

Export intensity in early and rapid internationalization new venture in Algeria: what effect of entrepreneur's antecedents and firm's capabilities

Lassas Ahmed ¹ Hakka Amal² Benamira Nouara³

¹ University of Oan 2, (Algeria), a.lassas@yahoo.com

² University of Oran 2, (Algeria), a.hakka@yahoo.com

³ Ecole Supérieure d'Economie d'Oran (Algeria), nouarabenamira@gmail.com

ARTICLE INFO

Article history:

Received: 19/08/2023

Accepted: 17/04/2024

Online:30/05/2024

Keywords:

export intensity
international new
venture

human capital,
social capital,
innovation,
JEL Code: F230, M130,
M160

ABSTRACT

The present article is focused on the determinants of export intensity in new venture with early and rapid internationalization in Algeria. We distinguish between entrepreneur and firm factors and hypothesized that high level of export is associated with entrepreneurial skills, social capital, innovation and novelty of technology. Those hypotheses are tested within ordinal regression model based on qualitative data from the GEM surveys of 2011, 2012 and 2013. The results show that new ventures with a high export level are different from those that remain attached to their local market or that are weakly internationalized. Entrepreneurs with experience in the business world, integrated into peer networks and offering products considered new in the market are the most dynamic in the international market. The results of this research are consistent with the conclusions of some research and not consistent with others. The novelty of this work lies in the specific context of the empirical analysis.

1.INTRODUCTION

A country's economic development is linked, all things being equal, to its active integration into the global economy. This integration takes place through various mechanisms, including all processes by which a company increases its awareness of the need to create and carry out transactions with other countries. (LEVRATTO & al, 2021, p. 190). In management, authors agree in defining internationalization as a strategy for companies that identify opportunities in the international market, which will enable them to build a competitive advantage in order to expand their activities abroad (CLIPA & CLIPA, 2011, p. 50). There are traditionally two forms of corporate internationalization: foreign direct investment (FDI) and international trade, notably through the export of goods and services.

Exports have a positive impact on foreign exchange reserve levels, and contribute to the development of domestic industry, improved productivity and job creation. (HESSELS & VAN-STEL, 2011, p. 260). The experience of newly industrialized countries (Hong Kong, Taiwan, South Korea, Singapore) in the 1980s and emerging countries (India, China, Mexico, Turkey, Thailand, Malaysia and the Philippines) in the early 2000s is a perfect example of the role of exports and the internationalization of companies in particular in economic growth. (OECD, 2013).

Generally speaking, most export flows are carried out by large, multinational companies. But in the mid-1990s, empirical studies revealed the development of new forms of enterprise characterized by rapid and early internationalization. This period was marked by a significant reduction in shipping costs, global investment barriers and the development of information technologies (MCDOUGALL & OVIATT, 2005). These factors have favored the emergence of small and medium-sized businesses which, without having accumulated experience in the local market, turn to the international market at the time of their creation or just afterwards (BEDDI, BUENO MERINO, &

COEURDEROYLA, 2012, p. 12).

Data from GEM's annual surveys, which are among the most reliable, reveal the quantitative importance of this type of company. For each year and in many countries, they measure the proportion of new companies involved in exporting. In 2018, they represent 37% of the total number of new companies in existence this year (table1). Companies with the majority of their customers abroad account for 5.9% of all new companies. Looking at the data for Algeria, we can see that this category of economic agent is relatively important. In 2013, among all newly-created companies (less than three years old), 28% were exporters, of which 6% placed the majority of their production on the international market.

TABLE 1: level of internationalization in new venture in the word and in Algeria

% of foreign customers	World(2018)	Algeria (2013)
Over 75%	5,9	6,3
Between 25% and 75%.	10,9	4,5
Less than 25% of sales	20,4	17,9
No foreign customers	62,8	71,4
Number of new companies	16598	112

Sources: Prepared by the researcher based on 2013 and 2018 GEM data

This observation is combined with increasing empirical evidence of the impact of this phenomenon on growth and development in developed countries. In an article unanimously considered to be a benchmark in the field of international entrepreneurship, HESSELS.J and VAN STELA have shown, for a sample of 36 countries, that economic growth in developed countries is positively correlated with levels of new business creation (entrepreneurship), and that this correlation is strengthened as the share of new businesses heading for the international market is higher (international entrepreneurship). (HESSELS & VAN-STEL, 2011, p. 265).

Definition of new internationalized companies

Much of the conceptualization work done in English has given different names to this type of company, in which the internationalization process plays a role: *borne global*, *early international new venture*, *entrepreneurial instant exporter* (GUIMARÃES, 2012, p. 235). In French-language literature, authors prefer to use the term *Entreprise à Internationalisation Précoce et Rapide* (EIPR) to designate this category of economic agent (BACQ & COEURDEROY, 2010, p. 100) we use this designation for the rest of the paper.

The precocity and speed of internationalization is empirically becomes real when these companies begin to operate in a global markets within the first two or three years". (MATHEWS & ZANDER, 2007, p. 390). These companies seek to obtain a substantial proportion of their income from the sale of products or services on the international market (ESCANDON-BARBOSA, RIALP-CRIADO, FUERST, RODRIGUEZ-OREJUELA, & CASTRO-ARISTIZABAL, 2019, p. 1).

In their seminal article, OVIATT AND MCDOUGALL consider that the EIPR is not a special case of SME internationalization, but a totally new form of multinational organization. These authors propose the following definition: "the EIPR is a commercial Organization which, from its birth, seeks to draw a significant competitive advantage from the use of resources (material, human, financial, time...) and the sale of products in multiple countries." (BACQ & COEURDEROY, 2010, p. 95).

The field that addresses this phenomenon is now called international entrepreneurship. It includes knowledge from both entrepreneurship and international management (VEILLEUX & MARINA FERRO, 2010, p. 1). This field has emerged to account for the significant differences between the early internationalization of companies and that of large, mature firms.

The EIPR are different from large companies, which internationalize by following a gradual path. This path has been theorized by what is known as the internationalization process theory (JOHANSON & VAHLNE, 1977, p. 23). This theory proposes an approach whereby companies increase their international involvement through a gradual process. This process begins with the export of a product, direct sales of the product, subsequent sales through an agent in the host country, the creation of a sales office, and ends with the company's establishment in the host country. During this process, companies reduce their perception of the uncertainty inherent in these operations by learning from their experience in the international market, which is generally a market that is close and culturally close, before they set out to conquer markets that are geographically and culturally distant. (JOHANSON & VAHLNE, 1977).

Paying particular attention to the speed and precocity of the internationalization of EIRPs is of two fold interest. Firstly, for research into the internationalization of companies, insofar as their development process calls into question the universality of traditional models for the phased internationalization of SMEs. Indeed, very early on in their existence, they rapidly expand internationally, i.e. without going through a phase of consolidation of their activities in a local environment. Secondly, for entrepreneurship research, as the organization's international thrust, almost from birth, overturns beliefs that the strategic choices of small businesses are limited by their restricted resources.

Because of its structural weaknesses, much of the current research focuses on the antecedents, linked to the capabilities of the entrepreneur and the company, which can play a palliative role to these insufficiencies and favor the emergence and success of the internationalization process (ESCANDON-BARBOSA, RIALP-CRIADO, FUERST, RODRIGUEZ- OREJUELA, & CASTRO-ARISTIZABAL, 2019, p. 3).

Company internationalization and exports in Algeria

In Algeria, the debate on export diversification and the role that SMEs can play is renewed every time there is a crisis affecting the country's external revenues. Since the crisis of 1986, companies have been urged to take an interest in the international market in order to diversify exports, which are still dominated by hydrocarbons. (BOUYACOU, 1998, p. 7). This issue is still topical, and the public authorities have recently put in place a number of slides to support and encourage exporting companies¹. In macroeconomic terms, the value of non-hydrocarbon exports remains very low, representing 7.2% of total exports (Direction Générale des Douanes, 2019, p. 14). Some specialists believe that their long-term growth is more than necessary. BOUKLI HASSAN.R estimates that the volume of exports of industrial products must reach 103 billion dollars to support the external balance of the economy by 2030 (BOUKLIA- HASSANE, 2013, p. 56). This objective cannot be achieved in the absence of entrepreneurs capable of detecting international market opportunities and organizing resources accordingly to expand internationally. Whether these entrepreneurs are already established or are setting up new, rapidly internationalizing businesses. But, *En rapportant le nombre d'exportateurs (environ 724(selon les données 2016 de la CACI) au nombre d'importateurs qui compte des dizaines de milliers (environ 43 000), le rapport est d'un (01) exportateur à 60 importateurs. En comparant avec la Tunisie 11 où le nombre d'exportateurs avoisine les 1700, soit trois fois plus le nombre en Algérie* (MAHOUI & FERFERA, 2017,p. 18).

