Learning Behaviour of Young Technology Firms in Foreign Markets: An Empirical Analysis of a Path Model

Marius Wehner
University of Giessen
Faculty of Economics and Business Administration
Chair for Business Administration VIII
Licher Str. 66
35394 Giessen
Tel.: +49 641 9922102
Fax: +49 641 9922109
e-mail: marius.wehner@wirtschaft.uni-giessen.de

Christian Schwens
University of Giessen
Faculty of Economics and Business Administration
Chair for Business Administration VIII
Licher Str. 66
35394 Giessen
Tel.: +49 641 9922103
Fax: +49 641 9922109
e-mail: christian.schwens@wirtschaft.uni-giessen.de

Ruediger Kabst
University of Giessen
Faculty of Economics and Business Administration
Chair for Business Administration VIII
Licher Str. 66
35394 Giessen
Tel.: +49 641 9922100
Fax: +49 641 9922109
e-mail: ruediger.kabst@wirtschaft.uni-giessen.de

Abstract

According to the reconceptualization of "Absorptive Capacity" (Cohen & Levinthal, 1989/1990/1994) performed by Zahra & George (2002), this paper develops and empirically measures a model of learning behaviours of young technology-based firms by drawing on two dominant internationalization theories. The aim of the paper is twofold. First, the model aims at explaining how firms learn and which kinds of knowledge they acquire during their first internationalization. Second, the study examines which role the international experience of the founder plays in that learning process. It is hypothesized that activation triggers like the decider's activity influence potential absorptive capacity in terms of conducting prior foreign market analyses and imitating competitors or perceived "best practices" for market entry. Further it is hypothesized that this potential absorptive capacity has an impact on realized absorptive capacity in terms of acquiring institutional and tacit knowledge. Finally, it is assumed that tacit knowledge plays a key role in obtaining sustainable competitive advantages, namely marketing and technology learning. The model is tested with data from German young high-tech firms. Structural equation modelling provides support for the hypotheses derived from the theoretical framework. Results indicate that "Absorptive Capacity" could be the conjunctive element between the two dominating internationalization theories.

1. Introduction

The first internationalization of young firms is always associated with high risks and uncertainties which can be summarized as liabilities of foreignness (Hymer, 1976; Zaheer, 1995; Oviatt & McDougall, 2005). Such firms quickly need to understand the rules of the new business culture and the foreign market to overcome their liabilities of foreignness. Especially for young technology firms, generating sustainable competitive advantages in a new market is mainly driven by the capacity to acquire and exploit foreign market knowledge (Oviatt & McDougall, 1994/1997; Autio et al., 2000; Zahra et al., 2000; Autio, 2005).

The two milestone theories in the research field of international entrepreneurship, namely the Process Theories of Internationalization (Johanson & Vahlne, 1977/1990) and the International New Venture Theory (Oviatt & McDougall, 1994/1997), attest "knowledge" and "learning" about the foreign market as critical factors during the internationalization. "Experience" is the third critical construct mentioned in the existing entrepreneurship and internationalization literature (Bloodgood et al., 1996; Burgel & Murray, 2000; Kundu & Katz, 2003; McDougall et al., 2003).

Although knowledge, learning and experience play such an important role in the context of internationalization, both research streams cannot explain how and particularly what firms learn during their first internationalization and, moreover, which role the international experience of the founder plays in that learning process. Without adding an approved learning theory, both internationalization theories are not able to adequately answer these research questions. We suggest that the theoretical construct "Absorptive Capacity" (Cohen & Levinthal, 1989/1990/1994) in its reconceptualization by Zahra & George (2002) will allow us to overcome this shortfall of the both internationalization theories.

Cohen & Levinthal (1990) characterized Absorptive Capacity (ACAP) as the capability of an organization to identify the value of new knowledge that relates to prior knowledge within the organization, absorb that new knowledge and apply it to commercial ends. In their reconceptualization, Zahra & George (2002: 186) defined ACAP "[…] as a set of organizational routines and processes by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organizational capability". These four capabilities are four dimensions of ACAP which influence the outcomes of an organization (Zahra & George, 2002).

To our knowledge, an adaption and empirical measurement of this extension of ACAP in the context of both internationalization theories is missing so far. We assume that the reconceptualization of ACAP is the conjunctive element to combine these internationalization theories, which are mostly perceived as contradictory. On the one hand, the International New Venture Theory is explicitly focused on explaining the conditions within new ventures before internationalization, but it almost makes no statement for the learning process thereafter. On the other hand, the Process Theory of Internationalization is explicitly focused on the learning process after internationalization, but it remains unclear what happens before. Thus, we use the reconceptualization of ACAP by Zahra & George (2002) because it provides a structure to simultaneously analyze the learning process before and after the first internationalization. Taking these considerations into account, in addition we will analyze the impact of international experience on this derived structure.

Existing studies have elaborated on the impact of international experience on the internationalization behaviour. Young firms which are able to revert to existing knowledge within the organization frequently internationalize faster and more prosperously than other firms because of their ability to identify and exploit new market opportunities at an early stage of the internationalization process (Bloodgood et al., 1996; Yeoh, 2004; Oviatt & McDougall, 2005). Thus, a higher ACAP empowers the whole organization to acquire, assimilate, transform, and exploit essential foreign market knowledge right from inception (Oviatt & McDougall, 2005; Autio et al., 2000; Chetty & Campbell-Hunt, 2004).

However, past research has always used ACAP in its definition by Cohen & Levinthal (1990). Therefore, we want to use our measurement of ACAP to examine the impact of the international experience of the founder on the whole process of knowledge acquisition and exploitation. The idea is that young firms which could revert to the international experience of the founder have a higher ACAP right from inception on and, therefore, can acquire a copious comprehension of different kinds of foreign market knowledge. On this account, we test the differences between two groups of firms: (1. Group) firms with an internationally experienced founder against (2. Group) firms without an internationally experienced founder.

Our study makes several contributions to the research field. First, our paper empirically answers the question how ACAP emerges and develops during the first internationalization. Second, the measurement of the reconceptualization of ACAP seems to be a fruitful reification (Lane et al., 2006) of a theoretical construct that gives a profound understanding of the learning mechanisms within an organization. Third, our study deepens the comprehension

for the complex multifaceted construct of organizational learning during the first internationalization (Zahra, 2005). Fourth, we identify differences between two groups: the founders who were already internationally experienced before inception and those who were not.

To answer our research questions, we are going to proceed as following. First, we will briefly give a literature review on studies elaborating foreign market knowledge, learning, and ACAP. Second, we will introduce our theoretical framework emphasizing the reconceptualization of ACAP (Zahra & George, 2002). Then, the hypothesis derived from our framework and the two established internationalization theories will be tested on a sample of German technology firms acting in Biotechnology, Nanotechnology, Microsystems and Renewable Energies. In the end, we will discuss our empirical results and finally point out the limitations of our study and its implications for future research.

2. Literature Review

The absorption of foreign market knowledge plays an important role in the dominating Process Theories of Internationalization (PTI) and in the International New Venture Theory (INV) (Autio et al., 2000). Following the PTI, the incremental process of knowledge acquisition and exploitation regulates the stepwise process of internationalization (Johanson & Vahlne, 1977/1990; Eriksson et al., 1997; Eriksson et al., 2000). In contrast, the INV stresses that foreign market knowledge may already exist at firms foundation due to an internationally experienced founder. Thus, a rapid internationalization is possible right from inception (Oviatt & McDougall, 1997; Autio et al., 2000; Autio, 2005).

It is widely agreed that foreign market knowledge is not a single construct. Penrose (1959) differs between objective knowledge, which can be taught, and experiential knowledge, which can only be learned through own experience. Objective knowledge contains knowledge about the institutional framework, rules, values, and norms. In the literature, the terms institutional, general, and explicit knowledge have been used synonymously for objective knowledge (Johanson & Vahlne, 1977/1990; Eriksson et al., 1997; Eriksson et al., 2000). Experiential knowledge contains knowledge about the business climate and culture, cultural patterns and structures of the market system, and characteristics of the individual customer, competitor or supplier. In the literature, the terms market-specific, business, and tacit knowledge have been used synonymously for experiential knowledge (Nonaka, 1991; Levitt & March, 1988;

Forsgren, 2002; Bengtsson, 2004; Johanson & Vahlne, 1977/1990; Eriksson et al., 1997; Eriksson et al., 2000).

