms' earlier knowledge and resources (Lindsay et al., 2017).

It appears to be rather common that these small companies are highly dependent on the owner-manager or other senior individual, have limited resources for R&D and marketing. Due to these characteristics, the same authors suggest using a multi-level approach to understand the internationalization process of small companies on the individual, company, industry and national levels (Boter and Holmquist, 1996). In order to bridge theory with business practices,

this paper partly covers the individual, company and industry levels to provide valuable insights into these rather complex systems. Besides that, in the context of CE firms, it is justified to inquire if there is a correlation between the degree of a firm's internationalization and innovating with products or processes positively impacting the environment. As existing literature has essentially disregarded research on the mutuality of CE and internationalization, a wider eco-innovation context was engaged from which CE stems.

Even though the research of Chiarvesio et al. (2015) on Italian SMEs denied a clear link between companies' eco-innovations and the export intensity, De Marchi (2012) found a correlation between a firm's characteristics, internationalization strategies and eco-innovation propensity based on Spanish manufacturing firms. Most recently, Cavallo et al. (2020) declared, based on their single case study on an environmentally friendly bio-products manufacturing company, that overall business model innovation has a direct impact on the scale of internationalization. The latter was qualitative in-depth research, while the previously mentioned ones were quantitative and based on great samples. Despite conflicting conclusions, Chiarvesio et al. (2015) concluded that the sample firms were more eager to invest in eco-innovations if their supply chain partners belonged to their region. Such locality was explained by the recognition of integrity among the supply chain partners, meaning change making would be more effective and better perceived by customers (Chiarvesio et al., 2015).

According to Beise and Rennings (2005, p.6), environmental innovation is defined as: "new or modified processes, techniques, practices, systems and products to avoid or to reduce environmental harms." Based on neoclassical contributions to innovation literature, environmental innovation differs from other types of innovation in terms of externalities and drivers (De Marchi, 2012). The same authors add that although the knowledge externality is shared by both, the environmental externality provided by innovators creates environmentally positive impacts, which will be partly shared with the society.

Project business as a special type of firms is defined by Owusu et al. (2007) through relationships between the manufacturer/seller and purchaser as well as other stakeholders involved in one or several projects between the organizations. Project business is distinct as each project is independent, rather unique, complex in structure (technologically and organizationally) and temporary in duration. Despite the latter, long-time relationships may occur, continuous cooperation and knowledge acquisition can take place (Owusu et al., 2007).

Despite these specificities, the project business type has attracted criticism as the boundaries of project business are hazy. Such a classification could only be used in cases where the projects are inseparable from the company's focal business-line. Additionally, little research has been conducted on the applicability of project business to small companies.

Based on risk taking, the level of accumulated knowledge and the level of investment, gradual models which are introduced in this sub-chapter successively apply the following company-level internationalization methods established by Johanson and Wiedersheim-Paul (1975): a) irregular or sporadic export activities, b) export through independent representatives (direct or indirect agents), c) exports through foreign sales subsidiaries or joint ventures, d) foreign production units or contractual relationships (e.g. franchizing). According to the Uppsala model, these methods are taken by companies step by step but it does not apply to born global firms. Relying on the versatile typology about the BGs proposed by Vissak and Masso (2015), firms are considered to skip one or several steps in this succession, to use several methods simultaneously or in a different order and occasionally to repeat the steps, as firms' internationalization process is not considered to be straightforward based on the research of Estonian companies' by these two authors. An overview of the internationalization literature mostly applied in the current research is summarized in Table 1 where representatives of gradualist models, born global and eco-innovation literature are presented according to the main findings.

Table 1 *Internationalization literature applied in the research*

Gradual models	Generalized findings
Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977; 2009	Defined the model of gradual foreign operations, presented firms' focus on the commitment to opportunities and updated its focus on firms' network commitment, which is based on the loop of learning respectively
Born global literature	Generalized findings
Knight and Cavusgil, 1996; Bell et al., 2001; Sheppard and McNaughton, 2012	BGs with its characteristics and born-again internationals as special cases with rapid and dedicated internationalization defined. Complemented with differentiated attributes of BGs and born-again internationals in terms of size, age and globalizing patterns supported by the domestic references for born-again internationals
Hennart, 2014; Bagheri, 2019	Accidental internationalization by BGs is based on initial and fast expansion, advanced business models and advanced combination of non-tangible resources, including superior performance based on technological innovativeness
Pellegrino and McNaughton, 2017; San Emeterio et al., 2020	Coincidental learning by BGs while internationalizing and experiential learning by gradually internationalizing companies introduced. Partial complementarity between BGs and gradualists detected: BGs start to internationalization fast but tend to continue gradually
Boter and Holmquist, 1996 Madsen et al., 2000	BGs are expected to increase organizational complexity while internationalizing, collaboration with local firms was suggested to reduce initial investments. SMEs and micro-companies are suggested to connect with large companies via their subcontractors' network.
Chandra and Wilkinson, 2017	Using intermediators' avoidance entry mode requires earlier knowledge and resources. Deficit in this matter may evoke the liability of outsidership. The solution suggested includes mode adequate perception of the relationships network
Eco-innovation and project business literature	Generalized findings
De Marchi, 2012 Chiarvesio et al., 2015 Cavallo et al., 2020	Opposite results were introduced about the nexus between eco-innovations and export intensity, while business model innovation impact to the scale of internationalization was confirmed by some authors. Also, firms characteristics, internationalization strategies and eco-innovation propensity are considered interdependent
Owusu, 2007	Project business has a temporary, rather unique and complex nature in terms of organizational structure

Based on the theories above, the author of this article argues that the explanations regarding the internationalization process of SMEs are ambiguous because of the abundance of factors and relativity. There is agreement in the literature that knowledge, networks and commitment are dynamic variables of this entrepreneurial equation, also that business model innovation (incl. eco-innovations) should be a persistent process. The case study based dynamic relationship between concepts' development over the last decades is noticeable as each one contributes to the development of the theory. For instance, Johanson and Vahlne were developing their model from firms' opportunities commitment (1977) to firms' network

commitment (2009) based on the loop of learning; and Pellegrino and McNaughton (2017) specified that organizations may have different sources of learning affecting the pace of internationalizing. In addition, the internationalization scale may be impacted directly by the attitude of a firm's continuous business model innovation.

2.2. *Resource- and institution-based view*

The resource-based view (RBV), grounded in the competitive advantage theory (Porter, 1979; 1980) and the price elasticity of supply theories, is a suitable approach for determining and handling a bundle of company specificities. As a major contributor to the theory, Barney et al. (2001) explained that RBV helps to specify the resources required to overcome the liability of foreignness, to investigate the resources defining the product and to enable international diversification.

The economic and strategic value of companies' tangible assets (financial and physical capital) and intangible assets (human and organizational capital) varies and these resources are only valuable when they enable a firm to implement strategies lowering its costs or increasing its revenues (Xiao et al. 2018). The RBV logic assumes that companies are profit-maximizing entities, managers have bounded rationality and different firms may possess different combinations of heterogeneous resources, experiencing occasional scarcity, which can remain over time and are non-substitutable (Barney 1991).

A widely known method for assessing value-rarity-inimitability-organization (VRIO) was proposed by Barney (2002), originating from his theory developed in 1991. This method is often criticized because of its complexity in attempting to transform theoretical concepts into practical guidelines (Knott, 2009). The current author suggests that after adopting this technique, the user should follow their own interpretation based on their understanding, previous knowledge and systemic view, and in this way design the suitable practice. In order to fill the gap, Knott proficiently demonstrated a practical example on the RBV with an enhanced and extended VRIO analysis, which resulted in two main implications: a) delineating a specific set of practices relating to the dynamic capability to manage resources and competences, b) presenting resource-based theory in a form that focuses on the building of strategy instead of the traditional focus to determine a firm's performance (Knott, 2009).

Nason and Wiklund (2018) have recently contributed to the lines of theory comparing VRIO and the Penrosean versatile method in order to validate, which is a better source for a company's growth. Quoting the same authors (Nason and Wiklund, 2018, p.33) about the approach to the VRIO method, "extant RBV research builds on the implicit assumption that growth and competitive advantage are concomitant". Subsequently, the authors dismiss the assumption with the support of a meta-analysis and show it is not always the case and that instead the Penrosean characteristic¹ of resource versatility is linked with a higher level of company growth (Nason and Wiklund, 2018). The current author agrees with this kind of versatility keeping in mind that the continuous shaping of a firm's competitive advantage is in the focus of RBV. Also, the current research explores if eco-innovations would support achieving it, while connecting a firm's internal and external resources. Based on De Marchi's (2012) research, suppliers and scientific agents stand out as more important partners during environmental R&D cooperation than in case of other innovation. The same research confirms theories that in the development of eco-innovations, the presence of technological interdependencies on knowledge, skills and resources are asserted (De Marchi, 2012). Based on that, building knowledge intensive competencies may prompt firms to engage partners to a greater extent due to the complexity.

The institution-based view (IBV), more recent than RBV, is considered to be an emerging economy-based branch of business research, which focuses on the interaction between economic actors and institutional environments (Meyer and Peng, 2015; Meyer and Peng, 2005; Peng et al., 2009; Peng et al., 2008) where institutions are defined as a bundle of formal and informal habits, rules, values and regulations configuring how transactions are executed on a specific market. IBV is built on two core propositions: 1) managers and firms follow their interests and execute decisions from a bounded rational choice perspective in order to reduce uncertainty within a given institutional environment; 2) the firms' behavior is based on the combination of formal and informal institutions (Peng et al., 2009).