In terms of academic researchs, little is known about early and rapid internationalization companies in Algeria. The limited availability of systematic data on their specific characteristics (entrepreneur-companies), and even less on their performance, does not allow for a better understanding of the antecedents that do or do not favor the emergence of this type of company. A total of 29 articles have been published in Algerian journals on the subject of SME exporters². To our knowledge, there is no paper dedicated exclusively to exporting at the entrepreneurial stage. That's why our aim is to contribute to improving knowledge of early and rapid internationalization in Algeria.

Research question

Given these observations, it is important to ask the question: *what are the characteristics of entrepreneurs and companies that encourage the emergence of new international businesses in Algeria?*

2.LEVEL OF INTERNATIONALIZATION IN NEW COMPANIES

The penetration of the international market takes place at different levels of intensity. This intensity is reflected either in the number of countries to which the products are destined, or in the share of production that is placed on the international market. There are companies with a high level of internationalization. These companies are referred to in the literature as *New Companies with a strong international orientation*. On the other hand, there are new companies planning to export their production, while remaining focused on their domestic market. Empirically, these companies are referred to as *New Companies with a Low International Orientation* (FERNANDEZ-MESA & ALEGRE, 2015, p. 151). The presence in the economy of the first category is an important factor in economic development (LEDERMAN, RODRÍGUEZ-CLARE, & YI XU, 2011, p. 559). For example, GONZÁLEZ-PERNÍA .J. L. and PEÑA-LEGAZKUE.I concluded that the difference in GDP per capita between Spanish regions is strongly correlated with the difference in the number of international oriented companies (GONZÁLEZ-PERNÍA & PEÑA-LEGAZKUE, 2015, p. 519). Indeed, the development of new companies with a high level of internationalization is an important factor in export

¹ In 2019, the National Consultative Council for the Promotion of Non-Hydrocarbon Exports is set up

² According to our search of publications on the ASJP platform website between 1984 and 2022, <https://www.asjp.cerist.dz/>

growth. This contribution can be seen either in the increase in the overall value of exports, even if the range of products exported remains limited (intensive margin), or in the diversification of export products (extensive margin). (JOSÉ- REGIS, 2018,p. 46).

Empirically, a growing body of research has highlighted the difference between these categories of company, not only in terms of their intrinsic characteristics, but also in terms of their impact on the economy of the country of origin. One of the most important explanation is relates to the productivity potential of these companies, which gives them a competitive advantage when exporting. (MELITZ, 2003, p. 1695). As recent empirical research seems to indicate that this potential of performance is linked to certain entrepreneurial skills and to the innovation introduced by the entrepreneur (DINOPOULOS & AND UNEL, 2017, p. 365).. It is in relation to these two dimensions that this research will be conducted.

Therefore, the research question becomes clearer and consists in knowing **whether the characteristics of the entrepreneurs and of the firm determine the intensity of exports in new internationalized firms?**

3.HUMAN CAPITAL AND INTERNATIONAL ENTREPRENEURSHIP

Human capital is an economic concept. Human capital theory originated to study the value of education and postulated that individuals possess a variety of knowledge and talents that have economic value. After some criticism, human capital has become one of the most attractive subjects in various fields of research. This concept describes the investment in skills, talent and knowledge that potentially enhances the cognitive abilities of individuals and, in turn, promotes their economic productivity. (BUZAVAITE & KORSAKIENE, 2019, p. 128). In the field of international entrepreneurship, human capital is often associated with owner-managers or what researchers prefer to call entrepreneurs. Studies focusing on the individual level have demonstrated a positive relationship between human capital and successful international entrepreneurship to justify the importance of knowledge and talent. The first impact is related to the concept of opportunity. DAVIDSSON.P., HONIG .B. have shown that education is a major aspect of the entrepreneur's human capital, and consider that those with a high level of education are the most apt to identify opportunities in the market and at the same time are the most adept at exploiting this opportunity and transforming it into value on the market (DAVIDSSON & HONIG, 2003, p. 318). The same authors have also shown that highly qualified entrepreneurs (university level) differ from poorly trained entrepreneurs in their growth ambitions.

Investment in qualifications (education) is not the only dimension of human capital. For a significant proportion of researchers, the prior experience of internationally-oriented entrepreneurs is a key element of human capital. Experience can be seen as a stock of events that the individual has lived through (participation in company management, setting up a failed business, working on a project). These events produce two kinds of capabilities: dominant action logics that enable the filtering of relevant information to drive the company's internationalization process. The second capacity is linked to expertise, which makes actions and decisions to go international at an early stage more informed. (REUBER & FISCHER, 1999). KLEPPER & SLEEPER tested in eight high-tech companies the hypothesis that entrepreneurs tend to create companies in the same industry in which they were employed (KLEPPER & SLEEPER, 2005, p. 1299). Other research has attempted to specify the role of experience in the international success of companies. For example, in a study of 8,000 MIT former students³ EESLEY, C.E. and, EDWARD R.B. showed that experience is important in a context where the product and technology are familiar in the market; however, their results show that individual talent is more decisive than experience in markets with a high level of technological innovation (EESLEY & EDWARD, 2012, p. 210). DE CLERCQ.D and ARENIUS.P demonstrated in a study involving a sample of 5205 individuals in Belgium and Finland, that individuals' belief that they possess the talent and experience required to start a business is the factor that most distinguishes entrepreneurs from non-entrepreneurs (DE CLERCQ & ARENIUS, 2006, p. 350).

Based on this position, we formulate the following hypothesis: *entrepreneurs' previous experience and belief in their own skills as two dimensions of human capital are positively related to the degree of exporting in new ventures.*

4.SOCIAL CAPITAL AND INTERNATIONAL ENTREPRENEURSHIP

The contribution of human capital to the intensity of a company's early internationalization takes into account the effect of the entrepreneur's own internal knowledge and abilities. It is also necessary to emphasize the external knowledge that can be acquired through contacts with people or organizations encountered before, during and after the internationalization decision, as suggested by the literature on the concept of entrepreneurial social capital (DE CLERCQ & ARENIUS, 2006, p. 340).

³ Massachusetts Institute of Technology, USA

The fundamental thesis of social capital theory is that relational networks provide the individuals or organizations involved in them with access to resources, including knowledge, that cannot be accessed outside these networks. (NAHAPIET & GHOSHAL, 1998, p. 243). The social network is therefore at the heart of the definition of social capital.

In the field of entrepreneurship in general, and international entrepreneurship in particular, research has introduced entrepreneurial social capital to highlight the fact that future entrepreneurs make intensive use of their relational network to overcome specific constraints and weaknesses of the business linked to its novelty (the limits of newness) and the uncertainty inherent in the lack of relevant information on the international market. (CATANZARO, MESSEGHM, & SAMMUT, 212, p. 39). As noted by BUENO-

MERINO.B and COEURDEROY, "the success of the international entrepreneur, far from being a solitary act, is very likely to depend on the quality of the networks in which the project is embedded". (BEDDI, BUENO MERINO, & COEURDEROYLA, 2012, p. 12).

Indeed, the early internationalization of companies is a complex and less structured process than that of large, established firms (EL IDRI SSI & HAUCH, 2012, p. 16). Newly internationalized companies lack experience in the international market and have not established managerial routines as is the case with large companies which, thanks to their activity in the local market and gradual internationalization, are better able to develop the capacity to plan and absorb information about international business opportunities (LEIPONEN, 2012, p. 1255). The following table summarizes the findings of some leading empirical work on the usefulness of different types of network to be developed during the early and rapid internationalization process.

TABLE 2. The development of entrepreneurial networks as a response to the specificities of the internationalization process for new companies

Network development support as a solution.
• Networks leverage tangible and intangible resources (Zahra et al., 2003) • They overcome the lack of resources required for early internationalization by enabling network members to acquire or lend the missing resources (Oviatt and McDougall, 1994).
• The main resource generated by networks : • knowledge (Nahapiet and Ghoshal, 1998) • market information (Kale, Singh and Perlmutter, 2000). • Building networks helps overcome cultural differences (Wilkinson, 2006). • The company's partners will provide it with the knowledge it needs to enter foreign markets using the most appropriate entry methods (Coviello and Munro, 1997).