However, "[l]earning is multifaceted, and we have just begun to explore selected parts of this complex construct" (Zahra, 2005: 25). Research concerning the knowledge acquisition process and especially the learning process during a firm's internationalization is limited so far. In the following, we want to review briefly prior research on the sources of foreign market knowledge, learning, and ACAP in its definition by Cohen & Levinthal (1990).[1]

The article of Eriksson, Johanson, Majkgard & Sharma (1997) extends the foreign market knowledge literature. The authors examine the impact of a lack of foreign market knowledge on the perceived cost of internationalization. In this study, the lack of foreign market knowledge is explicitly distinguished in foreign business, foreign institutional, and internationalization knowledge. Hypotheses derived from the theoretical framework are tested on a sample of 362 Swedish service firms. Results show that a lack of foreign business and foreign institutional knowledge has a strong influence on the perceived cost of internationalization. Further, Eriksson, Johanson, Majkgard & Sharma (2000) examine the effect of variation in the geographical scope of international business operations on internationalization, foreign business, and foreign institutional knowledge by drawing on organisational learning literature (Cohen & Levinthal, 1990; Argyris & Schön, 1978).

The study by Eriksson & Chetty (2003) examines the effect of acquired experience on foreign market knowledge in conjunction with ACAP. The authors test their hypotheses on a dataset of 152 CEO's of international small- and medium sized Swedish firms. Results show that a lack of foreign market knowledge is influenced by the firm's ACAP generated in dyadic relationships with foreign customers and the customer's network.

Autio, Sapienza & Almeida (2000) point out that early internationalization and high knowledge intensity are associated with faster international growth. Moreover, firms with more imitable technologies grow faster. The authors use panel data from the Finnish electronics industry because it is a dynamic industry in which knowledge is likely to be an important factor. Based on organizational learning theory (Cohen & Levinthal, 1990; Barkema & Vermeulen, 1998), Autio et al. (2000) argue that the creation of knowledge depends on what a firm knows when it is faced with new knowledge and how it assimilates and exploits the new knowledge.

[1] For an extensive review on ACAP see: Lane, Koka & Pathak (2006) and Todorova & Durisin (2007)

Yli-Renko, Autio & Tontti (2002) propose and test a model of the international growth of technology-based firms by drawing on social capital theory and the knowledge-based view of the firm. Testing hypotheses on the same longitudinal data from the Finnish electronics industry like Autio et al. (2000), the authors show that social capital influences the acquisition and creation of knowledge and that this kind of knowledge is a key resource driving the international growth of high-tech firms. Moreover, the authors propose that both views on internationalization, the PTI and INV, are complementary, rather than contradictory. In their study, they argue that foreign market knowledge as well as knowledge intensity plays a key role in facilitating international growth.

Yeoh (2004) examines the success of 258 young, internationally operating US firms. The author distinguishes three types of organizational learning: market learning, technological learning, and social learning. In addition, the study emphasizes the moderating role of managerial characteristics, especially the top manager's prior international experience. Results show that learning abilities, particularly market learning, have an impact on the new venture performance. Furthermore, the study points out the moderating influence of the top management's prior international experience on the three types of learning.

All of the above mentioned studies emphasize the importance of foreign market knowledge and learning. Moreover, some studies identify ACAP as an important element to combine both internationalization approaches, the PTI and INV. Especially the studies by Eriksson et al. (1997) and Eriksson & Chetty (2003) indicate a connection between ACAP and the learning processes within the firm.

However, these studies only focus on the lack of foreign market knowledge. They do not examine the antecedents and outcomes of ACAP or adapt and empirically measure the reconceptualization of ACAP by Zahra & George (2002). Implications of foreign market knowledge and learning have been stressed in several studies like international sales growth (Yli-Renko et al., 2002), the pace of international growth (Autio et al., 2000), and perceived costs of internationalization (Eriksson et al., 1997; Eriksson et al., 2000). Studies elaborating the effects of the acquisition and exploitation of foreign institutional and foreign tacit knowledge on sustainable competitive advantages like market and technological learning are lacking so far.

The study of Yli-Renko et al. (2002) extends the literature in additionally applying managerial characteristics in order to examine the role of the management during the learning process. Nevertheless, studies which emphasize a multiple group analysis in order to examine

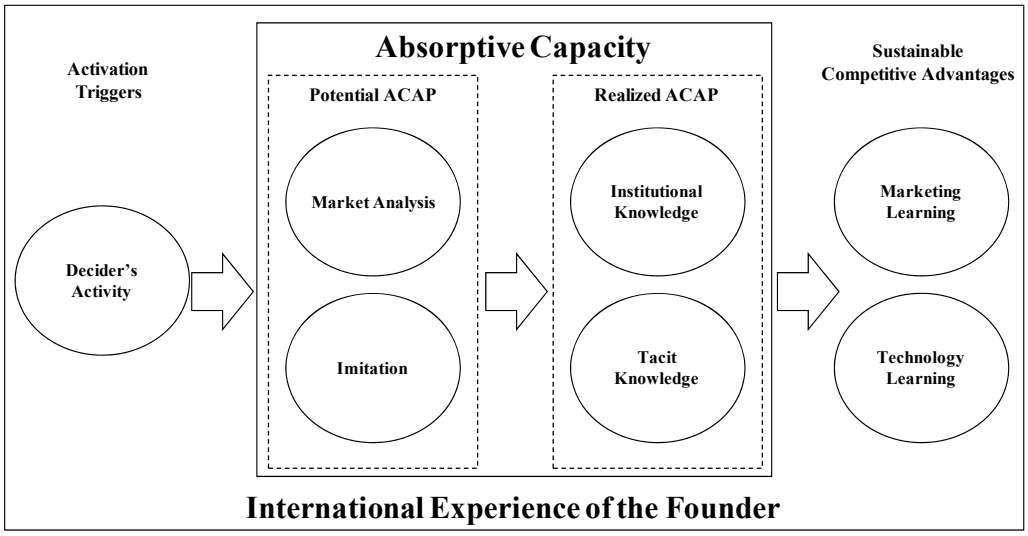
the role of an internationally experienced founder for the knowledge acquisition and exploitation process are missing so far. In the following, we will introduce our theoretical framework based on ACAP and derive our hypotheses by drawing on the PTI and INV.

3. Theoretical Framework

Cohen & Levinthal (1990: 128) originally defined ACAP as "[...] an ability to recognize the value of new information, assimilate it, and apply it to commercial ends. These abilities collectively constitute what we [the authors] call a firm's ‚absorptive capacity'." Zahra & George (2002) examined the use of that definition of ACAP in the existing literature and recommended a reconceptualization. The authors criticize recent empirical studies using that widely cited definition of ACAP by Cohen & Levinthal (1990) without capturing the multidimensionality and copious theoretical arguments of the ACAP construct. They state that ACAP is a dynamic capability which affects the sustainability of a firm's competitive advantages in the domestic as well was in the foreign market. The dynamic view on ACAP allows researchers to study antecedents and consequences in addition to the ACAP construct itself. ACAP mainly consists of two subsets: potential and realized ACAP. Antecedents of ACAP are "activation triggers" and the consequences are "competitive advantages".

We build our theoretical framework for ACAP based on Zahra & George (2002: 192) as shown in figure 1:

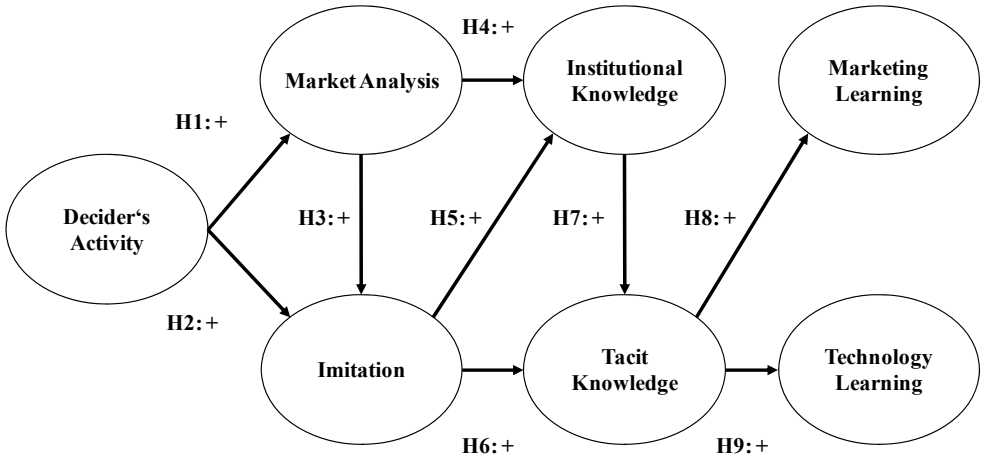
Figure 1: Theoretical Framework



Based on Zahra & George (2002: 192)

"Experience" is what we call "international experience of the founder". Experience could be a predictor for ACAP (Zahra & George, 2002), but we want to examine its impact on the whole process of knowledge acquisition. Therefore, experience is the major variable for conducting our multiple group analysis. Hence our hypothetical model is embedded in the international experience of the founder. We conceptualize our hypothesized research model on the basis of ACAP as illustrated in figure 2:

Figure 2: Hypothesized Research Model



Description: **Illustrated is our hypothesized research model. It is a simplification of our tested structural equation model and thus contains no error terms and indicator variables. The drawn arrows are the direct, hypothesized effects between the latent constructs. The assumed directions of the relationships are the same in both groups.**

Using the different perceptions of the Process Theory of Internationalization (PTI) by Johanson & Vahlne (1977/1990) and the International New Venture Theory (INV) by Oviatt & McDougall (1994/1997), we also derive our hypotheses for learning mechanisms within our specified research model from established organizational learning literature (Huber, 1991).

