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Determinants of hidden champions: Evidence from Germany

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Determinants of hidden champions - Evidence from Germany

Susanne Schlepphorst, Nadine Schlömer-Laufen, Michael Holz¹

19 August 2016

Abstract

Our explorative study analyses the factors that affect the likelihood of German companies to be a hidden champion. Based on an econometric estimation model with quantitative data from 60 hidden champions and 346 non-hidden champions, we could confirm prior research findings that specific enterprise characteristics such as research and development, international business activities and the great ambition to maximise market shares have significant positive effects on the likelihood to belong to the group of hidden champions. Companies of the service and distribution industries have lower chances to be a hidden champion compared to manufacturing enterprises. Drawing on the empirical finding that hidden champions do not place great value on the use of public promotional funds, governments are advised to apply other support measures in order to foster the development of hidden champions. The starting-point should be the improvement of framework conditions.

JEL-Classification: L21, L25, L26, L52

Keywords: hidden champions, internationalisation, Germany

1 Introduction

Germany is well-known for providing a great number of hidden champions (Simon 2012). Out of the entire business population of approx. 3.6 million German enterprises, around 1,500 to 1,620 – depending upon the definition applied – can be determined as hidden champions in 2014 (Venohr, 2015; Simon, 2012; IfM Bonn, 2016). Despite its small percentage share in the total stock of German businesses (i.e. 0.04 percent), this specific group of companies is regarded as a central pillar of the German economy due to its profound economic importance (Simon, 2012; Witt and Carr, 2014). These international market leaders realise global revenues which amount to approx. 2 billion Euro and are said to employ more than 8 million employees (Langenscheidt and Venohr, 2014, p. 14). Beyond that, hidden champions are said to have a stabilising effect in the aftermath of economic crises (Rasche, 2003, p. 220). It is therefore hardly astonishing that other countries are interested in emulating this model of success (e.g. Logue, Jarvis, Clegg and Hermens, 2015; Witt and Carr, 2014). In this regard, some researchers have scrutinised whether the model of the German *Mittelstand* – which is the predominant source of hidden champions – can be successfully transferred to other countries in the hope of generating hidden champions elsewhere (e.g. Baker and Mazzarol, 2015; Logue et al., 2015). Still, the efforts of emulating the success patterns of hidden champions in other countries have not succeeded to date. Hidden champions continue to be a mainly German phenomenon.

Despite the international interest in this topic, empirical research is astonishingly scarce – even in Germany. The global research leader in this field is, undisputedly, Hermann Simon who has invested great efforts and time to explore the hidden champion phenomenon in Germany and across the world (Simon, 2014; 2009; 1996; 1992). His observations greatly contribute to our understanding of these companies. However, his studies predominantly address practitioners (Blackburn et al., 2001, p. 1). This also applies to the majority of other research projects in this field. As a consequence, to the best of our knowledge, the factors that induce a company to be a hidden champion have not been empirically validated by econometric methods to date. The use of these methods is essential because this is the only possibility to ensure that these factors do not distort each other and thereby affect the outcomes. Thus, this paper aims to close this research gap by applying econometric methods to the analysis of those factors which support companies in their development to hidden champions. Two research questions lead our analyses. First, in what way do hidden champions differ from non-hidden

champions? If we find differences between these two types of businesses, the subsequent question is: How can other countries support their companies to become hidden champions?

To answer these research questions, the rest of this paper is structured as follows: In the next section, we summarise the findings of prior studies. This is followed by a description of the sample group and the methodological approach before we present and discuss our findings. Finally, we conclude with the limitations of the study.

2 Prior research on hidden champions

With the aim to explain the secret of their remarkable success, Simon started already in the 1990s to determine the central characteristics of hidden champions (Simon, 1992; 1996; 2009; 2014). Since then, an astonishingly scarce number of empirical research studies has been conducted. In the following, we describe the findings of Simon, complemented by additional results and views that have been recently pointed out by other authors.

Simon (1996) found out that the main objective of hidden champions refers to their aspiration for *gaining the market leadership position* (see also Rammer and Spielkamp, 2015, p. 19 for similar results). This ambitious goal goes beyond just achieving a purely quantitative, static market share target but also implies dynamic aspects such as setting rules and influencing trends.