¹ *The Penrosean theory stands for: "the productive opportunity set of the firm, which comprises all of the productive possibilities, that its entrepreneurs see and can take advantage of" (Penrose,1959/1995, p.28).*

The IBV was initially engaged in the research of multi-national enterprises (MNEs) of emerging economies and later came in the focus of SMEs. It accompanies the internal growth of an entrepreneurial environment where companies of emerging markets are considered to be in the stage of entering foreign markets (Meyer and Peng, 2015) for exploiting the potential of products or services. In terms of innovation drivers supporting that growth (mentioned in sub-chapter 2.1), additionally to demand-side pull and technology push known from overall innovation theories, which can be described also as institutional ones, regulatory push/pull factors induce innovation (Rennings, 2000). Lahiri et al. (2020) examined internationalizing family SMEs and claimed that institution-based contingencies are continuously emerging. At this point, companies are engaging with different sets of potentially conflicting institutions at multiple levels and in various locations (Meyer and Peng, 2015). For coping with these changes, the same authors suggested incentivized programs backed by governments helping SMEs to overcome international challenges and ensuring institutional investors' support addressing the "smallness" challenge in this way (Lahiri et al. 2020).

The review of the respective literature and connections to this sub-chapter are summarized in Figure 1, which is completely designed by the author.

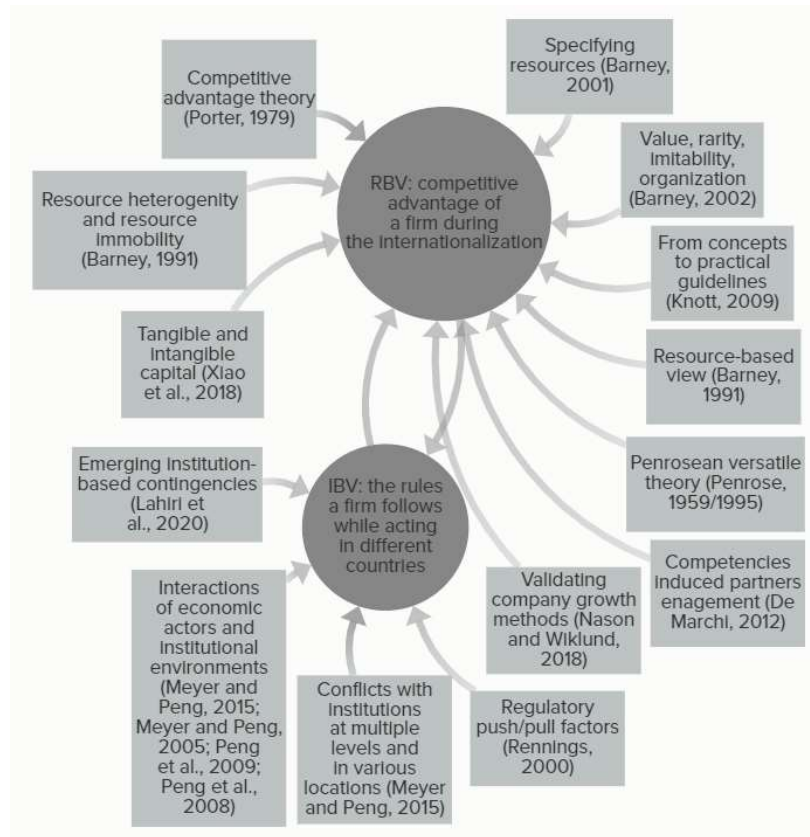


Figure 1 *Review of the literature regarding the resource- and institution-based views*

Considering the impact of the current economic crisis, the state of the European Union’s legal environment being in transformation due to the Circular Economy Action Plan (European Commission, 2020) and other drivers, established institutions find themselves in the context of change. The crisis-handling mechanisms, mainly decided by each member state individually, with the European Commission accepting some fiscal loosening and monetary leverage provided by the European Central Bank, will have a direct impact on how companies perceive and manage the institution-based change. Although addressed very heterogeneously by businesses in different member states until now, the change context may prompt companies to redefine strategies towards environmental and economical synergy more broadly. Additionally to targeted investments, it would require knowledge acquisition through cooperation across sectors to innovate business models and realize the potential of sustainable competitive advantage.

2.3. Circular economy and related literature

Based on the author's opinion, the momentum of recovery from the actual economic crisis pulls decision-makers towards the "old normal", as it seems secure primarily for major asset-owners. Nevertheless, it would be more proactive to direct the recovery towards the "new normal", since due to a full-scale change in the demand in several industries the aforementioned institutional situation is bound to change. The "new normal" would stand in the full compliance with the strategies aimed at achieving climate neutrality.

Social movement towards sustainability in accordance with the circular economy (CE) approach enables a significant change in the economic system and it needs immediate preliminary actions and a stronger commitment from countries as the macro-level (EMF (a), 2015; Ghisellini et al., 2016). On the system's micro-level, companies apply CE principles which embrace business activities oriented at closing the loop of material usage while preserving economic efficiency. The ultimate goal of CE is to decouple business revenues and growth from the input of finite resources (EMF (b), 2015). This means that converting waste into input minimizes the need for virgin raw materials. Achieving this goal contains complexities necessary to be considered to enable transition and to ensure socio-economic support, as reducing resources use would not always prompt an increase in resource use efficiency (Ghisellini et al., 2016).

Major concepts and frameworks related to CE emerged already in the 1970s but gained recognition only in the 1990s (EMF (b), 2015): some the most prominent of those to be mentioned are the ReSOLVE framework by McKinsey & Company (EMF (b), 2015), the "cradle to cradle" product design (McDonough and Braungart, 2003), industrial ecology (Lifset and Graedel, 2001) and blue economy systems approach (Pauli, 2010). Industrial ecology also comprises industrial symbiosis, which is considered to be a set of high-level collaborative activities between firms oriented at sharing resources to avoid waste (Aranda-Usón et al., 2020). Based on numerous case studies, the potential for applying industrial symbiosis is considered enormous both in the manufacturing sector and elsewhere (Neves et al., 2020). Several recent studies have indicated that eco-innovations in the form of environment management systems (EMS) have been motivated by substantive awareness, as such systems are considered to increase efficiencies and to enhance simultaneously firms' international competitiveness and reputation (Iatridis and Kesidou, 2018; Garcia-Quevedo et al., 2020).

Despite the level of awareness and consideration that EMS are ubiquitous and first in line activities for manufacturing companies, a surprisingly small number of firms have implemented those. For instance, according to a study by Garcia-Quevedo et al. (2020) among 16 manufacturing sectors of Spain, only 13.5% have implemented ISO 14001 and less than 1% the Eco-Management and Audit Scheme (EMAS). Consequently, despite many CE concepts and frameworks (e.g. those mentioned in the previous paragraph) being well-acknowledged, learning about the integration of actual CE principles into firms' business strategies is complicated because of a limited sample of companies applying these purposefully; hence, there are only a few studies available (Katz-Gerro and López Sintas, 2019). To fill the gap, the two authors mentioned conducted a geographic location based research among SMEs of several EU member states and resulted that the chance to implement CE-activities is highly dependent on previous experience of CE-implementation and on organizational properties.

For determining the current position and to monitor the progress of secondary manufacturing companies in adapting CE principles, the Circular Economy Index (CEI) methodology was proposed by DiMaio and Rem (2015). As the current European Commission policy (European Commission, 2000) does not foster value-based material recycling, a new index was proposed to address the complexity and align with more ambitious environmental policies; resulting in the ratio between the recycled materials' input and output values (DiMaio and Rem, 2015). In other words, DiMaio and Rem (2015) argued that the CEI stands for the ratio between the gross-value added (GVA) and the material input value.

Blomsma and Brennan (2019) using the systems thinking approach towards CE proposed Circularity Grid tool to visualize company CE-processes in the context of coupling and on different system levels. More specifically, it offers a 2-dimensional view of the relationships between the company system components where dependencies, infrastructures and knowledge requirements, costs and risks are coupled (Blomsma and Brennan, 2019). Manufacturers owning an independent product portfolio with supplementing services, defined as product/service-systems (PSS), appear to represent opportunities for the application of one or several multiple strategies (Pieroni et al., 2018), while moving from linear resource consumption towards a circular one. According to the same authors, PSS-firms tend to approach their activities holistically, as they are able to combine resource effective strategies

with overall resource efficiency (Pieroni et al., 2018). In this study's context, PSS-features were incorporated into the Circularity Grid tool application.

The most prominent literature in the context of the current case study mentioned in this sub-chapter is outlined in Table 2 based on recommendations presented in Vissak (2020).