Decider's Activity

Following INV, the characteristics and attitudes of the decision maker are the main reasons for obtaining abilities to internationalize soon after inception (Chetty & Campbell-Hunt, 2004). The INV emphasizes both the proactivity of the founder to seek for market opportunities and his pursuit to realize these opportunities immediately (Yli-Renko et al., 2002). According to the definition of "International Entrepreneurship" by McDougall &

Oviatt (2000), these typical characteristics suggest a proactive behaviour of the decision maker seeking for opportunities in foreign markets before entry.

Johanson & Vahlne (1977) did not account for this proactive behaviour in the PTI. However, representatives of the PTI like Hohenthal et al. (2003) see the importance of the activity of the decision maker: Seeking for market opportunities is a result of activity. Activation processes provide a basis to explore and analyze a market and to create an advanced understanding for competitors, customers, and suppliers (Hohenthal et al., 2003).

Therefore, representatives of the INV and of the PTI explicitly or implicitly identify positive relationships between the activity of the decider and the accomplishment of prior foreign market analysis and the orientation to best practices or competitors (imitation). Hypothesis 1 and 2 summarize our argumentation:

H 1: The higher the decider's activity, the higher the degree of the prior foreign market analyses of the firm.

H 2: The higher the decider's activity, the higher the degree of imitation of perceived best practices and the acting of other competitors.

Market Analysis

Searching and noticing is one learning mechanism of knowledge acquisition and can be intended or unintended (Bengtsson, 2004; Huber, 1991). Summarizing location, market, and customer analysis as one construct, namely "market analysis", it represents the intentional search for information. The argument that young firms "[...] seldom conduct research on market potential or the competitive environment" (Yli-Renko et al., 2002: 287; Roberts, 1990) is not applicable. Utterback, Meyer, Roberts & Reitberger (1988) "[...] found that faster growing firms paid more attention to feedback about markets and competition from both internal and external sources" (Yli-Renko et al., 2002: 287; Utterback et al., 1988). It seems that successful, fast growing firms use external sources for acquiring knowledge about the market potential or environment. Market analyses provide the basis for acquiring, transforming, and exploiting knowledge from others, e.g. suppliers, customers or cooperation partners. Moreover, Hohenthal et al. (2003) show the necessity of an intended search for information to develop proper internationalization strategies. Market analyses rest upon studying competitors. Thus, firms will be oriented towards the actions of other companies if they make their decisions on the basis of market analyses. Generally speaking, these firms

will imitate the others. Hypothesis 3 summarizes our argumentation concerning the relationship between market analysis and imitation:

H 3: The more the firm conducts prior market analysis about the foreign market, the more the firm will imitate the actions of the competitors and perceived best practices.

As mentioned at the beginning of our study, young internationalizing firms are always at a disadvantage in a foreign country. This is exactly what Zaheer (1995: 341) calls "liabilities of foreignness". In other words, a firm has to overcome the uncertainties and risks during its internationalization process, e.g. problems of targeting new customers, understanding the institutions, and getting along with the government in the foreign market (Pedersen & Petersen, 2004). Therefore, a firm has to acquire the multiple facets of foreign market knowledge to reduce these uncertainties and risks in order to overcome their liabilities of foreignness.

The traditional model by Johanson & Vahlne (1977, 1990) points out that foreign market knowledge is missing before market entry. Eriksson et al. (1997) identify two subdimensions of foreign market knowledge: institutional and tacit knowledge. "Some knowledge is easy to acquire [and] can be learned by reading written material [...]" (Johanson & Vahlne, 2006: 170). Knowledge that can be easily acquired contains legal, political or economic information about the foreign market. This information can be summarized as institutional knowledge. Thus, institutional knowledge "[...] is acquired through standardized methods of collecting and transmitting information, e.g. market research, and can be easily transferred to other countries and replicated by other firms" (Eriksson et al., 1997: 340).

"If the assumption about experiential knowledge's key role in the international expansion of firms is eliminated, international market research appears to be an obvious instrument for preentry learning" (Pedersen & Petersen, 2004: 107). Market analyses seem to be a tool to acquire objective, explicit and easily transferable information about the foreign market before entry.

In contrast, tacit knowledge cannot be acquired as easily as institutional knowledge. "The vital requisite knowledge about the local business environment is inherently experiential and specific to the individual foreign market. Opportunities for preentry learning are accordingly low for [...] tacit knowledge" (Pedersen & Petersen, 2004: 110). Therefore, the acquisition of institutional knowledge is possible before market entry, while preentry learning of tacit knowledge is not. Hypothesis 4 summarizes our argumentation:

H 4: The more the firm conducts prior market analysis about the foreign market, the higher is the degree of institutional knowledge about the foreign market.

Imitation

The term "imitation" contains three elements: the observation of competitors, competitor analysis in the foreign market, and the orientation towards actions of competitors and perceived best practices. The PTI excludes vicarious learning by imitation and focuses on experiential learning after market entry. Vicarious learning means acquiring second-hand experiences from others, e.g. strategies, activities, and technologies of other competitors or best practices within the market (Huber, 1991). Research on organizational learning identifies different learning dimensions inclusive "imitation" (Forsgren, 2002). Eriksson et al. (1997), Huber (1991), and Levitt & March (1988) point out that firms can gain access to the knowledge of other firms without first obtaining the same experience on their own. Thus, vicarious learning is a learning mechanism, although the PTI neglects this mechanism.

Oviatt & McDougall (1994) do not describe a learning mechanism like imitation, either. If we follow the assumption that an internationally experienced founder gains his experience through actions in internationally operating firms or by working abroad first, we cannot exclude an orientation towards other firms by this founder.

Altogether we suggest that organizations will obtain access to the knowledge of others "[...] without having to follow exactly the same experiences as the [other] firms" (Pedersen & Petersen, 2004: 106). Therefore, imitation implicitly is an element in both internationalization theories, the PTI and the INV, and firms are able to acquire institutional knowledge as well as tacit knowledge through imitation of others. Hypothesis 5 and 6 summarize our argumentation:

H 5: The more the firm imitates the actions of competitors and best practices, the higher the degree of institutional knowledge about the foreign market.

H 6: The more the firm imitates the actions of competitors and best practices, the higher the degree of tacit knowledge about the foreign market.

Institutional Knowledge

Institutional knowledge refers to a firm's knowledge about the foreign government, the institutional framework, rules, norms, and values (Johanson & Vahlne, 1977/1990; Eriksson et al., 1997). A deep understanding of the local business culture can be necessary to gain

competitive advantages. The same is true for the knowledge about the language (Dichtl et al., 1990) and the culture in the foreign market (Hofstede, 1984) because both influence the understanding of the local business culture and the customer needs (Eriksson et al., 1997).

As mentioned above in the context of market analysis, institutional knowledge is that kind of knowledge which can be acquired before market entry (Pedersen & Petersen, 2004). Thus, we suggest that institutional knowledge can be chronologically acquired prior to tacit knowledge. The knowledge about laws, rules, norms, and values within a foreign market is a basis for developing tacit knowledge. Therefore, we consider an impact of institutional knowledge on tacit knowledge in our model. Hypothesis 7 summarizes our argumentation:

H 7: The higher the degree of institutional knowledge about the foreign market, the higher the degree of tacit knowledge about the foreign market.

Tacit Knowledge, Marketing and Technology Learning

Following Johanson & Vahlne (1977/1990/2003) and Eriksson et al. (1997), tacit knowledge refers to knowledge about the customer needs, competitors, technological trends, and business networks. This is emphasized by both PTI (Johanson & Vahlne, 1977/1990) and INV (Oviatt & McDougall, 1994/1997). Within the PTI it is the core element of the internationalization process, namely experiential learning (Eriksson et al., 1997; Bengtsson, 2004; Huber, 1991). Additionally, this kind of knowledge contains more aspects, e.g. methods and techniques of doing business abroad and foreign operations, transactions with local customers and suppliers and knowledge about persons in key positions within buyer organizations (Welch & Luostarinen, 1988).

