# Born-global Firms' Export Performance Considering Innovation, Business Relations and Country-Level Contextual Factors: An Analysis Using GEM Data from 2008 to 2015

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in
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İSTANBUL
ŞEHİR
ÜNİVERSİTY

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in Industrial and Systems Engineering.

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This is to confirm that this thesis complies with all the standards set by the Graduate School of Natural and Applied Sciences of İstanbul Şehir University:

**DATE OF APPROVAL:** 13.06.2019

**SEAL/SIGNATURE:**

# Declaration of Authorship

I, Sikandar Abdul QADIR, declare that this thesis titled, 'Born-global Firms' Export Performance Considering Innovation, Business Relations and Country-Level Contextual Factors: An Analysis Using GEM Data from 2008 to 2015' and the work presented in it are my own. I confirm that:

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Date: 13 - June - 2019

*"The only thing I know is that I know nothing."*

-Socrates

# Born-global Firms' Export Performance Considering Innovation, Business Relations and Country-Level Contextual Factors: An Analysis Using GEM Data from 2008 to 2015

Sikandar Abdul Qadir

## Abstract

The concept of early internationalization created a new type of entrepreneur that is called a born-global. In today's world, every other individual is aiming to be a successful entrepreneur. Entrepreneurs can perform better if provided with necessary resources. What makes born-global successful or what factors contribute to the success of born-global? Considering the high failure rates for all types of entrepreneurs, we conceptualize a research model where we test to what degree born-global firms benefit from various factors such as innovation, business relations and country-level context on success as measured by export. In testing our research hypotheses, we compose a data-set covering more than 70 economies globally drawn from GEM data and apply multiple linear regression and hierarchical linear models. Our findings suggest that firm innovation and country contexts interact with firm age on firm exports. Besides, existing business relations of the entrepreneur also significantly affect success controlling for various entrepreneurial and business characteristics including entrepreneurial experience, fear of failure, startup skills, and industry. Our results shed light on the literature on how innovation, business relations, and country context interact on the success of born-global making several implications for policymakers, entrepreneurs.

**Keywords:** Born global, Entrepreneurship, Early Internationalization, Exports, Innovation, Global Entrepreneurship Monitor (GEM), Global Innovation Index (GII)

# Dünya Capındaki Firmaların İnovasyon, İş İlişkileri ve Ülke Düzeyinde Bağlamsal Etkenleri Kapsamında İhracat Performansı : 2008'den 2015'e GEM Verilerini Kullanan Bir Analiz

Sikandar Abdul Qadir

## Öz

Erken uluslararasılaşma kavramı, küresel-doğan olarak adlandırılan yeni bir girişimci türüyarattı. Günümüz dünyasında, her birey başarılı bir girişimci olmayı hedefliyor. Girişimciler gerekli kaynaklarla donatılırsa daha iyi performans gösterebilirler. Küresel-doğanı başarılı yapan nedir veya küresel-doğanın başarısına hangi faktörler katkıda bulunur? Her tür girişimci için yüksek başarısızlık oranları göz önüne alındığında, küresel-doğan firmaların, ihracatla ölçülen başarılarında inovasyon, iş ilişkileri ve ülke dü zeyindeki bağlam gibi çeşitli faktörlerden ne ölçü de yararlandığını test ettiğimiz bir araştırma modeli kavramsallaştırıyoruz. Araştırma hipotezlerimizi test ederken, Küresel Girişimcilik Monitörü (KGM) verilerinden küresel olarak çekilen 70'ten fazla ekonomiyi kapsayan bir veri seti oluşturuyoruz ve çoklu doğrusal regresyon ve hiyerarşik doğrusal modeller uyguluyoruz. Sonuçlarımız, firma inovasyonunun ve ülke bağlamlarının firma ihracatındaki firma yaşı ile etkileşime girdiğini gösteriyor. Ayrıca girişimcilik deneyimi, başarısızlık korkusu, başlangıç becerileri ve sektörler dahil olmak üzere çeşitli girişimcilik ve işletme özellikleri kontrol edildiğinde girişimcinin mevcut iş ilişkilerinin başarıyı önemli ölçü de etkilediği sonucuna varılmaktadır. Sonuçlarımız, yenilikçiliğin, iş ilişkilerinin ve ülke bağlamının, küresel-doğan firmaların başarısında nasıl etkileştiklerine dair literatüre ışık tutarken politika yapıcılar ve girişimciler için de çok çeşitli uygulamlar önermektedir.

**Anahtar Sözcükler:** Küresel-doğan, girişimcilik, erken uluslararasılaşma, ihracat, yenilikçilik, Küresel Girişimcilik Monitörü (KGM), Küresel İnovasyon Endeksi (KİE)

*Dedicated to My Family and Suwaiba Safa My Niece . . .*

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# Abbreviations

| | |
|---|---|
| **BG** | **B**orn **G**lobal |
| **EO** | **E**ntrepreneurial **O**rientation |
| **GDP** | **G**ross **D**omestic **P**roduct |
| **GEM** | **G**lobal **E**ntrepreneurship **M**onitor |
| **GII** | **G**lobal **E**nnovation **I**ndex |
| **GNP** | **G**ross **N**ational **P**roduct |
| **INV** | **I**nternational **N**ew **V**entures |
| **OECD** | **O**rganization for **E**conomic **C**o-operation **D**evelopment |
| **OL** | **O**rganization **L**earning |

# Chapter 1

# Introduction

## 1.1 Introduction

There is a widely accepted view that countries' economic conditions improve with exporting as it is linked to the economic growth [1, 2]. Since governments all around the world typically rely on the taxes to attain revenues, increase in trade brings capital in the country, which can then be used, for public healthcare, education and welfare projects. Exporting not only generates wealth but also it has a significant positive impact in generating new jobs [2]. In creating such an environment that fosters export, it is the responsibility of the state to devise policies to promote the existing businesses to grow more and to create further chances for the young businesses with more focus on selling abroad. Entrepreneurship is one such way through which young businesses of today will become multinationals corporations tomorrow [3]. However, entrepreneurship is still not considered as a means of economic development due to the isolation of the two fields, i.e. economics and entrepreneurship, and the lack of research in considering the entrepreneurship as a factor for growth [4, 5].

While exporting aids to improve a country's financial condition, this process is challenging for new companies, as they cannot enter the local markets with regular products that already exist. Particularly in entering into foreign markets, there should be some qualities in the product or service, which no one else is offering. Therefore, entrepreneurship not only can support the pillars of the economy but it should be linked with the

innovation as described in the early work of Schumpeter [6]. This notion of *innovative entrepreneurship* is addressed by Baumol [7] through a theoretical analysis of the innovative entrepreneur's role in economic growth and prosperity [8]. The innovative entrepreneurship is especially targeted to be promoted in countries where institutional support is provided to the stakeholders since many other countries are attempting to support regular entrepreneurship which does not substantially reflect economic growth [9]. Even if established companies do not invest to innovate, their survival is always doubtful [10] .In Europe and the United States, entrepreneurial policies are now devised to support more innovative entrepreneurs [11]. Thus, it is very essential to come up with an innovative product or service that can create its own market in the early phases of new firms.

An entrepreneur takes the initiative to start a new business. One of the important tasks for all entrepreneurs is to understand how to run the business in the market to compete in. When the business is targeted to internationalize in the foreign markets, it becomes more challenging. This requires prior experience, motivation and entrepreneurial characteristics of the founder, which might interact with the institutional, organizational, and spatial contexts. Starting a business being global from inception is relatively a new phenomenon, which attracted many scholars in the field of international business, entrepreneurship, and economics recently [12]. The concept of early internationalization is commonly referred to as *born-global or international new ventures* in the literature. As highlighted by several scholars in their studies that born-global firms do not need any substantial resources, as it challenges the traditional models, therefore, there has been a rise in research for this subject [13] and mainly due to the transition of emerging economies to developed economies.

While the research on early internationalization is growing at an accelerated rate, there is limited research on the convergence of the two emerging concepts: innovative entrepreneurship and early internationalization. Besides, the existing research is fragmented, use data that are specific to single countries which makes it difficult to make cross-country comparisons. In this study, we thus explore to understand how innovation and country-level contextual factors interact with early internationalization on exporting using a wide range of data. Our data set is composed of data from 70 different economies ranging from developed to developing which we aim to contribute to the existing literature where most of the studies are focused on one region or one country. The data set

that we have employed in this study is obtained from the Global Entrepreneurship Monitor (GEM), which provides the most comprehensive and systematized data for our study. We have also used the Global Innovation Index in our study, to reflect the institutional environment of countries that are covered by our data set. Innovation, business relations, and the county-level contextual factors form the key factors in our analyses that are hypothesized with early internationalization on firm exports. Besides, we also control for various entrepreneurial and business-level factors. We use multiple linear regression and hierarchical linear models to verify our research hypotheses. Our results suggest the importance of innovation, business relations, and favorable environmental conditions on firm export aligning with what we have hypothesized. Moreover, we observe firms benefit from higher innovation and favorable contexts on export. Overall, our study has key implications for policymakers, entrepreneurs, and all businesses.

## 1.2 Research Objectives

Before the conceptualization of the phenomenon of early internationalization, which starts with the first definition of the International New Venture (INV) in 1994, the literature was extensively focused on large and mature firms with very few studies on the entrepreneurship and its effects on economic growth. Although there has been a growth in the field of international business on early internationalization, born global firms, or international new ventures, the analyses are mostly limited to certain countries, which makes difficult the generalization of the findings or understanding the links between entrepreneurial, business and country level measures [14]. Using data from Global Entrepreneurship Monitor (GEM), one of the most important contributors providing comprehensive entrepreneurship data from all over the world, we conceptualize the factors that are most effective in the early internationalization of new firms as measured by firm export.

## 1.3 Thesis Organization

The rest of the thesis is organized as follows. Chapter 2 reviews the prior literature from the point of view of understanding the concept of, the reasons for, and the factors that are effective in early internationalization. Chapter 3 presents our empirical research framework and the development of research hypotheses. Chapter 4 explains our data set and the analyses of the empirical models. Lastly, Chapter 5 concludes the study with a detailed discussion of the findings, conclusions and future research directions.

# Chapter 2

# Background and Prior Literature

The goal of this study is to explore the roles of innovation, business relations and country-level contextual factors in early internationalization of entrepreneurs. In building our research model, we start with a discussion of the concept of early internationalization, which was referred to in different ways such as international entrepreneurship [15], born-global firms [16] and international new ventures [17] in the prior literature. While the phrase early internationalization encompasses the other concepts of born global, international new ventures and international entrepreneurship, as of the conceptual research model we will refer to the early-internationalized entrepreneurs as born global firms in this study. We review the literature from three main perspectives: the concept of early internationalization, the reasons behind early internationalization via the supporting theories, and the factors that are essential in exporting performance of entrepreneurs that internationalize early.

## 2.1 The concept of Early Internationalization

We are living in a global village today. Each country today has some specific characteristics and resources through which they can produce products and services for their local market as well as for the international market. Brazil, Vietnam and some African countries are currently ruling the coffee market since they supply the whole world with the most consumed beverage. However, they may not be good at producing other daily used commodity. Since they cannot fulfill all the needs of the local population, they

trade with countries for other products [18]. Recognizing the potentials in various trading activities and starting doing business in international markets require international experience that is easier for large, mature corporations based on the widely accepted perception in the international business literature. However, this necessity for trading gives birth also to a new stream of entrepreneurs or new small firms referred to as the international new ventures (INV) or born-global firms [19].

The term "international new ventures" was first appeared in the seminal paper entitled "Towards a theory of International New Ventures" by Oviatt and McDougall [17]. Defining an international new venture as "a business organization that, from inception seek to drive the significant competitive advantage from the use of resources and the sale of output in multiple countries", Oviatt and McDougall [17] put forward the importance of this new phenomenon in the era of traditional international business literature focusing mostly on large multinational companies. With an increasing number of people having international experience and the rate of technological change and innovations, this was inevitable according to Oviatt and McDougall [17]. As more scholars research in the area of international entrepreneurship, definitions of INVs have evolved from over time and there has a been a need to better understand the insights into these various conceptualizations of the phenomenon [20, 21]. Another alternative term that is also frequently used in the literature for international startups is *Born Global (BG)*. A born global firm is defined as a "business organizations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries" [22]. Here in the aforementioned two definitions, keywords that are key to become INVs or BGs are "competitive advantage" and "knowledge-based resources".

While both terms (INVs and BGs) are used in the same context representing firms that internationalize soon after their startup, but there are some differences based on the number of foreign markets they serve and years they take them to internationalize. Fundamentally, three factors are considered to classify a firm as an international new venture or a born-global, which are speed, extent, and scope. Speed is measured as the time difference between inception and the first international sales, extent reflects the share of foreign sales, and scope refers to the number of foreign countries that the firm generates sales [21, 23]. If the speed and scope of internationalization are considered then the underlying firm is an INV, while speed and extent are operationalized then it

is a born global [21]. Crick [24] differentiates the two concepts even at a more detailed level such that BG firms internationalize within three years of their formation [25] while for INVs this can be six years [26] based on a analysis of the UK technology firms. Since we are investigating the effects of both speed and extent for internationalization, we will refer to firms that early internationalize as born global firms conforming to the context of our study.

## 2.2 The reason behind early internationalization

There is an extensive discussion in the prior literature on why entrepreneurs choose to internationalize at early phases of the establishment even starting from inception. Understanding the reasons for firms to internationalize early starts from a discussion of what kind of motivation they have in choosing entrepreneurship as a profession. There exist numerous reasons for starting a business but the prominent one is the "independence" according to Smallbone & Welter [27]. In the prior research, it has been shown that there are several attributes that are specific to individuals are the reasons for start-ups. While being an entrepreneur requires some unique personal attributes that not all people have, the approach to early internationalization necessitates international experience and favorable conditions more than being an entrepreneur. A male entrepreneur can approach internationalization different than a female entrepreneur as they go through different experience through their life such as education, social status in society and choices of career available to them [28]. Thus, the view that every entrepreneur starts as a consequence of either based on necessity or finding an opportunity is not completely valid as some individuals are born to be entrepreneurs, according to Williams [29] who adds that we are limiting our understanding of the entrepreneurship by categorizing the entrepreneur as necessity or opportunity based.

Internationalization at an early phase can be linked to internal attributes of an individual whose foremost determination is to become successful. Early phase firm owners, observing foreign markets based on traveling and networking, know the need and importance of being global from the beginning of their start-ups [30]. Internationalization in early phases could even be easier than internationalizing at later stages [31]. Today, with the advancement of communication technologies, one does not need to be physically present

at some place for networking since social media and other various sources are catering for this need.