Another characteristic of hidden champions is that they pursue a *strategy of specialisation* by focusing on quality and product-related services (e.g. Rammer and Spielkamp, 2015; Voudouris, Lioukas, Makridakis and Spanos, 2000; Witt and Carr, 2014). This means that hidden champions are usually highly specialised in their products and services (often in B2B-markets), and thus are able to gain competitive advantages in sectors that are often labelled as 'unspectacular' industries (Rasche, 2003, p. 220).

Furthermore, there is great agreement among researchers that hidden champions increase their market niches by going international (e.g. Blackburn et al., 2001; Venohr and Meyer, 2007; Witt and Carr, 2014; Yoon, 2013). In doing so, these companies accomplish economies of scale which they would not have been able to realise if they had stayed in narrow niches (Simon, 1997, pp. 222). Through the establishment of sales and service subsidiaries abroad, their internationalisation strategy goes far beyond conventional export measures. This proximity to customers is commonly considered as a pivotal success factor of hidden champions (Baker

and Mazzarol, 2015; Rammer and Spielkamp, 2015, p. 21; Voudouris et al., 2000; Yoon, 2013).

A high degree of *innovativeness* seems to be another major characteristic of hidden champions. While a pioneering innovation often provides the initial impetus for becoming a market leader, later innovations do not need to be precipitous, but may emerge discretely (Simon, 1996) and thereby can continuously improve the company's performance. Rammer and Spielkamp (2015, p. 22) do not agree unconditionally on this matter. They rather point to the importance of radical innovations as they offer hidden champions the opportunity to gain first mover advantages. The authors further point out that the majority of hidden champions develop innovations themselves. In this regard, by referring to the results of a qualitative study on Swiss hidden champions, Kaudela-Baum et al. (2014) advise employers to provide their employees with creative freedom. This way, hidden champions can use the full innovative potential of their employees. In a similar vein, Voudouris et al. (2000) find evidence that managers of hidden champions encourage an open communication policy across hierarchies and promote mutual trust that also serve to stimulate innovation. Nonetheless, against common expectations, the results of a quantitative analysis of Yoon (2013) on the characteristics of Korean hidden champions in the manufacturing sector reveal that hidden champions do not have higher expenditures for research and development activities than a control group of non-hidden champions.

As regards the management level, hidden champions are commonly assumed to display a high level of continuity. Accordingly, the large majority of German hidden champions, namely two thirds, are *family-owned and managed businesses*. Similar results are gathered by Venohr and Meyer (2007). In a recent article, however, Simon (2014) reports that this share has decreased during the last decade.

The strength of hidden champions is purportedly further based on the *competences of the labour force*. Highly qualified employees are commonly regarded as a key asset by the management of hidden champions and thus also benefit from continued training provided by the company (Voudouris et al., 2000; Witt and Carr, 2014). Intrinsic and extrinsic motivational factors, such as incentives or autonomy in decision-making, strengthen employees' motivation and commitment (Rammer and Spielkamp, 2015, pp. 30). As a result, the workforce of hidden champions usually identifies strongly with the objectives and values of the employers. This, among others, results in low fluctuation rates at hidden champions. Therefore, these compa-

nies can turn the loyalty of their personnel and the pool of knowledge and expertise gained through long working histories to their advantage (Simon, 1996).

Hidden champions' long-term success also seems to rest on their efforts to avoid the outsourcing of core competences and on their hesitation to enter strategic alliances (Simon, 1996). Nevertheless, outsourcing may still be an option, if other market actors have strong specialisation advantages and produce a desired outcome more efficiently (Rammer and Spielkamp, 2015, p. 21). The avoidance of entering strategic alliances was recently confirmed empirically by Rammer and Spielkamp (2015, p. 20). The authors explain this behaviour with hidden champions' strong aspiration for independence. The Korean study of Yoon (2013) as well as the German study of Rammer and Spielkamp (2015, p.20), however, suggest that hidden champions can greatly profit from applying a collaboration-oriented strategy, e.g. by benefiting from external knowledge.

Finally, hidden champions are supposed to attach great importance on solid financing (Simon, 2012).