In that context, Yeoh (2004) identifies market specific learning as well as technology learning. Particularly the lack of experience in marketing and technology hamper the internationalization of firms. Marketing learning contains the abilities to trade with customers, suppliers, and distributors as well as the adaptation of domestic marketing techniques to the needs of the foreign market. Technology learning includes the firm's capabilities to develop and enhance its existing products as well as to design new products. These two dimensions of learning are the basis for generating and obtaining sustainable competitive advantages (Yeoh, 2004). But this is only true for the relationship between tacit knowledge and marketing or technology learning. A direct influence of institutional knowledge on these two kinds of learning has been excluded by both PTI and INV. Hypothesis 8 and 9 summarize our argumentation:

H 8: The higher the degree of tacit knowledge about the foreign market, the higher the degree of marketing learning within the foreign market.

H 9: The higher the degree of tacit knowledge about the foreign market, the higher the degree of technology learning about the foreign market.

International Experience of the Founder

Prior experience is emphasized as an antecedent of ACAP by Zahra & George (2002) and plays a major role for the emergence of successfully operating firms which are international right from inception (Oviatt & McDougall, 1997). Following Huber (1991), this is a kind of congenital learning which relates to the experience of the founder in doing business in other international operating firms or abroad (Bengtsson, 2004). Firms with such an internationally experienced founder will obtain market opportunities earlier than other firms because of their high ACAP at an early stage of their internationalization (Oviatt & McDougall, 2005; Autio et al., 2000; Chetty & Campbell-Hunt, 2004).

Eriksson et al. (1997) argue on a firm level that a lack of institutional and tacit knowledge results in high costs of internationalization. The firm has no methods or solutions for the problems it faces within the foreign market. In contrast, if the management of the young firm provides international experience, the whole organization will benefit from this experience (Sapienza et al., 2006).

These considerations show that the prior international experience of the management team is likely to affect rather the whole process of knowledge acquisition and exploitation than only one aspect of it. Thus, we performed multiple group analysis of our study. We compare the first group of firms provided with an internationally experienced founder with the second group of firms whose founder has no international experience. We assume that the relationships significantly differ in both groups.

4. Methodology

Design and Data

For our analysis we conducted a questionnaire-based statistical survey of young German technology firms. The data were already used by Schwens (2008) in his analysis of early internationalizers. To include a reasonable number a) young technology firms with b) a high degree of internationalization, he defined a total number of firms from the four following different technology areas: Nanotechnology (N = 305), Biotechnology (N = 526),

Microsystems (N = 292), and Renewable Energies (N = 821).[2] The questionnaires were sent out to a total number of N = 1,944 firms from March until May 2007. The survey took place in close cooperation with the Association of German Engineers (VDI/VDE-IT) and the German Energy Agency (dena).

Questionnaires were sent to CEOs, export managers or owners of the firms. These key persons were perceived to have the deepest knowledge of the firm's inception strategies, internationalization practices, and strategic decisions. The response rate was about 17.7%, which is a total number of n = 345 received questionnaires. The respondents were international firms as well as firms which are active only in the domestic market. To answer our research questions, we had to reduce our sample to the internationally operating firms only. The sample consists of n = 248 (71.9%) firms with international activities and n = 87 (28.1%) firms with domestic activities. Therefore, our final sample comprises n = 248 internationally acting firms. The average age of the final sample is 11.0 years;[3] the average age at first internationalization is 3.3 years.[4] 48.8% (n = 121) of the decision makers possessed international experience before inception, 51.2% (n = 127) of the deciders did not.

To test for nonresponse bias, we followed Armstrong & Overton (1977) and examined differences between respondents and nonrespondents. We compared the early and late respondents in terms of international experience of the founder and the other latent constructs. A *t*-test showed no significant differences ($p < 0.05$ and $p < 0.01$) for all variables except market analysis (t-value = 2.624; p-value = 0.009). Results indicate that differences between respondents were not related to Nonresponse Bias.

Measurement and Validation of the Constructs

We mainly used existing scales from previous research. However, appropriate scales for potential and realized ACAP were not available; therefore, we predominantly adapted items established in the entrepreneurship and internationalization literature (Schwens, 2008). We always used multi-item measurement to minimize measurement errors and to ensure the coverage as regards content for the scales. Statement-style items were measured on five-point Likert scales (completely disagree – completely agree) referring to the internationalization decisions of the decision maker for the first foreign market of the firm. To ensure reliability in

[2] The German Ministry of Education and Research identified all four technology populations as future-oriented growth technologies (Schwens, 2008).

[3] Calculating the age: age = 2007 – year of inception

[4] Calculating the age at first internationalization: age at first internationalization = year of first internationalization – year of inception

both groups, we conducted a confirmatory factor analysis and afterwards a reliability analysis with Cronbach's Alpha. In the following we quote the results for Cronbach's Alpha first for the internationally experienced group and then for the internationally inexperienced group (Cronbach's α = 1. Group/ 2. Group)

Activation Triggers: To measure the decider's activity, we adapted three items from the study by Sonnentag & Kleine (2000) and Sonnentag & Frese (2002). The respondents were asked to what extent they tried to enhance their abilities by informing themselves about important developments in the focal market via the internet, via professional literature, and via cooperation partners (Cronbach's α = 0.699/ 0.808).

Potential Absorptive Capacity: The analysis of the foreign market before market entry, an adaption from Yli-Renko et al. (2002), was measured by means of a three-item scale. Respondents were asked to what extent the firm conducted comprehensive analyses of the foreign market situation prior to market entry, to what extent the firm conducted comprehensive site analysis prior to foreign market entry, and to what extent the firm minimized risks by extensively collecting information prior to market entry (Cronbach's α = 0.897/ 0.881). Using a three-item scale, imitation was measured by asking for the extent to which the firm observed the actions of the competitors, the extent to which the firm conducted competitor analyses within the focal market, and the extent to which the firm orientated itself towards the operations of other firms perceived as "Best Practice" (Cronbach's α = 0.797/ 0.830).

Realized Absorptive Capacity: To measure the knowledge items, we followed the study by Eriksson et al. (1997) and adapted three items for each construct. Institutional knowledge consists of knowledge about the institutional framework, rules, values, and norms. Respondents were asked to what extent they possessed knowledge about the business laws and rules, financial practices, and the local business culture in the foreign market (Cronbach's α = 0.881/ 0.874). Tacit knowledge contains knowledge about customers, competitors, and knowledge about business and technology trends in the foreign market. Respondents were asked to what extent they possessed knowledge about the products of customers, products of competitors, and developing technologies and trends in the focal market (Cronbach's α = 0.753/ 0.791).

Sustainable Competitive Advantages: From existing literature we adapted three items for marketing learning (Yeoh, 2004; Cavusgil & Zou, 1994; Madsen, 1998; Nakata & Sivakumar, 1996; Leonidou et al., 2002) as well as for technology learning (Yeoh, 2004; Lefebrve et al.,

1998; Zahra et al., 2000). With respect to marketing learning, we asked to what extent the firm acquired new knowledge in terms of adjusting their products to the needs in the foreign market, exploring new market segments beside the original market segment and tracing customer needs as well as trends of the market (Cronbach's α = 0.814/ 0.798). Regarding technology learning, respondents were asked to what extent the firm acquired new knowledge in developing new product designs, improving the process of product development, and integrating new technologies into their own technologies (Cronbach's α = 0.867/ 0.829).

International Experience: To distinguish both groups, we adapted two items from the studies by Bloodgood et al. (1996) and Burgel & Murray (2000). The management team possesses international experience if the founder has worked for an internationally operating firm before inception or if the he has worked abroad before inception.

Analytical Approach

In order to estimate our structural equation model (AMOS), we apply the two-stage approach by Anderson & Gerbing (1988) because it is consistent with the dominating structural equation modelling literature. According to the first step of this approach, we estimate the measurement model which allows bivariate correlations between the latent constructs only. For a multiple group analysis we have to establish a measurement model which is valid in both groups and invariant among the groups. Before we test the invariance of the measurement model, we accomplish a confirmatory factor analysis. Then, using the chi-square test, we empirically test the assumption whether the factor loadings are equal among the groups.

5. Results

Table 1 shows the means, standard deviations and bivariate correlations between the study variables. All correlations stay below 0.7. Thus, no serious risk of multicollinearity between the variables can be detected (Anderson et al., 1996).