### 2.2.1 Supporting theories for early internationalization

The theories on the internationalization process of born global firms are not very well established [14] for which the theory and practice are still evolving [32] . There exist no theory that can completely fit the process of early internationalization of firms [31, 33]. Arguments on early internationalization have been made drawing from the existing theories in the prior literature. presented their model of firm internationalization in 1977 and that model is commonly called as The "Uppsala Model" offered by Nordic Scholars J.Johanson and J.Erik Vahlane, is one of them which gets its name from the city of Uppsala in Sweden. Empirical research that firms internationalize gradually as they get more knowledge of the foreign market based on a study of Swedish firms suggested by Johanson & Vahlne [34]. A few of the companies who used this traditional approach are stated as BP, Santander, and Phillip [35]. This theory was acceptable in 1977 as communication and transportation were not advanced [33] since the firm experience at the organizational level would ease the obstacles in internationalization. However, an entrepreneur has higher chances at the individual level to access to resources via advancements in technology and communication depending on his or her entrepreneur attributes and networks.

In the prior literature, the stage model is also justified based on the assumption that firms first go through process innovation and then move towards product innovation. After achieving these two innovation levels they export first to the closer and then to the farther market [36]. However, if we observe what we are witnessing these days with respect to how firms internationalize is completely different since the internet and advancements in mobile technology. These changes have been very substantial on the business environment and have completely changed the way we think in terms of how small firms without having enough resources internationalize [13, 14, 33].

Another stream of discussion in the literature is built around the resource-based theory of the firm to determine the factors that are important for firms to internationalize early. New firms generally lack resources, however, they have one very significant resource which makes them unique and stands out is the prior knowledge of the founder

or individuals that have a stake in the early phases of the establishment [37]. According to the knowledge-based view which is derived from the resource-based view, knowledge is considered as one crucial resource for all newly established firms [38–40]. The unique set of intangible knowledge resource of individuals creates innovative product and services [41]. Several other theories are also presented in the literature, which attempts to explain how firms internationalize. Both the knowledge-based perspective and the resource-based view make sense in their relevant context [42].

We cannot deny the importance of resources for the progress of the firm, but if the firm has knowledge-based resources then there is no need for others tangible resources [41, 43]. Another quest in this stream of argument is from where the knowledge comes. In other words, what is the origin of this knowledge source? Answers to these appealing queries lie in the network theory of the firm. Networks of an entrepreneur are important sources of learning. The importance of network can be assessed via revising the traditional Uppsala model to include the network perspective [44]. Organizational learning is also accepted as a form of networking within the organization or the firm [45]. This type of learning is achieved when the firm is mature enough so that accumulated experience interacting with the environment results in knowledge [46]. Organizational learning has always been associated with the time, in other words with what we have learned from past [47]. Since born global firms lack a structured arrangement of an organization, organizational learning cannot be applied here. However, one of the key resources for born-global firms that we have discussed earlier is the knowledge that comes with experience and networking of the founder or individuals who have a stake in the start-up. Thus, the underlying conceptual research model of this study is developed based on knowledge and network-based theories that are essential for early internationalization

## 2.3 Factors Essential For Internationalization

Although factors affecting the process of internationalization of different born global firms vary from one country to another [48, 49], there are some basic factors which are not dependent on the country environment but are more related to the entrepreneur's decisions about the scope and extent of his or her business. International orientation [15], export commitment [49] , innovative product [50], superior quality [51] and business networking [52] are some of the factors that are effective in the internationalization

process. In general, such factors that urge entrepreneurs to enter in foreign markets can be classified into four that are entrepreneurial factors, organizational factors, strategic factors, and external environment factors [53]

Entrepreneurial orientation (EO) is designated as a prominent characteristic in internationalization in the prior literature [15]. There is no doubt in saying this as individuals achieve what they desire. An entrepreneur who made his or her mind to see the firm competing in the international market from the initial phases of the firm establishment will do all efforts to achieve that target. Entrepreneurial orientation is a combination of variables measuring knowledge about the business startup activity, knowing about other entrepreneurs [54], startup skill for the business, fear of failure [55] and entrepreneurship environment in the country [56].

Besides entrepreneurial factors, business-related factors such as the industrial sector of the firm [57] also substantially affect the internationalization process of born global firms. Innovation, business relations, and country-level factors are the ones that are most discussed in the literature [2, 58–60]; however no study has combined these three factors in one single study. An increasing number of studies explore the role of networks in successful internationalization [44]. Early internationalization varies according to the overall wealth (i.e., GDP) or innovation level of the country that the firm originates from. While we discuss these factors in more detail drawing on the prior literature, we first elaborate on export as a measure of firm progress in early internationalization.

### 2.3.1 Export as a Measure of Firm Progress in Early Internationalization

There are two broad categories of internationalization (i.e., equity mode and non-equity mode) where subsidies and joint ventures are classified as equity mode and the non-equity mode includes export and contractual agreements [61]. Since young firms lack financial resources and marketing capability, equity modes such as foreign direct investment, licensing and franchising are difficult modes of internationalization for such firms [62] .Excluding these options, younger firms are frequently left with one possibility, i.e., direct exporting. Comparatively, exporting is the only mode in which the level of risk is low and no initial investments are required [63]. Also, the fastest way to enter in any market is through export [64]. It is also pertinent to mention that most of the born

global firms opt for export when they want to sell abroad, as participating and leaving the new market is fairly simple with this mode [51]. Since our study focuses on the born-global firm; export is the best criterion to measure the progress of a small firm within our context.

### 2.3.2 The Role of Innovation in Early Internationalization

One of the primary factors that play a substantial role in internationalization is the uniqueness of the product or service in that specific market where it is to be launched [13, 65], which we can call as an innovative product or service. While for a product or service to be innovative it does not need to be a completely new product or service, it is sufficient to be new to the market from the perspective of economics [65] Entrepreneurs create the market by themselves when they think that there is a space for introducing that new product or service [12, 52]. Having innovation capabilities from the start, firms become the source of knowledge for other market competitors and this advantage provides superiority in the global market [22]. The concept of early internationalization is solely based on the innovation of the firm according to Andersson & Wictor [52], and when this factor does not exist, it is very likely that the early internationalization concepts fail. For early internationalization, there must be some level of innovation in the product or service which makes it unique. Innovation is essential for the success of born globals regardless of the sector in which the firm is operating, it can be a high-tech or non-tech business; however, innovation results in value creation [50]

### 2.3.3 Entrepreneurial, Business-related and Contextual Factors

Entrepreneurial characteristics play a significant role in the internationalization of the business as it opens the new horizons of thinking [12, 66]. In general, entrepreneurs succeed when they take the crucial decision of startup on right time after analyzing the market situation and need for that product. It might be possible that what the entrepreneur perceives about the market will be different; thus, there is a huge risk in going ahead to realize the new business idea. With regards to the risk perspective, innovative entrepreneurs are found to have a high level of confidence which facilitates them to take bigger risks based on the prior empirical studies [65]. Entrepreneurs are mostly individuals who are risk takers who also do not hesitate to undertake risks to

internationalize their businesses. This risk-taking characteristic of the entrepreneur is of utmost importance for the internationalization [67] .

Every business has its own features and potentials. A manufacturing business will have a different approach to internationalization while a consumer service might work the other way round. In some economies, there is a very strong competition in the domestic market, which drives the new ventures to look beyond the home market which forces the entrepreneur to look for outside opportunities from the very beginning [60, 68].

**Business relations and networking outlooks on early internationalizing**

One of the factors that were overlooked in the prior literature was the effect of networking in early internationalization. An entrepreneur's network consists of formal and informal ties and relationships with family members, friends, colleagues, business and business connections [69, 70]. At times the personal connection of the entrepreneurs that are thought to be unrelated to the firm core activities, can help the firm to expand its market internationally [31]. In the literature, it has been verified that the network plays a very crucial role in early internationalization of the firm [70]. Networking in the international environment and the public sphere of the entrepreneur not only contributes to the exporting but also increases innovation [59]. International orientation of the founder with effective networking capabilities is thus helpful in the establishment of born global firms.

**Country-level contextual factors on early internationalization**

In previous studies, it has been shown that government policies have significant contributions towards the development of SMEs [2, 14, 60]. While promoting all kinds of entrepreneurship activities is important, formulating policies to foster innovative entrepreneurship are likely to have the highest value effect [71, 72]. When state policies are shaped to promote entrepreneurship culture, gradually more entrepreneurs will attempt to start new innovative businesses searching for new economic opportunities some of which may become the identity for that country based on the innovative ideas or products they bring on the table [73]. There are many examples such as IKEA, H&M, and Spotify, becoming an identity for Sweden; Apple, Microsoft, and Google for the USA, and Alibaba for China. All of these firms grow because of the favorable conditions provided by their respective governments besides their constant urge for innovation. If

there was no support from the government for Steve Jobs, we may not have Apple in our hands today. One can easily measure the effectiveness of these policy decisions in terms of GDP, GNP, and Innovation index. These country-level contextual factors also contribute to the early internationalization of the firms.

While such policies at the government level foster entrepreneurship and contribute to the economic outcomes of the country, they also flourish an environment that forms favorable conditions to innovate. Around the globe, countries are measured via a country level innovation index showing the importance of country-level characteristics besides actual innovations on the overall innovation levels [74]. Every region has its own dynamics. Some regions of the world are good in manufacturing while others are identified because of the unique services they create. Innovation ideas are regional dependent and characteristics of that region play a significant role in producing an innovative product, which might also affect the internationalization of firms.

# Chapter 3

# Research Model and Development of Hypotheses

Various factors affect the early internationalization of firms including innovation [13, 65], founder specific factors [12], business relations [70] and country-level contextual factors [73] as were discussed before. We hypothesize innovation, business relations, and country level contextual factors as the main exploratory variables to have a direct effect on firm internationalization. While active firm internationalization could be measured in exports, international contacts or direct foreign investments, the scope of internationalization is frequently measured as the number of foreign markets served by the firm [75] . We measure firm internationalization by the export level of the company. We use the country level innovation index (i.e., GII) as a proxy for the country level contextual factors. Since we are interested in the early internationalization of firms, firm age forms another main decisive variable in our model. Besides the direct effects of the three main exploratory variables on export, we also hypothesize that firms at their younger ages could benefit more from higher innovation, more business relations and the higher innovation circumstances. In addition to these variables, we also control for several entrepreneur and business level factors. Figure 3.1 presents the conceptual research model on which our analysis is based.

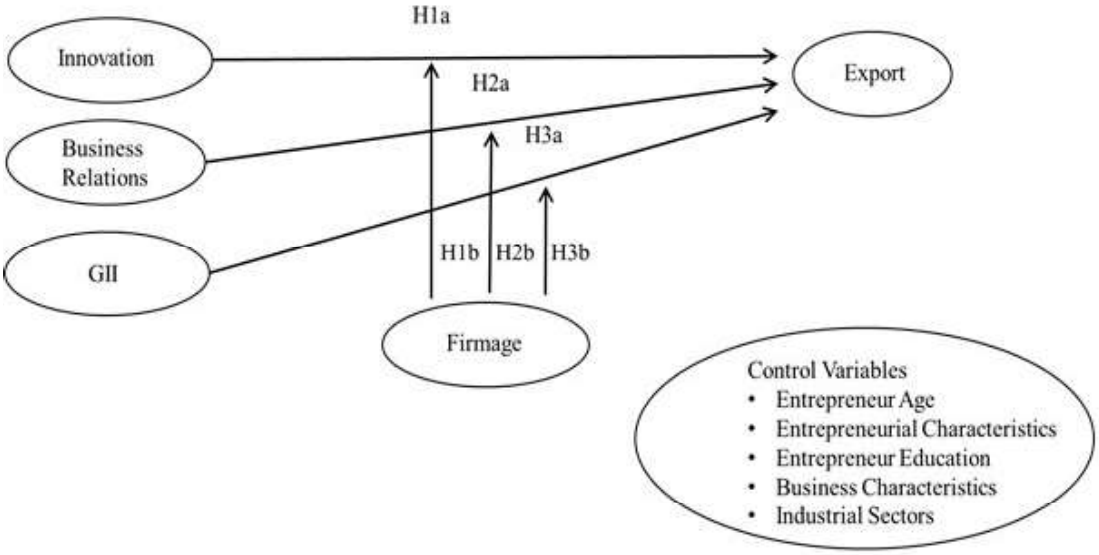


FIGURE 3.1: Conceptual Research Model.

## 3.1 Innovation, Born-global Firms, and Export Performance

The impact of innovation on export is not a clear cut as most of the prior studies are fragmented, use R&D as the main indicator or do not take into account innovation capabilities, which might play a significant role in firm internationalization [76] . Despite the existence of studies concluding that non-innovative firms are more likely to export than innovating firms [77] most of the studies in the literature are able to link innovation to export (i.e., intensity, the propensity to export or actual export levels [76]. These innovative products open the door for the other firms as well in terms of opportunities branched from their innovation to further improve the existing product [78]. In that sense, a firm's innovation capability is a special asset which provides and sustains its competitive advantage [76]

In comparing the two types of entrepreneurial activities (i.e., imitative and innovative), Koellinger [65] suggests that both notably contribute to the economic progress but innovative entrepreneurial activity will assist more as compared to the imitative activities highlighting the importance of innovation for export. A novel idea is a key factor for the innovation of the firm, which does not warrant a formal R&D structure at the earlier stages of a firm. The idea can come at any moment irrespective of the time, place or age. Facebook, Google, Uber, and several other high tech startups are successful because the ideas of their founders that were new and innovative. They took advantage of the existing gap in the market and made their presence worldwide in a short period.

With an innovative idea, an entrepreneur can reach higher levels of export at the newly established firm. New ideas shaping into new products or services that are not offered by others evolve into new firms. It is thus not just the R&D capability but new ideas, strategic and learning capabilities could make significant effects on export performance particularly in the earlier phases of firms. In light of these discussions, we posit the following hypothesis.

***Hypothesis 1a:*** *There is a positive relationship between innovation and the export performance of a firm. The higher innovation the firm has, the more the firm exports*

While a positive effect of innovation on firm export is more of an expected outcome as it is extensively discussed in the prior literature [58], the answer to the question of how born-global firms benefit from innovation could generate important implications for entrepreneurs, policymakers and governments all over the world. We have suggested early that innovative firms export more via Hypothesis 1a. Romanello & Chiarvesio [14] draw attention to the performance advantage of firms at the very early stages of their establishment, which might get lost as they mature over time. From this perspective, having an international orientation in the initial years is crucial in future internationalization of the firm. Once the new product or service is eminent, other entrepreneurs can introduce similar products or services, thus decreasing the significance of its impact if the underlying firm does not take the opportunity to internationalize early. While there is a widespread perception that younger firms cannot export as they lack the experience to sell abroad, they can get a grip on the market with a novel product or service [79]. Promoting entrepreneurs with low-growth potential and lack of interest in innovation do not contribute to economic growth as noticed recently by many policymakers and governments. Thus, new public policies supporting central-payer healthcare, STEM education and labor market reforms are initiated to foster valuable entrepreneurship which has high potentials to start new valuable businesses in the earlier phases of their formation [71, 72].