Table 2 Review of the significant literature regarding circular economy and eco-innovation

Study	Context	Data and methods	Findings
Ghisellini et al., 2016	Comparison of literature regarding implementations of China's CE with the applications in Europe, Japan and the world	Literature searches, selection and grouping; investigating two focus groups across three scales	Strong commitment and immediate action required in the CE on the country level; increasing resource efficiency presumes a systemic overview to avoid contradictory results; CE applies to steady-state oriented economic systems, not to growth
Aranda-Usón et al., 2020	Cross-sectorial regional measurement of CE activities in Spain	Qualitative analysis; selecting CE-related activities with a four-level classification; semi-structured interviews and questionnaires	It cannot be confirmed if the CE is being adopted by firms with the principal aim to close material loops as few companies have advanced to a higher level of activity groups
Blomsma and Brennan, 2019	Circularity Grid tool to visualize relationships	Systems thinking approach; case studies, semi-structured interviews	Solution provided for understanding the system components and relationships on different levels while applying CE strategies
Pieroni et al., 2018	Product/service systems' (PSS) relations to circular strategies	Retrospective case study: nine cases supported by the CIRCit database and exploratory analysis	PSS firms appear to be favorable for the application of multiple circular strategies; PSS firms tend to combine resource efficiency and resource effective strategies
DiMaio and Rem, 2015	Circular Economy Index (CEI) for the circularity adaptation level	Experiential research; financial calculation methods	Simple and robust CEI methodology introduced to foster value recovery policies where the gross value added to secondary resources is highlighted
Katz-Gerro, and López Sintas, 2019	Analysis of EU SMEs to research the level of engagement in CE activities	Quantitative analysis on survey-based data	The success of a particular CE activity implementation is depending on the previous experience acquired while implementing earlier CE-activities and the patterns are connected with SMEs organizational properties
Iatridis and Kesidou, 2018; Garcia-Quevedo et al., 2020	Eco-innovation in the form of environmental management systems deployment	Econometric analysis; panel data from 16 manufacturing sectors in Spain	More frequent eco-certification adopters come from sectors with the stricter environmental policy and export orientation, also that firm size drives the adoption

Considering closing material loops as the objective of CE, it is essential to specify business activities and to treat them as milestones in the progress towards circularity and managing complexity. For that purpose, four levels of activities were proposed by Aranda-Usón et al. (2020) which on the entry-level are related to recycling and energy efficiency and are often known to companies, while changes related to dematerialization, renewables and secondary raw-materials forming the second level demand much more awareness and actions. On the third level, activities related to eco-innovations and eco-design are set; and finally, industrial symbiosis and other collaborative circular activities are defined on the fourth level as the most advanced CE practices met by few companies (Aranda-Usón et al., 2020).

In summary, an early engagement with CE by the firm is not yet regarded as a competitive advantage in the literature, albeit eco-innovation strategies in general being better correlated with it in the context of internationalization. As De Marchi's (2012) study (referred in sub-chapter 2.1) concluded, company size determines the propensity for eco-innovation and firms that are previously familiar with new products and processes are more eager to implement eco-innovations as well. It seems that experiential (gradual) and experimental (learning in the process) ways of learning and acting may both describe the internationalization and CE transformation of a firm.

3. METHODOLOGY

3.1. Selection of methodology

In this chapter, the form of research, methods used and choosing the targets of the case study will be explained. The author explains the decisions and choices made, compares alternatives and presents methods for data collection and analysis. Despite the structure of the article following the example of a research article, the author attempted to maintain his personal style of comprehensive writing in line with the research interests, empirical field and target audience, as suggested by Jonsen et al. (2018).

In order to find answers to questions presented in the introduction, a qualitative multiple case study (Yin, 2003) was employed to examine which methods of internationalization apply to small circular economy production companies. That is, to explain how circularity affects the process and what could be contributed to the theory. Vissak (2010) advocated for the relevance of case studies when conducting research on international business as the studied processes are often dynamic and the phenomena are impacted by the country or culture specific characteristics; and the richness of results might not fit into any model. The same author counterbalanced her statement by pointing out that authors may face the risk of losing objectivity or conceal some of their results, which do not comply with the main conclusions of the research (Vissak, 2010). As location-based and cultural phenomena dynamics were experienced during the research, the author of this paper agrees with Vissak (2010), acknowledging also the warnings which are mainly the subjects of researchers' ethics.

Yin discussed different designs for case studies (Yin, 2003): a single case, a single case with embedded units and multiple cases. The author of this article decided that understanding the context is the most important parameter when choosing a convenient design. While a single case focuses on a clear and specific situation, a single case with embedded units allows to explore several sub-units of the population (i.e. groups of people, organizations) either within each sub-unit, between several sub-units or across all the sub-units, but all of these are a part of the same unique context (Baxter and Jack, 2008). Therefore, relying on Yin (2003) as well as Baxter and Jack (2008), the current author selected the multiple case study method as the most appropriate for this paper.

3.2. *Choosing case study objects*

Choosing the case study objects (companies) was simple and challenging at the same time. The circular nature of the businesses WW and WWT has been widely discussed in recent years ((DiMaio and Rem, 2015; Ghisellini et al., 2016; Pieroni et al., 2018; Blomsma and Brennan, 2019; Katz-Gerro, and López Sintas, 2019; Aranda-Usón et al., 2020) and will be continued in the immediate future due to the all-embracing climate change context. There are only few circular and in economic terms sustainable manufacturing businesses that have appeared in Estonia during the last decade, keeping the sample small to choose from. Whilst the author has a history of founding such companies, the choice was made in favor of these two because of access to trustworthy and sufficient information, keeping in mind the bias that might leave the author exposed to risks. Presumably, every researcher focusing on analyzing emerging phenomena face challenges concerning a limited sample. Another aspect in relation to this is the vitality and credibility of the businesses under investigation, especially while focusing on the small companies. However, the author was persuaded by purposeful sampling to ensure multiple data resources, as qualitative inquiry usually has an in-depth focus, meaning that relatively small or unique samples are selected for the analysis purposefully and the aim is to select potentially information-rich cases (Patton, 2015). Therefore, due to the author's position (discussed in Chapter 5) and the narrow sample of circular economy companies in the area of interest, the selection was extremely limited. WW and WWT were selected as both conducted business in international terms, thus contributing essential data to the research.

All methodological details discussed in this chapter are captured in Figure 2 (compiled completely by the author) to provide an overview.

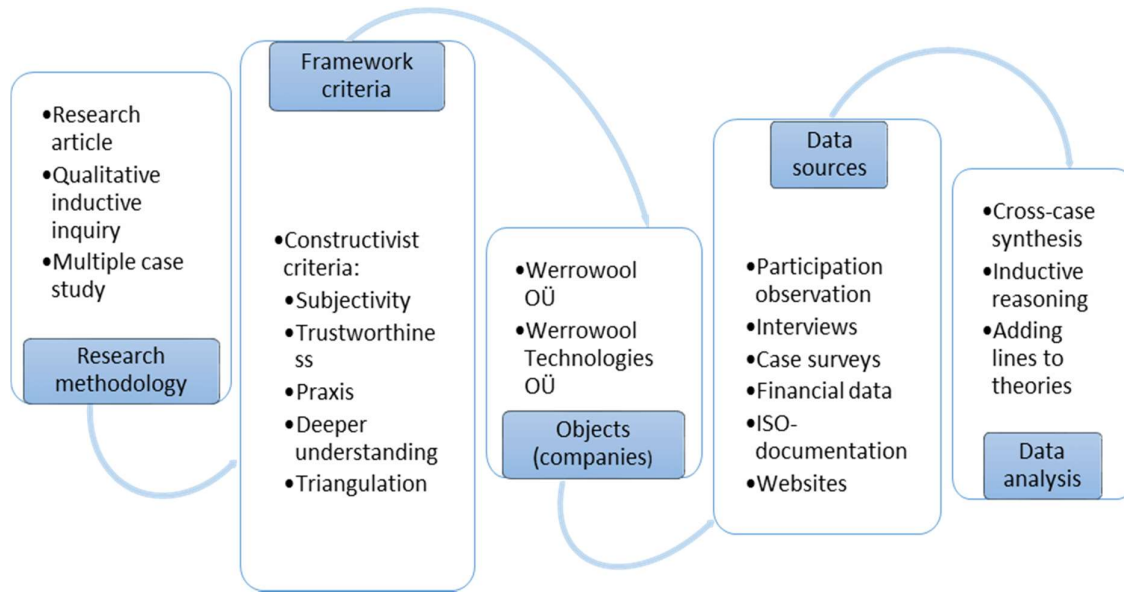


Figure 2 Overview of the research methodology

3.3. Data collection and the methods of analysis

While designing and implementing the current case study, some additional components were incorporated into the research context: a) the development of research questions, b) the application of the conceptual framework (Miles and Huberman, 1994), c) the criteria for interpreting findings (Yin, 2003). As Baxter and Jack (2008) note, the goal of the conceptual framework is to support the researcher: whom to engage in the research, which relationships to present based on logic, theory, experience and where to gather general constructs. To balance the dominance of such as deterministic patterns and generalizations, the tendency towards post-framework qualitative research was discussed by Jackson and Mazzei (2012), which leaves more room for open discussion. Therefore, according to Patton's (2002) sets of criteria for judging the quality and credibility of qualitative inquiry, the current research draws the most connections with the Constructivist criteria such as acknowledged subjectivity, trustworthiness, praxis and a deepened understanding. In addition, triangulation was applied to reduce cultural factors to increase the validity of evidence as suggested in the literature (Yauch and Steudel, 2003).

While considering the methods of analyzing the results of the current multiple case study, it was appropriate to choose between inductive and abductive approaches. While inductive reasoning aims to contribute to concept-building and complementing existing theory with the support of rather complete and valid data (Gioia et al., 2013), abductive reasoning with incomplete data sets on hand uses intuition and creativity more, leaving more space for bold and less rigorous concepts to be posed. As Michailova et al. (2014) argue, the disruption in the relationship between the researcher and the informants is necessary to provide the irritant for abductive research and abstraction for theorizing. Based on that, the current author acknowledged that the aforementioned disruption was not sufficiently ensured due to the researcher's roles as explained in the study limitations (Chapter 5).