Source : CATANZARO.A., MESSEGHM K., SAMMUT S., 2012, p 40

The networks activated in the internationalization process of new companies can have several origins. From an economic standpoint, we can differentiate between personal, business or transaction networks, and informational networks (PIERRE-ANDRE, LACHANCE, & MARTIN, 2004, p. 183). Personal networks are emotional and trust-based relationships. These include relationships with family members, friends or fellow students. Business or transaction networks are upstream and downstream links. Upstream, we find suppliers of raw materials, parts or finished or semi-finished products, equipment manufacturers and financial firms. Downstream are customers and the various players in the distribution process. Informational networks can provide general information, such as accounting auditing or quality system certification services, or be much more active in stimulating change within companies, providing them with all kinds of new information enabling them to innovate, distinguish themselves and thus increase their competitiveness. (PIERRE-ANDRE, LACHANCE, & MARTIN, 2004, p. 184). The distinction between these three types of network does not exclude the fact that a member of the personal network, for example, may be part of the informational network.

In this work, we are interested in two types of business relationships. The first is linked to having a personal relationship with other entrepreneurs, i.e. people who have already gone through the process of setting up a business. This kind of relationship can be an important resource in developing the best response to international market constraints, and promotes rapid penetration of this market. (DUANE IRELAND, HITT, CAMP, & L. SEXTON, 2001, p. 59). The second refers to the relationships that can be formed when entrepreneurs who decide to export have in the past helped finance the creation of other businesses (*business angel*). Involvement in the emergence of other businesses can provide a favorable context for the formation of personal networks (family, professional or other) that are useful for international success. These two types of

relationship have been widely examined in the international empirical literature, but only to a limited extent in the Algerian context. A few works have used these two forms of social capital components. LASSAS.A highlighted for a sample of 4457 individuals, a significant association link between personal knowledge of other entrepreneurs and being a business Angel with intention, commitment and success of the entrepreneurial process in Algeria (LASSAS, 2016). In a study of 103 exporting SMEs, HADDOUD,M,Y; NOWINSKI,W; PAUL, J and NEWBERY ,R showed that, unlike in other economies, in Algeria, the most successful SMEs in terms of exports are those that have the capacity to mobilize local relationships with other companies and relationships in the external market. These authors conclude that these relationships are more decisive than means of production and management skills. (HADDOUD, NOWINSKI, JONES, & NEWBER, 2019, p. 9).

The hypothesis we might propose here suggests that those *who know established entrepreneurs and who have in the past participated financially in the emergence of other companies are the most likely to develop a highly internationalized business.*

5.INNOVATION AND INTERNATIONAL ENTREPRENEURSHIP

As far back as 1934, SCHUMPETER.J considered the opening up of international markets, such as new consumer goods, new production and transport methods, and new types of industrial organization, as one of the activities characterizing the entrepreneurial function. The fact of orienting oneself, from birth, to a market outside national borders is in itself an innovative entrepreneurial step.

The relationship between innovation and the internationalization of companies, particularly through exporting, has been considered by two main theoretical models that reflect the direction of the relationship between these two phenomena: self-selection theory and learning-by-exporting theory. A third view seems to have developed recently to take into account a mutual causality between innovation and exporting. In other words, one contributes to strengthening the other (ENJOLRAS, SCHMITT, & CAMARGO, 2016).

The self-selection approach considers that the decision to internationalize can only be made once the company has reached a sufficient level of productivity and ability to bear the costs of operating in an international market. For proponents of this approach, this distinctive capacity is the only factor that differentiates exporting companies from non-explorers (COSTANTINI & MELITZ, 2008, p. 107).

More recent theoretical contributions in the field of international management point to innovation as the main determinant of productivity differentials between companies and, consequently, of their export decisions. Explanatory models attribute to productivity a mediating role between innovation, particularly in production processes, and companies' propensity to export (BELLONE & GUILLOU, 2011). For some authors, the role of innovation in export decisions needs to be put into perspective, due to the importance of the timing of the decision. The success of this decision also depends on the timing of market penetration. The latter may have been freshly liberalized and therefore include fewer competitors, unlike an old or liberalized market which is home to well-established companies, making the innovation introduced by young exploratory companies highly risky. (COSTANTINI & MELITZ, 2008, p. 126).

Several empirical studies have verified this hypothesis in large companies, but in the case of SMEs, this capacity is constrained by their small size and limited R&D resources. When we examine other empirical research on the Algerian context, the results sometimes seem contradictory. KADI. M tested this hypothesis of the link between innovation and exports in 60 SMEs surveyed in Algeria as part of a World Bank project (2007 Enterprise Survey). The author concludes that the age of the company is the most decisive factor. SMEs with a presence in the international market are older and achieve much higher apparent labor productivity than SMEs that have never placed their production outside the local market. (KADI, 2021, p. 87) On the other hand, BESSOUH N, FERHAT and ATROUCHE have shown a significant link between product innovation and export growth in 34 SMEs in Algeria (BESSOUH, FERHAT, & ATROUCHE, 2022, p. 155).

It is therefore interesting to analyze the hypothesis that *product innovation is a discriminating factor between companies with a high level of internationalization (exports) and new companies with little or no internationalization.*

6.NEW TECHNOLOGY AND INTERNATIONAL ENTREPRENEURSHIP

Technology can be defined as follows: *Technology can be defined as all the knowledge, products, processes, tools, methods, and systems employed in the creation of goods or in providing services. In simple terms, technology is the way we do things* Technology is the practical implementation of knowledge, a means of aiding human endeavor (KHALIL, 2000, pp. 1-2). In the field of international entrepreneurship, technological resources have been introduced as a performance factor with the emergence of the resource-based view. The main thesis of this theory is that when a new company has a unique and advanced technology at its disposal, this can be a source of competitive advantage when considering entering the

international market. The research examined the role of two types of technology: production-related technologies and communication-related technologies, commonly known as ICTs (DETHINE, ENJOLRAS, & MONTICOLO, 2020)..

6.1 Production-related technologies performance of new internationalized companies

In developed countries, the relationship between the novelty of technology and the export capabilities of new companies has been widely demonstrated in empirical work. But when this hypothesis is tested in developing countries? the results are not obvious. The explanation lies in the fact that technology, whether new or not, is not just a matter of equipment or machines, but of a whole organizational set-up, a capital of skills and knowledge that accompany its application in production processes. (KUMAR & SIDDARTHAN, 1993) .

Theoretically, technology novelty has at least three impacts theorized in the international entrepreneurship literature: cost reduction, improved economic efficiency and innovation (ZHANGA, ZHAN-ZHONG, YI-RONG, & NENG-JUN, 2022). Indeed, the application of digitalization in production as well as in procurement, sales and distribution can significantly improve resource allocation, adaptation to consumer needs, and the ability to respond effectively to demand. However, recent work has highlighted the fact that production-related technology paradoxically poses three major problems for the entrepreneur. The first is to acquire the technology, and once these two processes have been completed, the third is to take advantage of the resulting global technological infrastructure (knowledge, organization, management). (MARTIN-ROJAS, GARCIA-MORALES V, & GONZALEZ-ALVAREZ, 2019) .

But if we disregard the country's level of development, the novelty of the technology is crucial to the development of new companies' export capabilities. In empirical work involving international data from 70 countries in 2013. LEKOVIĆ et al, showed in a very careful regression model, that new companies that from birth have adopted a very recent technology in production are almost 1.5 times more likely to have an export level compared to companies that use technologies that have been around for more than 5 years (LEKOVIĆ, PETROVIĆ, & BERBER, 2018).