Another obstacle, which can prevent the newer firms to export, is the shortage of resources or funding to internationalize in the earlier stages of the start-up. While financing the business is an issue, innovative start-ups with an ambition to grow and internationalize could have higher chances in accessing external funds. For newborn firms, a unique idea of the founder is the greatest resource of all. These firms also apply unique strategies

that can help them to overcome the problem of accessing resources. Via ambidextrous innovation, such firms not only work on unique product development but also look for markets where to sale at the same time [80, 81]. If both of these activities are performed in parallel, it will take less time for these firms to export. Born-global firms grab considerable advantage from utilizing the ambidextrous innovation strategy. Overall, we hypothesize that firms at earlier stages could find opportunities to innovate and enter into foreign markets by turning the new ideas into products or services that could be sold in international markets.

***Hypothesis 1b:*** *Firm age acts as a moderator in the relationship between innovation and export. At earlier phases of establishment, opportunities for export are more. The younger the firm is, the more the firm benefits from innovation on export.*

## 3.2 Born-global Firms' Business Relations and Export Performance

Having business relations is designated as another valuable resource along with the innovation capability on firm growth and export [14]. While both innovation capability and networking structure positively contribute to the firm performance, [82] particularly emphasize the importance of the ties with innovative alters on performance. Entering into foreign locations is not straightforward, unless and until the starting firm (or the founder) has very strong connections within the targeted country.

It has been noted that nearly all firms that go beyond domestic boundaries have always used their networking abilities to start their businesses [20]. One of the main sources of learning for these new firms is these networks [83, 84]. Learning from networks can benefit the firm to cogitate the new ideas that could lead to further expansion of the market. In re-visiting the traditional Uppsala model, [44] point to the importance of the web of relationships (i.e., networking) in entering new foreign markets. The role of business relations in firms' export cannot be neglected. Therefore, we hypothesize business relations as a key attribute for export for all firms.

***Hypothesis 2a:*** *There is a positive relationship between business relations and the export performance of a firm. The more business relations the firm (entrepreneur) has, the more the firm exports.*

We have hypothesized that business relations have a substantial positive effect on firm export. While this effect is valid for all types of firms, younger firms could position themselves better to utilize the existing business relations at setting up their businesses. Especially young firms with new innovative products can take better advantage of networking. Export to other markets needs extensive knowledge that can be accumulated through learning from the networks. If the entrepreneur is already familiar with the foreign market, it takes less time for the firm export [31]. Networking enhances the existing knowledge of the individual or the firm, which can foster innovative ideas and offers benefit to export in the earlier phases of their lifespan [85] . One of the essential elements that make the newly established firms to cross borders is thus the entrepreneur's prior network, business relations or social capital. Based on the prior evidence, we hypothesize that firms with foreign market knowledge through networking and innovative products can take lead in exporting.

***Hypothesis 2b:*** *Firm age acts as a moderator in the relationship between business relations and export. The younger the firm is, the more the firm benefits from business relations on export.*

## 3.3 Country-level Innovation and the Export Performance of Born-global Firms

Institutions in a country are also vital for the growth of the entrepreneurship. Economic institutions, political democracy, and government regulations are found to significantly affect the transformation from the individual entrepreneurial readiness to entrepreneurship activities [86]. In general, entrepreneurs need monetary support for the start-up. They can get this support only if all the institutions of the state are committed for the economic growth of the country [87]. This commitment to economic growth not only increase the confidence of the entrepreneur but also the investor [86]. Individual characteristics of the entrepreneur make a difference, but without the institutional support, the probability of success is very low [88]. Moreover, the presence of such institutions is not sufficient in most cases, the activism of these institutions is what entrepreneurs are looking for [87].

Economic, political and regulatory institutions reflect the overall conditions of a country, the difference between these institutions across countries can explain the cross-country variations as these institutions are closely linked to the business opportunities in that country. While the performances of these institutions reflect various country-level indices representing the overall wealth, trust or inventiveness, we focus on the overall innovation index of a country in this study as it is closely related to the underlying conceptual model of this study. One such index which gauges the overall innovation in a country is the Global Innovation Index (GII) [74] . Firms that are cultivated in a highly innovative environment are expected to have higher performances as the entrepreneur exists within the environment acting with others. The innovation output at the firm level is related to the overall innovativeness of the country [59]. Thus, we posit that firms that reside in countries having high innovation scores have more potential to export as compared to low scoring countries in innovation.

***Hypothesis 3a:*** *Firms that reside in countries having higher innovation scores tends to export more as compared to firms in countries that have lower innovation scores.*

The relationship between the country level indicators such as innovation scores and the export performance of the firm becomes more significant when firms are in the starting phases of their development. It is widely believed that firms in initial phases lack experience for internationalization; however, the goodness of the national framework conditions could play a key role in firm growth and export. Rating the countries based on several key characteristics including institutions' capability, business environment, support for research and infrastructure availability, an overall innovation score can be calculated for each country [74]. The existence of such attributes in the economy could provide an advantage for the born-global firms originating from these high GII scoring countries in the foreign markets in terms of higher export levels and performances. The country-level innovation scores calculated by GII depend on several factors such as market attraction and globalization of the market, and the performance of firms is enhanced when government initiatives are directed towards the globalization [15]. Even though there is an exemption that not all firms can perform well in the same environment, this deviation of the performance is more embedded to the firm individual characteristics [89]. We hypothesize that GII's role is important for export particularly when firms get support in the initial phases of their establishment, which make them more export-oriented from the start.

***Hypothesis 3b:*** *The younger the firm is, the more the firm benefits from country-level innovation conditions on export.*

# Chapter 4

# Methodology and Empirical Analyses

Today the world population is growing at faster pace than before; due to this rapid population growth, it is not as easy for governments and other organizations to create job opportunities at the same growth rate. In order to deal with this problem, governments are encouraging entrepreneurs all over the world to establish new businesses that will add value to their economies [2, 90, 91]. This will not only solve the problem of unemployment but also assist nations for economic growth [92, 93].

To formulate the policies and understand the people's behaviors towards entrepreneurship, it is very important for policy makers to have an idea of economic and social life of individuals. Global Entrepreneurship Monitor (GEM) is one such project, which gathers data regarding the perceptions of individuals and experts on entrepreneurship.

As was discussed before entrepreneurship can be an effective way to generate jobs. Firms progress when they internationalize with higher levels of innovation. Besides the impact of innovation on internationalization, internationalization depends on several other factors including the founder's intentions of internationalization, the characteristics of the product, and the demand of that product in foreign markets. Our research aims at understanding the innovativness and internationalization levels of born-global at various entrepreneur, sector and country level measures. We employ GEM data to operationalize the concepts of the research model given in Figure 3.1 into variables that are measured by GEM surveys. One of the reason to use the GEM data is that it contains several

characteristics of the entrepreneurs, which makes this data-set comprehensive. The details of the data, variables, empirical specifications and empirical analyses are provided in the following sub-sections.

## 4.1 Data

Global Entrepreneurship Monitor started in 1999 as a joint task between Babson College (USA) and London School of Economics (UK). The goal of this joint project was to investigate the difference between entrepreneurship mindsets in different world economies. The GEM database is the leading database for entrepreneurship research. With representatives in almost 100+ economies and 500+ experts [94], GEM can give astounding data, complete reports and fascinating stories, which significantly improve the comprehension of the entrepreneurial marvel.

GEM database is not only used for academic research purposes, but many world renowned organizations like United Nations, World Economic Forum, World Bank and the Organization for Economic Co-operation and Development (OECD) are also using this dataset [94]. GEM releases annual report to portray the entrepreneurship advancements and help different economies of the world to align their policies with current trends. GEM dataset has 18 years of data since 2017, which covered approximately 200,000 Interviews each year.

GEM collects data in two different formats, i.e., Adult Population Survey (APS) and NES (National Experts Survey). In APS, minimum 2000 adults are interviewed each year and information regarding the entrepreneurial actions, behaviors and desires of the respondents are addressed. As for NES, 36 experts from each GEM member country are interviewed and data are collected based on socio-economic conditions of the country reflecting the entrepreneurial behavior in the country's population. We have used the APS (from 2008 to 2015) file because questions related to entrepreneurial behaviors and attitudes were asked in that file which is more close to our research questions. The empirical analyses of this study are based on the APS between years 2008 and 2015 from GEM [94].

Sample selection for APS survey is ensured to be completely random. Surveys are conducted with the sampled experimental units via phone interviews. A call is placed using

random phone numbers asking the person who receives the call for an interview in countries where 85 % of population has landline access. To ensure the randomness, these calls are placed during different times of the day on weekdays and weekends. In countries where landline phone is not prevalent, GEM assures randomness via employing geographically stratified sampling method. Using this approach, interviewee is identified and a face-to-face interview is conducted [95]. Each country submits the respective country data-set to GEM Data team where they check various aspects of the data to make sure that it represents the whole population. Furthermore, the data are evaluated for biasness based on the distribution of variables such as age, gender, refusal rate, and missing questions and incomplete interviews. All these factors may create the difficulty to represents true population characteristics [96].

## 4.2 Definition of Variables

In GEM APS file, there are two types of variables SU and OM. Both type of variables relate to two repeated questions, which are asked in different scenarios. SU Stands for *Start Up* and OM stands for *Owning-Managing*. This categorization is included to identify the Nascent and Established Entrepreneurs. Startups generally include two phases: a phase before the start of the firm and the second phase is realized when the firm is actually established. Both of these phases are collectively termed as *Total Entrepreneurial Activity*. SU variables in GEM Database describe the entrepreneurial behaviors of the Nascent Entrepreneurs/Firms and on the other hand, OM Variables represent entrepreneurial attitudes of the Established Entrepreneurs/Firms. These two classifications distinguish between the two stages of Entrepreneurial Activity. We combine these two variables SU and OM in a single data set to be used in our analyses since both represent entrepreneurs, one that are in the starting phase and other that are in operating phase. In addition, combining the data in one single data set from 2008 to 2015 helps to control the effect of several factors influencing the internationalization of the firm in different countries over time [65].

### 4.2.1 Dependent Variable

The main dependent variable of our models except for the first model is *EXPCT*. Respondents are asked to state the proportion of customers living outside the country of the business established. The answers are classified in seven different export categories that are ranging from more than 90 % to 0 %. The classified export level refers to the variable *EXPCT* in our empirical analyses. In order to use *EXPCT* as a numeric variable we took the mean of all ranges that were defined in GEM data. For instance, first range is 0 % to 10 % so we took 5 % as mean of that range and use this percentage number in our analysis and we did it for the other categories.

### 4.2.2 Independent and Control Variables

The main independent and control variables are firm age, innovation, age, gender, industrial sectors, and other entrepreneur and business specific characteristics. While some variables are used as they were originally coded in GEM, some others were transformed according to the empirical specifications of the research model. Table 4.1 briefly summarizes all the variables used in our models, their definitions and their corresponding coding in the GEM Survey data.

***Firm Age***

Firm age (*FIRMAGE*) is derived from the variable called Wageyr in GEM. *FIRMAGE* is the main explorative variable for our research model as we explore younger firms' innovativeness and export levels and generally age of the firm defines how mature or young they are. Wageyr variable represents the year at which the business owner receives the first payment or profit from that business he/she started. It defines in a way how much time it takes for the owner of the business to become successful. Equation 4.1 represents firm age calculation in our data set.

$$FIRMAGE = Survey\ year - Wageyr \tag{4.1}$$

***Innovation***

The variable Innovation *(INNO)* is created using three different variables of GEM surveys. Innovation is composed of *Compet* (Competition), *Newcst* (New Customer) and *Newtec* (New Technology). These three variables in some way represent how innovative the product is. *Compet* measures whether the product has any competitors or not. If there is no competitor for that product then it can be classified as a high innovative product. If some competitors exist for that product then it is a medium innovative product and if many competitors are present in the market, then innovation level is very low for that product. Thus, the variable *Compet* takes values from 1 to 3 where they represent low, medium and high innovations, respectively. The other measures of innovation *(Newcst and Newtec)* are transformed in a similar manner. For customers or consumers, if the product is new and the technology used is just one year old, then that product is a highly innovative product. If the product is not new and the technology used in that product is available in last five years, then innovation level for that product is medium. Lastly, if the product is not new and familiar with all customers and the technology is also more than five years old, then that product is ranked as a low innovative product. 4 is subtracted from *Newcst* and *Newtec* to make all the *INNO* variables on 1 to 3 scale. Equation 4.2 represents how the *INNO* variable is calculated:

$$INNO = Mean\ (Compet,\ 4 - Newcst,\ 4 - Newtec) \tag{4.2}$$

***Other Independent and Control Variables***

Age of the entrepreneur *(Age)* is used as a control variable in the regression models to check whether there is any effect of age on the firm to be born-global. Generally, it has been argued that young entrepreneurs at early stages of establishment lack the financial capital to start the firm [97]investors are always hesitant on them because of the young age so age is significant for the Born Global and Born Innovative firms. Another variable that might have an effect on the performance of the startup is the gender of the entrepreneur *(GenderFM)*. Being male or female could change the fortune of the firm. It has still been considered that entrepreneurship is male dominant field although females are also choosing entrepreneurship as career [98], so gender variable is included to check that this fact is valid for GEM data or not.

In order to examine the effect of schooling, the variable education *(Edy)* is included in the regression models to check whether having higher education elevate the fate of the firm or not. It has been generally considered that the education for an entrepreneur is not imperative but having certain level of education increases the chances of being a successful entrepreneur [99].

Knowing about other entrepreneurs is also important as they have similar interest, which can help other beginners [54]. *Knowent* variable is also included in our models to check the effect on the growth of the firm. To be a successful entrepreneur, one needs good environment around which fosters the new entrepreneur to flourish. Opportunity *(Opport)* variable is included in our models to investigate the quest whether opportunities cause the firm to progress early or not. Other entrepreneurial aspects that might be related to the growth of the startups are built into the models of this study. Startup *(Suskill)* skill is also one of them, which portrays whether the entrepreneur has any kind of startup skill or not for doing a new business [56]. Another important variable used in our models is fear of failure *(Nofearfailure).* Entrepreneurs should not be afraid of failure else, they cannot call themselves as entrepreneurs. This attribute amongst the individuals enhance the entrepreneurship skills. In GEM data, it is also questioned that the entrepreneur has any alliance with other entrepreneurs to promote and sale his/her goods. Several questions are asked about this intention related to suppliers, potential customers and effectiveness of having collaboration; we took the mean of all those answer and make one variable as *Brmean* in the data set.

The sector of the industry is included as a control because some sectors are more export oriented and innovative while some are less [100]. In GEM surveys, Sector is represented as SIC4C, which comes from the International standard industrial classification *(ISIC)*, and sectors in GEM are classified into four categories that are Extractive, Transforming, Business Services and Consumer Oriented Services sectors. In our study, we suppose that business service is the most innovative and exporting sector, as business services are different for every customer.

Global Innovation Index (GII) scores are used as control to check whether the innovation environment of the country does help the born-global firms to export or not. GII measures innovation levels of the countries based on several factors such as political conditions, education levels, infrastructure of the country and business complexity

[74]. All of these factors contribute to the innovativeness level of country. GII is very comprehensive and useful as it measure the data from 126 countries worldwide.

