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Innovation, temporary and sustainable competitive advantages, and internationalization

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Abstract Building on literature on innovation, dynamic resource-based view, and internationalization, this article explores the relationship between temporary and sustainable competitive advantages and innovation in internationalization. It is argued that the existence and emergence of both temporary and sustainable competitive advantages in internationalization of firms is conditioned by innovation activities, dynamism of the operations environment, and time lags. Empirical examination is used to illustrate these issues. The findings also indicate that the type of the competitive advantage may be used to differentiate firms regarding their internationalization performance.

Keywords: Sustainable competitive advantage, temporary competitive advantage, internationalization, innovation.

Introduction

Frenz et al. (2005) note in their work that the time since 1980s has been the time of increased attention towards the relationship between innovation and international activities (see also, e.g., Gassmann and von Zedtwitz, 1999). They state that the multinational corporation "*has gradually come to be seen as an evolutionary institution in terms of the way it organizes its businesses and in terms of the development of its competitive strategies among which a prominent role is played by strategies on innovation*" (Frenz et al. 2005, p. 67). Similarly, Cantwell (1995) notes that innovation can be used strategically to improve a multinational firm's competitive advantages: innovation can be transmitted inside the firm boundaries across national borders by relying, for example, on internal networks that spread knowledge (see also Manolopoulos et al., 2005). Furthermore, it is not only within multinational companies, but also between smaller firms located in different countries, where innovation takes place. The internationalized firm can learn from the host country, environment and actors in foreign markets (including its partners, customers, etc), which has the potential to facilitate the emergence of new innovations – especially if the firm is located in a country where innovation rates are high (Gupta and Govindarajan, 2000, Salomon, 2002). New combinations of knowledge have the potential to stimulate new products, services, and processes.

Considering such notions, it can be agreed that innovation and internationalization are increasingly intertwined: Intangible assets are needed for successful international expansion and growth and, on the other hand, new value and innovations can be generated through internationalization as it supports extracting, creating, combining, and utilizing such assets widely (Zahra and George, 2002, Martin and Salomon, 2003). Indeed, it has been agreed that companies that "*internationalize their operations in innovative and creative ways stand to achieve significant gains that go beyond superior financial performance*." (Zahra and George, 2002, p. 262), and on the other hand, that generating global networks facilitates innovation (Nambisan, 2005). In fact, from internationalization process point of view innovation has for long been one of the basic approaches used to explain internationalization of firms (See e.g., Bilkey and Tesar, 1977

or Czinkota, 1982). Mostly, however, when internationalization has been seen as an innovation process, it has been seen as an incremental (continuous) one. Radical (discontinuous) innovation—strange enough—has not been thought to have a role in the discussion of internationalization of firms.

The question is, then, what the modern role of innovation in the internationalization of firms today could be, and how we could combine radical and incremental innovation with internationalization and international behaviour. One possible key to this lies in the discussion of dynamic resources in the context of temporary competitive advantages. Temporary competitive advantages represent a new stream of research (consider, e.g., a recent call for papers by Strategic Management Journal) that by the nature and content of discussion within that stream comes close to the discussion on innovation and internationalization.

In this study we discuss the connection points of innovation, internationalization and different types of competitive advantages. In particular, *we aim at increasing understanding on the elements that constitute temporary and sustainable competitive advantage, and examine whether the type of innovation and competitive advantage have an effect on the international performance of the firm*. Exploratory empirical approach is taken in order to provide evidence on these issues, followed by discussion and concluding remarks.

Innovation, dynamic resources, competitive advantage and internationalization

Combination of three streams of research: (1) innovation, (2) dynamic resources and temporary competitive advantage, and (3) internationalization provides a good ground for examination on the role of different types of competitive advantages, and the dimensions – such as the type of innovation (radical vs. incremental) – behind them. While these streams are explicitly combined only rarely for individual studies, each of them holds relevant notions that fit quite well together.

