

## EARLY AND FAST INTERNATIONALISATION OF HIGH-TECH START-UP FIRMS

Michael Neubert – Augustinus (Stijn) van der Krogt

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### Abstract

**Purpose:** This paper analyses the research problem of the significance of early and fast internationalisation and how and why high-tech start-up firms (HSFs) from small and open economies (SMOPECs) differ in their internationalisation speed. For this purpose, the paper samples Switzerland as a developed economy and Paraguay as an emerging economy. This paper is based on the conceptual framework of the ‘born global firm’ (BGF) theory and the reviewed and updated Uppsala internationalisation process model.

**Design/methodology/approach:** The research questions will be answered using a comparative multiple case study research design. Data will be collected through multiple sources of evidence, including semi-structured, in-depth, individual face-to-face interviews with subject-matter experts (SMEs), field notes, corporate brochures, business plans and reviews, culminating in a reflection of the data collected. After drawing a random sample from a database of Swiss and Paraguayan HSFs, some typical cases are selected. The Swiss (Paraguayan) sub-sample comprises 20 (12) SMEs who are CxOs, owners and founders. These people have expertise and knowledge as entrepreneurs and managers in technology management as well as fundraising.

**Findings:** The results of the research reveal that the speed of internalisation is influenced by factors such as the skills of an entrepreneur and the management team, their international networking and learning skills, the business model and the pricing strategies of the HSF, market selection, the market entry mode, the successful implementation of a structured market-development process, uniqueness of the technology and the product portfolio, availability of market opportunities and the size of the home market. Furthermore, the results show significant differences between HSFs from developed and emerging SMOPECs concerning the importance of these factors for early and fast internationalisation.

**Research/practical implications:** The implications for practice, applications and consequences are identified. The outcomes will support policy makers, educators, investors as well as founders and managers to identify the respective key success factors for successful internationalisation and provide the required resources, including capital, processes and know-how. Future research can analyse the effect of location in cross-national studies with additional emerging and developed SMOPECs.

**Originality/value:** The findings of this qualitative multiple case study research project contribute to the field of research on international entrepreneurship because they will help researchers to better understand the significance of early and fast internationalisation and how and why HSFs from emerging and developed SMOPECs differ in their speed of internationalisation. In addition, the findings contribute to managerial practice because they will help managers and founders of HSFs from emerging and developed SMOPECs to develop new foreign markets earlier and faster.

**Keywords:** International entrepreneurship, Early and fast internationalisation, Born global, High-tech firm

**JEL Codes:** M13, M16, M31

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## **Introduction**

Early and fast internationalisation of high-tech start-up firms (HSFs), particularly in the sense of born global firms (BGFs) (Cavusgil & Knight, 2015) from different countries (Neubert, 2016b), is a matter that has attracted growing attention in international entrepreneurship, and yet, is among the least researched (Neubert, 2015).

A BGF that internationalises early and fast is often an HSF with innovative products operating as pioneers in a small global market niche (Neubert, 2015). It has a higher probability of being located in a small and open economy (SMOPEC) with a limited home market (Luostarinen & Gabrielsson, 2006). Consequently, a BGF from a SMOPEC is generally forced to internationalise early and fast to become profitable (Neubert, 2016a). This is very challenging for entrepreneurs and requires specific abilities. In parallel with this as well as limited resources, the entrepreneur builds the BGF, continues to develop its patent-protected products and enters new foreign markets (Cavusgil & Knight, 2015; Neubert, 2016b). Early and fast internationalisation of a BGF is considered entrepreneurial and risk-seeking (Oviatt & McDougall, 2005). It is often associated with the ability, experience and willingness of the entrepreneur, who might have gone through the first phases of the Uppsala internationalisation process model (Johanson & Vahlne, 2009) before founding the BGF.

This study responds to a call for research from Neubert (2016b) to analyse the effect of location in a cross-national multiple case study with BGFs from different SMOPECs. Therefore, this study analyses the research problem of the significance of early and fast internationalisation and how and why BGFs from SMOPECs differ in their speed of internationalisation, using Switzerland and Paraguay as a developed and as an emerging economy, respectively.

## **1 Literature Review and Theoretical Framework**

This study is based on the conceptual framework of the BGF theory (Cavusgil & Knight, 2015) and the reviewed and updated Uppsala internationalisation process model (Johanson & Vahlne, 2009).