TABLE 4.1: Definition of Variables

| ***Variable*** | ***Definition*** | ***Coding*** |
|---|---|---|
| *LogEXPCT* | Percentage of customers living outside the country of origin | 0, 5, 17, 37, 62, 82, 95 percent |
| *LogFIRMAGE* | Age of the firm at which the business owner starts receiving payments or profits | Survey year - Wageyr |
| *INNO* | Innovation level of the firm | Derived from the mean of *Compet*, 4- *Newcst* and 4- *Newtec* |
| *LogAge* | Current age of the entrepreneur at the time the survey was conducted | 18,. . . , 98 |
| *GenderFM* | Gender of the entrepreneur | 0 Female<br>1 Male |
| *Edy* | Education in years | 0,. . . ,19 |
| *Knowent* | Knowing about other entrepreneurs before starting new business | 0 No<br>1 Yes |
| *Opport* | Available opportunities for opening new business | 0 No<br>1 Yes |
| *Suskill* | Startup skill of the entrepreneur or any prior experience | 0 No<br>1 Yes |
| *Nofearfail* | Fear of failure for the newly started business | 0 No<br>1 Yes |
| *Brmean* | Business relations of the entrepreneur | 0,. . . ,1 |
| *ExtractiveSec*<br>*TransformSec*<br>*BusservSec*<br>*ConsorieSec* | Standard Industrial Classification (SIC4C) codes represented in GEM surveys | 1 Extractive<br>2 Transforming<br>3 Business Service<br>4 Consumer Oriented |
| *GII** | Global Innovation Index scores at country level | Average scores between years 2008 to 2015 |

*GII** scores are obtained from Global Innovation Index (2008 - 2015).
All the other variables are from the Adult Population Survey (APS) from years 2008-2015.

### 4.2.3 Descriptive Statistics of the Model Variables

Table 4.2 presents the descriptive statistics of the variables of our models. The mean value for export *(EXPCT)* is 8.98 indicating still low levels of export for born-global firms. The overall low average can be attributed to the wide range of data from 92 different countries between the years 2008 and 2015 and the variety of government policies in these countries. For *INNO*, the mean value is 1.47, which implies that innovation level for all those firms surveyed in GEM data, is moderate although not very high.

The mean firm age is 5.66 years old showing that most of the firms in the survey are young, but not mature as the data itself focus on startups or firms that are in early stage. The maximum value of the *FIRMAGE* turns out to be 36 years. The sample for GEM surveys only includes individuals who are between the age of 18 and 64. The mean value for the Age is 37 years suggesting most of the entrepreneurs are not very old. The average years of education *(Edy)* of the entrepreneurs is 11 years, which specifies that most of them are not university graduates. The rest of the values for the parameters range, min, max, mean and standard deviation are given for all model variables in Table 2. We have used Logarithmic function with *EXPCT*, *FIRMAGE* and *Age* because the variation is very high in these variables.

Table 4.2: Descriptive Statistics of the Model Variables

| ***Variable*** | ***Range*** | ***Minimum*** | ***Maximum*** | ***Mean*** | ***Std.Dev.*** |
|---|---|---|---|---|---|
| *LogEXPCT* | 1.982 | 0.000 | 1.982 | 0.433 | 0.617 |
| *INNO* | 2.000 | 1.000 | 3.000 | 1.479 | 0.473 |
| *LogFIRMAGE* | 1.568 | 0.000 | 1.568 | 0.530 | 0.511 |
| *LogAGE* | 0.551 | 1.255 | 1.806 | 1.550 | 0.144 |
| *Knowent* | 1.000 | 0.000 | 1.000 | 0.568 | 0.495 |
| *Opport* | 1.000 | 0.000 | 1.000 | 0.588 | 0.492 |
| *Suskill* | 1.000 | 0.000 | 1.000 | 0.787 | 0.409 |
| *Edy* | 19.000 | 0.000 | 19.000 | 11.112 | 4.656 |
| *Nofearfail* | 1.000 | 0.000 | 1.000 | 0.701 | 0.458 |
| *GenderFM* | 1.000 | 0.000 | 1.000 | 0.579 | 0.494 |
| *GII* | 46.029 | 19.914 | 65.943 | 40.065 | 9.89 |
| *BRMEAN* | 1.000 | 0.000 | 1.000 | 0.242 | 0.302 |

### 4.2.4 Heteroscedasticity

In order to build the model, which reflects the true characteristics and attribute of the firm, it is necessary to check the assumption of Heteroscedasticity for linear regression. We have used the Bresuch-Pagan test to check that is there Heteroscedasticity present in the data to or. We refer to the [101] where the method of checking Heteroscedasticity is defined in steps.

1. Calculate the OLS residuals in the first step using main model parameters.
2. Using residuals as DV, running regression again and obtain $R^2$ from this regression.
3. Calculate F-Statistic using $R^2$ from residuals and check the p-value for that F-Statistic Formula for F statistics is given in Equation 4.3

$$F = \frac{R^2/k}{1 - R^2/n - k - 1} \tag{4.3}$$

After using this method, we concluded that there is Heteroscedasticity present in the data, which should be removed to have the correct values for standard error in the regression model. Null hypothesis for the BP test is that Heteroscedasticity is not present. F Value for the BP Test was found to be 233.51, which corresponds to the p-value of $0.00^{+}$, reject null hypothesis and conclude that Heteroscedasticity is present.

Table 4.3 represents the Pearson correlations of the model variables. The correlations between the dependent variable and the independent variables are weak; however, there is no problem of multi-collinearity. There are some correlation coefficients, which are high but they stay within the limits so the model is not under the effect of multi-collinearity. For further analysis of the multi-collinearity issue, we have also checked the Variance Inflation Factors (VIF). The scores being less than 10 indicates the regression is not biased [102]

Table 4.3: Pearson Correlation Coefficients

| | ***LogEXPCT*** | ***INNO*** | ***LogFIRMAGE*** | ***EDY*** | ***GenderFM*** | ***LogAGE*** | ***Knowent*** | ***Opport*** | ***Suskill*** | ***Nofearfail*** | ***BRMEAN*** | ***GII*** | ***VIF*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *LogEXPCT* | 1.000 | | | | | | | | | | | | |
| *INNO* | 0.176** | 1.000 | | | | | | | | | | | |
| | (0.000) | | | | | | | | | | | | |
| *LogFIRMAGE* | -0.082** | -0.249** | 1.000 | | | | | | | | | | 1.084 |
| | (0.000) | (0.000) | | | | | | | | | | | |
| *EDY* | 0.204** | 0.112** | -0.074** | 1.000 | | | | | | | | | 1.199 |
| | (0.000) | (0.000) | (0.000) | | | | | | | | | | |
| *GenderFM* | .065** | 0.003 | 0.045** | .046** | 1.000 | | | | | | | | 1.022 |
| | (0.000) | (0.294) | (0.000) | (0.000) | | | | | | | | | |
| *LogAGE* | -0.013** | -0.093** | 0.337** | -0.042** | 0.023** | 1.000 | | | | | | | 1.191 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | | | | | | | |
| *Knowent* | .052** | 0.073** | -0.129** | .063** | 0.061** | -0.050** | 1.000 | | | | | | 1.092 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | | | | | | |
| *Opport* | 0.016** | 0.070** | -0.161** | -0.067** | 0.001 | -0.066** | 0.168** | 1.000 | | | | | 1.132 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.585) | (0.000) | (0.000) | | | | | | |
| *Suskill* | .051** | .037** | -0.050** | 0.027** | 0.063** | 0.069** | 0.161** | 0.130** | 1.000 | | | | 1.082 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | | | | |
| *Nofearfail* | .023** | .028** | -0.042** | -0.011** | 0.050** | -0.016** | 0.052** | 0.111** | 0.176** | 1.000 | | | 1.048 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | | | |
| *BRMEAN* | 0.235** | 0.107** | -0.057** | 0.249** | 0.106** | -0.013** | 0.095** | 0.008 | 0.057** | (0.000) | 1.000 | | 1.105 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.002) | (0.000) | (0.075) | (0.000) | (0.997) | | | |
| *GII* | .172** | -.032** | .132** | 0.315** | 0.042** | 0.185** | -0.046** | -0.134** | -0.051** | -0.026** | 0.128** | 1.000 | 1.224 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | | |

**Correlation is significant at the 0.01 level (2-tailed). Significance levels are provided in parentheses.

## 4.3 Empirical Analyses

We study the question of how global and innovative are the newly established firms and what other attributes of the entrepreneurs are required for starting or running a successful enterprise. Besides, we use different entrepreneurial and business characteristics in our models in exploring the main and interaction effects of *FIRMAGE* and *INNO* on export levels.

We are interested to examine the direct effects of firm age on export levels in the first part of Model 1, i.e., Model 1a. Export performance of the firm are contingent by the innovation level of the firm. We hypothesize innovation as a moderator for export growth, which we explore in Model 1b. Another critical factor that might play a role in the relation between firm age and export levels is the scale and scope of the relations with other businesses. Thus, we test the effects of business relations as both main effects (Model 2a) and as a moderator in the relation between firm age and export (Model 2b). Lastly, we investigate whether GII at country level can be a factor for predicting the firm growth or not via models 3a and as a moderator in model 3b. Table 4.4 presents the research models that are empirically tested in this study.

Table 4.4: Research Models of the Study

| **Model** | **Main Exploratory Variables** | **Dependent Variable** | **Type of Effects** |
|---|---|---|---|
| 1a, 1b | *INNO*,*FIRMAGE* (as Moderator) | *EXPCT* | Direct and Interaction effect |
| 2a, 2b | *Brmean*,*FIRMAGE* (as Moderator) | *EXPCT* | Direct and Interaction effect |
| 3a, 3b | *GII*,*FIRMAGE* (as Moderator) | *EXPCT* | Direct and Interaction effect |

***Models 1a & 1b: The Direct effects of FIRMAGE on EXPCT and the Moderating Effects of FIRMAGE and INNO on EXPCT***

We formulate and test two hypotheses, i.e. the direct effect of firm age and the interaction effects of firm age and innovation on export via the second model. Although, there may be some other factors, which are contributing to the firm dominance in the foreign market the role of innovation cannot be ignored in this context [58]. Equation 4.4 describes the regression equations for the first model.

$$LogEXPCT = Constant + \beta_1\ INNO + \beta_2\ LogFIRMAGE + \beta_3\ Edy + \beta_4\ GenderFM + \beta_5\ LogAge + \beta_6\ Knowent + \beta_7\ Opport + \beta_8\ Suskill + \beta_9\ Nofearfail + \beta_{10}\ ExtractiveSec + \beta_{11}\ TransformSec + \beta_{12}\ BusservSec + \beta_{13}\ LogFIRMAGE * INNO \quad (4.4)$$

TABLE 4.5: Parameter Estimates of Model 1a and 1b

| **Parameter** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** |
|---|---|---|---|---|---|---|---|---|
| | Beta | Std Error | Beta | - | Beta | Std Error | Beta | |
| (Constant) | -0.271 | 0.02 | | 0.000 | -0.295 | 0.021 | | 0.000 |
| *INNO* | 0.174 | 0.004 | 0.128 | 0.000 | 0.193 | 0.005 | 0.142 | 0.000 |
| *LogFIRMAGE* | -0.046 | 0.003 | -0.042 | 0.000 | 0.005 | 0.011 | 0.005 | 0.646 |
| *EDY* | 0.019 | 0.000 | 0.185 | 0.000 | 0.019 | 0 | 0.185 | 0.000 |
| *GENDERFM* | 0.055 | 0.003 | 0.049 | 0.000 | 0.055 | 0.003 | 0.049 | 0.000 |
| *LogAGE* | 0.068 | 0.012 | 0.017 | 0.000 | 0.067 | 0.012 | 0.016 | 0.000 |
| *Knowent* | 0.025 | 0.003 | 0.022 | 0.000 | 0.026 | 0.003 | 0.023 | 0.000 |
| *opport* | 0.01 | 0.003 | 0.009 | 0.002 | 0.01 | 0.003 | 0.009 | 0.003 |
| *Suskill* | 0.037 | 0.004 | 0.027 | 0.000 | 0.037 | 0.004 | 0.027 | 0 |
| *NOFEARFAIL* | 0.013 | 0.004 | 0.01 | 0.000 | 0.013 | 0.004 | 0.01 | 0.000 |
| *ExtractiveSec* | 0.022 | 0.005 | 0.012 | 0.000 | 0.02 | 0.005 | 0.011 | 0.000 |
| *TransformSec* | 0.033 | 0.004 | 0.024 | 0.000 | 0.033 | 0.004 | 0.024 | 0.000 |
| *BusservSec* | 0.12 | 0.005 | 0.064 | 0.000 | 0.119 | 0.005 | 0.064 | 0.000 |
| *INNO*LogFIRMAGE* | | - | - | - | -0.039 | 0.008 | -0.048 | 0.000 |
| *R* | 0.306 | | | | *R* | 0.306 | | |
| *Adj* $R^2$ | 0.0935 | | | | *Adj* $R^2$ | 0.0936 | | |
| *N* | 119045 | | | | *N* | 119045 | | |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

Table 4.5 presents the parameter estimates of Model 1a, which is link to the relation between the firm age and export. FIRMAGE coefficient is negative and significant in the direct effects model as shown in Table 4.5, which indicates that younger firms export more as compared to the mature ones supporting our hypothesis 1a of born global firms. Being innovative or cost-effective is essential in exporting. Entrepreneurs often use these two strategies to enter the new market. While there might be some resistance for foreign products, as some people prefer to use the domestic product no matter it is expensive to support the local economy, innovation is the other way to enter in the foreign market. We thus test the effects of innovation on export levels via the direct effects model, which is significant and positive as hypothesized We also explore the question to what extent young firmâs benefit from innovation through an interaction effects model of *FIRMAGE* and *INNO* on EXPCT. The last three columns in Table 5 represent the parameters estimates of the Model 1b in which INNO acts as a moderator variable. After incorporating the moderation term into the interaction effects model, we see a

0.10% increase in the $R^2$ value confirming that the model has improved and young firms do get benefit most from the innovation. Figure 2 shows the moderating effects of firmage on the link between innovation and export based on the coefficients of Table 4.5. While the export levels decrease with the increasing firm age, higher innovation levels mitigate this effect. We observe that at low age and low innovation firms export less in comparison to the low age and high innovation firms.