6.2 Information and communication technology (ICT) and the performance of new internationalized companies

As shown by JULIEN,P-A, it is the strategic decision - in this case, the penetration of a foreign market - that leads entrepreneurs to implement an information and marketing watch, and not the other way around. (JULIEN, CARRIERE, RAYMOND,, & LACHANCE, 1994,p. 94). The more or less risky choice of product and destination market leads new companies to practice different processes for accessing and circulating information, or what DIAMANTOPOULOS A ; SOUCHON, A call intelligence systems on foreign market information. (A & SOUCHON, 1999, p. 9). Indeed, the risks associated with distance from the international market and cultural differences with the country of origin give rise to significant information needs (BOUVERET-RIVAT, MERCIER-SUISSA, & SAOUDI, 2020). The quality of these practices determines the entrepreneur's ability to obtain a level of formalism in informational processes that is conducive to the company's successful internationalization. By formalism, we mean structured information gathering, reliable sources and precise data processing, both inside and outside the company. (ST-PIERRE, 2006, p. 3)

In this respect, information and communication technologies (ICT) have contributed enormously to improving this capacity. By way of illustration, several studies have shown the role played by communication applications and specialized e-commerce platforms in maintaining international trade relations, particularly in countries hard hit by the Covid-19 pandemic. (SHKALENKO & FADEEVA, 2020). In practice, ICTs can be divided into two categories: on the one hand, computerized applications used in company management processes (production management, distribution accounting, etc.); on the other, technologies linked to the Internet (social networking, video communication applications, etc.). These communication technologies are essential to international trade for a number of reasons: reducing transaction costs, building and developing relationships with suppliers and customers in other countries, negotiating contracts, resolving conflicts, and understanding cultural differences (language, tradition). (ST-PIERRE, 2006, p. 3). Several studies have shown the impact of the availability of these technologies in a given country on a company's ability to seize international market opportunities. There is even an international indicator that measures the e-readiness of each economy to make effective use of ICT. In 2004, Algeria was ranked 58 out of 64 countries. This ranking is based on the following criteria: *Connectivity - Business environment - Consumer and business adoption-*

Legal and policy- Social and cultural environment - Supporting e-services (the economiste, 2004). Several recent studies have used this ranking to identify the role of new communication technologies in the export performance of small businesses. From a sample of 25,423 industrial SMEs engaged in export activity in CROATIA, ŠIMIĆ, M.L., BILOŠ, A, MIJOČ, J, concluded that the use of tools such as: *e-mail usage, internet usage in market research, promotion, e-commerce, and e- payment possibilities* are determinants of export performance measured by the *export/total business activities ratio, the export/total revenue ratio and, additionally, the existence of multilingual official websites.les entreprises* (ŠIMIĆ & BILOŠ., 2019)

In a study of 110 exporting SMEs in Kenya, MALLINGUH, EDMUND; WASIKE, C, & ZOLTAN, Z revealed a positive link between the volume of the budget allocated to technology development and the regularity of export activity, which for these authors is an indicator of the international performance of these companies. (MALLINGUH, WASIKE, & ZOLTAN, 2020). Based on a survey of 60 SMEs in the wilaya of Oran, 15 of which are exporters, RAHMANI, Y, found that the use of ICTs is a distinguishing feature between companies that export and those that don't (RAHMANI, 2017, p. 179).

It is therefore interesting to test the hypothesis suggesting *a link between the use of the latest technologies and the degree of exporting by new companies in Algeria..*

Schematically, we can formalize our hypotheses according to the following model. Export intensity is the phenomenon to be explained. Human capital, social capital innovation and technological novelty are the variables expected to increase the probability of occurrence of this phenomenon.

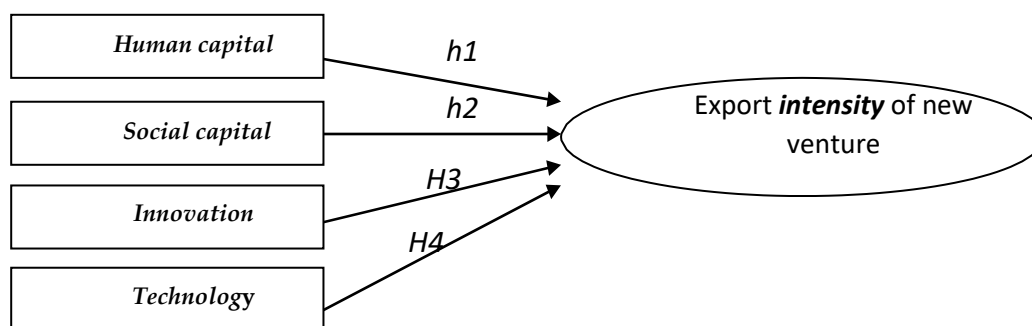


Figure. 1 Research model

7.DATA AND METHODOLOGY

This research uses data from annual surveys conducted by the international group *Global Entrepreneurship Monitor* (GEM). Since 1999, these surveys have been carried out in several countries and are based on face-to-face or telephone interviews with at least 2,000 people aged between 18 and 64. In 2013, for example, the survey covered 70 countries representing 75% of the world's population and 90% of global GDP (MOHD, KHAN, ANSARI, & SALEM, 2022, p. 14).

The aim of these surveys is to produce standardized data enabling international comparisons to be made on the level, determinants and economic consequences of entrepreneurial activity. The results of these surveys are published in an annual report (GEM, Global report) and an annual database in spss v18.0 format (Adult Population Survey, APS). The latter will be used in this study. It contains over 60 variables relating to the characteristics of the entrepreneur, and the enterprise at different stages of the entrepreneurial process (intention, creation, development). Algeria participated in the 2009, 2011, 2012 and 2013 surveys. The table below shows the samples interviewed each years⁴.

TABLE 3 overall sample and by year

	2011	2012	2013	Total
Samples	3427	4995	2500	10922

Sources: GEM data 2011-2013

7.1Sample

Our focus is on the intensity of export activity in new companies. This phenomenon is rare. This rarity is reflected in the low number of entrepreneurs who, from the first years of their company's existence,

⁴ We have not retained the data for 2009, as the coding and modalities of the variables of interest to us in this work have changed from those of subsequent years, implying a risk of error when consolidating the databases.

have a very strong orientation towards the international market. It was for this reason that we combined the 2011, 2012 and 2013 samples into a single sample comprising a total of 10922 people.

7.2 Research variables

This research examines the relationships between a dependent variable relating to the intensity of the international orientation of entrepreneurs and a series of independent variables relating to the human capital, social capital of these entrepreneurs and the technological and innovation capabilities of the firm.

7.2.1 Dependent variable: intensity of exportation in new entrepreneurial activity

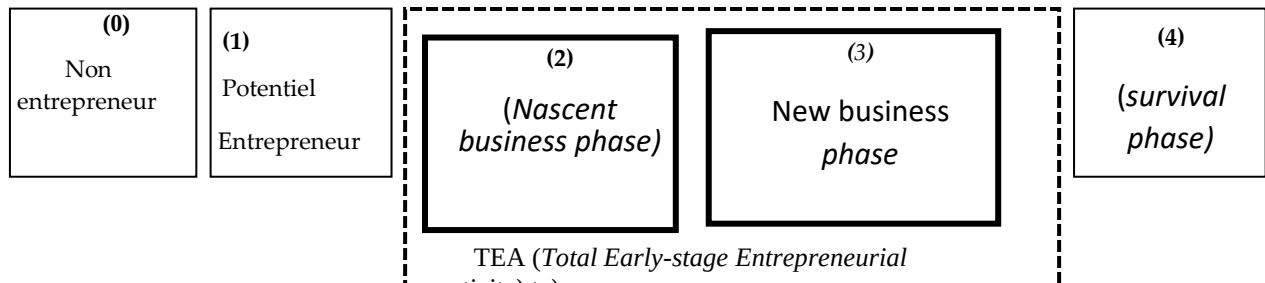
The dependent variable is directly linked to the concept of early and rapid internationalization (EIPR). Empirically, this means that among all respondents, we need to detect those who are owners or managers of a company that is both new and have all or part of their production destined for the international market (exportation activities).

The Early-stage Entrepreneurial Activity: according to GEM data, the people surveyed can be present in five possible situations:

- (0) People who are not considering entrepreneurship (*non-entrepreneurs*)
- (1) People planning to set up a business in the future (*intention phase*)
- (2) People who, in the last twelve months, have actually set up a business but which is not yet operational, because at the time of the survey they declare that they have not received any income from this business (*nascent business phase*).
- (3) People who have successfully created a company that is less than three years old and active in the market (new business *phase*).
- (4) People who own or manage a business that has been in existence for more than three years. (*survival phase*)

As the following diagram shows, the sum of start-ups and new businesses forms what GEM calls the early-stage entrepreneurial phase. This phase is identified by the variable **TEA** (*Total Early-stage Entrepreneurial Activity*).

Figure 1 The new company according to GEM surveys



Source: Author according to the GEM Manual (2011)

The TEA variable is binomial. It is coded **1** when the person is present in this phase and **0** for the rest of the sample. As shown in Table 3, entrepreneurs represent on average 8% (857) of the adult population in Algeria between 2011 and 2013.