The general strategy used for the analysis is closest to Yin's cross-case synthesis (Yin, 2003) as the current case study concerns two different cases which do not overlap much and are more spread over a period of time (one is very recent and the other has a longer history). Overall, Yin suggests continuously reflecting on basic distinctions in the design of the research and analysis (Yin, 2003). In the following chapter, companies are introduced at first by providing general information in Table 3 and a chronological grouping of Werrowool OÜ's exporting activities and outcomes (see Table 4). Thereafter, significant insights from both companies were combined for comparison and analysis as suggested by Shepherd and Wiklund (2019), to enable readers to better assess the nature of the research or to use the data potentially for reanalyzing, hence the results are presented in tables and referenced. For that reason the current author took a groundwork set by Gioia et al. (2013, p.20) as a model to compose Table 5: "The features that enhance qualitative rigor actually begin with our approach to analyses, especially in terms of organizing the data into 1st- and 2nd-order categories to facilitate their later assembly into a more structured form", where the 1st order category defines informant-centric terms and the 2nd order category researcher-centric concepts, respectively (Van Maanen, 1979).

Several qualitative methods were used for the research: participant observation (the author's own position), interview and case survey (project leader of the main customer organization) in WWT's context and participant observation (the author's own position from 2007-2017), interview and case survey (the current CEO of the company) in WW's context. The interviewees were selected as the most informed persons in the organization about

internationalization and circularity matters. The validity assessment in this regard came from the researcher acting as a participative observer and a former insider. At first, semi-structured interviews with open questions were held, allowing to go deeper into detail, followed by survey questions asked from the same interviewees to assess certain factors and to make the results comparable for a better discussion. The interview regarding WWT was conducted via Skype due to the interviewee's geographical location and the interview regarding WW was made vis-à-vis. Both interviews were recorded and transformed into transcripts.

The qualitative research was enriched with some quantitative data sources. The company documents and data (financials, ISO-standards, environmental statements) were used as valuable sources of specific information. The companies' background information was gathered from their websites and public online databases additionally to the researcher's own knowledge.

Insights from some other case studies were included, lines to internationalization and circular economy theories drawn and the discussion was built for answering the posed research questions. The aim of the selected methodology was to enable a contribution to supplementing theories.

The following chapter provides the analysis, results and discussion. Finally, conclusions, implications, limitations and further research opportunities are proposed.

4. ANALYSIS, RESULTS AND DISCUSSION

4.1. *Introduction of the companies*

Two Estonia-based privately held companies are the objects of the conducted research. Both companies have partly overlapping ownership but different activities in terms of vertical sectorial hierarchy. The difference in the author's roles in the companies was explained above.

Werrowool OÜ (WW) was established in 2007 for importing constructional insulation material to the Estonian market. After four years, the company was transformed into a company manufacturing constructional insulation material. The main reasons were the limited growth and low added value potential of business while importing.

WW initiated its manufacturing activities in Antsla, Estonia in Q4 2011 while owning tangible assets in the form of production machinery, raw-materials and a stock of products in Antsla and on its partners' premises in Estonia and abroad.

The focal production article of WW is loose cellulose insulation. The value proposal of the company is to offer the most human and environmentally friendly energy efficiency as an easily accessible product and service mix for private households with the shortest ROI (return on investment).

WW stands out from manufacturing companies based on its application of circular economy activities. The following intermediate and high-level CE-activities are applied in the production and service systems: design for resource efficiency, design for resource recovery, recycled raw materials usage, product-life extension, design for upcycling (upgradability and multi-functionality), eco-innovation, internal-recycling, energy waste recovery and industrial symbiosis (Aranda-Usón et al., 2019). The production process of WW follows the closed-loop strategy where production inputs leave zero or minimal waste for disposal. Accordingly, WW products made of recycled paper extend the life-cycle of the material by decades and their functional value may be restored even later. Also, no packaging materials without direct or secondary recycling options are used. According to the waste permit reports, at least 70% of product packages sold on the domestic market (Estonia) to B2B customers was returned to the manufacturer and was internally recycled in the production process. Although CEI is primarily the recycling facility targeted index (Di Maio and Rem, 2015), using it in the WW context is

justified, as based on the financial accounting reports 85% of the input flow contains recycled paper and cardboard. Accordingly, the product's output market value GVA of WW products exceeds the value of the recycled raw-material input price by three times, which is a notable result compared to alternative usages of recycled paper and cardboard.

Products are mainly installed by B2B customers throughout the WW network in Estonia and on foreign markets. Based on the financial reports, this kind of partnerships are responsible for 85% of the sales turnover, leaving 15% of sales to end-users by re-sellers. The by-products are either sold directly to end-customers as low-degree insulation materials or as secondary sources to other companies in the industry as part of industrial symbiosis.

WW production systems and management systems are ISO 9001:2015 and ISO 14001:2015 certified, obtained in February, 2012 and in May, 2014, respectively. WW's production and environmental management systems earned high-level recognition from the government of Estonia and by the European Commission in 2014.

Werrowool Technologies OÜ (WWT) was established in 2018 with the perspective to start building small-scale cellulose insulation production lines (to manufacture the same products as WW). WWT's activity is performed on the sub-contractor's premises by sub-contractors under the WWT's management and expertise, completing its first order in 2019 relying on this flexible form of outsourcing operations. The current economic crisis has halted the activities of WWT.

The CE context of WWT is determined through the supply of technology to highly circular WW-like companies. Primarily, from the point of view of the industrial process, WWT complies with the design for resource recovery, product-life extension, eco-innovation as the criteria from CE-related activities (Aranda-Usón et al., 2019).

Based on participant observation, the initial impetus for founding WWT came via an international network, the European Cellulose Insulation Association (ECIA). The call for joining an international project of the European Union for exterior activities in the Kingdom of Jordan (Jordan) came from the Italian non-governmental organization Istituto per la Cooperazione Universitaria Onlus (ICU), leading the project. A supply gap in micro-production machinery also favored this business opportunity.

The value proposal of WWT is to offer mobile micro-production machinery for the recycling of waste paper materials with operational and end-product marketing trainings supporting the company-level transformation towards CE.

More detailed business information about both companies is presented below in Table 3.

Table 3 *Information on case study companies*

	Werrowool OÜ	Werrowool Technologies OÜ
Founded	2007	2018
Location	Antsla, Võru County, Estonia	Antsla, Võru County, Estonia
Activity	Manufacturing cellulose insulation	Manufacturing paper recycling equipment
Activity until Q4, 2011	Cellulose insulation import and sales	n/a
No. of products	4	1
Product list	Cellulose insulation (newspaper)	Custom-made electromechanical equipment
	Cellulose insulation (cardboard)	n/a
	Separated by-product (newspaper)	n/a
	Separated by-product (cardboard)	n/a
B2B sales	85%	100%
Year	Turnover (eur) / export share	Turnover (eur) / export share
2012	195,100 / 10%	n/a
2013	337,974 / 11%	n/a
2014	424,133 / 17%	n/a
2015	421,219 / 21%	n/a
2016	503,283 / 27%	n/a
2017	641,405 / 31%	n/a
2018	762,853 / 43%	n/a
2019	767,472 / 41%	206,695 / 100%
Export markets	Latvia, Lithuania, Finland, Denmark, Sweden	Italy, the Kingdom of Jordan
Certificates	ISO 9001:2015; ISO 14001:2015	n/a
Recognitions	The most environmentally friendly company in Estonia in 2013	n/a
	European Business Award for the Environment Management Award 2014/2015	n/a

4.2. Internationalization activities and outcomes

In sub-chapters 4.2 and 4.3 export activities and outcomes of the case study companies are introduced, followed by the discussion in sub-chapter 4.4.

The WW's niche-market oriented business plan anticipated 66% export sales from the beginning in Q4 2011. The internationalization of WW was strategically vital from the start and there was certainty among the founders that the domestic market will be secondary and fast growth will come from export markets such as Latvia (50% of the total revenue) and Finland (16% of the total revenue). The focus of foreign markets was on Latvia, Lithuania and Finland due to logistic restrictions, as the product has high volume in space but low value in financial terms.

The basis on which WWT founded was WW's experience and its activities were completely oriented at foreign markets. WWT is a part of the same sector's value-creation axis but towards the higher end. By value, the author refers to the economic value in the CE-context.

The main activities of WW internationalization carried out over several years were identified and divided into four timeframes as shown in Table 4 based on a retrospective analysis by the author and contemporary contributions from the current CEO (Gioia et al., 2013). The following methods of export were used in 2012-2019 (listed according to descending transaction costs):

- Direct export B2C sales to non-recurring end-customers (high transaction costs),
- Direct export B2B sales to professional installers (medium transaction costs),
- Export B2B sales to retailers (low transaction costs),
- Export B2B sales via an agent: transforming a key customer into a local distributor (low transaction costs).