### **1.1 Uppsala internationalisation process model**

In 1977, Johanson and Vahlne (2009) developed the Uppsala internationalisation process model. Their foremost finding was that firms enter new foreign markets using a so-called establishment chain. In the first step of this gradual internationalisation process, firms enter

geographically and culturally closer markets with low-risk market entry modes, such as 'export', 'licensing' or 'franchising' in collaboration with a local partner (Neubert, 2016b). With growing international success and market knowledge, they increase their investments, first establishing, for example, a wholly-owned subsidiary, and gradually begin to enter more distant foreign markets. Certainly, if market attractiveness decreases, the level of resources dedicated to a foreign market might also decrease, leading to outcomes such as a market exit (Neubert, 2013). Per this framework, Paraguayan firms are expected to enter (geographically and culturally closer) foreign markets like Bolivia and Brazil before they export to the European Union and Swiss firms predominately export to neighbouring EU member states like Germany, Austria, France or Italy.

The second finding is related to the liability of foreignness and outsidership. Firms need a firm-specific advantage (FSA) in every new foreign market to compensate for the liability of being a new foreign firm without a client portfolio, a support network to create market opportunities, or sufficient market knowledge. The larger the geographical, administrative, economical and cultural distance between the home and the foreign market, the larger is the liability of foreignness and outsidership, and the bigger the FSA needs to be (Johanson & Vahlne, 2009). Local partners, such as distributors or resellers, help to bridge these differences. The speed of internationalisation depends on the speed of learning (Johanson & Vahlne, 2009) about every new foreign market. This means that the firm must be able to transfer its FSA to a sustainable and relevant competitive advantage in every new foreign market to cover the cost (the liability of foreignness and outsidership) (Johanson & Vahlne, 2009).

## **1.2 A new type of firm—the born global firm**

According to Johanson & Vahlne (2009), the Uppsala model can also be applied to firms that begin to internationalise soon after their founding (BGFs) (Cavusgil & Knight, 2015) because these firms select foreign markets where they can enter fast and use low risk and low cost market entry modes such as exporting. Both of these (selection of market and mode) might be regarded as the first step of the establishment chain of the Uppsala model (Johanson & Vahlne, 2009).

Most empirical research on early and fast internationalisation focuses on HSFs in the sense of BGFs (Servantie, Cabrol, Guieu, & Boissin, 2016). A BGF (Cavusgil & Knight, 2015; Knight & Liesch, 2016) is a young firm that is active through early export sales. Thus, the BGF concept focuses on a market-seeking internationalisation strategy that uses, for example, a global exporter internationalisation model (Neubert, 2013). This is the link with the establishment chain of the Uppsala internationalisation process model (Johanson & Vahlne,

2009). Both the concepts focus on the market entry mode of ‘export’ as the first step to enter a new foreign market. Further, the word ‘global’ in BGF should not be understood in the sense that a BGF exports immediately to all global markets. Often, the BGF starts exporting to a limited number of the most attractive markets or to a particular region such as a free-trade area (Coviello, 2015).

A BGF needs to be distinguished from an international new venture (INV). The concept of INV (Oviatt & McDougall, 2005) analyses all international value chain activities of a young firm including not only exporting but also offshoring, outsourcing, R&D, production and sourcing. Thus, the terms BGF and INV cannot be used synonymously (Coviello, 2015).

### **1.3 Effect of location on early and fast internationalisation**

The effect of location on early and fast internationalisation has gained more attention among researchers (Knight & Liesch, 2016; Hitt, Li, & Xu, 2016) because findings from studies that analyse the fast and early internationalisation of high-tech firms from developed economies are not necessarily transferable to emerging economies (Zander, McDougall-Covin, & Rose, 2015). To date, there is little research on BGFs from emerging economies (Gonzalez-Perez, Manotas, & Ciravegna, 2016). The existing studies of Ciravegna, Lopez, & Kundu, 2014 emphasise the importance of social networks—particularly, the networking ability of an entrepreneur as a driver of the speed of internationalisation. Hitt et al. (2016) and Zucchella et al. (2016) reported that the reputation of the home country and the quality of institutions in that country also influence early and fast internationalisation.

## **2 Research Methodology**

The purpose of this study has brought up the following three research questions:

- Research Question 1: What are the perceptions of subject-matter experts (SMEs) regarding the significance of early and fast internationalisation for high-tech firms?
- Research Question 2: What are the views of SMEs regarding how high-tech firms may differ in their speed of internationalisation?
- Research Question 3: What are the opinions of SMEs about why high-tech firms may differ in their speed of internationalisation?