Emergence of different types of innovation

Novelty of innovation (or radicalness) is a widely studied subject in the existing research. The challenge is that there are many different frameworks that may be used to describe how new the innovation is (see, e.g. Hurmelinna-Laukkanen et al., 2008, on the difficulty of defining radicalness). For example, innovations are often categorized according to the classical "uncertainty matrix" developed by Ansoff (1988), in which market uncertainty is placed on one axis and technology uncertainty on the other. The quadrant in which both are low is called incremental innovation, and the one in which both receive high values is labelled radical innovation. The other two quadrants are named evolutionary market innovation and evolutionary technology innovation, respectively. Likewise, innovation novelty is analyzed from the market and technology perspectives in the classical framework developed by Abernathy and Clark (1985). However, their classification differs from Ansoff's model as it describes the effect of innovation on the capabilities of a firm: on the incremental side of the framework, an assumption is laid out that the current capabilities and customer base are utilized and improved, and on the radical side, it is expected that linkages to current technologies and markets are destroyed. Consequently, Abernathy and Clark (1985) end up with a matrix where four distinct innovation types are identified: regular, niche creation, revolutionary, and architectural. Tushmann and Andersson (1986), for their part, divide radical (or discontinuous) innovations into two categories: competence-enhancing and competence-destroying. Competence-enhancing innovations are discontinuous in the sense that they introduce completely new products that are connected to some of the current know-how of the firm. Competence-destroying innovations, on the other hand, create completely new products that have no linkages to existing knowledge. It is further suggested that market entrants are often responsible for the introduction of the latter, whereas incumbents are generating the former. In addition to this, also other forms of innovation radicalness than just technological and market radicalness, such as business radicalness, are starting to emerge in research (see, e.g., Sainio et al., 2009).

In this study, we place innovations along a *continuum with incremental and radical innovations at the ends*. Subsequently, innovations at the incremental end of the scale include minor improvements to existing products and services (which may not be

minor with respect to their impact on profitability, however), while those at the radical end are related to new products and services. When we discuss radical innovations, we consider competence-enhancing rather than on competence-destroying ones.

The different types of innovation are more likely to emerge in different settings. It may be that the composition of the aggregation of actors responsible for innovation creation is different (consider, e.g., closed/internal vs. open/networked innovation models, e.g., Chesbrough, 2003), the incentives for innovation may be different: For example, the maturity of the industry may have a role, like the innovation appropriability potential as well (Hurmelinna-Laukkanen et al., 2008). Tight quality control and rewards granted for as little disturbances in production as possible may not be the best way to encourage trials and new innovative ideas. Among the factors that have a role is undoubtedly *environmental dynamism* faced by the companies (see, e.g., Dess and Beard, 1984). It may open up new opportunities in international markets, but on the other hand, it requires a lot from companies: Rapid technological change, changing customer preferences, changing roles of market actors (e.g., from partners to competitors and vice versa), and other such turbulence-increasing factors open and close windows of opportunity swiftly, and in such situations it is important to be efficient in converting expertise and intangible assets into new and better products and services (Christensen et al., 1998). Similarly, the *rate of innovation diffusion* (e.g., Rogers, 1976) *and knowledge spillovers* (e.g., Levin et al. 1987) also plays a role in the field of innovation. For example, from the point of view of an individual firm, it is a factor that may have an effect on the benefits gained from innovative efforts, and thus also incentives to invest in innovation (see, e.g., van Dijk, 2000; Dosi et al., 2006; Hurmelinna-Laukkanen et al. 2008). Often it is considered that the longer the imitation lag is, the longer the time during which the firm can enjoy (temporary) monopoly rents. Surely, in some cases, such as when network externalities are in an important role, innovation diffusion may enable achieving the critical mass, but in general, some threshold level of competitive lead is needed in order to support emergence of new innovation.

These elements; radicalness of innovation, dynamism of the operating environment, and length of imitation lags – and subsequent (temporary) monopoly positions – form the very basis for defining whether the competitive advantages reached

by the firm through innovation are of sustained or temporary kind. Thus, research on innovation comes in touch with discussion on dynamic resources.