Table 4 *The internationalization activities and outcomes of Werrowool OÜ*

Years	Internationalization activities	Internationalization outcomes
2012-2013	Approaching cellulose insulation installation companies (B2B) directly mainly in Finland and Latvia	No recurring B2B customers (installers) engaged
	Attempting distributor engagement in Latvia, offering credit for stored goods - focusing on the dominant trading company in the sector (forecasted 50% of sales from Latvia)	Distributors' engagement was based on a false assessment and attempts failed, resulting in a great volume of unrealized foreign sales
	Releasing the localized minimum viable packet for marketing channels to attract foreign B2B interest	Unsatisfying foreign interest achieved among B2B customers: 2012 - 10% of the sales (6% Latvia, 4% Denmark), 2013 – 11% of the sales (Finland)
	Becoming a co-founding member of the European Cellulose Insulation Association (ECIA)	Industry-level knowledge acquired about the challenges ahead and the sectorial network initiated
2014-2017	Continuously searching for cellulose insulation installation companies (B2B) in Finland, Latvia and Sweden by attending trade fairs, using online channels, offering trial discounts	Effective growth in foreign sales from 72,000 euros in 2014 to 200,000 euros in 2017, based mainly on Finland and Lithuania.
	Searching for key distributor engagement (B2B) in Latvia, Lithuania and Finland, offering credit for stored goods	Key distributor found and engaged in Lithuania in 2014, culminating in a 19% share in WW's total sales in 2016. No results in other foreign countries in this field
		Striving to achieve Finnish customers' loyalty for recurring purchase orders
		2014 as the most diverse year: serving six foreign markets, but no customer loyalty achieved from the Nordic countries
Contributing to ECIA membership for the European Union standardization of cellulose insulation products	Postponed decisions about the European Union's standardization of cellulose insulation products	
2018-2019	Low-price policy when re-entering Finland where the product category is well-known but WW has not succeeded in establishing sustainable relationships	Low-price policy re-entrance to Finland rejected due to the major liability of foreignness met
		Re-internationalization to Latvia realized, since the key distributor approached since 2012 was at last engaged
2020	Managing the plummeting demand by promoting a new cost-efficient product even more and educating customers in the midst of an economy crisis triggered by Covid-19	70% fall in foreign and domestic demand brought about by the COVID-19 crisis. Fortunately, it occurred during the sectorial off-season (Q2)

WW with a business model in place is a regional player and has its home market in Estonia. The manufactured end-products or by-products have to be land-transported to the next location, be it a mid-customer (professional installer, re-seller), DIY (do-it-yourself)-customer or by-product customer as a part of industrial symbiosis: the value creator applies its technological capacities to add further value (Aranda-Usón et al., 2020). Due to the costly delivery component, the market area is determined regionally. Accordingly, neighboring countries are in the focus of export, while sales to retailers has the most prominent share with 65%, followed by direct export to professional installers with 25% and 10% direct export to non-recurring

buyers. Attempts to combine agent sales with others over the years has had very limited results. Export through retailers has been the most lucrative for WW, also featuring low transaction costs. Direct sales to installers has a substantial share, but carries higher handling costs and direct sales to non-recurring buyers is the least efficient way for export sales.

WWT's first commercial order, also the only one until today, was realized in the form of direct export supported by the business network, proving that it can be global. While initiated, WWT was considered as a project business firm defined by Owusu et al. (2007), but later defined as a BG with possible independent business-line. Knowing the niche, small size, capability for small-scale projects and flexibility are major BG attributes available to WWT in terms of internationalization. Although owning technologically advanced knowledge, WWT is partially confirming Hennart's (2014) findings that BGs are not necessarily more knowledgeable regarding products and services than the Uppsala model companies, but claim to sell niche products and services to internationally dispersed customers using more efficient information change and delivery methods. For instance, from the observer's point of view, containerization-centric product design was used and only one site visit carried out during the whole process. Also, a competitive advantage based on the VRIO method was created, enabling to meet the business opportunity and to execute a purchase order successfully, while extensively using outsourcing for technical work from different sub-contractors but delivering all the critical knowledge of the company itself, avoiding knowledge transfer loss (Barney, 1991; 2001).

The impact of the internationalization process on WW and WWT in monetary terms is presented in Figure 3. The results of WW are presented from the beginning of the importing business in 2008, export turnover occurred in 2012 after the company turned to manufacturing. Since 2015, the results of WW have been improving continuously in terms of market diversity and turnover based on more knowledge, but there have still been setbacks to handle on a yearly basis according to managers. WWT's data are limited to 18 months of activity in 2018-2020. Additionally, the best foreign market by sales is presented above each year in Figure 3.

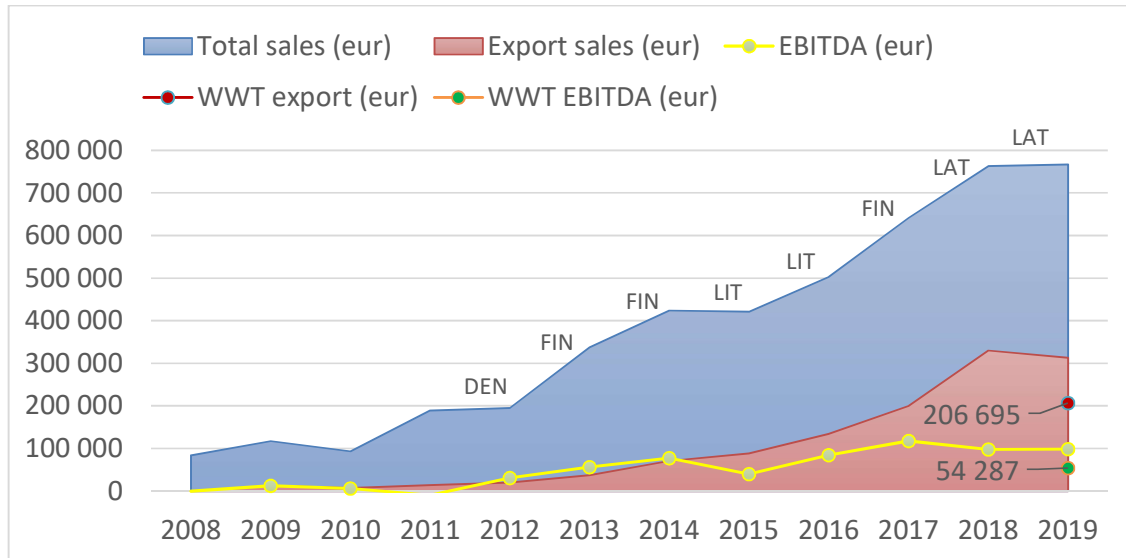


Figure 3 The foreign advancement of Werrowool OÜ and Werrowool Technologies OÜ in 2008-2019

Additional to outcomes presented in Table 4 the following possible reasons emerged why WW's internationalization activities and strategies did not yield anticipated results:

- Meeting the liabilities of outsidership and foreignness in Latvia and Finland,
- The CE aspect of the product and company was not accepted by customers as anticipated,
- Personal reluctance to WW by the management of the key account customer/distributor in Latvia caused by their previous disappointment in the business,
- Incapability of the former CEO to perceive opportunities after setbacks (a participant observation finding),
- The current CEO's low managerial expertise regarding internationalization (survey by the CEO of WW, 2020).

Meeting the liability of outsidership in Latvia was unexpected for the management of WW as previous experience on the market suggested a high demand for the product. The reasons remained unclear for WW's management.

B2B customers in Latvia targeted by WW are micro and small companies serving mainly private households and constructional companies where the propensity to avoid taxes is high. Relying on observations, in 2012, the majority of these customers favored purchasing both

locally and internationally unofficially to avoid value added tax. Based on WW's unsatisfying business results in Latvia in 2012-2017 and information that several suppliers traded in such an illegal manner, it was an example of a different set of conflicting institutions on different markets, albeit in the immediate proximity of WW's location, which was assumed to have a very similar cultural environment (Meyer and Peng, 2015).

Also, DIY retailers were not convinced and stated that a higher-priced ecological premium product would have DIY retail potential alongside mainstream mineral insulation materials. It was also added that the installation service requirement limited buyers' interests, despite the WW's management opposite observations on the domestic market. Local sales agents for the Latvian market were engaged in several occasions, but no results followed neither in 2012-2013 nor in 2017-2020. This reflects the fact that a niche market product requires from an agent specific sectorial knowledge, active sales methods to locate and approach potential customers and a competitive value proposal. Such a knowledge acquisition path was experienced by the former and current CEOs of WW, and resulted in a significant increase in the level of confidence (survey by the CEO of WW, 2020).

Contrary to WW's management's assumption, the supply-side gap of cellulose insulation products on the Latvian market was filled by importers fast. Also, a local manufacturing facility in a new location was opened in Q4 2012 and another one in Q3 2015.

For these reasons, WW was left out from the network of doing business in Latvia, disappointed WW's management and caused an increased psychic distance from the Latvian market. In fact, according to theorists it should progress in an opposite manner - gathering more knowledge about the market supports companies overcoming the psychic distance incrementally (Johanson and Vahlne, 1977). WW's position on the Latvian market changed from the Q3 2017 due to changes in the WW's management and in the ownership structure. Q3 2017 may be considered as the re-entering moment onto the Latvian market. It is essential to point out one lesson from participant observation perspective: overcoming the psychic distance faster would have offered earlier opportunities to re-enter Latvia and a stronger position could have been earned in the continuously tightening market competition.

In Finland, the liability of foreignness was met by the product's origin and surprisingly low price level, explained by very high competition and a recent stagnation period in the construction sector in 2012-2014 (EU Finnish Construction Sector Observatory, 2018, p.4).