The choice of research method is based on the purpose of this study. This study uses a comparative cross-national multiple case study research design to answer the explanatory research questions (Yin, 2015). In contrast to an experimental design or a survey, a multiple

case study has more flexibility, allows an in-depth analysis of a complex research problem (Yin, 2015) within a highly contextualised environment and also allows for a comparison between different cases and countries. This research design helps answer the research questions because it allows the use of the replication logic as a possibility to obtain external and internal validity as well as in analysing pattern-matching properties between theories and cases (Yin, 2015).

This study used different sources of evidence to obtain robust conclusions and to achieve construct validity. Therefore, we applied the triangulation concept to the data collection phase to guarantee that different sources of evidence were used to collect data from each case. The primary source for data collection comprised qualitative, semi-structured, in-depth, individual face-to-face interviews with SMEs. Other sources of evidence were the corporate website, product and firm brochures, internal documents provided by the SMEs and other secondary data. The data of the Swiss sample was collected in July and August 2015 and that of the Paraguayan sample was collected in October and November 2016. The reliability criteria were met by using the same questionnaire, the same study protocol and the same data structure in the data collection phase. The duration of the SME interviews was between 60–90 minutes.

The data analysis followed a logical sequence, starting with an individual case analysis, followed by a cross comparison to identify similarities and differences and finally a literal and theoretical replication using a pattern-matching approach. The goal of this approach is to increase the possibility to transfer and generalise the findings to other contexts.

The choice of the sampling strategy is based on the purpose of this study that uses a purposive case selection strategy. After drawing a random sample (probability sampling) from a database of Swiss and Paraguayan HSFs, typical cases of the sample were selected. According to Yin (2015), if at least 6 to 10 cases are selected, this sampling strategy produces a statistically representative sample. Data saturation was achieved after 20 Swiss and 12 Paraguayan SME interviews. This sample size allows for a better triangulation of data and helps to strengthen the results of the whole study (Yin, 2015).

### **3 Findings**

The findings of this comparative cross-national multiple case study are presented to answer the research questions. The analysis of the data collected from the in-depth, semi-structured, qualitative, individual face-to-face SME interviews revealed the following similarities and differences between the significance of early and fast internationalisation and the factors that

influence the speed of internationalisation, by sampling Switzerland as a developed economy and Paraguay as an emerging economy.

Primarily, the analysis of the similarities revealed that the Uppsala model might be applied to both the Paraguayan and the Swiss cases (Johanson & Vahlne, 2009; Neubert, 2015). The SMEs put focus on the existence of FSA. Unique, innovative and high-quality niche market products and professional local partners are a precondition for every new foreign market entry because they compensate for the liability of outsidership and foreignness (Neubert, 2016a).

The second similarity is that all case study firms might be considered BGFs (Cavusgil & Knight, 2015; Knight & Liesch, 2016). These young firms are active through early export sales as their market entry form (Coviello, 2015) with strong attention on a market-seeking internationalisation strategy using, for example, a global exporter internationalisation model (Neubert, 2013a).

Although all SMEs understand the significance of early and fast internationalisation, almost all of the HSFs faced significant delays in their internationalisation projects due to disorganisation with unclear strategies and processes.

Networking and learning ability were identified as the key abilities of the entrepreneur (Coviello, 2015; Cavusgil & Knight, 2015; Neubert, 2016b; Ciravegna et al., 2014) and the main drivers of the speed of internationalisation. Networking in the sense of foreign markets is defined as the ability to create market opportunities to acquire new clients and distribution partners with local networks.

The existence of a structured international market-development process (Neubert, 2011) also drives the speed of internationalisation and another similarity. All the SMEs understand that disorganised internationalisation behaviour causes delays in the internationalisation process.

**Tab. 1: Similarities**

Similarities	Paraguay and Switzerland
Significance of early and fast internationalisation	Early and fast internationalisation is considered essential for the survival of HSFs from SMOPECs like Paraguay and Switzerland due to the small size of the home market.
Delays in the internationalisation process	Almost all HSFs face significant delays in the execution of their international market-development activities in comparison to the time planned in their business plans due to disorganised internationalisation behaviour.
Importance of internationalisation strategies and process	All SMEs understand the importance of structured market-development processes, including local market intelligence, for international success.
Abilities of the entrepreneur	The primary ability of the entrepreneurs (and their teams) is their networking ability in the sense of creating market opportunities to acquire new clients and distribution partners.

A comparison of the findings revealed the following differences. The main differences are based on the framework conditions of the home market. Paraguay is an emerging economy. Switzerland is a developed economy with a reputation for innovative HSFs with high-quality products, well-known university spin-offs, start-up coaching programmes, grants and a venture capital market that gives HSFs access to growth capital and exit channels.