3 Empirical data

As shown in chapter 2, hidden champions are said to have unique characteristics. However, the presented research studies predominantly had a practical orientation and neglected the verification of their results with the help of econometric methods. Therefore, this study aims to close this gap and examine the factors that lead companies to become hidden champions.

3.1 Research Sample

The analysis uses a secondary data set originally created for the purpose of investigating fast growing firms in Germany (Schlepphorst and Schlömer-Laufen, 2016, in press). It is based on an online survey targeting 14,389 owners and managers of German companies which was carried out between October 2015 and January 2016.

The entire randomly stratified sample is representative of Germany's company population of all industries and sizes with a minimum of five employees. In recognition of the fact that only a small fraction of all German companies grow fast, the drawing of the sample was divided into two groups in order to increase the likelihood of obtaining a sufficient number of respondents belonging to the target group. Part A consists of 6,728 companies that were randomly drawn in accordance with the criteria described above ('drawing A'). The 7,661 com-

panies of part B principally fulfilled the same criteria, but this sample was randomly drawn out of a group of companies whose prior development suggested that they were growing fast ('drawing B').

The sample consists of 693 complete responses, reflecting a 4.8 percent response rate.² Owing to missing responses and to ensure the comparability of our results we finally make use of 409 complete responses.

3.2 Measures

All variables refer to activities and circumstances within the last five years, unless otherwise stated. The variables are mostly based on self-reports. We are aware that the subjective perceptions may bias the results. Nonetheless, we agree with other studies (e.g. Semrau and Werner, 2012) that this approach is appropriate for our study.

Dependent Variable

In accordance with Venohr (2015) and Simon (2012), we differentiate hidden champions from their non-hidden champion counterparts by referring to the criterion of market leadership.³ This variable is operationalised by self-estimated responses to the question, whether the company was (on the basis of market shares) a market leader in Europe with at least one product or ranked among the top three market leaders in the world within the last five years. The variable was coded 1, if companies approved this question, and 0 if otherwise.

Independent Variables

For the sake of clarity, we subdivided the great number of independent variables inductively into four categories, referring to business objectives, market-related factors, ownership and management structures and strategic measures.

Business objectives – To capture the companys' strive for maximising their market shares, the respondents were asked to value the importance of this specific goal on a scale ranging from 1 (unimportant) to 5 (very important). We also asked the respondents to appraise the relevance of further goals, i.e. their ambition to maximise profits and to increase the company value in

² Among all companies, 2.5 percent stem from drawing A and 2.3 percent from drawing B. As expected, bivariate tests show that the response rates do not differ between the two drawings.

³ Simon applies two further criteria (revenue and level of public awareness) to determine hidden champions.

the long-term. Subsequently, we created dichotomy variables, taking the value 1 if the goals were considered (highly) relevant, and 0 if otherwise.

Market-related factors – To capture the companies' differentiations from competitors, we asked the survey participants about their general strategic position in the market, i.e., whether the company occupies a niche or serves the market as a whole, through the provision of high quality products (see Porter 1998). The variable is coded 1 if firms focus on a niche and 0 if otherwise. To explore the financial situation we use a question in which the respondents were asked to evaluate the degree to which they are satisfied with the financial situation of the company. The question was based on a 5-point Likert scale. The variable is coded 1 if firms are (very) satisfied, and 0 if otherwise.

Ownership and management structures – There are countless definitions of what a family business is. We draw on the family business definition of the Institut für Mittelstandsforschung (IfM) Bonn, as applied in the primary data set (Schlepphorst and Schlömer-Laufen, 2016, in press). This definition is well established in Germany and proved to be feasible and successful. In its studies, IfM Bonn defines a family enterprise as an enterprise where up to two natural persons or their family members have at least 50 percent ownership of the company and where these natural persons are also involved in the management of the company (Wolter and Hauser, 2001, p. 33). The structure of the management team was measured by the number of managers.

Strategic measures – To gain insights into the strategic activities of hidden champions we used several measures that have been found in the literature. The items included education and training measures for employees, international business activities, research and development activities, the provision of tangible and intangible incentives to the workforce, outsourcing measures and whether the companies have (introduced) a corporate mission statement. To capture the companies' degree of innovativeness, the respondents were further asked whether they had launched a new product or service (i.e. new for the market or the company) or had improved existing products, services or technological processes. All variables were coded as dummy variables.