TABLE 4 New entrepreneurs in Algeria compared with the world average

TEA Total Early stage entrepreneurial activity	Algeria	
	Workforce	%
(No)	10065	92,2
(Yes)	857	7,8
Total	10922	100

Sources author's calculation based on GEM data 2011-2013

2 Export intensity in early and rapid internationalization new venture:

To find out who is now exporting, these new entrepreneurs (TEA) were asked about the proportion of their customers who are based in other countries. Their answers are classified in a categorical variable called **TEAEXP4C** (*Total Early stage entrepreneurial activity Export 4 categories*) according to the following scale: **(1)** More than 75% **(2)** Between 25% and 75% **(3)** Less than 25% **(4)** No foreign customers.

7.2.2 Independent variables

These variables refer to the characteristics of the entrepreneur himself or of the business he creates, which can differentiate those who are export-oriented from the outset from those with little or no orientation towards the international market.

Human capital

Perceived entrepreneurial talent: this is measured by the **SUSKILL** variable (start-up skill). This declarative variable measures the level of knowledge and talent that entrepreneurs believe they possess to successfully carry out the entrepreneurial process. The question was as follows: *Do you have the knowledge, skill and experience required to start a new business?* This variable is coded (1) if the answer is positive and (0) otherwise.

Business experience: Knowledge is also the result of business experience. For this reason, we use a variable called **DISCENT** (discontinued enterprise). This variable measures the number of entrepreneurs who, at the time of the survey, have just closed or left a business of which they were either owners or managers. The values of this variable are taken from the answers to the question: *Have you, in the past 12 months, sold, shut down, discontinued or quit a business you owned and managed, any form of self-employment, or selling goods or services to anyone?*

This variable is coded (1) if the person declares having had this experience and (0) otherwise.

social capital

The entrepreneur's own skills and knowledge can be complemented by social contacts. In fact, contacts with other people who have succeeded in the field of entrepreneurship can be a means of gaining access to new and sometimes decisive knowledge, such as opportunities on the international market, knowledge of the risks associated with presence in a physically and culturally distant market, regulations in force in the host country, etc. This relational dimension is apprehended in this research through two variables. This relational dimension is addressed in this research through two variables:

Contact with entrepreneurs: to find out whether individuals have contacts with other entrepreneurs, they are asked the following question: *Do you know someone personally who started a business in the past 2 years?* Responses are consolidated into a dichotomous variable called **KNOWENT** (*knowing an entrepreneur*). This variable is coded (1) if the answer is yes, and (0) if the answer is no. It is therefore possible to use this variable as an indicator of the level of social capital of entrepreneurs, as it provides information on the level of embeddedness in a social network that is useful for the success of business start-ups, but also for the decision to internationalize.

Business angel: Another event can provide a favorable context for entrepreneurs to amplify their cognitive abilities in deciding to go international. This involves their involvement in the start-up (investment) of another company owned and created by other entrepreneurs. This type of practice is known as *business angelism*. The implicit assumption here is that involvement in the financing of other businesses can be a circumstance that generates new knowledge and useful learning for the future exporting entrepreneur. GEM identifies individuals who have engaged in this type of activity by the answers they gave to the question: *Have you, in the past three years, personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds?* Responses are recorded in the dichotomous variable **BUSANG** (**business Angel**). It is coded (1) if the answer is positive and (0) otherwise.

Product innovation

Empirically, measuring the level of innovation at company level is based on different conceptual definitions. The OECD, in its annual reports on innovation, uses the following definition: Innovation is defined as a process by which an organization introduces new or improved products or production processes that are significantly different from existing products or processes, and that have become available to users (product) or are put into use in the organization (production process) (OECD, 2018). The GEM group is particularly interested in product innovation introduced by new entrepreneurs. Indeed, in the GEM questionnaire respondents are asked to indicate whether: (1) all, (2) some or (3) none of the potential consumers, consider the product or service to be unfamiliar to them? Responses are consolidated into a categorical variable called **TEACUST** (TEA Customer). From the values of this variable, we calculated another dichotomous variable

called **TEANEWP** (*TEA new product*). This distinguishes between entrepreneurs who believe they are innovators (categories 1 and 2). In this case, it is coded (1) for entrepreneurs who do not (category 3). In this case, it will be coded (0).

New technology

The extent to which entrepreneurs use new technologies or production processes is measured by the question: *How long have the technologies or procedures required for this product or service been available?* Technology therefore concerns all the knowledge, resources and organization that can be used in the production of goods or services, as well as in activities such as external communication and information retrieval. (GEM (Global Entrepreneurship Monitor) , 2022). The answers to this question are organized in the variable **TEAyyNTC**, which is coded 0 if the technology has been around for more than a year, and 1 if it has been on the market for less than 1 year.

7.2.3 Control variables: These are not directly related to our topic, but may have an influence on the occurrence of export activity in new companies.

Gender: is measured by the **Gender** variable, which is dichotomous, taking the value of 0 for women and 1 for men.

Level of education: The first category is revealed by the GEM survey through two variables: the first called **UNEDUC** (*United Nation education*) measures the level of education of respondents. This is a categorical variable comprising seven levels, from primary to university (according to the United Nations classification). We wanted to test the effect of university education in our work, so this variable was transformed into a binomial variable called **EDUCUNIV**. It is coded (1) when answers correspond to university level and (0) when answers correspond to lower level (secondary, middle and primary). In a way, this variable measures the qualification of entrepreneurs.

Growth aspiration: this exists when entrepreneurs expect to increase the resources and results of their activities. When this aspiration is high, it can be a favorable antecedent to entrepreneurs' orientation towards the international market. GEM measures the level of aspiration by the answers to the following question: *Starting this year and not counting yourself, how many people can work for this company in the next five years?* Responses are consolidated into a categorical variable called **TEAyyJ5Y** (*TEA job for 5 years*), with the following modalities: **0**, 1 to 5 employees, 6 to 19 employees and more than 20 employees.

Risk perception: the decision to internationalize implies the possibility of events occurring which may be unfavorable to the new company's success. The perception of this risk can be mitigated by past experience and learning, but in the case of the new company that has not tested the international market. Risk perception is measured by the variable **Fairfail** (*faire to fail*), which is based on responses to the question: *Would fear of failure would prevent you from starting a business?* The **Fairfail** variable is coded (0) for negative answers and (1) for the opposite.

Motivations: GEM data enable us to identify two key reasons why people decide to set up a business. The first is linked to a business opportunity in the market. The second reason is the absence of a source of income for the people surveyed, where setting up one's own business becomes the only alternative for earning an income (necessity). The variable that identifies this type of motivation is called **TEAyy WHY**. It classifies responses according to whether motivations are based: (1) purely on opportunity (2) partially on opportunity and (3) purely on necessity.

Age is a continuous variable with values from 18 to 64.

7.3 Methodology

The research question here is to assess the influence of a series of independent or explanatory variables on a categorical dependent variable. The appropriate statistical procedure is ordinal logistic regression. This regression is carried out by two procedures using spss v18.0 software.

7.3.1 Ordinal logistic regression

The results of this procedure make it possible to identify :

- *Model fitting information*
- *The goodness of fit of the model*

- The proportion explained by the model of the variation between levels of entrepreneurial internationalization (Nagelkerke's R) due to model variables
- Parallel lines test to determine the fit of the model with the choice of categories for the dependent variable.

7.3.2 Generalized linear models

This procedure makes it possible to determine the odd ratio (EXP(B) in the spss version used) for each independent variable introduced into the model. These factors make it possible to interpret the contribution of the human capital, social capital, innovation and technology novelty variables to the intensity of entrepreneurs' international orientation.

8. SEARCH RESULTS

Table 3 shows the values of the variables introduced into the model. The percentages for **TEAEXP4C**, **TEAyyWHY**, **TEANEWPR** and **TEAyyNTC** are calculated in relation to the total number of entrepreneurs in the early entrepreneurship phase (TEA=1857 individuals). For the others variables, the percentages are calculated in relation to the total population surveyed (10922).

TABLE 5 variables introduced into the model

Dependent variable	%	Control variables	%
TEAEXP4C		Gender	
None	72,5	Male	53,6
Under 25%	18,6	Female	46,1
25 to 75% of the price	5,9	EDUCUNIV	
More than 75%	3	yes	23,4
Independent variables		no	74,2
SUSKILL		TEAyyJ5Y	
yes	53,6	yes	12,5
DISCENT		no	87,5
yes	5,9	TEAyyWHy	
no	88,7	Pure necessity	33,1
KNOWENT		Partly by opportunity	11
yes	52,7	Purely by expediency	55,9
no	43,6	FEARFAIL	5,4
BUSANG		yes	34,1
yes	10	no	57,7
no	86,7	Age	34,8
TEANEWPR			
yes	43,4		
no	56,6		
TEAyyNTC			
yes	16,6		
no	83,4		

Sources author's calculation based on GEM data 2011-2013

8.1 Model quality

The first part of the analysis concerns model quality, and aims to determine whether the model provides adequate forecasts. To answer this question, we look at the model fitting information, which gives -2 likelihood values for the baseline model and the final model containing the predictor variables (human capital, social capital and indicators of product innovation and technology novelty). From the values in Table 4, it is clear that the model is statistically significant (-2log-likelihood=523.928, Chi-Square=44.918, p=0.000). This means that the model with the presence of the independent and control variables provides a significant improvement over the basic model.