Table 1: Means (M), Standard Deviations (SD), and Correlations

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.
1. International Experience	0.49	0.50							
2. Decider's Acitivity	3.56	1.03	0.08						
3. Market Analysis	2.53	1.16	0.01	0.47***					
4. Imitation	2.57	1.05	0.09	0.44***	0.56***				
5. Institutional Knowledge	2.84	1.00	0.14**	0.33***	0.47***	0.47***			
6. Tacit Knowledge	3.55	0.92	0.17**	0.46***	0.34***	0.56***	0.54***		
7. Marketing Learning	3.28	0.94	0.10	0.52***	0.32***	0.42***	0.35***	0.45***	
8. Technology Learning	2.76	1.11	0.06	0.30***	0.22***	0.40***	0.17**	0.35***	0.49***

(M = mean value; SD = standard deviation; significance levels: * = $p \leq 0.10$; ** = $p \leq 0.05$; *** = $p \leq 0.01$)

In the following, first, we analyze the unrestricted factor loadings in both groups in an unconstrained model. Second, we examine a more restricted model that assumes equal factor loadings in both groups, namely the constrained model. Altogether, we test the invariance of the measurement model among both groups. This means that we empirically answer the question if there is the same qualitative causal structure between items and constructs in the first group (with an internationally experienced founder) and in the second group (without an experienced founder) (Bollen, 1989; Arbuckle, 2006).

Measurement Model

Table 2 summarizes our constructs, their indicators, the estimate values, the standard deviation, and standardized estimates for the unconstrained model. The last column on the right hand side summarizes the standardized estimates for the constrained model. Comparing the two groups, we can state that all standardized factor loadings in the unconstrained model as well as in the constrained model are above 0.5. Most loadings are higher than 0.7. Some of the factor loadings in the unconstrained model were fixed to one to set the metric for the respective latent construct. This is necessary for estimating the model (Arbuckle, 2006). The remaining estimates are significant ($p \leq 0.01$), in the unconstrained as well as in the constrained model.

Table 2: Estimates for Confirmatory Factor Analysis for both the Unconstrained and Constrained Model

Construct	Item (shortened text)	Unconstrained Model						Constrained Model	
		1. Group Internationally Experienced			2. Group Internationally Inexperienced			1. Group = 2. Group equal factor loadings	
		B	SE	β	B	SE	β	1. Group	2. Group
Decider's Acitvity	… I am informed via internet	1.000		0.633	1.000		0.781	0.660	0.768
	… I am informed via professional literature	0.886	0.187	0.566	1.057	0.137	0.819	0.639	0.782
	… I am informed via cooperation partners	1.261	0.214	0.799	0.899	0.133	0.698	0.729	0.750
Market Analysis	… conduct analyses of foreign market situation prior to market entry	1.000		0.954	1.000		0.904	0.954	0.908
	… conduct location analyses prior to foreign market entry	0.875	0.070	0.848	0.950	0.078	0.882	0.858	0.870
	… minimized risks by collecting information prior to market entry	0.908	0.081	0.798	0.830	0.088	0.751	0.782	0.770
Imitation	… observed actions of competitors	1.000		0.813	1.000		0.838	0.808	0.843
	… conduct competitor analyses within the foreign market	0.871	0.107	0.799	0.961	0.101	0.837	0.816	0.823
	… orientated on operations of perceived "Best Practice"	0.840	0.124	0.670	0.770	0.108	0.663	0.643	0.682
Institutional Knowledge	… possess knowledge about the business laws and rules	1.000		0.876	1.000		0.834	0.852	0.861
	… possess knowledge about financial practices	0.972	0.083	0.889	1.226	0.119	0.891	0.904	0.864
	… possess knowledge about local business culture	0.832	0.086	0.777	0.968	0.106	0.790	0.777	0.786
Tacit Knowledge	… possess knowledge about the products of customers	1.000		0.763	1.000		0.806	0.772	0.795
	… possess knowledge about the products of competitors	0.980	0.141	0.697	0.972	0.138	0.727	0.705	0.722
	… possess knowledge about technologies and trends	1.086	0.151	0.719	0.945	0.139	0.701	0.699	0.723
Marketing Learning	… knowledge of tracing customer needs and market trends	1.000		0.783	1.000		0.771	0.765	0.782
	… knowledge of exploring new market segements	1.216	0.144	0.821	0.963	0.148	0.682	0.789	0.731
	… knowledge of adjusting products for market needs	1.035	0.137	0.740	1.110	0.149	0.810	0.792	0.763
Technology Learning	… knowledge of integrating new technologies	1.000		0.803	1.000		0.697	0.855	0.824
	… knowledge of improving the process of product development	0.999	0.109	0.838	1.162	0.160	0.865	0.852	0.841
	… knowledge of developing new product designs	1.050	0.111	0.862	1.072	0.150	0.809	0.792	0.714

Description: **Unconstrained model: B = unstandardized estimates; SE = standard deviation; β = standardized estimates; all estimates are significant at a significance level of $p \leq 0.01$**
Constrained model: Standardized regressions weights are presented for both groups only; unstandardized regressions weights were constrained to be equal in both groups

Thus, confirmatory factor analysis and internal consistency (Cronbach's Alpha; Chapter 4) indicate both high factor loadings and high reliability for all constructs in the two groups. Having satisfied these first requirements for a multiple group analysis, we prove the model fit for the unconstrained model as well as for the constrained model. The constrained model ensures equal factor loadings in both groups; therefore, the nested model comparison should not suggest that imposing the additional restrictions of equal factor loadings across the groups result in a statistically significant worsening of the overall model fit.

In the following, we compare the (1) unconstrained model with the (2) constrained model by using fit indices recommended in the literature (Bollen, 1989; Bentler, 1990; Hu & Bentler, 1995/1998). Summarizing the results in table 3, we can say that the unconstrained measurement model and the constrained model (equal factor loadings) show a good fit.

Table 3: Model Fit Comparison of Unconstrained versus Constrained Measurement Model

Models / Model Fit	(1) Unconstrained Model	(2) Constrained Model (equal factor loadings)
Chi-Square	387.871	402.932
df	336	350
***p*-Value**	0.027	0.027
CMIN/ df	1.154	1.151
IFI	0.978	0.978
TLI	0.968	0.969
CFI	0.977	0.976
RMSEA	0.025	0.025
P-Close	1.000	1.000

Table 3 is divided into three blocks. The values in the first block belong to the Chi-square test. The (1) unconstrained model (Chi-Square=387.871 with 336 df, *p*-value=0.027) as well as the (2) constrained model (Chi-Square=402.932 with 350 df, *p*-value = 0.027) cannot reject the null hypothesis ($p < 0.01$) that the empirical co-variance-matrix corresponds with the theoretically expected co-variance-matrix. According to the literature (Bollen, 1989; Bentler, 1990; Hu & Bentler, 1995/1998), this indicates a good model fit.

In the second block, the Incremental Fit Index (IFI) (Bollen, 1989), the Tucker Lewis Index (TLI) (Tucker & Lewis, 1973), and the Comparative Fit Index (CFI) (Bentler, 1990) are all above 0.96. For establishing the Maximum-Likelihood estimation, Hu & Bentler (1998) recommended values above 0.95 for IFI, TFI, and CFI; thus, the two models show good model fit.

In the last block, the Root Mean Squared Error of Approximation (RMSEA) by Brown & Cudeck (1993), which expresses whether the model is a good approximation to the population model, has a value of 0.025. The literature recommends values below 0.05 for the RMSEA and values nearby one for the P-Close (Brown & Cudeck, 1993; Hu & Bentler, 1998). Altogether the fit of the underlying measurement model is acceptable for both the (1) unconstrained and the (2) constrained model.

Table 4 summarizes the results of the nested model comparison for the measurement model. Taking these results into account, we can conclude that the (2) constrained model shows no significant worsening of the model fit. Therefore, the (2) constrained model, which fulfils the important requirements of similar causal structures in both groups, is the one to choose for multiple group analysis.

Table 4: Nested Model Comparison for the Measurement Model

Model \ Model fit	df	Chi-Squared	*p*-Value	IFI (Worsening)	TLI (Worsening)
(2) Constrained Model	14	15.061	0.374	0.006	-0.001

(Null hypothesis: assuming the (1) unconstrained model to be correct)

Structural Equation Model

In the next step, configural invariance has to be tested for the structural equation model (SEM). Table 5 summarizes the results of the model fit comparison of the SEM as table 3 did for the measurement model before. In the comparison of the (1) unconstrained model and the (2) constrained model, we can see that CMIN/df, IFI, TLI, and CFI are nearly identical. The same is true for the RMSEA and P-Close. Taking the entire fit measures into account, we can conclude that the (2) constrained model fits to the same extent as the (1) unconstrained model. Although the incremental fit indices (IFI, TLI, and CFI) stay below the value of 0.95 recommended by Hu & Bentler (1998), the two models show an acceptable fit to the data.