Control Variables

We also add several control variables into the estimation model, i.e. environmental and socio-demographic factors. Considering the fact that the environment, in which companies are embedded, influences their performance (Lumpkin and Dess, 2001), we included variables to capture the development trends of the respective sector. That is, the survey participants were

asked to give their responses on a Likert-scale ranging from 1 (it does not apply at all) to 5 (it fully applies) on the intensity of competition, change and growth. We then created dummy variables reflecting the value 1 in case of great to high intensity, and 0 if otherwise.

As regards socio-demographic factors, we controlled for company size in 2012 and age as well as for location. The age and size of the companies were included as logarithms in order to adjust for skewed distribution of the original variables. Location was incorporated as a binary variable reflecting the value 1 if the company is located in West Germany and 0 if otherwise. We created dummy variables for a set of industry affiliations with the value of 1 if companies are engaged in the distribution or service industry. We also controlled for drawing A and B.

4 Empirical Analyses

Determinants of being hidden champions

The results of our descriptive analyses reveal that the data include 14.8 per cent hidden champions (see Table 1). Compared to the share of hidden champions in the stock of all German companies, this share is considerably large. This can be explained by the fact that the present sample only includes companies with a minimum of five employees. Other estimations include micro-enterprises that predominate the number of German companies.

On a descriptive level, table 1 points to some (initial) differences between hidden champions and non-hidden champions. The major differences refer to internationalisation as well as to research and development activities. The hidden champions in our sample have initiated or continued both measures more frequently than their counterparts.

Table 1: Descriptives (Means)

Variables	Hidden champions	Non-hidden champions	All firms
Hidden champions	14.8	85.2	100.0
Objective: Maximising market share	60.0	37.6	40.9
Objective: Maximising profit	56.7	48.6	49.8
Objective: Long-term increase of company value	85.0	72.8	74.6
Assessment: Greatest satisfaction with the company's financial situation	68.3	55.8	57.4

Niche strategy with quality products/services	35.0	47.7	45.8
Family Business	53.3	68.5	66.3
Number of managers	2.6	2.2	2.2
Measure: (Further) training of workforce	83.3	76.9	77.8
Measure: International business activities	80.0	24.9	33.0
Measure: Incentives to workforce	56.7	44.5	46.3
Measure: Outsourcing	25.0	19.7	20.4
Measure: Mission statement	40.0	28.0	29.8
Measure: Research and Development	70.0	20.8	28.1
Launch new products/services on the market/into the firm	85.0	52.0	56.9
Improvement of existing products/services	83.3	62.1	65.3
Improvement of technological processes	63.3	35.8	39.9

Continue Table 1: Descriptives (Means)

Variables	Hidden champions	Non-hidden champions	All firms
<i>Control variables</i>			
Strong competition within the industry	73.3	76.3	75.9
Great changes within the industry	51.7	48.0	48.5
Strong growth within the industry	28.3	21.1	22.2
Number of employees in total in 2012	663.9	137.8	215.6
Age of company	42.6	34.7	35.8
Location in West Germany	81.7	82.7	82.5
Industry: Distribution	21.7	29.2	28.1
Industry: Manufacturing	66.7	35.6	40.2
Industry: Services	8.3	24.0	21.7
Industry: Other services	3.3	11.3	10.1
Drawing A	58.3	47.4	49.0
Observations	60	346	406

Source: Own calculations (2016)

It cannot be ruled out that there are dependences between the explaining variables described, e.g. between company size and research and development activities. Therefore, we use an econometric estimation model – more precisely a logistic regression model – to test the influence of these variables simultaneously. In doing so, we can determine the factors that positively or negatively affect the probability of a company to belong to the group of hidden champions. Beyond that, we tested for multicollinearity. Computations of the variance inflation factor (VIF) do not show (serious) threats of multicollinearity (mean VIF=1.3).