Dynamic capabilities and temporary competitive advantage

The main focus within the field of strategic management is in explaining the performance differences between firms. Competitive advantage has partly been explained with industry characteristics, partly with internal, firm-specific factors. Resource-Based View (RBV) suggests that the firm performance is related to resources which are not commonly available to all competing firms (Ray, Barney, Muhanna, 2004: 26). According to Barney (1991) "*valuable but common resources can only be a source of competitive parity; business processes that exploit valuable and rare resources can be a source of temporary competitive advantage; and business processes that exploit valuable, rare and costly-to-imitate resources can be a source of sustained competitive advantage*". It is, however, acknowledged that resources as such cannot be a source of competitive advantage. Resources are transformed through management and business processes and aligned with strategic logic to create a competitive advantage (Porter, 1991; Eisenhardt and Martin, 2000, Sanchez, 2008).

Assumption of the sustainability of competitive advantage seems to be in striking contradiction with the reality among many companies operating in dynamic markets where sustainable competitive advantages have been seen unlikely to emerge (D'Aveni 1994; Eisenhardt and Martin 2000). In dynamic environments competitive advantages that are in normal circumstances thought to be sustainable, turn into temporary ones. Indeed, Eisenhardt and Martin (2000) argue that in dynamic and high-velocity markets the duration of any competitive advantage is inherently unpredictable.

Teece, Pisano and Shuen's (1997) concept of dynamic capabilities as a firms' capacity to renew its resources or as firms' repeatable patterns of action in changing competitive environment involve adaptation and change through building, integrating, and reconfiguring resources. In dynamic environments it has been explored why certain firms seem to have competitive advantages in situations of rapid and unpredictable changes (Eisenhardt and Martin, 2000), such as internationalization. Dynamic capabilities can be characterized as simple, experiential, and unstable processes that rely on quickly

created knowledge and iterative execution. The outcomes of these processes are also adaptive and unpredictable.

Eisenhardt and Martin (2000) challenged the traditional resource-based view on competitive advantage by the dynamism view by claiming that competitive advantage arises from valuable, somewhat rare, equifinal, substitutable, and fungible dynamic capabilities (resources). Furher, RBV's lacking ability to identify firm's strategically valuable resourses, problems in identification of the strategically valuable resources ex ante rather than ex post, and the absence of a chain of causality, how the resources create strategic value, have further been pointed out by Sanchez (2008).

Dynamic capabilities involve the creation of new, situation-specific knowledge by engagement in experiential, learning-by-doing actions. The dynamic capabilities view build on two perspectives of change: 1) market dynamism and 2) evolution of resources, whether internal or external to the firm (Oliver, 1997; Eisenhardt and Martin, 2000; Helfat and Peteraf 2003; Schreyögg and Kliesch-Eberl 2007; Pacheco-Almeida, Henderson and Cool, 2008). The discussion on market dynamism within the dynamic capabilities approach can be summarized by stating that the higher the dynamism of the market, the more unpredictable, volatile, and temporary the competitive advantages become.

Another relevant point in this context is the discussion on the evolution of resources and capabilities, especially discussion on capability life cycles (CLC). Helfat and Peteraf (2003) defined three original stages in the capability life-cycle: founding, development, and maturity. Nevertheless, the branching of capabilities emerging during the life-cycle is often more interesting. After a selection event, the capabilities may become retired (dead), retrenched (gradually declined), renewed (improved), replicated (in a different market), redeployed (in a different product-market), or recombined (with another capability). Related to this, Pacheco-De-Almeida et al. (2008) discuss resource accumulation lags that they define as the average time a firm takes to accumulate the resources to produce one unit of output in a product-market of interest. If seen from the CLC point of view, this lag starts after the point of selection and ends as the resource contributes to the competitive advantage and activities of the firm. Again, assuming these notions of resource evolution, it might be argued that as resources evolve, their

heterogeneity increases and the competitive advantages based on them become more unpredictable, volatile, and temporary. Sustainable competitive advantages, in turn, can be argued to emerge as the effects of market dynamism and resource evolution decrease or their determinants lose relevance in competitive situations.

To sum up the preceding discussion, it may be argued that—quite like in innovation-related research—market and industry dynamism and the evolution of firm-specific resoures determine whether temporary or sustainable competitive advantages may arise from the activities of the firm, and to what extent and style competitive advantages remain temporary or sustainable. Indeed, it might be argued that competitive advantages are first temporary by nature, are the outcome of managerial selection and competition, followed by the resource accumulation lag, conditioned by the determinants of market dynamism and resource evolution; finally some advantages to become sustainable. All this has implications on internationalization of firms as well.