Occasionally, WW's products have been exported to Sweden and Denmark despite the high delivery costs. Demand has occurred during the season (autumn-winter), caused by limited local production capacities. Therefore, immediate additional supply from the Baltics (no matter the total cost) has been required, a similar situation has also happened in Finland. Considering all aspects, WW's management acknowledges that a stable demand from the Nordic countries (except for Finland) is not justified due to the high delivery costs.

4.3. Circular economy and competitive advantage

The most important shared feature identified by the observation was the founders' intentional propensity for dynamic movement towards higher value creation. Knowledge acquired from the start of WW's business established a solid foundation for initiating new business models and ventures. At the same time, domestic and international networks have constantly been expanded and WWT with its first delivered project is a clear result of this development. As the project manager of ICU said, "We searched on the web and found ECIA, contacted the chairman to provide the technology. We got a price quote for second-hand machinery but were not fast enough to finalize the deal and it was sold. We got back to ECIA's chairman who delivered three more contacts, WWT among others, and we reached a deal to deliver a new production-line" (interview with the project manager of ICU, 2020). Moreover, WWT has impacted positively the recycling and waste management sector via the cooperation project in Jordan multiplying economic, environmental and social revenues similar to the case in Estonia, which is depicted in Figure 4.

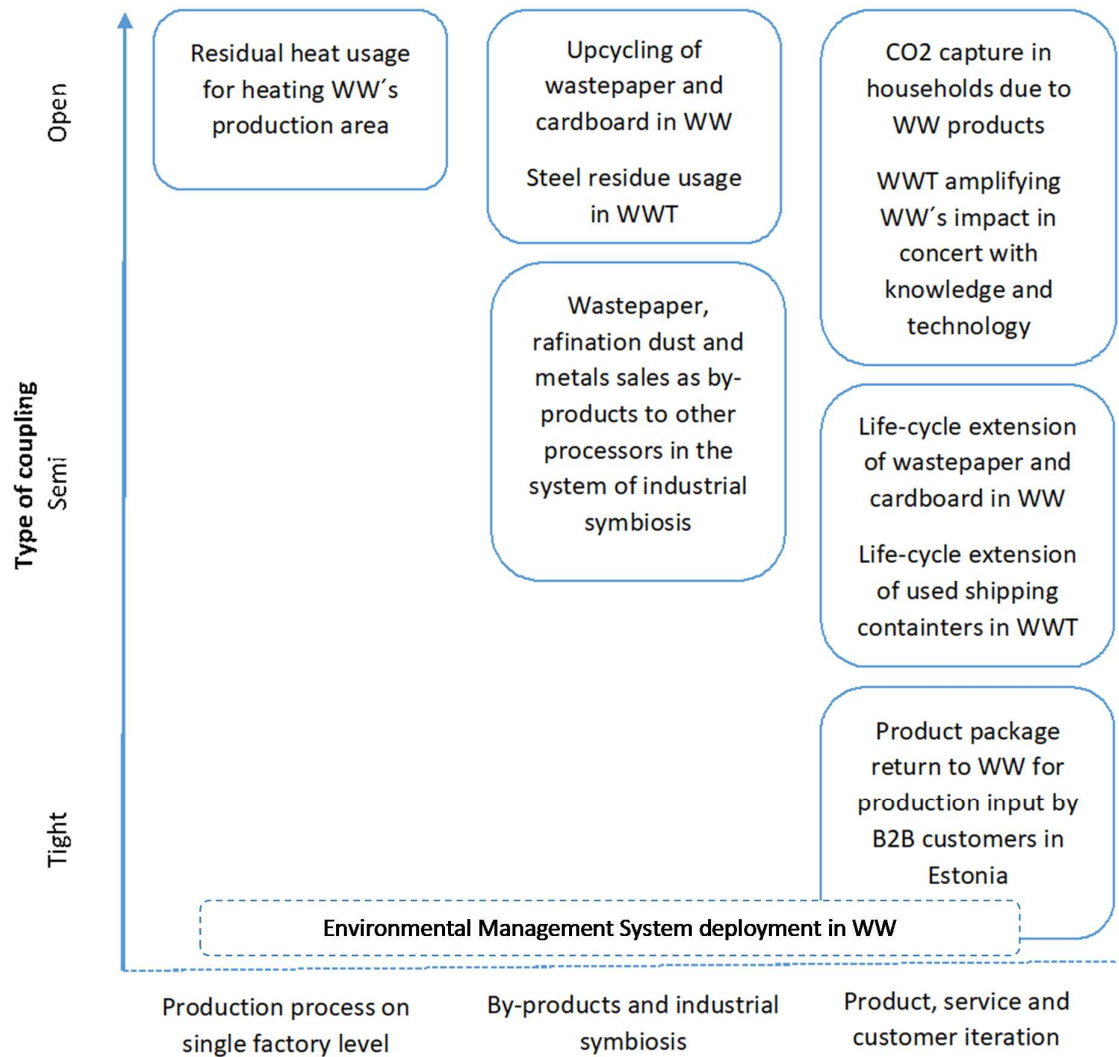


Figure 4 *Circularity Grid (Blomsma and Brennan, 2019) of Werrowool OÜ (WW) and Werrowool Technologies OÜ (WWT)*

The author of this article chose to use the Circularity Grid tool for visualizing the CE-processes of the case study companies to present diversity and engagement in Figure 4. Blomsma and Brennan (2019) introduced this 2-dimensional view of the relationships between the company system components to illustrate how important understanding the stakeholders of any company is, while discovering strategies for CE transformation. It is essential to find support from the system to which the company belongs to gain new knowledge and opportunities, also to develop a value proposal for achieving better competitiveness on markets where these values are respected. The tool was adjusted by the current author to emphasize the direction from the

local to the regional level according to the case study companies' business and CE-activities. The left column of Figure 4 presents company-level activity which supplies the production area with residual heat. The middle column shows whether the activities of companies are tied to the system of other manufacturers with industrial symbiosis and recycled materials upcycling. The right column shows the processes that accompany customer transactions and impacts, while the coupling describes how tight or loose the cooperation between economic actors is. Product package return, CO₂ capture created by households and WWT in the right column represent a product/service system cooperation with customers who offer services relying on WW's products and increase the impact of CE-activities (Pieroni et al., 2018). EMS deployment by WW is added in the figure conditionally, as it does not represent a process or a result of a CE concept but may act as a prerequisite towards it. Although this statement cannot be verified by the WW case study as the firm's CE features were recognized prior to EMS's deployment, it has been considered as a guiding framework since its initial deployment (interview with the CEO of WW, 2020). Relying on several studies, it can be concluded that the deployment of EMS is considered to increase efficiencies and to enhance a firm's international competitive advantage and reputation (Iatridis and Kesidou, 2018; Garcia-Quevedo et al., 2020).

Depending on the target foreign market, the sustainability aspect of the product (e.g. CE-nature of the product) or manufacturer may be perceived as a competitive advantage through differentiation on the mainstream market or differentiation in the target segment, or they are left "stuck in the middle" (Porter, 1980) and experience the liability of outsidership and foreignness, as it occasionally happened to WW. In order to avoid the "stuck in the middle" status, a company should update its competitive position continuously to minimize physical distance and maximize knowledge about the target markets. Markets' acceptance of CE-products and services is directly affected by the economic and social development level of the respective country. Implementing CE principles creates permanent environmental mitigation but a firm's possible competitive advantage could be temporary if subsequently taken up by others, decreasing the level of differentiation. Based on the current case study, the firms' small sample, involvement in CE and more broadly in eco-innovations reflects a firm's propensity to sustain innovation over time, as CE concepts' implementation tends to shape a firm's relation to innovation. Rennings (2000) could be quoted to offer institutional support to that statement: "Secondary benefits of an innovation-friendly environmental policy are often seen in reduced

costs, increased competitiveness, creation of new markets for environmentally desirable products and processes, corresponding employment effects, etc.”

As an example of CE-related technological, process and business model innovation from the observer’s perspective: having experienced a threat owing to the raw-materials’ price increase and scarcity for years, WW’s investment in 2019 aimed to exploit recycled cardboard as a new raw material to lower the product’s price while preserving the product’s premium characteristics, including its CE-nature. This kind of tendencies would push firms towards further internationalization as the completion of an innovative and environmentally friendly product or process calls decision-makers to maximize its market potential (Cavallo et al., 2020).

4.4. Discussion

Phenomenologically reflected retrospective information (participant observation) used for the cross-case analysis, received from the former and the present CEOs of WW, customer-side (ICU) project manager of WWT and various company and public sources, was converged into the Table 5 (Patton, 2002; Gioia et al., 2013; Van Maanen, 1979). Additionally, the surveys were used to validate the results and to foster the discussion. The results of the case study and the respective discussion with the contribution to the literature are presented in Table 6.

One of the major contributions of this article is the knowledge how essential internationalization is for a small production company, the value-proposal of which involves an inevitable tangible format. Openness and the courage to make decisions are the prerequisites for this process, but the advancement is dependent on the mix of methods selected. The list of methods is universal (direct export, using an export agent, a re-seller on the foreign market, FDI etc.) but the mix which fits a certain company is specific and changes over time, only to be validated while internationalizing and gathering knowledge. The validation process may take years, as was the example of WW, and this process is recurring if a firm continues to develop and grow. For WW, the validated export methods were the sales to retailers, considered as the most lucrative and efficient, followed by direct export to professional installers involving higher transaction costs and direct export to non-recurring buyers as the least efficient way.