All independent variables, which have been analysed in table 1 are now part of the logistic regression model. This model estimates the probability that a company has held a market-leading position in Europe or has ranked among the top three in its global market. There is reasonable predictive power of the model with a pseudo- R^2 (McFadden) of 0.4019 (Urban 1993, p. 62).

Table 2: Logistic Regression – Likelihood of being a hidden champion

Dependent Variable: Hidden Champion (yes)	Model 1 coefficients
Objective: Maximising market share ((highly) relevant)	0.953 [*] (2.41)
Objective: Maximising profit ((highly) relevant)	-0.0489 (-0.12)
Objective: Long-term increase of company value ((highly) relevant)	0.191 (0.37)
Assessment: Greatest satisfaction with the company's financial situation ((fully) applies)	0.664 (1.57)
Niche strategy with quality products/services (yes)	-0.213 (-0.52)
Family business (yes)	-0.207 (-0.48)
Number of managers	0.107 (1.19)
Measure: (Further) training of workforce (yes)	-0.0334 (-0.06)
Measure: International business activities (yes)	1.982 ^{***} (4.27)
Measure: Incentives to workforce (yes)	0.243 (0.52)
Measure: Outsourcing (yes)	-0.0634 (-0.14)
Measure: Mission statement (yes)	-0.481 (-0.99)
Measure: Research and Development (yes)	1.051 [*] (2.32)
Launch new products/services on the market/in the firm (yes)	0.717 (1.25)
Improvement of existing products/services (yes)	-0.237 (-0.50)
Improvement of technological processes (yes)	0.935 [*] (2.15)
Strong competition within the industry (yes)	-0.0732 (-0.16)
Great changes within the industry (yes)	0.0983 (0.25)
Strong growth within the industry (yes)	0.344 (0.77)
Number of employees in total in 2012 (ln)	0.242 ⁺ (1.66)
Age of company (ln)	-0.0818 (-0.32)
Location in West Germany (yes)	-0.0650 (-0.12)

Continue Table 2: Logistic Regression – Likelihood of being a hidden champion

Dependent Variable: Hidden Champion (yes)	Model 1 coefficients
Industry: Distribution (yes)	-0.813 ⁺ (-1.72)
Industry: Services (yes)	-1.346** (-2.85)
Industry: Other services (yes)	-1.543 (-1.54)
Drawing A (yes)	0.937* (2.54)
Constant	-5.715*** (-4.81)
Observations	406
Pseudo R^2 /Wald- χ^2	0.402/89.67***

Note: ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; *References for industry: manufacturing industry; robust standard errors; t statistics in parentheses.*
Source: Own calculations (2016)

As shown in Table 2, hidden champions particularly differ from their counterparts in terms of four characteristics. This precisely applies to the companies' objective of maximising their market shares, international business activities, research and development activities and the improvement of technological processes. Therefore, this study confirms a considerable number of features deemed to characterise hidden champions. Specifically, the (strong) aspiration to maximise the market share during the last five years increases the likelihood of belonging to the group of hidden champions. Furthermore, international business activities and research and development activities have positive effects on the likelihood of gaining market leadership and becoming a hidden champion. The same is true for companies that have improved their technological processes within the last five years.

The remaining independent variables of our model do not show significant effects. For example, the provision of incentives to employees within the last five years, the conduct of radical and incremental innovations in the same time period and ownership and management structures have no influencing effects on the likelihood of being a hidden champion. As regards the latter factor, the findings lead to the conclusion that family and non-family businesses have equal chances of belonging to the group of hidden champions.

Several of the control variables are also significant. The number of employees is positively correlated with being a hidden champion. This finding indicates that market leadership is no phenomenon of small-sized companies. Rather a certain size is needed to meet market demands. Beyond that, the results reveal that manufacturing companies have greater chances of

belonging to the group of hidden champions than companies in the service and distribution sectors. In particular, the last item confirms results of a current panel analysis, where the great majority of hidden champions (86 percent) operate in the manufacturing sector (Rammer and Spielkamp, 2015, p. 14).

Support policies for hidden champions

In a further step, we aim to find out whether companies can be supported in their development to become hidden champions. In doing so, we apply the same logistic regression model but add a variable on whether the companies attach great value on public promotional funds. This question was based on a 5-point Likert scale. For the purpose of this study, we coded the variable 1 if public promotional funds play a (large) role, and 0 if otherwise.