TABLE 6 Model fitting information

Model	-2log-likelihood	Chi-Square	ddl	Sig.
-------	------------------	------------	-----	------

Only the constant	568,846			
Final	523,928	44,918	13	,000

Sources author's calculation based on GEM data 2011-2013

The next step is to judge the quality of the model, and check whether there is a match between the observed values of the variables and the predicted values of the model. This condition is met when the Pearson chi-Square and deviance chi-Square statistics are insignificant. As shown in Table 5, the respective *p-values* of these two parameters are 0.979 and 1.000. This indicates that the data and model predictions are similar.

TABLE 7 Model fit quality

	Chi-Square	ddl	Sig.
Pearson	1015,363	1109	,979
Deviance	513,988	1109	1,000

Sources author's calculation based on GEM data 2011-2013

The dependent variable is categorical, with four response levels. The parallel lines test table checks whether the relationship between the independent variables and each level of this scale remains constant. To meet this condition, the Chi-Square for the general model (with the predictor variables) must be insignificant. According to the results of the ordinal logic regression (table5), the *p-value* is equal to 0.926 (greater than 0.05). This value shows once again that the choice of modalities for the **TEAEXP4C** variable is appropriate for our analysis.

TABLE 8 Parallel line test

Model	-2log-likelihood	Chi-Square	ddl	Sig.
Null hypothesis	523,928	16,420 ^b	26	,926
General	507,508 ^a			

Sources author's calculation based on GEM data 2011-2013

In the case of ordinal logistic regression, it is possible to calculate approximations to the R statistic², through the Cox and Snell, Nagelkerke and McFadden coefficients. The value of the pseudo R-two (Nagelkerke is 13.8%) indicates that the predictor variables explain a small proportion of the variation between the levels of international orientation of new entrepreneurs in the sample.

TABLE 9 Approximation of R statistics²

Cox and Snell	,106
Nagelkerke	,138
McFadden	,078

Sources author's calculation based on GEM data 2011-2013

8.2 Results of the generalized linear model

Table 8 presents the results of the generalized linear model procedure. By reading the values of the *p* parameters and the odds ratios, we can identify which variables are significantly linked to the intensity of entrepreneurs' international orientation.

TABLE 10 Parameter estimates for the generalized linear model

Parameter	B	Hypothesis testing			Exp(B)
		Wald Chi-square	ddl	Sig.	
Thresh [TEAEXP4C=1]	1,605	4,292	1	,038	4,978
old [TEAEXP4C=2]	3,269	16,935	1	,000	26,287
[TEAEXP4C=3]	5,266	33,006	1	,000	193,548
[suskil=0]	-,397	1,010	1	,315	,672
[suskil=1]	0 ^a	.	.	.	1
[discent=0]	1,011	12,323	1	,000	2,747
[discent=1]	0 ^a	.	.	.	1
[knowent=0]	1,447	10,747	1	,001	4,250
[knowent=1]	0 ^a	.	.	.	1
[busang=0]	-,054	,028	1	,867	,947
[busang=1]	0 ^a	.	.	.	1
[TEANEWPR=0]	,511	4,144	1	,042	1,667
[TEANEWPR=1]	0 ^a	.	.	.	1
[TEAyyNTC=0]	,338	1,143	1	,285	1,402
[TEAyyNTC=1]	0 ^a	.	.	.	1
[gender=0]	-,577	4,716	1	,030	,562
[gender=1]	0 ^a	.	.	.	1
[EDUCUNIV =,00]	,358	1,593	1	,207	1,430
[EDUCUNIV =1,00]	0^a	.	.	.	1
[TEAyyJ5Y =,00]	,902	7,669	1	,006	2,466
[TEAyyJ5Y =1.00]	0^a	.	.	.	1
[fearfail=0]	-,285	1,075	1	,300	,752
[fearfail=1]	0 ^a	.	.	.	1
[TEAyyWHY=1]	-,234	,680	1	,410	,792
[TEAyyWHY=2]	-,094	,048	1	,826	,910
[TEAyyWHY=3]	0 ^a	.	.	.	1
Age	-,012	,722	1	,396	,988

Sources author's calculation based on GEM data 2011-2013

As for the variables linked to the human capital of entrepreneurs, whether or not they are university graduates does not seem to have an impact on the international orientation of new entrepreneurs. Belief in one's own skills is also not a factor in international activity. It is also interesting to note that fear of failure or acceptance, which is an approximation of risk-taking attitude, is not a determining factor in international entrepreneurship ($p > 0.05$).

On the other hand, entrepreneurial experience is significantly linked to a strong presence in the international market in the early years of a company's existence. Those who have participated in the creation of a company in the past as a business angel are 2.7 times more likely to have a growing number of customers abroad than entrepreneurs who have not had this experience.

Believing in strong growth for their company is an important asset for those heading for the international market. In fact, the growth variable is positively linked to the international orientation of young companies. Those with this perception are 2.4 times more likely to be among the most active in the international market, when compared with entrepreneurs who have a negative or low perception of their company's future growth.

In terms of social capital, the Knowent variable is positively and significantly related to our dependent variable. Indeed, those who declare having personal relations with other entrepreneurs are almost four times ($\text{Exp(B)} = 4.2$) more likely to display a strong orientation towards exporting their product or service than entrepreneurs who emerge but have had no contacts with entrepreneurs. These contacts appear to be decisive not only for the internationalized entrepreneur, but also for engagement in entrepreneurial activity in general (LASSAS, 2016, p. 51).

In terms of a company's capacity for innovation, the results in Table 8 show that offering a product or service that is considered new by consumers is an important asset for penetrating the international market.

Indeed, those who consider their product to be innovative are **1.6** times more likely to have a large proportion of their clientele abroad than those whose product is familiar to customers.

On the other hand, the novelty of the technology used, whether in communication or in production processes, does not contribute directly to the new company's level of internationalization. The TEAyy NTC variable has a positive but insignificant coefficient.

9.CONCLUSION

This paper examined the effect of entrepreneur's antecedents and firm capabilities on the export intensity in early internationalized new venture. The results show, first of all, that there is indeed a difference between highly internationalized start-ups and domestic firms or firms with a low concentration on the foreign market in Algeria. This result is not specific to the Algerian context, since the publication of MOEN, Ø. and SERVAIS.P's work on the determinants of SME export behavior in France, Denmark and Norway, empirical research has confirmed this distinction. (MOEN & SERVAIS, 2002). For a number of reasons, it will be useful for future research to look more closely at this issue of internationally-oriented entrepreneurship. Firstly, because this type of company, thanks to its entrepreneurial behavior (innovation, risk-taking), has a strong potential for rapid growth, and is for many specialists the type of company that contributes most to economic growth and job creation. (ASIAN DEVELOPMENT BANK, 2020).

This research has shown that the individual characteristics of entrepreneur play a key role in the decision to enter the international market. Those with a strong export orientation are particularly entrepreneurs who have been involved in entrepreneurial activities in the past, who are connected to a professional network and who develop a positive vision in terms of their company's growth.

The ability to innovate is also an important factor in the emergence of highly internationalized companies. This finding is confirmed by several studies that have used the same empirical material as this research. LEKOVIC.B et al. have shown that product or service innovation is the most decisive factor for international entrepreneurship in a sample of 12027 individuals surveyed in seven transition countries in 2013 (LEKOVIĆ, PETROVIĆ, & BERBER, 2018, p. 447). In more in-depth research HESSELS.J and TERJESSEN.S have shown for a sample of new entrepreneurs observed in 36 countries, that innovation is important only for entrepreneurs whose sales are exclusively aimed at external markets (JOLANDA & TERJESSEN, 2008). This type of entrepreneur, both innovative and internationalized, forms a category of economic agent that some specialists refer to as new economy entrepreneurs, as opposed to traditional entrepreneurs who do not see the creation of new value as their own mission.