Table 5: Model Fit Comparison of Unconstrained versus Constrained Structural Equation Model

Model Fit \ Models	(1) Unconstrained Model	(2) Constrained Model (equal factor loadings)
Chi-Square	478.518	495.792
df	360	374
***p*-Value**	0.000	0.000
CMIN/ df	1.329	1.326
IFI	0.949	0.948
TLI	0.932	0.933
CFI	0.947	0.946
RMSEA	0.037	0.036
P-Close	0.997	0.997

Table 6 summarizes the results of the nested model comparison for SEM. Taking these results into account, we can conclude that the (2) constrained model shows no significant worsening of the model fit. Therefore, we can conclude that the (2) constrained model is the one to choose.

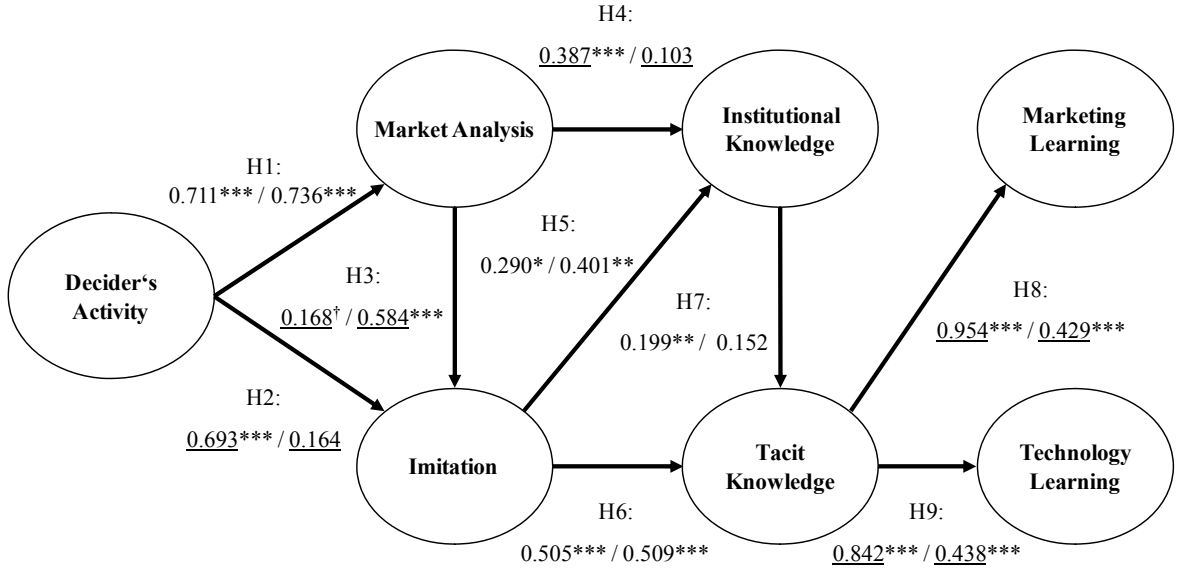
Table 6: Nested Model Comparison for the Structural Equation Model

Model \ Model fit	df	Chi-Squared	*p*-Value	IFI (Worsening)	TLI (Worsening)
(2) Constrained Model	14	17.274	0.242	0.007	-0.001

(Null hypothesis: assuming the (1) unconstrained model to be correct)

Figure 3 shows the results of our final (hypothesized) structural equation model:

Figure 3: Final Structural Equation Model



Description: **Underneath our hypotheses (H1-H9), we illustrated the unstandardized estimates for the group with an internationally experienced founder first (1. Group) and for the group without an internationally experienced founder thereafter (2. Group): (1. Group / 2. Group);**
significance levels: † = $p \leq 0.10$; * = $p \leq 0.05$; ** = $p \leq 0.01$; *** = $p \leq 0.001$ and significant differences between the two groups have been underlined

This is a simplified version of the actual model. It does not show error terms or indicator variables of the latent constructs. An exogenous unobserved error variable has been attached to each of the endogenous variables to account for the variance not explained by the observed exogenous variables. The error coefficients were fixed to unity to enable model identification. Path coefficients are Maximum-Likelihood estimates.

The results approve our hypothesized relationships among all latent constructs. Activation triggers (decider's activity) have an impact on potential ACAP (market analysis and imitation). Further, potential ACAP positively influences realized ACAP (institutional and tacit knowledge). These effects result in obtaining sustainable competitive advantages (marketing and technology learning).

Moreover, the model shows that the learning mechanisms are even stronger in those firms where the founder had international experience at the time of inception. In addition, the internationally experienced decision maker affects the potential ACAP as well as the realized ACAP in two ways. The decider's activity influences both conducting market analyses and imitating the activities of others. Further, market analyses and imitation influence institutional as well as tacit knowledge. As a result, the high ACAP influences marketing and technology learning. In this group, the relationships between tacit knowledge and learning are significantly higher than in the other group. Obviously, those firms which can revert to the

international experience of the founder are more active and, thus, they can absorb a higher degree of knowledge and learning success.

In the second group (firms without an internationally experienced founder), the reader can see that the decider's activity has an impact only on conducting market analysis. Therefore, assembling ACAP is just possible in one single way. Thus, the ACAP as a whole is lower in the second group than in the first group. That leads to a significant lower learning success regarding marketing and technology.

Table 7 summarizes a simplified illustration of the results of the SEM.

Table 7: Path Coefficients and t-Test for Significant Differences

Hypotheses	Relationships between the Latent Constructs	1. Group International Experience	2. Group No International Experience	t-Test for equal Parameters	
		Coefficient (Significance)	Coefficient (Significance)	C. R.	*p* -Value
H1	Decider's Activity → Market Analysis	0.711 ***	0.736 ***	0.122	0.903
H2	Decider's Activity → Imitation	0.693 ***	0.164	-2.510	0.012
H3	Market Analysis → Imitation	0.168 †	0.584 ***	2.921	0.004
H4	Market Analysis → Institutional Knowledge	0.387 ***	0.103	-1.989	0.047
H5	Imitation → Institutional Knowledge	0.290 *	0.401 **	0.647	0.518
H6	Imitation → Tacit Knowledge	0.505 ***	0.509 ***	0.031	0.975
H7	Institutional Knowledge → Tacit Knowledge	0.199 **	0.152	-0.316	0.752
H8	Tacit Knowledge → Marketing Learning	0.954 ***	0.429 ***	-3.463	0.001
H9	Tacit Knowledge → Technology Learning	0.842 ***	0.438 ***	-2.170	0.031

(C.R. = Critical Ratio; significance levels: † = $p \leq 0.10$; * = $p \leq 0.05$; ** = $p \leq 0.01$; *** = $p \leq 0.001$)

Assuming multinormal distribution for the variables, the critical ratio (C.R.) follows a t-statistic (Arbuckle, 2006). In the last column, we examined a *t*-test for equal parameters with 374 degrees of freedom (see table 5, (2) constrained model). Taking the results of the *t*-test into account, the null hypothesis for equal parameters has to be rejected ($p \leq 0.05$) for H2, H3, H4, H8, and H9.

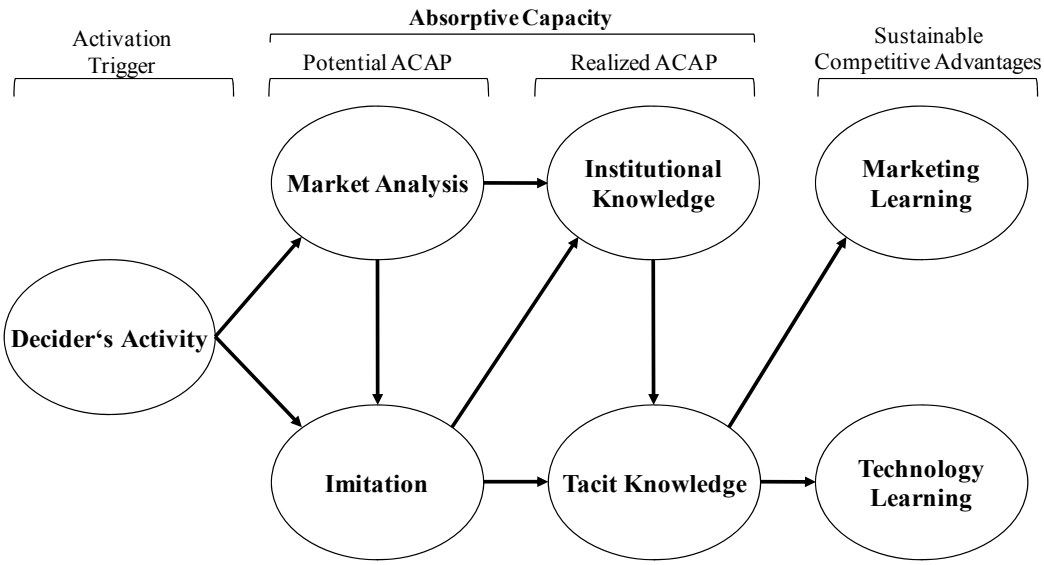
6. Discussion

Our results verify our hypotheses derived from our theoretical framework. The adaption of the reconceptualization of ACAP by Zahra & George (2002) seems to allow a fruitful measurement and empirical examination of the complex learning system within young

internationally operating firms. Thus, we empirically tested the extension of ACAP by Zahra & George (2002), which existed only theoretically up to now. Initiated by an information-seeking decision maker, firms learn through market analyses and imitation two different kinds of knowledge about a foreign market to obtain learning successes in areas such as marketing and technology.