Interestingly, table 3 reveals a significant negative effect. This means, companies that generally place great importance on the use of publicly available promotional funds are less likely to belong to the group of hidden champions.

Table 3: Logistic Regression: Likelihood of being a hidden champion

Dependent Variable: Hidden Champion (yes)	Model 2 coefficients
Relevance of promotional funds (yes)	-1.132 ⁺ (-1.69)
Objective: Maximising market share ((highly) relevant)	1.085 ^{**} (2.68)
Objective: Maximising profit ((highly) relevant)	0.0125 (0.03)
Objective: Long-term increase of company value ((highly) relevant)	0.192 (0.38)
Assessment: Greatest satisfaction with the company's financial situation (fully) applies	0.592 (1.40)
Niche strategy with quality products/services (yes)	0.592 (1.40)
Family business (yes)	-0.231 (-0.54)
Number of managers	0.128 ⁺ (1.65)
Measure: (Further) training of workforce (yes)	-0.166 (-0.34)
Measure: International business activities (yes)	1.963 ^{***} (4.21)
Measure: Incentives to workforce (yes)	0.241 (0.52)

Continue Table 3: Logistic Regression: Likelihood of being a hidden champion

Dependent Variable: Hidden Champion (yes)	Model 2 coefficients
Measure: Outsourcing (yes)	-0.0631 (-0.14)
Measure: Mission statement (yes)	-0.592 (-1.15)
Measure: Research and Development (yes)	1.214* (2.46)
Launch new products/services on the market/in the firm (yes)	0.793 (1.37)
Improvement of existing products/services (yes)	-0.254 (-0.52)
Improvement of technological processes (yes)	0.952* (2.13)
Strong competition within the industry (yes)	-0.175 (-0.39)
Great changes within the industry (yes)	0.0467 (0.12)
Strong growth within the industry (yes)	0.475 (1.07)
Number of employees in total in 2012 (ln)	0.211 (1.44)
Age of company (ln)	-0.00548 (-0.02)
Location in West Germany (yes)	-0.217 (-0.43)
Industry: Distribution (yes)	-0.821 ⁺ (-1.73)
Industry: Services (yes)	-1.299** (-2.68)
Industry: Other services (yes)	-1.642 (-1.62)
Drawing A (yes)	0.893* (2.40)
Constant	-5.533*** (-4.60)
Observations	406
Pseudo R^2 /Wald- χ^2	0.411/85.89***

Note: ⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; *References for industry: manufacturing industry; robust standard errors; t statistics in parentheses.*
Source: Own calculations (2016)

5 Discussion and final conclusions

Our empirical analyses confirm some characteristics that have traditionally been attributed to hidden champions. Setting the ambitious goal of maximising market shares, international

business activities, research and development activities and the improvement of technological processes are conducive factors for enterprises to have a higher likelihood of gaining a market leadership position.

Most strikingly, our results provide the indication that hidden champions do not ascribe much importance to publicly available promotional funds. In fact, the opposite is true. If they do consider them (very) important, they are less likely to be a hidden champion. These results indicate that institutional framework conditions (and non-financial assistance) seem to be more important for companies to gain and maintain market leadership than (temporary) promotional funds.

In sum, the results indicate that a key success factor for any hidden champion refers to the business-related objectives and entrepreneurial capabilities of the entrepreneurs and company founders themselves. To foster the development of these characteristics, there are several potential – and in the best case intertwined – policy measures. The following suggestions may help other countries to emulate the success patterns of hidden champions.