If WWT was researched separately, one could come to the conclusion that the opportunity to internationalize came extrinsically and did not result from the company's decisions. As the two cases were cross-case synthesized (Yin, 2004), it is clear that WWT's opportunity was the combination of WW's earlier decisions and the founders' ambition to participate in the more added valued business. Specifically, the decision to expand WW's network and cooperating with other manufacturers did not reflect in WW's results, but turned out to be a realized opportunity for WWT several years later. WWT's mix of export methods was simpler, resulting in direct export initiated by the business network. Albeit the CE aspect of its product and services affecting WWT's business results directly and positively, its CE nature was more likely intrinsic than intentional. Such a regulatory push and demand-side pull based market intervention is enforced by the EU to support CE-transformation, offering particular opportunities for SMEs but there is no ground to claim that WWT would have attracted interest outside the waste machinery niche-sector for similar reasons.

Considering the circularity aspect of the case study companies' business models, it was elaborated by the research that this aspect has an impetus for small-scale companies to stand out among others, which is essential while building the network and looking for opportunities on foreign markets. As the Paris Agreement (UNFCCC, 2015) and the Circular Economy Action Plan (European Commission, 2020) are directing transformation towards CE anyway, it could be a possible competitive advantage to anticipate the trend. Circularity has had a major impact on both case study companies' performance: economic sustainability is supported by a higher ethical and social acceptance level derived from environmental sustainability factors. When initiating or proceeding with CE strategies, gaining new knowledge and opportunities from the system to which the company belongs helps to achieve higher competitiveness on markets with similar values. In other words, to prepare the ground for subsequent internationalization. That was the visualization-based knowledge gained when applying the Circularity Grid on the case study firms (Blomsma and Brennan, 2019). According to this and to the survey by the CEO of WW (2020), CE nature *per se* did not create a competitive advantage for WW on any foreign market, although some aspects (e.g. energy saving) of CE according to the Circularity Grid were considered financially feasible for all parties.

Table 5 *The summary of case study companies' insights for analysis (Van Maanen, 1979; Gioia et al., 2013)*

1st order - informant statement	2nd order - researcher convergence	Common denominator
New product release by WW - may become a trend-maker for exports	Opportunity detection	Managing the “new normal”
Positive propensity towards Estonian product in Latvia and Lithuania		
EU legal acts enforced to support eco-friendly products and processes		
Internationalization in 2011-2020 topping 42% exports share by WW	Opportunity exploitation	
Latvia’s largest re-seller gained in the mid-2018 by WW		
WW network as business case mediator for WWT	Re- and niche specialization	
Covid-19 crisis impact: lower delivery costs, new dwellings fall, focus on retro-fittings		
Small-scale niche-market focus brought the deal in Jordan for WWT	Physical boundaries acceptance	Coping with boundaries and identifying bypasses
Delivery cost defines WW market area to be served from Estonia		
WWT follow-up in Jordan low as ICU depends on EU calls only		
Circularity "enforced" from EU in Jordan, not locally acknowledged	Boundaries overcoming opportunities	
Small company’s low networking power, differentiation needed		
Low innovation in WW, better in WWT	Limited knowledge transfer options	
Favoring plastic packages in the sector surprises WW		
Small-scale re-entrance to Denmark failed by WW		
Small company challenge: every CEO builds its network again		
Limited physical presence and knowledge about foreign markets prevents success	Facing the liability of foreignness	
Every market is different though, even the closest neighbors		
No mistakes allowed on export markets: trust hard to build, easy to lose		
WWT experience: public sector and NGOs hard to handle in governance		
Research on sectoral language skills needed prior entrance planning		
Receivables policy country based only, collecting habits to be cleared out		
Not to underestimate physical and financial risks outside the known region	Facing the liability of outsidership	
Managing lower quality issue and new product challenge in Finland for WW		
WWT experience: values to be negotiated, the level of professional delivery researched		
Understanding company’s business model inside the local eco-system	Awareness building	Positive change context
Latvia and Lithuania left behind, challenging to catch Finland in circularity recognition		
Educating stakeholders as the first step towards circularity: practice for novices	Feedback loop of the innovation	
Major innovations in WW tested on 1 season basis		
WWT in Jordan: capacity built, behavioral change to be made		

In the WWT's context, the CE aspect was a significant feature for the Jordanian invitation to tender and this niche market could offer opportunities if policies favoring CE transformation were enforced extensively. Nevertheless, the local recognition of CE concept in Jordan is limited and the value of such resources and products should be introduced at different levels. ICU's project manager referred to discrepancies in the local business network as follows: "While involving private companies in the context and creating deeper relationships to implement sustainable development goals (SDGs), it is essential to create a right environment and a right communication set sharing the values between the private companies and international support cooperation" (interview with the project manager of ICU, 2020). The adoption of EMS could be a starting point to shape a firm's sustainability commitment either in Jordan or elsewhere. According to the analysis of Garcia-Quevedo et al. (2020), the firm's size was seen as a major driver of ISO 14001 adoption, but it was not confirmed in WW's case as the micro-company has followed ISO 14001 for many years and even observed EMAS for two years, discontinuing it due to limited recognition by the market.

Table 6 *The case study results and contribution into the literature*

Previous studies	Statements of the previous studies	Findings of the current study
McNaughton, 2003; Rialp et al., 2005, Bagheri et al. 2019	BGs and born-again internationals are related to faster and more extensive internationalization than gradually moving traditional firms (McNaughton, 2003; Rialp et al., 2005, Bagheri et al. 2019)	Firms studied, though micro-companies in size, tend to confirm earlier statement possessing a distinctive technological component and making continuous investments into technological innovations to develop its competitive position
Bell et al., 2001; Sheppard and McNaughton, 2012; Hennart 2014	Born-again international firms, though usually have operated for longer and have gained a large market share domestically, share a similar phenomenon with BGs in terms of internationalization (Bell et al., 2001; Sheppard and McNaughton, 2012); BGs considered as accidental internationalists due to equal effort on the domestic and foreign markets (Hennart, 2014)	Sales through retailers, direct B2B export and direct export to non-recurring buyers are the validated mix of export methods by the born-again international CE micro-production case study firm with the confirmed domestic focus prior exporting. Direct B2B export method validated by the born global CE micro-production case study firm. Some aspects about the incidental internationalization are also found confirmative
Johanson and Vahlne, 1977; Meyer and Peng, 2015	While internationalizing: a) a firm has to reduce the psychic distance, uncertainty and risks regarding each foreign market it would enter (Johanson and Vahlne, 1977), b) firms are engaging with different sets of potentially conflicting institutions at multiple levels and in various locations (Meyer and Peng, 2015)	Difference between the perception and experience was recognized causing major loss of revenues on one firm's case. While a minimal level of psychic distance was expected, it was met extensively by one case study firm. The other firm experienced the opposite (positively) at a very distant location
Pieroni et al., 2018; Blomsma and Brennan, 2019; Iatridis and Kesidou, 2018; Garcia-Quevedo et al. 2020	Visualizing relationships with stakeholders in CE context by the Circularity Grid enables to develop a value proposal for better competitiveness (Pieroni et al., 2018; Blomsma and Brennan, 2019); EMS found to favor implementing eco-innovations (Iatridis and Kesidou, 2018; Garcia-Quevedo et al. 2020)	Circularity Grid tool applied on the case study firms CE strategies explains essential relationships and locates the product/service systems; EMS favoring eco-innovations could not be confirmed due to the case study firm's specificity
Rennings, 2000	Reduced costs, increased competitiveness, creation of new markets for environmentally desirable products and processes, corresponding employment effects are institutional benefits of an innovation-friendly environmental policy (Rennings, 2000)	The case study firms' involvement in CE and in eco-innovations reflects their propensity to sustain innovation over the time. A very small sample has to be considered as a limitation. The finding is indirectly confirmative with the earlier study
Chetty and Campbell-Hunt, 2004; Dimitratos et al., 2012; Pellegrino and McNaughton, 2017	Founders of BGs enable the firms to deliver novel products to international niche-markets faster than traditional firms using an experimental way of learning (Pellegrino and McNaughton, 2017); founders of BGs are more positive about overcoming the barriers they meet during international market entries (Chetty and Campbell-Hunt, 2004; Dimitratos et al., 2012)	The case study firms lead by founders were able to export products to niche-markets relying on experimental approach and overcoming barriers. Despite, no universal transferable experience to another market was confirmed.

Another major result is establishing the essential cognitive difference between the perception of the internationalization process during the development and the experience while realizing the methods chosen. While in the current case study WW theoretically had a minimal level of psychic distance towards the target markets (neighboring countries with a similar cultural background), it was actually encountered on some markets. In contrast, regarding WWT, significant psychic distance and obstructing institutions on the market were perceived: geographical locations, formal and informal regulations, values, cultural backgrounds and religious beliefs in Jordan and Italy (Johanson and Vahlne, 1977; Meyer and Peng, 2015), but the experience turned out not to be more challenging than in WW's context. The current author admits that WWT had 18 months of unique experience compared to the several years of WW, but a gap between managers' perceptions and experiences occurred nevertheless. As generalized by Chandra and Wilkinson's (2017) research on internationalization's network-centric perspective, managers' knowledge about a firm's performance affects their perception of the firm, not *vice versa*.