Further, our results support the assumption that the international experience of the founder has an impact on our derived learning system. For the group of firms which can revert to the international experience of their founder, we found support for all hypotheses. The decider's activity is an activation trigger for conducting market analyses as well as for imitating other firms and "best practices" (H1 and H2). Conducting prior market analyses about the foreign market has a positive effect on imitation and on absorbing institutional knowledge (H3 and H4). Imitation influences the acquisition of both institutional and tacit knowledge (H5 and H6). Moreover, we found in this group of firms a positive relationship between institutional knowledge and tacit knowledge, which supports hypothesis 7. The relationships between tacit knowledge and marketing learning as well as between tacit knowledge and technology learning were the strongest within this group. Obviously, tacit knowledge is the basis to obtain a profound knowledge about the customer needs and technological trends in the foreign market. This supports hypotheses 8 and 9. In figure 4, we illustrated our findings for the first group.

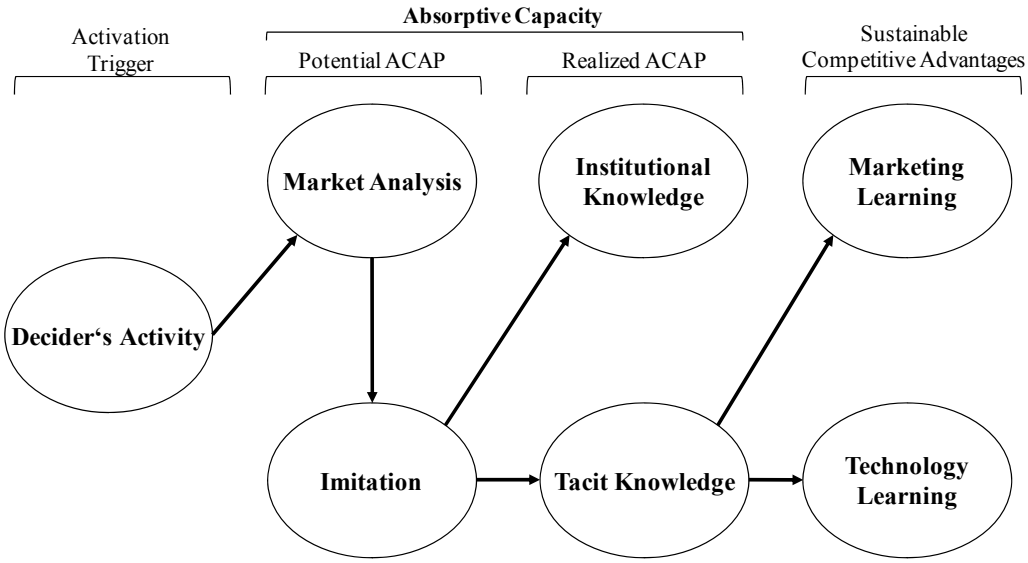
Figure 4: Significant Results for the Group with an Internationally Experienced Founder



For the group of firms which have no support of an internationally experienced founder, we can conclude that the learning system is constrained to a single path. We found support for

our Hypotheses H1, H3, H5, H6, H8, and H9. The decider's activity influences the accomplishment of market analyses (H1), but it does not influence imitation (H2). Conducting prior market analysis has an impact on imitation (H3), but not on institutional knowledge (H4). As in the first group, we found positive relationships between imitation and institutional knowledge (H5) and tacit knowledge (H6), but we found no support for our hypothesized relationship between the two kinds of knowledge (H7). Nevertheless, tacit knowledge has an impact on both marketing learning and technology learning (H8 and H9), but the relationships are significantly lower in the second group than in the first group. In figure 5, we illustrated our findings for the second group of firms.

Figure 5: Significant Results for the Group without an Internationally Experienced Founder



Altogether, we found support for our assumption that the ability to absorb new knowledge and to obtain sustainable competitive advantages is mainly influenced by the international experience of the founder or management team. Therefore, we can conclude that the international experience plays a key role for the whole system of knowledge acquisition and exploitation particularly with regard to young high-tech firms which are acting internationally. As a result of our findings, management teams of entrepreneurial firms, aiming at early internationalization, are well advised to acquire international experience before venturing into foreign markets in order to increase potential competitive advantages and thus the chance of survival.

7. Conclusions

The aim of our study was twofold. First, we set out in this study to explore the applicability of the reconceptualization of ACAP by Zahra & George (2002) in the context of two dominating internationalization theories, namely the Process Theory of Internationalization and the International New Venture Theory. Both theories seem to be more contradictory than complementary at first glance.

We assumed that the theoretical construct ACAP in its reconceptualization is the conjunctive element to combine the two internationalization theories. Our adaption and empirical measurement of ACAP in connection with the two internationalization theories seem to be a fruitful contribution to the research field. Using this theoretical construct, we specified an empirical model of knowledge acquisition and learning mechanisms of young high-tech firms from Germany. We examined how and particularly what firms learn during their first internationalization. As hypothesized, the interactions between an activation trigger and potential ACAP as well as between potential ACAP and realized ACAP seem to lead to a higher accumulation of knowledge, and therefore, to a greater learning success in the areas marketing and technology. Our empirical findings support the conclusions of existing literature that both internationalization theories, PTI and INV, should be perceived more complementary than contradictory (Autio et al., 2000; Yli-Renko et al., 2002; Chetty & Campbell-Hunt, 2004; Autio, 2005).

The second aim of our study was to examine the role of the international experience of the founder within the specified learning system. We can conclude that the experience of the founder enables the organization to acquire and absorb a higher degree of knowledge about the foreign market, competitors, customers, suppliers, and technological trends. We conclude that an organization which can revert to the international experience of a founder can emerge and develop a higher degree of ACAP and thus realize greater learning success in terms of marketing and technology. This is possible because these firms acquire knowledge in more than one single way.

The generalizability of the results is limited by context and method. We focused our study on a single country and a single industry sector. The comprehension of technology in this study is broader than in other studies which focus only on Biotechnology or Microsystems as future oriented technologies, but we are limited to high-tech firms from one European country, not because we expected the theories to be limited to technology-based firms, but because we assumed the hypothesized relationships to be pointed out more clearly among

technology-based firms. Further research should try to replicate our findings in other cultural or industrial contexts.

Perceptional measures were used to measure our key variables because reliable objective measures for our constructs have not been developed yet. Nevertheless, all measurement items were adapted from existing literature and have been established in prior research. Future research should develop reliable objective measures, especially for activity and foreign market knowledge. Moreover, our findings are limited to qualitative statements about the learning success and the knowledge acquisition. Future research should examine the impact of our specified model on monetary and non-monetary factors of success.

References

Anderson, D. R., Sweeney, D. H., & Williams, T. A. (1996). *Statistics for Business and Economics***.** St. Paul: West Publishing Company.

Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(3), pp. 411–423.

Arbuckle, J. L. (2006). *Amos 6.0 User's Guide***.** IL: Chicago.

Argyris, C., & Schön, D. A. (1978). *Organizational Learning: A Theory of Action Perspective***.** Reading, MA: Addison-Wesley.

Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research*, 14(3), pp. 396–402.

Autio, E. (2005). Creative Tension: The Significance of Ben Oviatt's and Patricia McDougall's Article ´Toward a Theory of International New Ventures´. *Journal of International Business Studies*, 36(1), pp. 9–19.

Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of Age at Entry, Knowledge Intensity, and Imitability on International Growth. *Academy of Management Journal*, 43(5), pp. 909–924.

Barkema, H. G., & Vermeulen, F. (1998). International Expansion through Start-Up or Acquisition: A Learning Perspective. *Academy of Management Journal*, 41(1), pp. 7–26.

Bengtsson, L. (2004). Explaining Born Globals: An Organisational Learning Perspective on the Internationalisation Process. *International Journal of Globalisation and Small Business*, 1(1), pp. 28–41.

Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107(2), pp. 238–246.

Bloodgood, J. M., Sapienza, H. J., & Almeida, J. G. (1996). The Internationalization of New High-Potential U.S. Ventures: Antecedents and Outcomes. *Entrepreneurship: Theory and Practice*, 20(4), pp. 61–76.

Bollen, K. A. (1989). *Structural Equations with Latent Variables***,** New York: Wiley.