Internationalization and competitive advantages

Peng (2001) reviewed the usage of the RBV within international business (IB) research and noted that it is no wonder that many scholars in the IB have turned to the RBV as the core questions asked within the RBV and IB research have turned out to be similar. In Peng's view, the most significant contribution of IB to the RBV has been the identification of international knowledge and experience as a valuable, unique, and hard-to-imitate resource that differentiates companies in global competition. However, this is not – as noted above – this straightforward, especially with regard to imitation: In some cases increased imitation by competitors has seemingly led to the speeding up of the process of international growth.

This may be related to the dynamism of the markets: On the one hand, as the dynamism of the market increases, the processes of internationalization and the competitive advantages required for internationalization also become more volatile, unpredictable, and emergent by nature as the dynamism of the market increases. From the perspective of competitive advantage and internationalization some notions concerning dynamic capabilities (Schreyögg and Kliesch-Eberl, 2007) even suggest that capabilities may become obsolete as strategic resources in highly dynamic markets. In such a

situation imitation might not be that harmful. On the other hand, sustainability emerges as market dynamism and subsequent resource evolution decrease. As a result of this, companies face much less pressure to look for and utilize new, short term or temporary advantages. Instead, they can rely on their existing and already emerged advantages in their attempts to internationalize. However, in this case they may become much more concerned about safeguarding their unique assets (see, e.g., Martin and Salomon, 2003).

Dynamism also comes into play through the stages of CLC and the related internationalization activities that can be found within the internationalization process research, albeit with different terminology used in within the internationalization research. Traditional stage theories of internationalization state that firms develop their activities in foreign markets gradually to increase their knowledge and experience in internationalization (Ahokangas, 1998). This can be understood as an incremental innovation process taking place in a less dynamic environment, and in an analogous manner compared to the CLC stages. According to the Uppsala model, firms expand first to geographically close markets and then stage by stage continue to further markets (Johansson and Vahlne, 1977, 2009). Firms are assumed to internationalize slowly to gain knowledge, reduce uncertainty, and to avoid risks as well as to adopt new ways of doing business. However, dynamic environments have mainly been seen as contexts that contradict these traditional stage theories of internationalization.

All in all, *the level of dynamism* of the environment is a common and relevant factor for innovation, competitive advantage research, and internationalization of firms (see, e.g., Ricart et al. 2004). The dynamism of the environment fosters innovation and helps companies to create international opportunities although it also creates competitive pressure to internationalize. This has been studied especially among the high technology industries (see e.g., Crick and Jones, 2004; Komulainen et al., 2006; Blomqvist et al. 2008).

The role of dynamism of markets is just one elaboration of the connection between dynamic resources, temporary and sustained competitive advantages, innovation, and internationalization, however. *Time lags* (whether they are resource accumulation lags regarding the evolution of resources, or imitation lags regarding the rate of innovation diffusion) also play a role in the internationalization of companies. All

strategic action, including internationalization, must be based on resources and competences that evolve over time. Considering resources, (sustainable) competitive advantage refers to the implementation of a value-creating strategy that is not susceptible to duplication and that is not currently implemented by competitors (Wernerfelt 1984, 1995; Mahoney and Pandian 1992; Barney 1991; Amit Shoemaker 1993; Peteraf 1993; Oliver 1997). The paradoxical point of this is that internationalization (whether we see it as a process or as a strategy) is a duplicate or innovation that is continuously implemented among established and emerging competitors. Thus, time lags, from both the innovation and resource point of view, are fundamentally the same things.

Finally, *the level and type (radical or incremental) of innovation* may be assumed to vary between companies the same way as the level and type of internationalization does. Basically, a firm's orientation towards innovation and internationalization is a question of selection and strategy, conditioned by the environment and its dynamism. International settings may, at best, provide sources for radical innovation and, on the other hand, it may be that radical innovations form such a basis for differentiation that provides a firm a chance to internationalize successfully, but in this, it should be acknowledged that such competitive edge is likely to be temporary by nature.