Some publications (e.g. Knight and Cavusgil, 1996, 2004) have discussed the main drivers behind the increase in BGs during the last decades. They find that it is easier even for small firms to internationalize and sometimes it is necessary for firms to think and re-think globally: specialized, innovative or niche products may have to be sold worldwide and delivered fast. Via existing industry relationships and networks across borders it has been possible to find marketing channels to realize it. These drivers appeared in WW's context on two occasions: 1) not successfully after transforming into a manufacturing company, 2) more successfully after re-focusing and showing persistence in execution. WW has simple products with a regional competitive advantage as mentioned above. WWT's production is technologically sophisticated, which is the foundation of its competitive advantages (Bagheri et al., 2019). As WW holds knowledge about the product to be manufactured with the machinery built by WWT, it is a competitive combination not easy to match. The niche market of WWT has a limited number of potential purchase orders, but the company has a combination of advantage factors, including customer references and meeting the VRIO method characteristics (Barney, 2002).

In the light of the rapidly growing number of BGs and born-again internationals during the last decades, the internationalization experience of WWT was based on certain drivers (Sheppard and McNaughton, 2012; Madsen et al., 2000): professionals with some cross-national

experience, small-scale operations involving customization of products for niche-markets, inexpensive containerization and other shipping methods, customer relationship management capability over a long-distance and instant communication tools. Based on both case study firms, some accordance with Pellegrino and McNaughton's (2017) study became evident, as the most knowledgeable key persons in the companies (founders) enable these firms to deliver their products to niche-markets faster, rather than relying only on experiential learning based on the domestic market success to be transferred to a foreign market, applied by incrementally internationalizing companies. On the other hand, there is no confidence it would happen fast on every market as the CEO of WW stated: "It seems to be universal and transferrable but actually it is not easy to take the experience to another market" (interview with the CEO of WW, 2020).

Both gradualist models and born global literature have incorporated the concept of networking into internationalization methods and according to San Emeterio et al. (2020) BGs and born-again internationals often advance on their foreign path gradually after the initial launch or transformation. This pattern seems to be in accordance with WW's experience, which started fast with direct export attempts as a business actor with earlier domestic experience and limited resources after the company's transformation, being highly committed but not planning capital intense entry modes (Lindsay et al., 2017). WWT, however, was an innovative player with a global focus. As WW and WWT have the same founders, WWT's first project stemmed from an international network and knowledge gathered by them and WW's personnel, favoring taking advantage of this kind of opportunities (Knott, 2009). Personnel as an intangible asset is an inevitable part of the versatility of resources among Penrosean characteristics (Nason and Wiklund, 2018). Without the network's existence, this opportunity would not have emerged nor realized. As the case study demonstrates, the founders' earlier experience, immediate and consistent learning while acting in accordance with the network's support accelerated advancement internationally; several earlier studies have also demonstrated this pattern (Pellegrino and McNaughton, 2017; Chetty and Campbell-Hunt, 2004; Dimitratos et al., 2012).

At the same time, the position of WWT in the network was affected by the developing economic crisis and by the project manager of ICU saying that "the reason for a limited cooperation following the Jordanian project is that ICU's competence in the waste management field left the organization with me" (interview with the project manager of ICU, 2020).

Different from WWT, WW has a settled position in the production and service system, which has a broader foundation but according to the CEO's statement, "the company has a relatively low innovation capability and on the managerial level has a very inconsistent attitude towards internationalization" (interview with the CEO of WW, 2020). At the same time, the company relies on its new cost-efficient eco-innovation product to recover its position regionally. These conflicting assessments are signs of the complexity and indicate that preserving its competitive advantage is driving the innovation. Iatridis and Kesidou (2018), researching SMEs in Greece, point out that companies used to preserve eco-innovations even in the context of economic crisis, earning credibility from customers and supply chain partners. This kind of behavior, even though possibly questioned by outsiders, was confirmed by the current case study company WW in a similar situation.

In general, it has to be considered that there are always resources and institution-based characteristics which enable to limit the actual internationalization process. At this point, we can additionally experience a disruption of relationships in industrial networks, affecting formal and informal institutions where firms are operating (Peng et al., 2009). Thus, well-analyzed market entry modes may fail as the actual situation is affecting what competitors (and other stakeholders) are expected to do and what they actually do (Chandra and Wilkinson, 2017). Under similar circumstances, WW first entered the markets of Latvia and Finland, after which the competitors started to protect their well-established customer relationships, leaving WW to face the liabilities of foreignness and outsidership (Barney et al., 2001; Johanson and Vahlne, 2009). According to the current author's participant observer view, these liabilities may be met by born global, born-again international or incrementally internationalizing firms. Also, it is plausible that a resilient attitude can help to cope with changing the economic environment and to adapt to the rules causing value gains and losses for all stakeholders. For instance, WW has continuously contributed into the search for foreign re-sellers and distributors with the goal to become a part of the network (Pellegrino and McNaughton, 2017; Chetty and Campbell-Hunt, 2004; Dimitratos et al., 2012) and to overcome the outsidership liability factors. According to the CEO of WW, foreign markets are much more different than managers initially presume (interview with the CEO of WW, 2020). The interviewee compared doing business in Finland, Latvia and Lithuania with Estonia. While in the Nordics there is no bias towards products and services provided to each other, there is opposition from Finland's perspective towards Estonia to be managed. It can be argued that a similar bias continues

towards the south (from Estonia to Latvia and Lithuania), although it is not as evident. However, according to this case study, in Latvia and Lithuania the business environment is not statutory enough. This problem slows down or postpones the entrance of SMEs to these countries and even forces them to exit, as it happened on a few occasions with WW during 2011-2017. Nevertheless, Estonian origin has a favorable effect on products and services compared to local competitors (interview with the CEO of WW, 2020).

5. CONCLUSIONS AND IMPLICATIONS

The author has conducted a multiple case study on the internationalization methods of SMEs production companies, combining circular economy (CE) aspects with competitive advantage while building on the context of different exporting methods. The most valuable contribution of this study is offering an empirical view on the internationalization experience of SMEs production companies implementing CE strategies, which has very limited coverage in the literature (Katz-Gerro, and López Sintas, 2019). The results suggest that the combination of export methods with regard to a company's resources tends to be rather specific and influenced by the institutional context. This respective applied combination was validated while internationalizing and gathering experimental and experiential knowledge.

First, exploring the case study companies in detail resulted in finding that the CE aspects of the product or service, the position in the business network, commitment level towards market entry, the level of previous managerial knowledge and the level of psychic perception about the market *per se* do not ensure progression on the target market. However, it was concluded that involvement in CE and eco-innovation activities reflects in firms' propensity to sustain innovation over the time.

Second, based on the case study companies' advancement in foreign sales, it can be revealed that the outcomes of export-oriented activities may be versatile and not rigidly connected with anticipations in terms of time and results. The implemented methods of export by the case study firms were in accordance with previous studies. Despite, it has to be mentioned there was no universally transferable experience to enter a new market found. In addition, the management's high commitment level, accompanied by no capital-intense entry modes (Lindsey et al., 2017), may also create business opportunities on foreign markets (Knott, 2009).

Third, a firm's position in a business network with some innovative differentiation (i.e. providing a CE product or service) while exhibiting entrepreneurial persistence (Bagheri et al., 2019) improves the firm's international performance and supports overcoming the liabilities of outsidership and foreignness (Johanson and Vahlne, 2009), experienced repeatedly by one of the case study companies in Latvia and Finland during internationalization.

Fourth, it was presented by the support of Circularity Grid tool, how firms' CE strategies can be better explained while visualizing essential relationships inside the industry and with the surrounding community.

Fifth, the relevance of collaboration with local firms on the target foreign market in the form of a distributor and agent is confirmed due to the limited resources of SMEs (especially micro-companies) to be presented locally and to build network relationships and gather market knowledge.

As an implication of the case study, small manufacturing companies with business models aiming towards the higher added value through the differentiation and niche-market orientation, possessing a firm connection with the circular economy aspects making companies more visible (bigger) and more acceptable by the stakeholders, also being open to knowledge and committing to the network of business relationships, are more likely to succeed in the international environment.

As the main limitation of the study, it is essential to remember that the author of this article having had a participant observation perspective was also a former insider. Interviews with case-study companies' insiders, the current CEO of Werrowool OÜ (WW) and the Jordanian customer's project manager of Istituto per la Cooperazione Universitaria Onlus (ICU), complemented by case surveys offer additional insights into the Werrowool Technologies OÜ (WWT) context. The author finds it important to note that the Jordanian representative had left the organization by the time the interview and case survey took place.

The author's bias was reduced in the WW case-study context by changes made in the structure of the WW ownership in 2017 and the author has had no connection with the company starting from May 2020.

The author's position in the WWT context is somewhat different due to the fact that the author was the one to cofound the company and to carry out the responsibilities of the CEO.

Further research on the advancement of manufacturing SMEs applying CE-strategies or going through the transformation process towards a CE-driven business model would be valuable, as there are still only a limited number of studies covering this area.

Based on the observations regarding the construction products sector from 2012 until today, the Latvian and Lithuanian small business customers tend to act in a non-statutory manner, specifically tolerating tax avoidance. From this perspective, ideas for further possible research were implicated: how micro and small companies, which are similar to WW and WWT, are able to cope with such a distortion of competition on respective markets.

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