The other result worth highlighting is the absence of any relationship between the novelty of technology and the international orientation of entrepreneurs. This is particularly true in countries with low levels of development, and seems to be linked to the fact that exporting entrepreneurs are generally much more focused on trade and service activities, which are not always sophisticated in terms of technological content. (AMOROS, ETCHEBARNE, ZAPATA, & FELZENSZTEIN, 2016, p. 2059).

Recent research has shown that entrepreneurs internationalize not only to sell goods or services abroad, but also to benefit from resources not available in their home country (DE COCK, ANDRIES, & CLARYSSE, 2021). The fact that their customers benefit from a conducive ecosystem to international trade, such as the existence of credit facilities, trade fairs to multiply business contacts, and means of communication in host countries, can be generic resources producing positive externalities for their foreign suppliers.

However, it was unexpected to find no relationship between a high level of qualification and export intensity in new ventures. In other words, it is not the stratum of university graduates that supplies this category of entrepreneurs. This observation needs to be examined in greater depth, as the hypothesis underlying the theory of human capital in the world of entrepreneurship postulates the opposite (ZAHRA, SANTERI KORRI, & YU, 2005). The more individuals invest in their training, the more they will have the talents, knowledge and resource-capture skills needed to detect and exploit opportunities outside their country of origin (CAPELLERAS, MARTIN-SANCHEZ, RIALP, & SHLEHA). Some experts even recommend the creation of specialized university courses in export and international management for SMEs. Further research is needed to clarify the contribution of skill level to the propensity of (new) entrepreneurs to enter the international market.

Finally, this research also shows that it is rational for public policies to integrate export promotion into policies of development of entrepreneurship and SMEs in general. As MIRA- BONNARDEL points out: *"The importance of support structures in the internationalization of SMEs has largely materialized since, over the 20 years from 1985 to 2005, the number of support agencies has tripled worldwide. This development is based on a*

number of studies, including one by Coughlin and Cartwright in the United States in 1987, which showed that \$1 invested in support programs triggered \$432 in additional exports (MIRA-BONNARDEL, 2015, p. 264).

10. RESEARCH LIMITS

It is worth recalling that our research has its limitations. Firstly, the hypothesis as formulated and tested envisaged direct relationships between human capital, social capital, innovation, technological novelty and the intensity of entrepreneurs' international orientation.

Careful research has shown that a company's capacity for innovation does not come from a vacuum, but is strongly influenced by the talents and knowledge accumulated by the entrepreneur over the course of his or her career, or through insertion into professional networks. Those who have developed their human and social capital are the most likely to bring new, effective products to the international market. (ACS & VARGA, 2005). In other words, innovativeness is assumed to be a mediating variable between human capital, social capital and the early internationalization of the new company (HESSELS & VAN-STEL, 2011). The second limitation, which is also a trigger for further research, relates to the model's level of explanation. The pseudo R value² shows this quite well. In addition to factors linked to the entrepreneur and the innovative capacity of companies, it would be plausible to consider the existence of other factors that objectively determine the orientation of new companies towards the international market. A growing body of current research is empirically examining the role of macro-economic factors, such as the quality of export-related institutions, exchange rates and levels of development.

References

- A, D., & SOUCHON, A. L. (1999). Measuring Export Information Use: Scale Development and Validation. *Journal of Business Research*, 1-14.
- ACS, Z., & VARGA, A. (2005). Entrepreneurship, Agglomeration and Technological Change. *Small Business Economics*, 24 (3), 323-334.
- AMOROS, J. E., ETCHEBARNE, M., ZAPATA, I. T., & FELZENSZTEIN, C. (2016). International entrepreneurial firms in Chile: An exploratory profile. *Journal of Business Research*, 69 (6), 2052-2060.
- ASIAN DEVELOPMENT BANK. (2020). *Asian Development Outlook 2020: What Drives Innovation in Asia? 2020*. Manila.
- BACQ, S., & COEURDEROY, R. (2010). La théorie de l'entreprise à internationalisation rapide et précoce " à l'épreuve des faits, Évaluation de l'apport des travaux empiriques à ce champ de recherche. *Revue internationale P.M.E*, 23 (1), 91-124.
- BEDDI, H., BUENO MERINO, P., & COEURDEROY, R. (2012). Reticular strategy: a distinctive skill of the international entrepreneur. *Revue de l'Entrepreneuriat*, 11, 7-14.
- BELLONE, F., & GUILLOU, S. (2011). Innovation et primes à l'exportation : une analyse empirique sur données d'entreprises françaises, La Documentation française | " Économie & prévision ", 2011/1 n° 197-198 | pages 45 à 61.
- BESSOUH, N., FERHAT, Y., & ATROUCHE, K. (2022). L'innovation et son impact dans l'activation du processus d'exportation-cas des PME algériennes. *Les Cahiers du MECAS*, 18 (2), 147-156.
- BOUKLIA- HASSANE, R. (2013). L'économie Algérienne face à la diversification: quelles perspectives? *Les cahiers du CREAD* (105-106), 37-62.
- BOUVERET-RIVAT, C., MERCIER-SUISSA, C., & SAOUDI, L. (2020). Risks and internationalization of SMEs: proposal for an analytical framework. *Revue internationale P.M.E*, 33 (1), 147-175.
- BOUYACOUB, A. (1998). Entreprise et exportation: quelle dynamique? *Les cahiers du CREAD* (43), 7-13.
- BUZAVAITE, M., & KORSKIENE, R. (2019). Human Capital and the Internationalization of SMEs: A Systemic Literature Review. *Entrepreneurial Business and Economics Review*, 7 (3), 125-142.
- CAPELLERAS, J. L., MARTIN-SANCHEZ, V., RIALP, J., & SHLEHA, W. In *Studies on Entrepreneurship, Structural Change and Industrial Dynamics*, (pp. 63-87). Springer International Publishing AG,.
- CATANZARO, A., MESSEGHEM, K., & SAMMUT, S. (2012). Accompagner l'entreprise à internationalisation précoce et rapide: la place centrale de la dimension réticulaire. *Revue de l'Entrepreneuriat*, 11, 33-53.

- CLIPA, R.-I., & CLIPA, F. (2011). The process of internationalization of the firm - a Multicriteria decisional approach,. *International Journal of Communication Research* , 1 (1), 50-55.
- COSTANTINI, J., & MELITZ, M. (2008). The Dynamics of Firm-Level Adjustment to Trade Liberalization. . In *The Organization of Firms in a Global Economy* (pp. 107-141).
- DAVIDSSON, P., & HONIG, B. (2003). The role of social and human capital among nascententrepreneurs . *Journal of Business Venturing* , 18 (3), 301-331.
- DE CLERCQ, D., & ARENIUS, P. (2006). The Role of Knowledge in Business Start-up Activity . *international small business journal* , 24 (4), 339-356.
- DE COCK, R., ANDRIES, P., & CLARYSSE, B. (2021). How founder characteristics imprint ventures internationalization processes: The role of international experience and cognitive beliefs. *Journal of World Business* , 56 (3).
- DETHINE, B., ENJOLRAS, M., & MONTICOLO, D. (2020). Digitalization and SMEs' Export Management: Impacts on Resources and Capabilities. *Technology innovation management review* , 10 (4), 18-34.
- DINOPOULOS, E., & AND UNEL, B. (2017). Managerial Capital, Occupational Choice and Inequality in a Global Economy. *Canadian Journal of Economics* , 50 (2), 365-397.
- Direction Générale des Douanes.(2019). *Algerian foreign trade statistics 2019*. Ministry of Finance,alger.
- DUANE IRELAND, I., HITT, M., CAMP, M., & L. SEXTON, D. (2001). Integrating Entrepreneurship and Strategic Management Actions to Create Firm Wealth. *The Academy of Management Executive* , 15 (1), 49-63.
- EESLEY, C., & EDWARD, R. (2012). Are You Experienced or Are You Talented?: When Does Innate Talent vs. Experience Explain Entrepreneurial Performance?, , 2012, Volume6, Issue3, pp , p210. *Strategic Entrepreneurship Journal* , 6 (3), 207-219.
- EL IDRI SSI, D., & HAUCH, V. (2012). International entrepreneurship and social networks for innovative SMEs: what perceptions for what strategies? *Revue de l'Entrepreneuriat* , 11 (2), 15-32.
- ENJOLRAS, A., SCHMITT, C., & CAMARGO, M. (2016). The complexity paradigm to address the link between innovation and export in SMEs . In *On the complexity of action in organizations* (p. 227). Growth Publisher.
- ESCANDON-BARBOSA, D., RIALP-CRIADO, J., FUERST, S., RODRIGUEZ-OREJUELA, A., & CASTRO-ARISTIZABAL, G. (2019). Born global: the influence of international orientation on export performance. *Heliyon* , 5 (11), 1-12.
- FERNANDEZ-MESA, A., & ALEGRE, J. (2015). Entrepreneurial orientation and export intensity: Examining the interplay of organizational learning and innovation . *International Business Review* , 24 (1), 148-156.
- GEM (Global Entrepreneurship Monitor) . (2022). *Global Entrepreneurship Monitor 2021/2022Global Report: Opportunity Amid Disruption* . London.
- GONZÁLEZ-PERNÍA, J., & PEÑA-LEGAZKUE, I. (2015). Export-oriented entrepreneurship and regional economic growth . *Small Business Economics* , 45 (3), 505-522.
- GUIMARÃES, S. (2012). International Entrepreneurship in an Emerging Economy . In *Entrepreneurship - Gender, Geographies and Social Context* (ed. BURGER-HELMCHEN T, p. 308).
- HADDOUD, M., NOWINSKI, W., JONES, P., & NEWBER, Y. R. (2019). Internal and external determinants of export performance: Insights from Algeria. *Thunderbird International Business Review* , 6 (1), 43-60.
- HESSELS, J., & VAN-STEL, A. (2011). Entrepreneurship, export orientation, and economic growth . *Small Bus Econ* (37), 255-268.
- JOHANSON, J., & VAHLNE, J. (1977). The internationalization process of the firm-a model of knowledge development and increasing foreign market commitments . *Journal of International Business Studies* , 8, 23-32.
- JOLANDA, H., & TERJESEN, S. (2008). *Entrepreneurial Career Capital, Innovation and New Venture Export Orientation*. Scales research reports.
- JOSÉ- REGIS, P. (2018). The extensive and intensive margins of exports of firms in developing and emerging countries. *International Review of Economics & Finance* , 56, 39-49.