Two distinctive features of hidden champions relate to the great importance they place on research and development activities and on the improvement of technological processes. Obviously, market leadership cannot be attained without highly competitive products and services or without an efficient production process. The topics of research and development and innovation activities are therefore of key importance, both for (potential) hidden champions and for policy makers. Despite the afore-mentioned hesitation of hidden champions to enter strategic alliances, research and development activities can be further supported – as is the case in Germany – by policies that promote the cooperation of innovative companies with universities and specialised public research institutions, thus facilitating technology transfer and synergies from joint research and development activities. German policy makers have also enacted measures which provide support for research and development co-operation of several innovative enterprises as well as for clusters and industrial networks which can generate positive external and spill-over effects. Since all innovation, competitiveness and growth is eventually generated by the companies' employees, policy makers might install similar framework conditions and educational systems as in Germany which is renowned for the high skill level, flexibility and innovativeness of their employees. A fundamental principle of Germany's systems of vocational training and tertiary education is the combination of both theory and practice, e.g. in the form of dual apprenticeship training and dual (tertiary) studies. These systems require the commitment and active co-operation of employers, but reward them with

skilled employees who are able to make significant contributions to innovation and competitiveness. A comprehensive entrepreneurship education at all levels of education is another vital ingredient for innovation and intrapreneurship.

Internationalisation activities are another distinctive feature of hidden champions. German enterprises in general and also hidden champions benefit from institutions that provide information and advice on the key issues of business activities in foreign markets, such as market potential, political and economic risks, potential business partners, culture and regulation/administrative procedures. Policy makers in all countries that intend to foster growth and internationalisation of their domestic companies are advised to establish a well-structured and coordinated infrastructure which provides (growth-oriented) companies with targeted assistance. Basic elements in Germany include centralised information portals with country-specific information on the internet and a dense network of agencies at home and abroad which offer personal, more enterprise-specific advice. Of increasing importance are peer learning approaches such as interactive forums on the internet which connect experienced companies with newcomers that intend to enter a specific foreign market for the first time.

Legal norms and administrative procedures provide the regulatory framework conditions for the companies' business activities. In this regard, governments should increase their efforts to streamline and simplify regulations and reduce administrative burdens and compliance costs as it is increasingly practiced by German governments on national and regional level. Another important feature of Germany's support policies for (growth-oriented) companies is the integration of representatives from the business community into policy making, e.g., through mixed working groups, consultations, advisory groups or joint policy initiatives. In a consensus-oriented, "coordinated" social market economy as in Germany, these measures help to design framework conditions, institutions and policies which tackle relevant challenges to businesses and achieve effective impacts.

In order to lay the foundations for an increase of the pool of (potential) founders of hidden champions at an early stage, policy makers should target the school system and create interest in entrepreneurship and foster talents, capabilities and attitudes among students in primary and secondary schools. Especially interesting are extracurricular talent centres in Germany which systematically support young people with talents in entrepreneurship, innovation and STEM-competencies (science, technology, engineering and mathematics). An increased focus on out-of-the box thinking, learning-by-doing measures and partnerships between schools and regional enterprises are also important cornerstones of German policies. Entrepreneurship edu-

cation should continue in tertiary education, where universities are given incentives to offer a variety of entrepreneurship projects and to establish an infrastructure to support innovative start-ups from students and graduates. Experiential entrepreneurship activities and entrepreneurial learning projects help participants to develop critical skills for innovation, interdisciplinary thinking, risk management and problem solving. Internships in growth-oriented start-up companies provide students with a real life experience of managing a new business venture. Since start-ups from university students and graduates are increasingly recognised as key sources of innovation and growth, policy makers should connect the existing infrastructure of student start-up centres more strongly with the regional entrepreneurial ecosystems in order to facilitate access to knowledge, finance, support services and the business community.

6 Limitations

This study's main contribution lies in shedding light on those factors which support a company in becoming a market leader. Nonetheless, our study is not without limitations. Firstly, even though we consider our sample to be representative of Germany's stock of companies, we are aware that the selection criteria purposefully addressed fast growing businesses to a great extent. This may bias our findings. Secondly, the data consists of self-reported data that reflects the subjective perceptions of survey participants. This data-collection instrument is, however, not uncommon in research. Indeed, prior research by Brush and Vanderwerf (1992, p.164) and Dess and Robinson (1984, p.264) established proof that self-reported data can be considered valid and reliable. Nonetheless, one must be aware of the threat of biased perceptions that may jeopardise outcomes. Thirdly, we confirmed several characteristics of hidden champions in Germany. We suppose that they are of general importance, regardless of the company's locations. Nonetheless, we cannot assert that the findings are readily transferable to other countries and cultural contexts and therefore invite international researchers to conduct follow-up studies.

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