Hypotheses

The above discussion suggests that the challenge in terms of research has often been that even those studies that have utilized the RBV in dynamic environments (Ahokangas, 1998; Westhead, Wright and Ucbasaran, 2001; Fahy, 2002; Sapienza, Autio, George and Zahra, 2006) have been approaching the phenomenon of internationalization from the perspective of sustainable competitive advantage. Thus the question what is the role of the temporary competitive advantage in the internationalization of firms has remained unanswered in earlier research.

Based on the discussions above, we assert that if we are to explore the relationship between competitive advantage (temporary vs. sustainable in particular) and innovation in internationalization, attention must be paid to three factors: 1) the level of dynamism of the environment, 2) time lags, and 3) the level and type of innovation.

Based on the theoretical considerations, it can be argued that the existence and emergence of *temporary competitive advantage* goes hand in hand with a relatively high level of environmental dynamism, relatively short time lags, and potentially higher levels of radical innovation and lower levels of incremental innovation. Likewise, it can be argued that the existence and emergence of *sustainable competitive advantage* is characterized by a relatively low level of environmental dynamism, relatively long time lags, and relatively higher levels of incremental innovation and lower levels of radical innovation. Thus, our first hypothesis is drafted as follows:

Hypothesis 1a: *High level of environmental dynamism, short imitation lags, and low levels of incremental innovation characterize temporary competitive advantage of a firm.*

Hypothesis 1b: *Low level of environmental dynamism, long imitation lags, and high levels of incremental innovation characterize sustainable competitive advantage of a firm.*

While seeing whether these elements actually can show whether competitive or sustainable advantage is the dominating type within a firm is bound to be useful, the connection to internationalization is still lacking. However, if we are to draw conclusions regarding internationalization performance and the role of temporary and sustainable competitive advantages earlier research gives much less (and even more contradictory) guidance. From the traditional RBV point of view it may be argued that the existence and emergence of sustainable competitive advantages should favour the internationalization of firms more than the existence and emergence of temporary competitive advantages. However, if seen from the dynamic RBV (or DCV) point of view, the picture changes to the opposite: The existence and emergence of temporary competitive advantages should favour the internationalization of firms more than that of the existence and emergence of sustainable competitive advantages. Thus, our second hypotheses takes an exploratory form and is formulated as follows:

Hypothesis 2: *The dominant type of competitive advantage explains international performance of a firm*

Empirical examination

Sample and data collection

The survey data used for examination of the topics of interest was collected in Finland in 2008-2009. The data was collected with a structured questionnaire, using the key-informant technique: two questionnaires were sent to each firm, one to the representative of R&D activities, and the other to the representative of HR activities. In addition, public data (e.g., turnover, personnel, profit before tax, ROI) was included in the final database.

The initial population comprised cross-industry sample of Finnish companies engaged in R&D, and all firms with at least 100 employees were selected in the sample. The Amadeus database was used to identify the companies. Total of 1035 firms were identified at the first level where the size of the firm was the defining factor. This number of firms was reduced to 762 when the criteria were tightened: The inclusion criterion was that the firm should be an independent business organization making its own strategic decisions (this excludes, e.g., non-independent production facilities and sub-branches with no independent strategy for R&D), and have on-going R&D and innovation activity. All the eligible firms were contacted by phone, and they were asked if they were willing to participate in the questionnaire. Confidentiality was emphasized and a summary of the results was promised to the respondents. Of the 762 firms' R&D representatives, 570 were reached after several contact attempts (It is also possible that due to time lag between accessing the contact information and actual contacts, some of the companies had merged or seized to exist). 455 agreed to participate, and 115 refused in the phone or when they received the questionnaire. The questionnaire was web-based, and each respondent received a personal link to the questionnaire. Total of five follow-up e-mails were sent. Responses were received from 213 companies, representing a satisfactory effective response rate of 37.4% (213/570). Most of the respondents held positions such

as R&D director, development manager, or technology manager indicating their seniority and key position in the company in terms of R&D and innovation.

The possible non-response bias was checked utilizing the ANOVA test (following the suggestions of Armstrong and Overton, 1977). Five central definitive factors were examined: ROCE 2007 (Return On Capital Employed, public data), Sales 2007 (public data), number of employees 2007 (public data), market performance (adapted from Delaney and Huselid, 1996), and innovation performance (adapted from Alegre and Chiva, 2008). No significant differences between the respondent groups were found with respect to any of these factors.