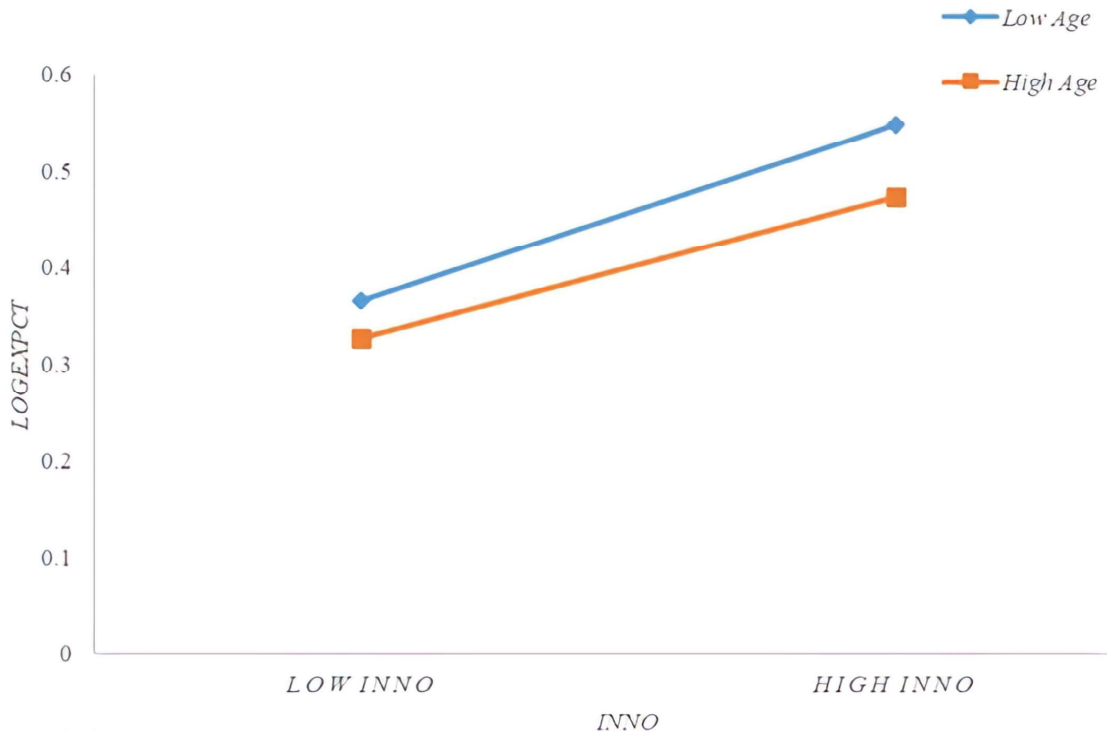


FIGURE 4.1: The Moderating effects of Firmage on the link between Innovation and Export

***Model 2a & 2b: The Direct Effects of Brmean on EXPCT and the Interaction effect of FIRMAGE and Brmean on EXPCT***

In exporting, the knowledge of the foreign market by the owner or the manager of the young firm, which comes through networking, is an asset. For the third model, we have hypothesized that the business relations of the entrepreneur are important for gaining access to the foreign market. Similar to the other models of this study, we control for other entrepreneurial and business-related factors. The sector is also included as a control, as we think that the effects of business relations may vary depending on the industrial sector of the business. Equation 4.5 represents the second regression model.

$$LogEXPCT = Constant + \beta_1\ INNO + \beta_2\ LogFIRMAGE + \beta_3\ Edy + \beta_4\ GenderFM + \beta_5\ LogAge + \beta_6\ Knowent + \beta_7\ Opport + \beta_8\ Suskill + \beta_9\ Nofearfail + \beta_{10}\ ExtractiveSec + \beta_{11}\ TransformSec + \beta_{12}\ BusservSec + \beta_{13}\ Brmean + \beta_{14}\ LogFIRMAGE * Brmean \quad (4.5)$$

TABLE 4.6: Parameter Estimates of Model 2a and 2b

| **Parameter** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** |
|---|---|---|---|---|---|---|---|---|
| | Beta | Std Error | Beta | - | Beta | Std Error | Beta | |
| *(Constant)* | -0.117 | 0.033 | | 0.000 | -0.119 | 0.033 | | 0.000 |
| *Inno* | 0.145 | 0.007 | 0.109 | 0.000 | 0.145 | 0.007 | 0.109 | 0.000 |
| *LogFIRMAGE* | -0.055 | 0.006 | -0.053 | 0.000 | -0.053 | 0.006 | -0.051 | 0.000 |
| *Edy* | 0.013 | 0.000 | 0.132 | 0.000 | 0.013 | 0.001 | 0.132 | 0.000 |
| *GenderFM* | 0.031 | 0.005 | 0.03 | 0.000 | 0.031 | 0.005 | 0.03 | 0.000 |
| *LogAge* | 0.014 | 0.02 | 0.004 | 0.482 | 0.014 | 0.02 | 0.004 | 0.488 |
| *Knowent* | 0.018 | 0.005 | 0.017 | 0.001 | 0.018 | 0.005 | 0.017 | 0.001 |
| *Opport* | 0.009 | 0.005 | 0.009 | 0.079 | 0.009 | 0.005 | 0.009 | 0.08 |
| *Suskill* | 0.035 | 0.006 | 0.028 | 0.000 | 0.035 | 0.006 | 0.028 | 0.000 |
| *Nofearfail* | 0.014 | 0.005 | 0.013 | 0.009 | 0.014 | 0.005 | 0.013 | 0.009 |
| *ExtractiveSec* | -0.002 | 0.008 | -0.001 | 0.78 | -0.002 | 0.008 | -0.001 | 0.777 |
| *TransformSec* | 0.008 | 0.006 | 0.006 | 0.219 | 0.008 | 0.006 | 0.006 | 0.223 |
| *BusservSec* | 0.089 | 0.01 | 0.044 | 0.000 | 0.089 | 0.01 | 0.044 | 0.000 |
| *Brmean* | 0.371 | 0.011 | 0.164 | 0.000 | 0.382 | 0.016 | 0.168 | 0.000 |
| *LogFIRMAGE*Brmean* | | - | - | - | -0.02 | 0.021 | -0.007 | 0.347 |
| $R$ | 0.321 | | | | $R$ | 0.321 | | |
| *Adj* $R^2$ | 0.1028 | | | | *Adj* $R^2$ | 0.1027 | | |
| $N$ | 41552 | | | | $N$ | 41552 | | |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

In the direct effects Model of 2a, we find that the coefficients of business relations to be significant and positive which indicates the importance of business relations in export. We also check for the interaction effects of firm age and business relations on export 2b; however, the interaction is found to be insignificant. Here we can say that, for younger firms, good business relations do not seem to help in increasing the level of exports. Networking surely is important for the firm performance but younger firms lack the networking abilities to start. Therefore, product or service will speak up for itself if it is innovative. Due to the networking, firms are also able to satisfy customer needs because they designed what is required in specific markets.

***Model 3a and 3b: The Direct Effects of GII on EXPCT and the Interaction Effects of FIRMAGE and GII on EXPCT***

To test the direct and interaction effects of GII and firm age on export, we use the Hierarchical Linear Model in SPSS. To proxy for the innovation environment of the countries, we merge the data for Global Innovation Indices (GII) with the entrepreneur level data obtained from GEM. Since the GEM data cover years from 2008 to 2015, we took the mean of the Global Innovation Index between 2008 and 2015 obtaining an average innovation score for each country in the data set. The regression equation for Model 3 is given in Equation 4.6.

$$LogEXPCT = Constant + \beta_1\ INNO + \beta_2\ LogFIRMAGE + \beta_3\ Edy + \beta_4\ GenderFM + \beta_5\ LogAge + \beta_6\ Knowent + \beta_7\ Opport + \beta_8\ Suskill + \beta_9\ Nofearfail + \beta_{10}\ ExtractiveSec + \beta_{11}\ TransformSec + \beta_{12}\ BusservSec + \beta_{13}\ Brmean + \beta_{14}\ GII\ \beta_{15}\ LogFIRMAGE * GII \quad (4.6)$$

Table 8 presents the parameter estimates of the Models 3a and 3b with the GII scores added into the regression equation as a direct factor and an interacting one with the firm age on export levels. High innovating countries overall have higher export levels, as the positive and significant coefficient of GII highlights. The key contributor that differentiates between low innovative and the highly innovative country is the government support for entrepreneurship [90]. Thus if government promotes innovative entrepreneurship which eventually increases the innovation index of the country as more innovative startups are established, positive effects of these policies are reflected in terms of a higher level of export [71, 72, 91]. Our results support the hypothesis 3a, that we proposed.

GII also positively moderates the relation between firm age and export levels. Figure 4.2 displays the moderating relationship of GII with firm age on firm performance. We observe that countries having lower value in the GII, organizations from these countries in their early days export less as compared to the countries having a higher value in GII. This figure confirms our hypothesis 3b which is related to the effect of country GII on export. Since government policies to promote innovation, social condition and ease of doing business are relatively simple in higher GII scoring countries, firms do get the benefit of this condition and they challenge the presence of the older firms. From Figure 4.2, we can see that the line for low GII countries cannot reach high export levels even after getting experience in the market that suggests that if the overall economic, social

TABLE 4.7: Parameter Estimates of Model 3a and 3b

| Parameter | Beta | Std Error | Sig. | Beta | Std Error | Sig. |
|---|---|---|---|---|---|---|
| *Intercept* | 0.016 | 0.117 | 0.894 | -0.019 | 0.117 | 0.872 |
| *INNO* | 0.028 | 0.002 | 0.000 | 0.029 | 0.002 | 0.000 |
| *LogFIRMAGE* | -0.007 | 0.001 | 0.000 | 0.046 | 0.011 | 0.000 |
| *Edy* | 0.002 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| *GenderFM* | 0.007 | 0.000 | 0.000 | 0.007 | 0.000 | 0.000 |
| *LogAge* | -0.004 | 0.001 | 0.000 | -0.003 | 0.001 | 0.000 |
| *Knowent* | 0.004 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 |
| *Opport* | 0.000 | 0.000 | 0.039 | 0.000 | 0.000 | 0.025 |
| *Suskill* | 0.003 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |
| *Nofearfail* | -0.002 | 0.000 | 0.000 | -0.002 | 0.000 | 0.000 |
| *ExtractiveSec* | -0.001 | 0.000 | 0.03 | -0.001 | 0.000 | 0.014 |
| *TransformSec* | 0.004 | 0.000 | 0.000 | 0.005 | 0.000 | 0.000 |
| *BusservSec* | 0.013 | 0.005 | 0.005 | 0.013 | 0.005 | 0.004 |
| *GII* | 0.009 | 0.003 | 0.001 | 0.01 | 0.003 | 0.000 |
| *Brmean* | 0.083 | 0.006 | 0.000 | 0.085 | 0.006 | 0.000 |
| *LogFIRMAGE*GII* | - | - | - | -0.001 | 0.000 | 0.000 |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

and financial conditions of the country are not stable, firms from these countries struggle to compete in the international market.

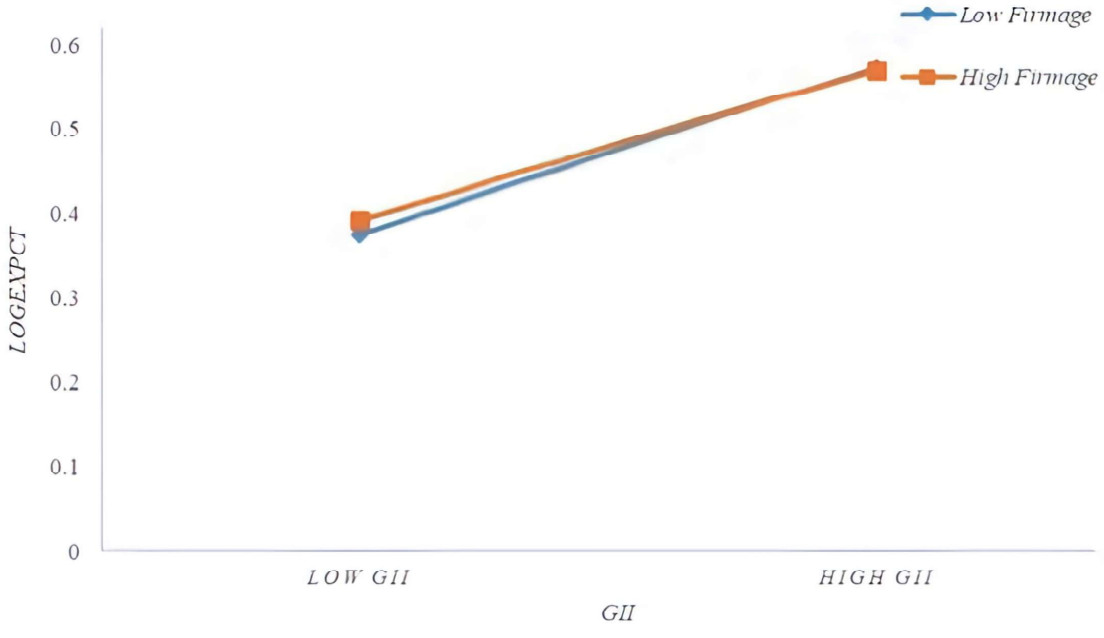


FIGURE 4.2: The Moderating effects of Firmage on the link between GII and Export

# Chapter 5

# Discussions, Conclusions and the Future Work

The internationalization efforts of a firm in the early phases and how these efforts could transform to greater progress have been the starting goal of this study. We develop a comprehensive model that reflects the effects of innovation, entrepreneur's network and country-level factors such as global innovation index on firm success in the early phases of the establishment. Firm age is a vital factor for born-global firms; thus, it used to differentiate between the different phases of firms. The presence of these attributes in the newly established firm positively contributes to the progress of that firm to be global. In our study, we have incorporated data from 70 different economies over periods of 8 years, which makes this research pertinent across various economies ranging from developed to developing all over the world.

Testing our first hypothesis for the relation between innovation and export, we find that being innovative can make a huge impact on firm export supporting the earlier findings in the literature [77, 79]. Via innovation, it gets easy for the firm to market their products or services and this opens the door for further progress. In addition to this, this benefit is more viable in the early stages of firms as shown in testing the second hypothesis. Another aspect for these young businesses that we analyze via the second pair of hypotheses is the accessibility of entering the foreign market through business relations which facilitates introducing their unique products in foreign markets. The positive direct effects of business relations on export are supported through the GEM data

suggesting that business relations are an important attribute for the initial export when the firm lacks the required sources and knowledge-base to establish its own subsidiaries [70]. Further, we hypothesize the moderating role of firm age in the relationship between business relations and export; however, this hypothesis is not supported through the GEM data. Younger businesses have fewer connections in their early stages of the start-up [31], that might be the reason for the insignificant relationship, but we cannot deny the importance of networks for the export [82].

In order for further strengthening the conceptual model, we incorporate the institutional role in early export which is shortness in the entrepreneurship literature as most of the studies focus on individuals or firms [103]. Institutions in a country are the indicators that demonstrate the business conditions in that country since they make public policies that could significantly reduce administrative and regulatory barriers for entrepreneurs[9]. While the institutional and policy context reflects various indicators, we have used the global innovation index of a country to determine its role for the early export. Our third hypothesis on the direct effects of overall innovation index of a country suggests that firms from high-level innovation index countries perform better as compared to the low-level innovation index countries. Moreover, we also find support for the moderation effects of firm age such that in countries with high global innovation index, young firms are found to be more export-oriented. While this effect is not strong in terms of its magnitude, it highlights the importance of contextual influences on shaping the nature of the relationship between entrepreneurial orientation and small firm performance as suggested by [43]. This weak relationship might also be due to aggregation effects of data composed of all developed and underdeveloped countries that reduce its strength. Nevertheless, these findings imply the importance of formulating government policies in the underdeveloped or low innovative countries in promoting entrepreneurial innovation.