- JULIEN, P., CARRIERE, J., R. L., & LACHANCE, R. (1994). La gestion du changement technologique dans la PME manufacturière au Québec : une analyse de cas multiples . *Revue internationale P.M.E.* , 7 (3-4), 87-120.
- KADI, M. (2021). The self-selection effect as explanatory elements of the export commitment of Algerian SMEs. *Marketing and Business Research Review* (1), 77-89.
- KHALIL, M. T. (2000). *Management of technology The key to competitiveness And wealth creation*. McGraw-Hill,.
- KLEPPER, S., & SLEEPER, S. (2005). Entry by spinoff . *Management Science* , 51 (8), 1291-1306.
- KUMAR, N., & SIDDARTHAN, N. (1993). technology, firm size and export behavior in developing countries, the case of indian enterprises. *UNU/INTECH working paper* (9), 1-27.
- LASSAS, A. (2016). L'influence Du Réseau Social Dans Les Phases D'émergence Et De Survie Des Nouvelles Entreprises: Analyse à Partir Des Données Gem Algérie De 2011. *Revue algérienne d'économie et gestion* , 9 (2), 37-55.
- LEDERMAN, D., RODRÍGUEZ-CLARE, A., & YI XU, D. (2011). Entrepreneurship and the Extensive Margin in Export Growth: A Microeconomic Accounting of Costa Rica's Export Growth during 1997- 2007. *The World Bank Economic Review* , 25 (3), 543-561.
- LEIPONEN, A. (2012). The benefits of R&D and breadth in innovation strategies: a comparison of Finnish service and manufacturing firms, *Industrial and Corporate Change* , 21 (5), 1255-1281.
- LEKOVIĆ, B., PETROVIĆ, M., & BERBER, N. (2018). Determinants of export oriented Entrepreneurs from southeast Europe region . *Economic Themes* , 56 (4), 439-452.
- LEVRATTO, N., & al. (2021). Diversity of forms of corporate internationalization and their determinants: an empirical analysis of three Middle Eastern countries. *Management internationa* , 25 (5), 188-205.
- MAHOUI, K., & FERFERA, M. (2017). Integrating global value chains: what prospects for Algeria? . *Les Cahiers du Cread* , 33 (119/120), 5-39.
- MALLINGUH, E., WASIKE, C., & ZOLTAN, Z. . (2020). Technology Acquisition and SMEs Performance, the Role of Innovation, Export and the Perception of Owner-Managers, *Journal of Risk and Financial Management*. 2020, V13,1-19. 13, 1-19.
- MARTIN-ROJAS, R., GARCIA-MORALES V, J. A., & GONZALEZ-ALVAREZ, N. (2019). Technological antecedents of entrepreneurship and its consequences for organizational performance. *Technological Forecasting and Social Change* , 147, 22-35.
- MATHEWS, J., & ZANDER, I. (2007). The international entrepreneurial dynamics of accelerated internationalization . *ournal of International Business Studies* , 38 (3), 387-403.
- MCDUGALL, P., & OVIATT, M. (2005). Defining International Entrepreneurship and Modeling the Speed of Internationalization . *Entrepreneurship theory and practice* , 29 (5), 537 - 554.
- MELITZ, M. (2003). The Impact of Trade on Intra-industry Reallocations and Aggregate Industry Productivity. *Econometrica* , 71 (6), 1695-1725.
- MIRA-BONNARDEL, S. (2015). SME growth through internationalization: the reticular leverage effect of French chambers of commerce abroad. *Revue internationale P.M.E* , 28 (3-4), 257-286.
- MOEN, Ø., & SERVAIS, P. (2002). Born Global or Gradual Global? Examining the Export Behavior of Small and Medium-Sized Enterprises . *Journal of International Marketing* , 10 (3), 49-72.
- MOHD, Y. A., KHAN, M., ANSARI, S., & SALEM, I. (2022). What drives internationalization of new ventures? Evidence from India. *Journal of Innovation and Entrepreneurship* , 11-25.
- NAHAPIET, J., & GHOSHAL, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage . *The Academy of Management Review* , 23 (2), 242-266.
- OECD. (2013). Interconnected economies: how to benefit from global value chains. [https://www.oecd.org/fr/rcm/C-MIN\(2013\)15-ENG.pdf](https://www.oecd.org/fr/rcm/C-MIN(2013)15-ENG.pdf) , 3-65.
- OECD. (2018). *Oslo manual 2018: Guidelines for collecting, reporting and using data on innovation*. Paris: OECD Publishing.
- PIERRE-ANDRE, J., LACHANCE, L., & MARTIN, M. (2004). Strong signals and weak signals: an investigation of reticular links in dynamic SMEs . *Géographie, économie, société* , 6, 179-201.
- RAHMANI, Y. (2017). the determinants of Algerian SME exporters: the case of SMEs in the wilaya of Oran . *Economic Researcher Review* (4), 168-183.
- REUBER, A., & FISCHER, E. (1999). Understanding The Consequences of Founders' Experience. *journal of small business management* , 37, 30-45.

- SHKALENKO, A., & FADEEVA, E. (2020). Analysis of the Impact of Digitalization on The Development of Foreign Economic Activity During COVID-19 Pandemic. *Advances in Economics, Business and Management Research* , 138, 1190-1195.
- ŠIMIĆ, M., & B. A. (2019). E-business tools adoption and export performance: Empirical evidence from Croatian companies. *Journal of Entrepreneurship, Management and Innovation (JEMI)* , 15 (4), 11-33.
- ST-PIERRE, J. M. (2006). Le rôle des TIC sur le degré d'exportation des PME : une étude exploratoire. *Proceedings of the 8th CIFEPME (2006)*.
- the economist (2004). *The 2004 e-readiness rankings* . The Economist Intelligence Unit Limited and IBM Corporation.
- VEILLEUX, S., & MARINA FERRO, L. (2010). International entrepreneurship - Reflections on the structuring of an emerging field of study. *Cahier de recherche* (3), 1-26.
- ZAHRA, S. A., SANTERI KORRI, J., & YU, J. (2005). Cognition and international entrepreneurship: Implications for research on international opportunity recognition and exploitation . *International Business Review* , 14 (2), 129-146.
- ZHANGA, T., ZHAN-ZHONG, S., YI-RONG, S., & NENG-JUN, . (2022). Enterprise digital transformation and production efficiency: mechanism analysis and empirical research. *ECONOMIC RESEARCH- EKONOMSKA ISTRAŽIVANJA* , 35 (1), 2781-2792