Brown, M., & Cudeck, R. (1993). Alternative Ways of Assessing Model Fit. In: K. A. Bollen, & J. S. Long (Eds.), *Testing Structural Equation Models* (pp. 136–162). Beverly Hills, CA: Sage.

Burgel, O., & Murray, G. C. (2000). The International Market Entry Choices of Start-Up Companies in High-Technology Industries. *Journal of International Marketing*, 8(2), pp. 33–62.

Cavusgil, S. T., & Zou, S. (1994). Marketing Strategy-Performance Relationship: An Investigation. *Journal of Marketing*, 58(1), pp. 1–21.

Chetty, S., & Campbell-Hunt, C. (2004). A Strategic Approach to Internationalization: A Traditional Versus a "Born-Global" Approach. *Journal of International Marketing*, 12(1), pp. 57–81.

Cohen, W., & Levinthal, D. (1989). Innovation and Learning: The Two Faces of R&D. *Economic Journal*, 99, pp. 569–596.

Cohen, W., & Levinthal, D. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), pp. 128–152.

Cohen, W., & Levinthal, D. (1994). Fortune Favors the Prepared Firm. *Management Science*, 40, pp. 227–251.

Dichtl, E., Koeglmayr, H.-G., & Mueller, S. (1990). International Orientation as a Precondition for Export Success. *Journal of International Business Studies*, 21(1), pp. 23–40.

Eriksson, K., & Chetty, S. (2003). The Effect of Experience and Absorptive Capacity on Foreign Market Knowledge. *International Business Review*, 12, pp. 673–695.

Eriksson, K., Johanson, J., Majkgard, A., & Sharma, D. D. (1997). Experiential Knowledge and Cost in the Internationalization Process. *Journal of International Business Studies*, 28(2), pp. 337–360.

Eriksson, K., Johanson, J., Majkgard, A., & Sharma, D. D. (2000). Effect of Variation on Knowledge Accumulation in the Internationalization Process. *International Studies of Management and Organization*, 30(1), pp. 26–44.

Forsgren, M. (2002). The Concept of Learning in the Uppsala Internationalization Process Model: A Critical Review. *International Business Review*, 11(3), pp. 257–277.

Hofstede, G. (1984). *Culture's Consequences: International Differences in Work Related Values,* Beverly Hills: Sage.

Hohenthal, J., Johanson, J., & Johanson, M. (2003). Market Discovery and the International Expansion of the Firm. *International Business Review*, 12, pp. 659–672.

Hu, L.-T., & Bentler, P. M. (1995). Evaluating Model Fit. In: R. H. Hoyle (Ed.), *Structural Equation Modeling: Concepts, Issues and Applications* (pp. 77–99). Thousand Oaks: Sage.

Hu, L.-T., & Bentler, P. M. (1998). Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification. *Psychological Methods*, 3(4), pp. 424–453.

Huber, G. P. (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organization Science*, 2(1), pp. 88–115.

Hymer, S. H. (1976). *The International Operations of National Firms: A Study of Direct Foreign Investment,* Cambridge, Mass: MIT Press.

Johanson, J., & Vahlne, J.-E. (1977). The Internationalization Process of the Firm – A Model of Knowledge Development and Increasing Foreign Market Commitments. *Journal of International Business Studies*, 8(1), pp. 23–32.

Johanson, J., & Vahlne, J.-E. (1990). The Mechanism of Internationalisation. *International Marketing Review*, 7(4), pp. 11–24.

Johanson, J., & Vahlne, J.-E. (2003). Business Relationship Learning and Commitment in the Internationalization Process. *Journal of International Entrepreneurship*, 1, pp. 83–101.

Johanson, J., & Vahlne, J.-E. (2006). Commitment and Opportunity Development in the Internationalization Process: A Note on the Uppsala Internationalization Process Model. *Management International Review*, 46(2), pp. 165–178.

Kundu, S. U., & Katz, J. A. (2003). Born-International SMEs: Bi-Level Impacts of Resources and Intentions. *Small Business Economics*, 20(1), pp. 25–47.

Lane, P. J., Koka, B. R., & Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct. *Academy of Management Review*, 31(4), pp. 833–863.

Lefebrve, E., Lefebrve, L. A., & Borgault, M. (1998). R&D-Related Capabilities as Determinants of Export Performance. *Small Business Economics*, 10(4), pp. 365–377.

Leonidou, L. C., Katsikeas, C. S., & Samiee, S. (2002). Marketing Strategy Determinants of Export Performance: A Meta-Analysis. *Journal of Business Research*, 55(1), pp. 51–67.

Levitt, B., & March, J. G. (1988). Organizational Learning. *Annual Review of Sociology*, 14, pp. 319–340.

Madsen, T. K. (1998). Executive Insights: Managerial Judgement of Export Performance. *Journal of International Marketing*, 6(3), pp. 82–93.

McDougall, P. P., & Oviatt, B. M. (2000). International Entrepreneurship: The Intersection of Two Research Paths. *Academy of Management Journal*, 43(5), pp. 902–906.

McDougall, P. P., Oviatt, B. M., & Shrader, R. C. (2003). A Comparison of International and Domestic New Ventures. *Journal of International Entrepreneurship*, 1(1), pp. 59–82.

Nakata, C., & Sivakumar, K. (1996). National Culture and New Product Development: An Integrative Review. *Journal of Marketing*, 60(1), pp. 61–72.

Nonaka, I. (1991). The Knowledge-Creating Company. *Harvard Business Review*, 69(6), pp. 96–104.

Oviatt, B. M., & McDougall, P. P. (1994). Toward a Theory of International New Ventures. *Journal of International Business Studies*, 25(1), pp. 45–64.

Oviatt, B. M., & McDougall, P. P. (1997). Challenges for Internationalization Process Theory: The Case of International New Ventures. *Management International Review*, 37(2), pp. 85–99.

Oviatt, B. M., & McDougall, P. P. (2005). Defining International Entrepreneurship and Modeling the Speed of Internationalization. *Entrepreneurship: Theory and Practice*, 29(5), pp. 537–553.

Pedersen, T., & Petersen, B. (2004). Learning About Foreign Markets: Are Entrant Firms Exposed to a „Shock Effect"? *Journal of International Marketing*, 12(1), pp. 103–123.

Penrose, E. T. (1959). *The Theory of the Growth of the Firm***,** London: Basil Blackwell.

Roberts, E. (1990). Evolving Towards Market and Product Orientation: The Early Years of Technology-Based Firms. *Journal of Product Innovation Management*, 7(4), pp. 274–287.

Sapienza, H. J., Autio, E., George, G., & Zahra, S. A. (2006). A Capabilities Perspective on the Effects of Early Internationalization on Firm Survival and Growth. *Academy of Management Review*, 31(4), pp. 914–933.

Schwens, C. (2008). *Early Internationalizers: Specificity, Learning, and Performance Implication.* PhD. Dissertation, Munich: Hampp.

Sonnentag, S., & Frese, M. (2002). Performance Concepts and Performance Theory. In: Sonnentag, S. (Ed.), *Psychological Management of Individual Performance***,** West Sussex: John Wiley & Sons, pp. 3–25.

Sonnentag, S., & Kleine, B. M. (2000). Deliberate Practice at Work: A Study with Insurance Agents. *Journal of Occupational and Organizational Psychology*, 73(1), pp. 87–102.

Todorova, G., & Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *Academy of Management Review*, 32(3), pp. 774–786.

Tucker, L. R., & Lewis, C. (1973). A Reliability Coefficient for Maximum Likelihood Factor Analysis. *Psychometrika*, 38(1), pp. 1–10.

Utterback, J., Meyer, M., Roberts, E., & Reitberger, G. (1988). Technology and Industrial Innovation in Sweden: A Study of Technology-Based Firms Formed Between 1965 and 1980. *Research Policy*, 17(1), pp. 15–26.

Welch, L. S., & Luostarinen, R. (1988). Internationalization: Evolution of a Concept. *Journal of General Management*, 14(2), pp. 34–55.

Yeoh, P.-L. (2004). International Learning: Antecedents and Performance Implications among Newly Internationalizing Companies in an Exporting Context. *International Marketing Review*, 21(4/5), pp. 511–535.

Yli-Renko, H., Autio, E., & Tontti, V. (2002). Social Capital, Knowledge, And the International Growth of Technology-Based New Firms. *International Business Review*, 11(3), pp. 279–304.

Zaheer, S. (1995). Overcoming the Liability of Foreignness. *Academy of Management Journal*, 38(2), pp. 341–363.

Zahra, S. A. (2005). A Theory of International New Ventures: A Decade of Research. *Journal of International Business Studies*, 36, pp. 20–28.

Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review*, 27(2), pp. 185–203.

Zahra, S. A., Ireland, R. D., & Hitt, M. A. (2000). International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance. *Academy of Management Review*, 43(5), pp. 925–950.