No studies can be conducted without limitations as it is the case for our study also. One of the limitations of our study is the lack of data on the survival of entrepreneurs which limit us to test our hypotheses with this measure. Since researchers are mostly interested in the startup phase of the firms, sufficient data is not available for this. Therefore, availability of survival data of the firms makes a significant contribution if included. We also do not know to which counties the entrepreneurs in our sample export. Knowing these with the home country could help us to further understand the dynamics of the born-global export performance under the context influence. Besides, via this data,

if available will enhance our understanding about the geographical locations in which entrepreneurs export more.

It is crucial to know the chances to survive for the startups which internationalize after the inception. Besides, the chances for survival or success is also related to various attributes within the organizational, entrepreneurial, social, and institutional contexts. Facing difficulties in overseas operations could bring them to the closure of business abroad. Although there exist some literature that reflects common difficulties firms face when they do the overseas operation, it is important to study those struggles that a newly established entity has to go through in detail. It is one of the possible research areas which has not been focused yet by many scholars. The closure of businesses creates a huge impact on the environment and wastage of resources which might the whole world to face scarcity of resources in the near future. Thus, entrepreneurship studies coupled with sustainability which is termed as "ecopreneurship", may open many horizons for further research.

# Appendix A

# Global Innovation Index Score (GII) of 2015

Table A.1: Global Innovation Index Score (GII) 2015

| Code | Country Code | Rank | Country | Score |
|---|---|---|---|---|
| SW | 41 | 1 | Switzerland | 68.3 |
| SE | 46 | 2 | Sweden | 62.4 |
| UK | 44 | 3 | United Kingdom | 62.4 |
| NL | 31 | 4 | Netherlands | 61.6 |
| US | 1 | 5 | United States of America | 60.1 |
| FI | 358 | 6 | Finland | 60 |
| SG | 65 | 7 | Singapore | 59.4 |
| IE | 353 | 8 | Ireland | 59.1 |
| DK | 45 | 9 | Denmark | 57.7 |
| HK | 852 | 10 | Hong Kong (China) | 57.2 |
| DE | 49 | 11 | Germany | 57.1 |
| IS | 354 | 12 | Iceland | 57 |
| KR | 82 | 13 | Korea, Republic of | 56.3 |
| NZ | 64 | 14 | New Zealand | 55.9 |
| CA | 1 | 15 | Canada | 55.7 |
| AU | 61 | 16 | Australia | 55.2 |

Continued on next page

**Table A.1 – continued from previous page**

| Code | Country Code | Rank | Country | Score |
|---|---|---|---|---|
| AT | 43 | 17 | Austria | 54.1 |
| JP | 81 | 18 | Japan | 54 |
| NO | 47 | 19 | Norway | 53.8 |
| FR | 33 | 20 | France | 53.6 |
| IL | 972 | 21 | Israel | 53.5 |
| EE | 372 | 22 | Estonia | 52.8 |
| CZ | 420 | 23 | Czech Republic | 51.3 |
| BE | 32 | 24 | Belgium | 50.9 |
| ES | 34 | 25 | Spain | 49.1 |
| SI | 386 | 26 | Slovenia | 48.5 |
| CN | 86 | 27 | China | 47.5 |
| PT | 351 | 28 | Portugal | 46.6 |
| IT | 39 | 29 | Italy | 46.4 |
| MY | 60 | 30 | Malaysia | 46 |
| LV | 371 | 31 | Latvia | 45.5 |
| HU | 36 | 32 | Hungary | 43 |
| SK | 421 | 33 | Slovakia | 43 |
| BB | 246 | 34 | Barbados | 42.5 |
| LT | 370 | 35 | Lithuania | 42.3 |
| BG | 359 | 36 | Bulgaria | 42.2 |
| HR | 385 | 37 | Croatia | 41.7 |
| CL | 56 | 38 | Chile | 41.2 |
| ME | 382 | 39 | Montenegro | 41.2 |
| SA | 966 | 40 | Saudi Arabia | 40.7 |
| GR | 40 | 41 | Greece | 40.3 |
| PL | 48 | 42 | Poland | 40.2 |
| AE | 971 | 43 | United Arab Emirates | 40.1 |
| RU | 7 | 44 | Russian Federation | 39.3 |
| QA | 974 | 45 | Qatar | 39 |
| CR | 506 | 46 | Costa Rica | 38.6 |

Continued on next page

**Table A.1 – continued from previous page**

| Code | Country Code | Rank | Country | Score |
|---|---|---|---|---|
| VN | 84 | 47 | Vietnam | 38.3 |
| RO | 40 | 48 | Romania | 38.2 |
| TH | 66 | 49 | Thailand | 38.1 |
| MK | 389 | 50 | TFYR Macedonia | 38 |
| MX | 52 | 51 | Mexico | 38 |
| TR | 90 | 52 | Turkey | 37.8 |
| ZA | 27 | 53 | South Africa | 37.4 |
| PA | 507 | 54 | Panama | 36.8 |
| YU | 381 | 55 | Serbia | 36.5 |
| CO | 57 | 56 | Colombia | 36.4 |
| UY | 598 | 57 | Uruguay | 35.8 |
| BR | 55 | 58 | Brazil | 34.9 |
| PE | 51 | 59 | Peru | 34.9 |
| AR | 54 | 60 | Argentina | 34.3 |
| GE | 995 | 61 | Georgia | 33.8 |
| JO | 962 | 62 | Jordan | 33.8 |
| LB | 961 | 63 | Lebanon | 33.8 |
| TN | 261 | 64 | Tunisia | 33.5 |
| KW | 965 | 65 | Kuwait | 33.2 |
| MA | 212 | 66 | Morocco | 33.2 |
| BA | 387 | 67 | Bosnia and Herzegovina | 32.3 |
| TT | 868 | 68 | Trinidad and Tobago | 32.2 |
| IN | 91 | 69 | India | 31.7 |
| KZ | 710 | 70 | Kazakhstan | 31.2 |
| PH | 63 | 71 | Philippines | 31.1 |
| SN | 221 | 72 | Senegal | 31 |
| DO | 809 | 73 | Dominican Republic | 30.6 |
| BW | 267 | 74 | Botswana | 30.5 |
| JM | 876 | 75 | Jamaica | 29.9 |
| ID | 62 | 76 | Indonesia | 29.8 |

Continued on next page

**Table A.1 – continued from previous page**

| Code | Country Code | Rank | Country | Score |
|---|---|---|---|---|
| MW | 265 | 77 | Malawi | 29.7 |
| SV | 503 | 78 | El Salvador | 29.3 |
| EG | 20 | 79 | Egypt | 28.9 |
| GT | 502 | 80 | Guatemala | 28.8 |
| BF | 262 | 81 | Burkina Faso | 28.7 |
| BO | 591 | 82 | Bolivia, Plurinational State of | 28.6 |
| IR | 98 | 83 | Iran, Islamic Republic of | 28.4 |
| NA | 264 | 84 | Namibia | 28.1 |
| GH | 233 | 85 | Ghana | 28 |
| CM | 237 | 86 | Cameroon | 27.8 |
| UG | 256 | 87 | Uganda | 27.6 |
| EC | 593 | 88 | Ecuador | 26.9 |
| AO | 244 | 89 | Angola | 26.2 |
| ZM | 260 | 90 | Zambia | 24.6 |
| DZ | 213 | 91 | Algeria | 24.4 |
| ET | 251 | 92 | Ethiopia | 24.2 |
| BD | 880 | 93 | Bangladesh | 23.7 |
| NG | 234 | 94 | Nigeria | 23.7 |
| PK | 92 | 95 | Pakistan | 23.1 |
| VE | 582 | 96 | Venezuela | 22.8 |
| YE | 967 | 97 | Yemen | 20.8 |

# Appendix B

# Model Results without WLS Regression

Table B.1: Parameter Estimates of Model 1a and 1b

| **Parameter** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** |
|---|---|---|---|---|---|---|---|---|
| | Beta | Std Error | Beta | - | Beta | Std Error | Beta | |
| (Constant) | -0.333 | 0.023 | - | 0.000 | -0.349 | 0.023 | - | 0.000 |
| *INNO* | 0.183 | 0.004 | 0.141 | 0.000 | 0.194 | 0.005 | 0.149 | 0.000 |
| *LogFIRMAGE* | -0.056 | 0.004 | -0.047 | 0.000 | -0.019 | 0.011 | -0.016 | 0.102 |
| EDY | 0.021 | 0.000 | 0.163 | 0.000 | 0.021 | 0.000 | 0.163 | 0.000 |
| *GENDERFM* | 0.06 | 0.004 | 0.048 | 0.000 | 0.06 | 0.004 | 0.048 | 0.000 |
| LogAge | 0.092 | 0.013 | 0.02 | 0.000 | 0.091 | 0.013 | 0.02 | 0.000 |
| *Knowent* | 0.019 | 0.004 | 0.015 | 0.000 | 0.019 | 0.004 | 0.015 | 0.000 |
| Opport | 0.01 | 0.004 | 0.008 | 0.008 | 0.01 | 0.004 | 0.008 | 0.007 |
| *Suskill* | 0.031 | 0.005 | 0.019 | 0.000 | 0.031 | 0.005 | 0.019 | 0.000 |
| *NOFEARFAIL* | 0.011 | 0.004 | 0.008 | 0.005 | 0.011 | 0.004 | 0.008 | 0.005 |
| *ExtractiveSec* | 0.029 | 0.006 | 0.013 | 0.000 | 0.028 | 0.006 | 0.013 | 0.000 |
| *TransformSec* | 0.045 | 0.004 | 0.032 | 0.000 | 0.045 | 0.004 | 0.032 | 0.000 |
| *BusservSec* | 0.13 | 0.005 | 0.075 | 0.000 | 0.13 | 0.005 | 0.075 | 0.000 |
| *LogFIRMAGE*INNO* | | | | | -0.026 | 0.008 | -0.032 | 0.001 |
| $R$ | 0.284 | | | | $R$ | 0.284 | | |
| *Adj* $R^2$ | 0.0806 | | | | *Adj* $R^2$ | 0.0807 | | |
| $N$ | 119045 | | | | N | 119045 | | |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

Table B.2: Parameter Estimates of Model 2a and 2b

| **Parameter** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** | **Unstand. Coeff.** | | **Std. Coeff.** | **Sig.** |
|---|---|---|---|---|---|---|---|---|
| | Beta | Std Error | Beta | - | Beta | Std Error | Beta | |
| (Constant) | -0.205 | 0.037 | | 0.000 | -0.201 | 0.037 | | 0.000 |
| *Inno* | 0.161 | 0.006 | 0.123 | 0.000 | 0.161 | 0.006 | 0.123 | 0.000 |
| *LogFIRMAGE* | -0.069 | 0.006 | -0.057 | 0.000 | -0.077 | 0.008 | -0.064 | 0.000 |
| Edy | 0.014 | 0.001 | 0.113 | 0.000 | 0.014 | 0.001 | 0.113 | 0.000 |
| *GenderFM* | 0.035 | 0.006 | 0.029 | 0.000 | 0.035 | 0.006 | 0.029 | 0.000 |
| LogAge | 0.059 | 0.022 | 0.013 | 0.008 | 0.059 | 0.022 | 0.013 | 0.008 |
| *Knowent* | 0.007 | 0.006 | 0.006 | 0.233 | 0.007 | 0.006 | 0.006 | 0.239 |
| *Opport* | 0.005 | 0.006 | 0.004 | 0.443 | 0.005 | 0.006 | 0.004 | 0.452 |
| *Suskill* | 0.03 | 0.008 | 0.019 | 0.000 | 0.029 | 0.008 | 0.018 | 0.000 |
| *Nofearfail* | 0.017 | 0.006 | 0.013 | 0.006 | 0.017 | 0.006 | 0.013 | 0.006 |
| *Sector1* | 0.009 | 0.011 | 0.004 | 0.411 | 0.009 | 0.011 | 0.004 | 0.407 |
| *Sector2* | 0.024 | 0.007 | 0.017 | 0.001 | 0.024 | 0.007 | 0.017 | 0.001 |
| *Sector3* | 0.106 | 0.009 | 0.057 | 0.000 | 0.106 | 0.009 | 0.057 | 0.000 |
| *Brmean* | 0.354 | 0.01 | 0.177 | 0.000 | 0.339 | 0.013 | 0.17 | 0.000 |
| *LogFIRMAGE*Brmean* | | | | | 0.034 | 0.019 | 0.013 | 0.078 |
| *R* | 0.32 | | | R | 0.32 | | | |
| *Adj* $R^2$ | 0.1021 | | | *Adj* $R^2$ | 0.1022 | | | |
| *N* | 41552 | | | *N* | 41552 | | | |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

Table B.3: Parameter Estimates of Model 3a and 3b

| **Parameter** | **Beta** | **Std Error** | **Sig.** | **Beta** | **Std Error** | **Sig.** |
|---|---|---|---|---|---|---|
| *Intercept* | -0.138 | 0.115 | 0.232 | -0.172 | 0.115 | 0.14 |
| *Inno* | 0.107 | 0.006 | 0.000 | 0.107 | 0.006 | 0.000 |
| *LogFIRMAGE* | -0.009 | 0.006 | 0.123 | 0.056 | 0.024 | 0.019 |
| *Edy* | 0.006 | 0.001 | 0.000 | 0.006 | 0.001 | 0.000 |
| *GenderFM* | 0.034 | 0.006 | 0.000 | 0.034 | 0.006 | 0.000 |
| *LogAge* | -0.037 | 0.021 | 0.083 | -0.037 | 0.021 | 0.083 |
| *Knowent* | 0.019 | 0.006 | 0.001 | 0.018 | 0.006 | 0.001 |
| *Opport* | 0.007 | 0.006 | 0.244 | 0.007 | 0.006 | 0.266 |
| *Suskill* | 0.002 | 0.007 | 0.741 | 0.003 | 0.007 | 0.727 |
| *Nofearfail* | -0.005 | 0.006 | 0.407 | -0.005 | 0.006 | 0.392 |
| *ExtractiveSec* | -0.023 | 0.01 | 0.024 | -0.022 | 0.01 | 0.029 |
| *TransformSec* | 0.003 | 0.007 | 0.654 | 0.003 | 0.007 | 0.643 |
| *BusservSec* | 0.051 | 0.009 | 0 | 0.051 | 0.009 | 0 |
| *GII* | 0.008 | 0.002 | 0.003 | 0.009 | 0.003 | 0.001 |
| *Brmean* | 0.252 | 0.009 | 0 | 0.252 | 0.009 | 0.000 |
| *LogFIRMAGE*GII* | | | | -0.002 | 0.001 | 0.005 |

Dependent Variable: *LogExpct*, also controlled for years from 2008-2015

# Appendix C

# ISIC Classification for Sectors

Table C.1: ISIC Classification

| **Transforming** | **Extractive** | **Consumer Oriented** | **Business Services** |
|---|---|---|---|
| MANUFACTURING | AGRICULTURE, FORESTRY, FISHING | GOVERNMENT, HEALTH, EDUCATION, SOCIAL SERVICES | ADMINISTRATIVE SERVICES |
| MINING,CONSTRUCTION | MINING,CONSTRUCTION | PERSONAL/CONSUMER SERVICE ACTIVITIES | FINANCIAL INTERMEDIATION, REAL ESTATE ACTIVITIES |
| UTILISATION, TRANSPORT, STORAGE | | RETAIL TRADE, HOTELS AND RESTAURANTS | INFORMATION AND COMMUNICATION |
| WHOLESALE TRADE | | WHOLESALE TRADE | PROFESSIONAL SERVICES |

Table C.2: ISIC Coding

| **Sections** | **Division** | **Description** |
|---|---|---|
| A | 01-03 | Agriculture, forestry, and fishing |
| B | 05-09 | Mining and quarrying |
| C | 10-33 | Manufacturing |
| D | 35 | Electricity, gas, steam and air conditioning supply |
| E | 36-39 | Water supply; sewerage, waste management and remediation |
| F | 41-43 | Construction |
| G | 45-47 | Wholesale and retail trade; repair of motor vehicles and motorcycles |
| H | 49-53 | Transportation and storage |
| I | 55-56 | Accommodation and food service activities |
| J | 58-63 | Information and communication |
| K | 64-66 | Financial and insurance activities |
| L | 68 | Real estate activities |
| M | 69-75 | Professional, scientific and technical activities |
| N | 77-82 | Administrative and support service activities |
| O | 84 | Public administration and defense; compulsory social security |
| P | 85 | Education |
| Q | 86-88 | Human health and social work activities |
| R | 90-93 | Arts, entertainment and recreation |
| S | 94-96 | Other service activities |
| T | 97-98 | Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use |
| U | 99 | Activities of extraterritorial organizations and bodies |

# Bibliography


[1] Z. J. Acs and L. Szerb. Entrepreneurship, Economic Growth and Public Policy. *Small Business Economics*, 28(2-3):109–122, feb 2007. ISSN 0921-898X. doi: 10.1007/s11187-006-9012-3. URL `http://link.springer.com/10.1007/s11187-006-9012-3`.