Due to some missing information, the final number of examined firms in this study was 69 (which is the number of companies reporting the length of imitation lags).

Measures

A variety of measures was utilized in this study in order to capture factors that might indicate presence of temporary or sustainable competitive advantages.

The measurement scale for *environmental dynamism* was partly adapted from Garg et al. (2003) and Jaworski and Kohli (1993), and modified. Following the prior examples, environmental dynamism was measured using a multi-item scale. Mean of seven items, measured on a Likert scale from one to seven produced the Cronbach alpha of .697, which can be seen as satisfactory.

Innovation type was approached by examining the role of incremental innovations. It was measured as the percentage of total turnover from improved products that were launched during the past three years. This measure was adopted from the Community Innovation Surveys (CIS).

Imitation lag was measured by asking the respondents to indicate how many months after the launch of the product or service competitors brought the same or similar offering to the markets.

In line with many other researchers, we acknowledge that *international performance* is a multidimensional construct. Thus, we also utilized multiple measures.

Two objective measures were used, *share of turnover coming from foreign markets* (the percentage of the total turnover), and *the number of countries* in which the company operates or has clients.

In addition to this, we also used a subjective measure, as the respondents were asked to evaluate, how well it had performed compared to other organizations operating in the same sector in terms of *opening up new markets abroad*. Relying a single-item measure (Likert scale 1-7) surely is a limitation, but when used with other measures, it provides additional information.

Finally, we also examined *size*, measured as the turnover in 2007, *age* of the firm, the *R&D intensity* (percentage of R&D from turnover), and *profit* before tax (2007).

Analyses and results

In order to test our first hypotheses, and explore temporary and sustainable competitive advantage as a combination of environmental dynamism, type of innovations, and length of imitation lag, we constructed a typology with a hierarchical cluster analysis (Euclidean distance measure, Ward method of agglomeration). The theoretical reasoning (see discussion above) and change in the agglomeration coefficient suggested a two cluster solution as seen in Table 1 below.

Table 1. Clusters describing different types of competitive advantage

	C 1		C 2	
Total N	39		30	
Environmental dynamism mean	4.08	+	2.92	-
Environmental dynamism s.d.	.50		.83	
Imitation lag mean	3.28	-	12.83	+
Imitation lag s.d.	4.38		14.21	
Incremental innovation mean	15.74	-	30.06	+
Incremental innovation s.d.	11.48		24.35	

The first cluster (C1) is characterized by high environmental dynamism (+ sign in the table indicates this), short imitation lags, and low levels of incremental innovations.

These are characteristic to presence temporary competitive advantage. Firms in cluster 2, on the other hand, have low environmental dynamism, significantly longer imitation lags, and higher share of incremental innovations. Thus, C2 refers to sustainable competitive advantage indicated in above theoretical discussion. Thus, we see that the three suggested elements divide as expected, and the hypotheses 1a and 1b are supported.

Following the cluster analysis, differences between the clusters regarding different dimensions of international performance were examined. Since these are the first steps to examine such issues, A Mann-Whitney U test was applied. The results are summarized in Table 2 below.

Table 2. Differences between C1 and C2

	C 1; Temp C/A	C 2; Sust. C/A	
	Mean (rank)	Mean (rank)	Asymp.Sig.
% turnover foreign	5.82 (29.38)	11.06 (42.30)	.007
# of countries	21.09 (20.52)	28.91 (26.23)	.147
Open new mkts abroad	3.71 (27.08)	4.33 (33.46)	.150
Size	429 M€ (27.71)	184 M€ (41.36)	.004
Age	27.27 (34.75)	16.01 (28.33)	.169
R&D intensity	.44 (32.69)	.46 (33.46)	.872
Profit	34 M€ (28.22.)	15 M€ (38.37)	.031

The results indicate, that the firms characterized with sustainable competitive advantage (C2) gain higher share of turnover from foreign markets than companies with temporary competitive advantage (C1). In this respect, hypothesis 2 could also be supported. In particular, the idea suggested in previous studies as well that sustainable competitive advantage plays a role in internationalization seems to gain support. However, there are no statistically significant differences in terms of the number of countries in which a firm operates, or success in opening new markets abroad. There are also differences between the two clusters in terms of size and profit, but no differences emerge in terms of age or R&D intensity.