Due to this difference in framework conditions, Paraguayan HSF could be considered less self-conscious and more risk averse. Investors such as founders, family and friends push less for internationalisation because they invest their money and focus on profitability instead of growth. In contrast, Swiss HSFs often acquire investors on the basis of ambitious business plans, which increases the pressure for early and fast internationalisation. Thus, it can be concluded that the reputation and the framework conditions of the home country and the quality of institutions also influence early and fast internationalisation (Hitt et al., 2016; Zucchella, et al., 2016).

Swiss HSFs are traditional BGFs seeking market opportunities wherever they are located (Cavusgil & Knight, 2015). In contrast, Paraguayan HSFs could be considered ‘born regionals’ (Cavusgil & Knight, 2015) that focus on neighbouring markets at the beginning of their internationalisation process.

The final difference can be identified by the entrepreneur’s role. While Paraguayan HSFs rely greatly on the entrepreneurs and their families, Swiss HSFs are managed by entrepreneurial teams with complementary abilities and receive support from investors, advisers and board members. Furthermore, the Paraguayan SMEs value the experience of the

entrepreneur more than the Swiss HSFs. This difference might be based on the notion that in newly created industries and markets, prior experience is not as important as the development of a new technology in an existing industry.

**Tab. 2: Differences**

Differences	Paraguay	Switzerland
Type of BGF	Born regional	Born global
Investors	Entrepreneur/founder, family and friends/business angels	Entrepreneur/founder, family and friends/business angels, government, foundations and institutional investors
Risk awareness	Higher risk-awareness and more focus on profitability than growth	Lower risk-awareness due to a higher pressure from investors to internationalise
Role and experience of the entrepreneur	High dependence on the entrepreneur	Entrepreneurial team with complementary skills and support of investors

## Conclusions

This study provides new evidence on the speed of internationalisation of HSFs from emerging and developed SMOPECs. It is based on the theoretical framework of the Uppsala and BGF model and examines how and why BGFs differ in their speed of internationalisation.

Despite the differences that distinguish both countries-of-origin, the majority of both Swiss and Paraguayan SMEs consider early and fast internationalisation important for the enduring survival of their countries' HSFs. The case study firms can be considered as BGFs and they follow the establishment chain of the Uppsala model. Both, Paraguayan and Swiss HSFs, face significant delays in the execution of their international market-development activities in comparison to the time estimated in their business plans. The main reason is disorganised internationalisation behaviour exhibited frequently. HSFs often enter new markets on the basis of their networks, use market opportunities or follow existing clients without analysing the attractiveness of foreign markets or following a pre-defined market-development process.

Most SMEs understand that this reduces the speed of internationalisation. They acknowledge the importance of a market-development process that begins with a detailed evaluation and selection of foreign markets before a company actually enters them. While Paraguayan HSFs start their internationalisation primarily in neighbouring countries, Swiss

HSFs have a global approach that depends on the attractiveness of each market. All SMEs understand that the role and the capabilities of the entrepreneur are crucial for the international success of their HSFs. The faster the entrepreneur (Paraguay) and the management team (Switzerland) learn business and techniques of acquiring clients in foreign markets, the higher the speed of internationalisation will be.

The findings of this qualitative multiple case study research project contribute to the field of research of international entrepreneurship because researchers will better understand how and why HSFs from SMOPECs differ in their speed of internationalisation. Furthermore, the findings also add to managerial practice because they will help managers to increase the efficiency of international market-development. Lastly, policy makers might also benefit from the findings in developing improved public support programmes for HSFs.

This comparative cross-national multiple case study research design has several limitations in size and scope that offer new ideas for future research. Most SMEs in the sample were males. Therefore, the effect of sex on how and why the speed of internationalisation of HSFs differs might be analysed. Future cross-national studies can focus on the differences between other emerging and developed SMOPECs. Future scholarly work might also include quantitative assessments of SME perceptions combined with qualitative data to provide greater clarification of the statistical significance of the variables of this study. Finally, it would be valuable to include correlational studies for analysing the relationships between two variables, for example the networking ability of the entrepreneur and the speed of internationalisation.

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**Contact**

Michael Neubert

UPA Universidad Paraguayo Alemana

Lope de Vega 1279, Asuncion/ Paraguay

neubert@gmx.ch

Augustinus (Stijn) van der Krogt

UPA Universidad Paraguayo Alemana

Lope de Vega 1279, Asuncion/ Paraguay

vander.krogt@upa.edu.py