[2] A. van Stel, D. J. Storey, and A. R. Thurik. The Effect of Business Regulations on Nascent and Young Business Entrepreneurship. *Small Business Economics*, 28 (2-3):171–186, mar 2007. ISSN 0921-898X. doi: 10.1007/s11187-006-9014-1. URL `http://link.springer.com/10.1007/s11187-006-9014-1`.

[3] M. Ruzzier, R. D. Hisrich, and B. Antoncic. SME internationalization research: past, present, and future. *Journal of Small Business and Enterprise Development*, 13(4):476–497, oct 2006. ISSN 1462-6004. doi: 10.1108/14626000610705705. URL `http://www.emeraldinsight.com/doi/10.1108/14626000610705705`.

[4] D. B. Audretsch, I Grilo, and A. R. Thurik. *Handbook of research on entrepreneurship policy*. Edward E., Cheltenham, 2007.

[5] W. Naudé. Entrepreneurship, developing countries, and development economics: new approaches and insights. *Small Business Economics*, 34(1):1–12, jan 2010. ISSN 0921-898X. doi: 10.1007/s11187-009-9198-2. URL `http://link.springer.com/10.1007/s11187-009-9198-2`.

[6] J. Schumpeter. *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle*. Harvard University Press, Cambridge, MA, 1934.

[7] W. J. Baumol. *The Free-Market Innovation Machine*. 2002. ISBN 069111630X.

[8] W. J. Baumol. *The Microtheory of Innovative Entrepreneurship*. Princeton University Press, 2010. ISBN 9781400835225.

[9] E. Autio, M. Kenney, P. Mustar, D. Siegel, and M. Wright. Entrepreneurial innovation: The importance of context. *Res. Policy*, 43(7):1097–1108, 2014. ISSN 00487333. doi: 10.1016/j.respol.2014.01.015. URL http://dx.doi.org/10.1016/j.respol.2014.01.015.

[10] B. M. Cole. Innovate Or Die: How A Lack Of Innovation Can Cause Business Failure. URL https://www.forbes.com/sites/biancamillercole/2019/01/10/innovate-or-die-how-a-lack-of-innovation-can-cause-business-failure/{#}6620aebc2fcb.

[11] R. Grimaldi, M. Kenney, D. S. Siegel, and M. Wright. 30 years after Bayh-Dole: Reassessing academic entrepreneurship. *Res. Policy*, 40(8):1045–1057, 2011. ISSN 00487333. doi: 10.1016/j.respol.2011.04.005. URL http://dx.doi.org/10.1016/j.respol.2011.04.005.

[12] G. Knight. Born Global Firms: Evolution of a Contemporary Phenomenon. *Entrepreneurship in International Marketing*, 25:3–19, jan 2015. doi: 10.1108/S1474-797920140000025015. URL http://www.emeraldinsight.com/doi/10.1108/S1474-797920140000025015.

[13] S. T. Cavusgil and G. Knight. The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. *Journal of International Business Studies*, 46(1):3–16, 2015. ISSN 14786990. doi: 10.1057/jibs.2014.62. URL http://dx.doi.org/10.1057/jibs.2014.62.

[14] R. Romanello and M. Chiarvesio. Early internationalizing firms: 2004-2018. *Journal of International Entrepreneurship*, pages 2004–2018, jan 2019. ISSN 1570-7385. doi: 10.1007/s10843-018-0241-8. URL http://link.springer.com/10.1007/s10843-018-0241-8.

[15] S. Gerschewski, E. L. Rose, and V. J. Lindsay. Understanding the drivers of international performance for born global firms: An integrated perspective. *Journal of World Business*, 50(3):558–575, 2015. ISSN 10909516. doi: 10.1016/j.jwb.2014.09.001. URL http://dx.doi.org/10.1016/j.jwb.2014.09.001.

[16] Michael W. Rennie. Born Global. *McKinsey Q.*, (4):45, sep 1993. URL https://www.questia.com/library/journal/1G1-15424561/born-global.

[17] B. M. Oviatt and P. P. McDougall. Toward A Theory of International New Ventures. *Journal of International Business Studies*, 25(1):45–64, 1994. URL https://link.springer.com/article/10.1057/palgrave.jibs.8490193.

[18] Economics Online. Why do countries trade?, 2018. URL http://www.economicsonline.co.uk/Global_economics/Why_do_countries_trade.html.

[19] J. Sheth and N. K. Malhotra. *Wiley International Encyclopedia of Marketing*. John Wiley & Sons, Ltd, dec 2010. ISBN 9781405161787. doi: 10.1002/9781444316568. URL http://doi.wiley.com/10.1002/9781444316568.

[20] M. V. Jones, N. Coviello, and Y. K. Tang. International Entrepreneurship research (1989-2009): A domain ontology and thematic analysis. *Journal of Business Venturing*, 26(6):632–659, nov 2011. ISSN 08839026. doi: 10.1016/j.jbusvent.2011.04.001. URL https://linkinghub.elsevier.com/retrieve/pii/S0883902611000395.

[21] T. K. Madsen. Early and rapidly internationalizing ventures: Similarities and differences between classifications based on the original international new venture and born global literatures. *Journal of International Entrepreneurship*, 11(1):65–79, mar 2013. ISSN 1570-7385. doi: 10.1007/s10843-012-0099-0. URL http://link.springer.com/10.1007/s10843-012-0099-0.

[22] G. A Knight and S. T. Cavusgil. Innovation , organizational capabilities , and the born-global firm. *J. Int. Bus. Stud.*, 35:124–141, 2004. doi: 10.1057/palgrave.jibs.8400071.

[23] S. A. Zahra and G. George. International Entrpreneurship: The Current status of the Field and Future Research Agenda. In *Strateg. Entrep. Creat. a New Mindset*. 2002.

[24] D. Crick. The internationalisation of born global and international new venture SMEs. *International Marketing Review*, 26(4/5):453–476, 2009. doi: 10.1108/02651330910971986.

[25] S. T. Cavusgil and G. A. Knight. The Born Global Firm: A Challenge to Traditional Internationalization Theory. *Adv. Int. Mark.*, 8(1):11–27, 1996.

[26] P. P. McDougall, B. M. Oviatt, and R. C. Shrader. A Comparison of International and Domestic New Ventures. *J. Int. Entrep.*, 1:59–82, sep 2003.

[27] D. Smallbone and F. Welter. The Distinctiveness of Entrepreneurship in Transition Economies. *Small Business Economics*, 16(4):249–262, 2001. ISSN 16130073. doi: 10.1023/A. URL https://link.springer.com/article/10.1023/A:1011159216578.

[28] E. J. Gatewood, K. G. Shaver, and W. B. Gartner. A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. *Journal of Business Venturing*, 10(5):371–391, sep 1995. ISSN 08839026. doi: 10.1016/0883-9026(95)00035-7. URL http://linkinghub.elsevier.com/retrieve/pii/0883902695000357.

[29] C. C. Williams. Beyond Necessity-Driven Versus Opportunity-Driven Entrepreneurship. *The International Journal of Entrepreneurship and Innovation*, 9(3):157–165, aug 2008. ISSN 1465-7503. doi: 10.5367/000000008785096647. URL http://journals.sagepub.com/doi/10.5367/000000008785096647.

[30] S. Chetty and C. Campbell-Hunt. A Strategic Approach to Internationalization: A Traditional Versus a 'Born-Global' Approach. *Journal of International Marketing*, 12(1):57–81, 2004. ISSN 1069-031X. doi: 10.1509/jimk.12.1.57.25651. URL http://journals.ama.org/doi/abs/10.1509/jimk.12.1.57.25651.

[31] D.D. Sharma and A. Blomstermo. The internationalization process of Born Globals: a network view. *International Business Review*, 12(6):739–753, dec 2003. ISSN 09695931. doi: 10.1016/j.ibusrev.2003.05.002. URL http://linkinghub.elsevier.com/retrieve/pii/S0969593103000982.

[32] M. Gabrielsson, V. H. M. Kirpalani, P. Dimitratos, C. A. Solberg, and A. Zucchella. Born globals: Propositions to help advance the theory. *Int. Bus. Rev.*, 17(4):385–401, aug 2008. ISSN 09695931. doi: 10.1016/j.ibusrev.2008.02.015. URL https://linkinghub.elsevier.com/retrieve/pii/S0969593108000371.

[33] G. A. Knight and P. W. Liesch. Internationalization: From incremental to born global. *Journal of World Business*, 51(1):93–102, jan 2016. ISSN 10909516. doi:

10.1016/j.jwb.2015.08.011. URL https://linkinghub.elsevier.com/retrieve/pii/S1090951615000644.

[34] J. Johanson and Jan-E. Vahlne. The internationalization process of the firm-a model of knowledge development and increasing foreign market commitment. *Journal of International Business Studies*, 8(1):23–32, mar 1977. URL https://link.springer.com/content/pdf/10.1057{%}2Fpalgrave.jibs.8490676.pdf.

[35] London Business School Review. Born global | London Business School. URL https://www.london.edu/faculty-and-research/lbsr/born-global.

[36] N. Halilem, N. Amara, and R. Landry. Exploring the relationships between innovation and internationalization of small and medium-sized enterprises: A nonrecursive structural equation model. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 31(1):18–34, mar 2014. ISSN 08250383. doi: 10.1002/cjas.1272. URL http://doi.wiley.com/10.1002/cjas.1272.

[37] K. R. Conner. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have new theory of the firm? *Journal of Management*, 17(1):121–154, 1991.

[38] J. Balogun and M. Jenkins. Re-conceiving Change Management:. *European Management Journal*, 21(2):247–257, apr 2003. ISSN 02632373. doi: 10.1016/S0263-2373(03)00019-7. URL https://linkinghub.elsevier.com/retrieve/pii/S0263237303000197.

[39] C. Curado. The Knowledge Based-View of the Firm : From Theoretical Origins To Future. 2006.

[40] C. E. Helfat and M. A. Peteraf. The dynamic resource-based view: capability lifecycles. *Strategic Management Journal*, 24(10):997–1010, oct 2003. ISSN 0143-2095. doi: 10.1002/smj.332. URL http://doi.wiley.com/10.1002/smj.332.

[41] J. B. Barney. Firm Resources and Sustained Competitive Advantage. *Jounal Manag.*, 17(1):99–120, 1991.

[42] J. B. Barney. Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27:643–650, 2001.

ISSN 01492063. doi: 10.1177/014920630102700602. URL http://jom.sagepub.com/cgi/doi/10.1177/014920630102700602.

[43] B. S. Anderson and Y. Eshima. The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs. *Journal of Business Venturing*, 28(3):413–429, 2013. ISSN 08839026. doi: 10.1016/j.jbusvent.2011.10.001. URL http://dx.doi.org/10.1016/j.jbusvent.2011.10.001.

[44] J. Johanson and Jan-E. Vahlne. The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9):1411–1431, dec 2009. ISSN 0047-2506. doi: 10.1057/jibs.2009.24. URL http://link.springer.com/10.1057/jibs.2009.24.

[45] J. Bell. The internationalization of small computer software firms. *Eur. J. Mark.*, 29(8):60–75, aug 1995. ISSN 0309-0566. doi: 10.1108/03090569510097556. URL https://www.emeraldinsight.com/doi/10.1108/03090569510097556.

[46] L. Argote and E. Miron-Spektor. Organizational Learning: From Experience to Knowledge. *Organization Science*, 22(5):1123–1137, oct 2011. ISSN 1047-7039. doi: 10.1287/orsc.1100.0621. URL http://pubsonline.informs.org/doi/abs/10.1287/orsc.1100.0621.

[47] Ch. Argyris and D. A. Schön. *Organizational Learning: A Theory of Action Perspective*. Number 77/78. 1997. ISBN 0201001748.

[48] Y. Chandra, C. Styles, and I. F. Wilkinson. An Opportunity-Based View of Rapid Internationalization. *J. Int. Mark.*, 20(1):74–102, mar 2012. ISSN 1069-031X. doi: 10.1509/jim.10.0147. URL http://journals.sagepub.com/doi/10.1509/jim.10.0147.

[49] M. A. Machado, W. M. Nique, and F. B. Fehse. International orientation and export commitment in fast small and medium size firms internationalization: scales validation and implications for the Brazilian case. *Rev. Adm.*, 51(3):255–265, 2016. ISSN 00802107. doi: 10.1016/j.rausp.2016.06.002. URL https://linkinghub.elsevier.com/retrieve/pii/S0080210716300231.

[50] E. Zijdemans and S. Tanev. Conceptualizing Innovation in Born Global Firms. *Technol. Innov. Manag. Rev.*, (September):5–10, 2014.

[51] S. Tanev. Global from the Start: The Characteristics of Born-Global Firms in the Technology Sector. *Technol. Innov. Manag. Rev.*, 2(3):5–8, 2018. doi: 10.22215/timreview/532.