Discussion and conclusions

In recent literature such notes as that of Yeniyurt et al. (2005, p. 2) stating that having "*a global orientation is no longer a luxury, but a necessity for economic survival in a large number of countrie*s" have become more common. Accordingly, internationalization has touched and changed the range of activities carried out both small and large firms. Among these activities are innovation activities: innovative orientation is inherently relevant in terms of the need to constantly adapt company operations and offerings according to the emerging business opportunities in the widening and internationalizing markets. However, it has not been particularly clear what kind of innovations and innovation environments yield competitive advantages, and whether there are differences in terms of the type of competitive advantage – let alone difference in the internationalization-related benefits that these different competitive advantages can produce.

In this study, we have explored the relationship between temporary and sustainable competitive advantages and internationalization performance of firms. Building on literature from three areas—innovation, dynamic resources and competitive advantages, and internationalization—we concluded that environmental dynamism, time lag, and level of innovation play a role in the when describing different types of competitive advantage.

The theoretical and empirical findings suggest that the existence and emergence of temporary competitive advantage goes hand in hand with a relatively high level of environmental dynamism, relatively short time lags, and potentially higher levels of radical innovation and lower levels of incremental innovation. The same can be said about the emergence of sustainable competitive advantage, which is related to a relatively low level of environmental dynamism, relatively long time lags, and relatively higher levels of incremental innovation and lower levels of radical innovation. The only limitation in this categorization was that the data used did not give us enough information for determining the level of radical innovation among the sample firms.

Regarding internationalization performance, earlier research gave us basis to draw two contradictory suggestions. On one hand, building on the traditional RBV, it was

argued that that the existence and emergence of sustainable competitive advantages favours the internationalization performance of firms more than the existence and emergence of temporary competitive advantages. Thus, we would have expected to see higher levels of internationalization among firms in Cluster 2. However, this was found to be the case only for the measure share of turnover coming from foreign markets. Surprisingly, the firms in Cluster 2 were also significantly smaller in size, when measured in terms of total turnover. Whether this argument can be used to contradict the argument that sustainable advantages evolve from temporary ones remains unanswered, however. On the other hand, building on the dynamic RBV, we argued that the existence and emergence of temporary competitive advantages favours the internationalization performance of firms more than the existence and emergence of sustainable competitive advantages. The data, however, gave no support to this line of argumentation. The most striking piece of evidence regarding the Cluster 1 was the greater size of firms and lower share of turnover coming from foreign markets of the firms in that cluster. Again, whether this can be used as partial evidence for the traditional RBV against the dynamic approach remains unanswered.

From managerial point of view our results give support to the idea that companies should try to develop sustainable competitive advantages for their internationalization attempts. Also, the smaller size of the firms in Cluster 2 compared to Cluster 1 indicates that firms should be able to internationalize early. Unfortunately the data lacked information regarding the speed of internationalization among the sample. The R&D intensity as such did not seem to differentiate between firms with temporary and sustainable competitive advantages.

Like any study, this one is limited in many respects. The most obvious limitation is the level of empirical analysis. More sophisticated tests and wider set of measures are needed in order to examine the relationships between temporary/sustainable competitive advantage, and international business. Having said this, this study nevertheless reveals some important points relevant for both managers and academics. The other obvious limitation is the low number of firms in the two clusters. Many of the measures were rather close to being significant, and increase in the size of the clusters might have given different results.

Regardless of its limitations, this study has thus provided a starting point for further research. The role of radical innovation and its relationship with both temporary and sustainable competitive advantages in internationalization requires further analysis, both conceptually and empirically. Secondly, a wider set of internationalization performance measures should be used in the analysis. Especially, the speed and type of internationalization remains an untouched concerning especially the temporary competitive advantages. Indeed, this research represents the first steps in the attempt to increase our understanding of the concept and role of temporary competitive advantages, not only regarding internationalization, but also in general. Nevertheless, this kind of approach to temporariness and sustainability makes it possible empirically identify the threshold between temporariness and sustainability; it is no longer a problem where the answer must be found inside a company, but instead the answer can be found in the business context.

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