[52] S. Andersson and I. Wictor. Innovative Internationalisation in New firms: Born Globals-the Swedish Case. *J. Int. Entrep.*, 1:249–276, 2003.

[53] S. Andersson, M. Danilovic, and H. Huang. Success Factors in Western and Chinese Born Global Companies. *iBusiness*, 07(01):25–38, 2015. ISSN 2150-4075. doi: 10.4236/ib.2015.71004.

[54] DD. Clercq. The Role of Knowledge in Business Start-up Activity. *International Small Business Journal*, 24(4):339–358, aug 2006. ISSN 0266-2426. doi: 10.1177/0266242606065507. URL `http://isb.sagepub.com/cgi/doi/10.1177/0266242606065507`.

[55] R. S. Schillo, A. Persaud, and M. Jin. Entrepreneurial readiness in the context of national systems of entrepreneurship. *Small Bus. Econ.*, 46(4):619–637, apr 2016. ISSN 0921-898X. doi: 10.1007/s11187-016-9709-x. URL `http://link.springer.com/10.1007/s11187-016-9709-x`.

[56] D. R. Gnyawali and D. S. Fogel. Environments for Entrepreneurship Development: Key Dimensions and Research Implications. *Entrepreneurship Theory and Practice*, 18(4):43–62, jul 1994. ISSN 1042-2587. doi: 10.1177/104225879401800403. URL `http://journals.sagepub.com/doi/10.1177/104225879401800403`.

[57] A. Rialp, J. Rialp, and G. A. Knight. The phenomenon of early internationalizing firms: What do we know after a decade (1993-2003) of scientific inquiry? *Int. Bus. Rev.*, 14(2):147–166, 2005. ISSN 09695931. doi: 10.1016/j.ibusrev.2004.04.006.

[58] D. Añón Higón and N. Driffield. Exporting and innovation performance: Analysis of the annual Small Business Survey in the UK. *International Small Business Journal*, 29(1):4–24, feb 2011. ISSN 0266-2426. doi: 10.1177/0266242610369742. URL `http://journals.sagepub.com/doi/10.1177/0266242610369742`.

[59] T. Schott and M. Sedaghat. Innovation embedded in entrepreneurs' networks and national educational systems. *Small Business Economics*, 43(2):463–476, aug 2014. ISSN 0921-898X. doi: 10.1007/s11187-014-9546-8. URL `http://link.springer.com/10.1007/s11187-014-9546-8`.

[60] A. Yaprak, T. Yosun, and D. Cetindamar. The influence of firm-specific and country-specific advantages in the internationalization of emerging market firms: Evidence from Turkey. *International Business Review*, 27(1):198–207, feb 2018. ISSN 09695931. doi: 10.1016/j.ibusrev.2017.07.001. URL `https://linkinghub.elsevier.com/retrieve/pii/S0969593117305085`.

[61] R. Azuayi. Internationalization Strategies for Global Companies: A Case Study of Arla Foods, Denmark. *J. Account. Mark.*, 05(04), 2016. ISSN 21689601. doi: 10.4172/2168-9601.1000191.

[62] Tradestart. Market Entry Strategies | Tradestart. URL `http://www.tradestart.ca/market-entry-strategies`.

[63] Franklin R. Root. *Entry Strategies for International Markets*. Lexington Books, 1994. ISBN 9780029269039.

[64] A. Majocchi, E. Bacchiocchi, and U. Mayrhofer. Firm size, business experience and export intensity in SMEs: A longitudinal approach to complex relationships. *Int. Bus. Rev.*, 14(6):719–738, 2005. ISSN 09695931. doi: 10.1016/j.ibusrev.2005.07.004.

[65] P. Koellinger. Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31(1):21–37, jun 2008. ISSN 0921-898X. doi: 10.1007/s11187-008-9107-0. URL `http://link.springer.com/10.1007/s11187-008-9107-0`.

[66] J. Weerawardena, G. S. Mort, S. Salunke, G. Knight, and P. W. Liesch. The role of the market sub-system and the socio-technical sub-system in innovation and firm performance: a dynamic capabilities approach. *Journal of the Academy of Marketing Science*, 43(2):221–239, mar 2015. ISSN 0092-0703. doi: 10.1007/s11747-014-0382-9. URL `http://link.springer.com/10.1007/s11747-014-0382-9`.

[67] H. K. Hvide and G. A. Panos. Risk tolerance and entrepreneurship. *J. financ. econ.*, 111(1):200–223, 2014. ISSN 0304405X. doi: 10.1016/j.jfineco.2013.06.001. URL `http://dx.doi.org/10.1016/j.jfineco.2013.06.001`.

[68] Y. Yamakawa, M. W. Peng, and D. L. Deeds. What Drives New Ventures to Internationalize from Emerging to Developed Economies? *Entrep. Theory Pract.*, 1(972):59–82, 2008. doi: 10.1111/j.1540-6520.2007.00216.x. URL http://journals.sagepub.com/doi/10.1111/j.1540-6520.2007.00216.x.

[69] K. Klyver. Shifting family involvement during the entrepreneurial process. *Int. J. Entrep. Behav. Res.*, 13(5):258–277, aug 2007. ISSN 1355-2554. doi: 10.1108/13552550710780867. URL http://www.emeraldinsight.com/doi/10.1108/13552550710780867.

[70] M. Sedaghat and M. Derrabi. Firms' exports promoted by the entrepreneurs' networking: MENA and Denmark. *International Journal of Business and Globalisation*, 11(4):427, 2013. ISSN 1753-3627. doi: 10.1504/IJBG.2013.056878. URL http://www.inderscience.com/link.php?id=56878.

[71] Z. Acs, T. Åstebro, D. Audretsch, and D. T. Robinson. Public policy to promote entrepreneurship: a call to arms. *Small Business Economics*, 47(1):35–51, jun 2016. ISSN 0921-898X. doi: 10.1007/s11187-016-9712-2. URL http://link.springer.com/10.1007/s11187-016-9712-2.

[72] S. Shane. Why encouraging more people to become entrepreneurs is bad public policy. *Small Business Economics*, 33(2):141–149, aug 2009. ISSN 0921-898X. doi: 10.1007/s11187-009-9215-5. URL http://link.springer.com/10.1007/s11187-009-9215-5.

[73] J. H. Block, C. O. Fisch, and M. van Praag. The Schumpeterian entrepreneur: a review of the empirical evidence on the antecedents, behaviour and consequences of innovative entrepreneurship. *Industry and Innovation*, 24(1):61–95, 2017. ISSN 14698390. doi: 10.1080/13662716.2016.1216397. URL http://dx.doi.org/10.1080/13662716.2016.1216397.

[74] Global Innovation Index. Global Innovation Index | Energizing the World with Innovation, 2018. URL https://www.globalinnovationindex.org/home.

[75] J. Jankowska. Measures of Company Internationalization. *Bus. Non-Profit Organ. Facing Increased Compet. Grow. Cust. Demands*, 10:419–429, 2011.

[76] J. Guan and N. Ma. Innovative capability and export performance of Chinese firms. *Technovation*, 23(9):737–747, 2003. ISSN 01664972. doi: 10.1016/S0166-4972(02)00013-5.

[77] K. Wakelin. Innovation and export behaviour at the firm level. *Res. Policy*, 26: 829–841, 1998.

[78] P. N. Figueiredo and J. Piana. Innovative capability building and learning linkages in knowledge-intensive service SMEs in Brazil's mining industry. *Resources Policy*, 58:21–33, oct 2018. ISSN 03014207. doi: 10.1016/j.resourpol.2017.10.012. URL `https://doi.org/10.1016/j.resourpol.2017.10.012`.

[79] J. H. Love, S. Roper, and Y. Zhou. Experience, age and exporting performance in UK SMEs. *International Business Review*, 25(4):806–819, aug 2016. ISSN 09695931. doi: 10.1016/j.ibusrev.2015.10.001. URL `https://linkinghub.elsevier.com/retrieve/pii/S0969593115300329`.

[80] Zi-Lin He and Poh-Kam Wong. Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4):481–494, 2004. ISSN 1047-7039. doi: 10.1287/orsc.1040.0078. URL `http://pubsonline.informs.org/doi/abs/10.1287/orsc.1040.0078`.

[81] S. L. Martin, Rajshekhar G. Javalgi, and E. Cavusgil. Marketing capabilities, positional advantage, and performance of born global firms: Contingent effect of ambidextrous innovation. *International Business Review*, 26(3):527–543, 2017. ISSN 09695931. doi: 10.1016/j.ibusrev.2016.11.006. URL `http://dx.doi.org/10.1016/j.ibusrev.2016.11.006`.

[82] A. Zaheer and G. G. Bell. Benefiting from network position: firm capabilities, structural holes, and performance. *Strategic Management Journal*, 26(9):809–825, sep 2005. ISSN 0143-2095. doi: 10.1002/smj.482. URL `http://doi.wiley.com/10.1002/smj.482`.

[83] B. M. Oviatt and P. P. McDougall. Defining International Entrepreneurship and Modeling the Speed of Internationalization. *Entrepreneurship Theory and Practice*, 29(5):537–554, sep 2005. ISSN 1042-2587. doi: 10.1111/j.1540-6520.2005.00097.x. URL `http://journals.sagepub.com/doi/10.1111/j.1540-6520.2005.00097.x`.

[84] L. Zhou, W. Wu, and X. Luo. Internationalization and the performance of born-global SMEs: the mediating role of social networks. *Journal of International Business Studies*, 38(4):673–690, jul 2007. ISSN 0047-2506. doi: 10.1057/palgrave.jibs.8400282. URL http://link.springer.com/10.1057/palgrave.jibs.8400282.

[85] M. Beeby and C. Booth. Networks and inter-organizational learning: a critical review. *The Learning Organization*, 7(2):75–88, may 2000. ISSN 0969-6474. doi: 10.1108/09696470010316260. URL http://www.emeraldinsight.com/doi/10.1108/09696470010316260.

[86] A. Raza, M. Muffatto, and S. Saeed. The influence of formal institutions on the relationship between entrepreneurial readiness and entrepreneurial behaviour. *Journal of Small Business and Enterprise Development*, 26(1):133–157, feb 2019. ISSN 1462-6004. doi: 10.1108/JSBED-01-2018-0014. URL https://www.emeraldinsight.com/doi/10.1108/JSBED-01-2018-0014.

[87] J. C. D. Casero, M. A. González, M. de la Cruz Sánchez Escobedo, A. C. Martínez, and R. H. Mogollón. Institutional variables, entrepreneurial activity and economic development. *Management Decision*, 51(2):281–305, 2013. ISSN 00251747. doi: 10.1108/00251741311301821.

[88] T. Schøtt and Wickstrøm J. K. The coupling between entrepreneurship and public policy: Tight in developed countries but loose on developing countries. *Estudios de Economia*, 35(2):195–214, 2008. ISSN 03042758. URL http://econ.uchile.cl/uploads/publicacion/ec3f363c-5d74-4771-87e6-9cbf38e847cb.pdf.

[89] C. Landau, A. Karna, A. Richter, and K. Uhlenbruck. Institutional Leverage Capability: Creating and Using Institutional Advantages for Internationalization. *Global Strategy Journal*, 6(1):50–68, 2016. ISSN 20425805. doi: 10.1002/gsj.1108.

[90] N. O.; Obaji and M. U. Olugu. The Role of Government Policy in Entrepreneurship Development. *Science Journal of Business and Management*, 2(4):109, 2014. ISSN 2331-0626. doi: 10.11648/j.sjbm.20140204.12. URL http://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=175{&}doi=10.11648/j.sjbm.20140204.12.

[91] M. Minniti. The Role of Government Policy on Entrepreneurial Activity: Productive, Unproductive, or Destructive? *Entrepreneurship Theory and Practice*, 32(5):

779–790, sep 2008. ISSN 10422587. doi: 10.1111/j.1540-6520.2008.00255.x. URL http://journals.sagepub.com/doi/10.1111/j.1540-6520.2008.00255.x.

[92] Sander Wennekers and Roy Thurik. Linking Entrepreneurship and Economic Growth. *Small Bus. Econ.*, 13:27–55, May 1999.

[93] V. D. Rusu and A. Roman. Entrepreneurial Motivations in the European Union Countries: An Empirical Approach. *Management Dynamics in the Knowledge Economy*, 6(1):9–31, 2018. ISSN 23928042. doi: 10.25019/MDKE/6.1.01. URL http://www.managementdynamics.ro/index.php/journal/article/view/242.

[94] Global Entrepreneurship Monitor. GEM Global Entrepreneurship Monitor, 2018. URL https://www.gemconsortium.org/.

[95] P. Reynolds, N. Bosma, E. Autio, S. Hunt, Natalie De Bono, Isabel Servais, P. Lopez-Garcia, and N. Chin. Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998?2003. *Small Business Economics*, 24(3): 205–231, apr 2005. ISSN 0921-898X. doi: 10.1007/s11187-005-1980-1. URL http://link.springer.com/10.1007/s11187-005-1980-1.

[96] N. Bosma, A. Coduras, Y. Litovsky, and J. Seaman. GEM Manual. Technical report, dec 2012.

[97] G. Cannone, A. Pisoni, and A. Onetti. Born global companies founded by young entrepreneurs. A multiple case study. *International journal of Entrepreneurship and Innovation Management*, 18:210–232, 2014. ISSN 1935-5130. doi: 10.1504/IJEIM.2014.0628751. URL https://doi.org/10.1504/IJEIM.2014.062875.

[98] F. Wilson, J. Kickul, and D. Marlino. Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship Education. *Entrepreneurship Theory and Practice*, 31(3):387–406, may 2007. ISSN 1042-2587. doi: 10.1111/j.1540-6520.2007.00179.x. URL http://journals.sagepub.com/doi/10.1111/j.1540-6520.2007.00179.x.

[99] P. B. Robinson and E. A. Sexton. The effect of education and experience on self-employment success. *Journal of Business Venturing*, 9(2):141–156, mar 1994. ISSN 08839026. doi: 10.1016/0883-9026(94)90006-X. URL http://linkinghub.elsevier.com/retrieve/pii/088390269490006X.

[100] I. Martins, A. Rialp, and Y. Vaillant. Simultaneous Effects between Innovativeness and Export Propensity: Evidence from Small Firms in Spain. *SSRN Electronic Journal*, pages 1–27, 2012. ISSN 1556-5068. doi: 10.2139/ssrn.2161996. URL `http://www.ssrn.com/abstract=2161996`.

[101] J. M. Wooldridge. *Introductory Econometrics*. 2013. ISBN 978-1-111-53104-1.

[102] M. H. Kunter, C. J. Nachtsheim, J. Neter, and W. Li. *Applied Linear Statistical Models.*, volume 138. McGraw-Hill Irwin, 2005. ISBN 0-07-238688-6.

[103] S. A. Zahra and M. Wright. Entrepreneurship's Next Act. *Acad. Manag. Perspect.*, pages 67–83, 2011. ISSN 1558-9080. doi: 10.5465/amp.2010.0149. URL `http://journals.aom.org/doi/10.5465/amp.2010.0149`.