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Knowledge-based services for sustainable development

Participation of SMEs in international trade: The case
of companies producing software and computer
services in Mar del Plata (Argentina)

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¿Why firms internationalize?

- Participating in foreign markets allow firms to improve their productivity.
- Learning by exporting: scale and scope economies, interaction (clients, competitors, suppliers) and higher competencies. (Álvarez y López ,2005; Blalock y Gertler, 2004; Silva *et al.*, 2010)
- Objective: Contribute to the analysis of firms' internationalization process in **developing economies**.
 - We analyze the practices made by the **software and computer services companies in Mar del Plata (Argentina)** during the process of **internationalization**.

Antecedents

- Previous studies in Argentina:
 - Internationalization (different industries): entering foreign markets implies changing domestic business practice, it is more relevant the commercial tacit knowledge than the productive knowledge, and it is crucial the role of an pioneer entrepreneur

(Artopoulos *et al.*, 2013 y 2014 ; González y Hallak, 2016)

- Business strategies (software and computer services- SCS): studies focus in high value or rapid growth firms, with emphasis on the way they finance their activities, how they generate technical capacities or from a historical perspective

(Artopoulos, 2013; Erbes *et al.*, 2006; Gonzalo, 2012, 2015; Gonzalo *et al.*, 2011, 2013; López, 2003;;López *et al.* 2009; Pérez Puletti, 2014)

Stylized facts

- In Argentina:
 - Increasing internationalization (25% in 2018). Even though it still is mainly orientated to the domestic market
 - Sustained growth, specially from 2002
 - More than 50.000 people directly employed
 - Increasing demand for qualified workers
 - Strong concentration in Buenos Aires city, but there are other important cities like Rosario, Córdoba, Mendoza, Tandil, Mar del Plata, Bariloche and Bahía Blanca
 - Legal framework (Law s25.922/04 and 26.692/11; Plan 11 Mil)

Stylized facts

- In Mar del Plata:
 - 470 firms (85% micro) (2014)
 - Almost 3.300 workers employed (2014)
 - Dedicated mainly to development of products and software consultancy in different areas: business management, business intelligence, data mining, videogames, mobile apps, informatics security, digital marketing and e-commerce
 - Half of the firms are internationalized (more than 33% of sales come from foreign markets), with different levels of continuity and scope
 - Relevant role of the local companies association (ATICMA)

Internationalization decisions

- Internationalization decisions constitute an essential part of firm strategy (*“group of plans, courses of action and decision rules that tend to build a competitive advantage”*).
- Creating a competitive advantage requires to build and recreate resources, capacities routines and knowledge.
- Some of the internal and external resources necessary to build competitive advantage (property advantages) are:
 - Human resources
 - Innovative capacity
 - Certification capacity
 - Entrepreneur characteristics
 - Preferential access to inputs and funding
 - Marketing and management capacity
 - Capacity of creating social capital
 - Agglomeration economies

(Dunning, 1988, 2000, 2001, 2003; Penrose, 59)

Internationalization decisions

- Internationalization through subsidiaries depends on elements that can not be transferred from one country to another (localization advantage):
 - Distance between markets: transport costs, cultural and commercial barriers
 - Destiny characteristics: legal framework, infrastructure, human resources
- Motivation to establish a subsidiary:
 - Market seeking: the intention to exploit a foreign domestic market
 - Resource seeking: the disposal (or cost) of resources abroad
 - Efficiency seeking: the intention to obtain scale or scope economies
 - Strategy asset seeking: the development of strategy resources

(Dunning, 1988, 2000, 2001, 2003; Johanson y Vahlne, 1977)

Methodological Strategy

- **Multiple case study:** We compare internationalization practices, commercial and productive strategies from different firms.
- Qualitative and quantitative information:
 - In deep- interviews with firms' owners and important local actors
 - Innovation and capacity in SSC Survey (2017- UNGS- UNMdP)
 - Local survey (2017-ATICMA - UNMdP)
- Cases selection → Different internationalization strategies in order to find common characteristics and general rules of behaviour.
- 7 cases selected (on the basis of secondary information): Firms located in Mar del Plata with at least 5 employees that have permanent presence in foreign markets.

Selected cases

Market Segment	<ul style="list-style-type: none"> -2 niche specific firms that offer specialized products and services -5 industry transversal firms that offer versatile products for many industries -1 firm software factory -2 firms combining software and hardware 	Origin	<ul style="list-style-type: none"> -3 firms that emerge from thesis projects -2 firms that emerge from the detection of a niche market -2 firms that emerge from an specific proposal from an argentine citizen living in a foreign country
Size	<ul style="list-style-type: none"> -2 big firms with more than 100 employees -2 medium sized firms that have between 10 and 50 employees -3 small firms with less than 10 employees 	Innovation	<ul style="list-style-type: none"> -Permanent product and commercial innovations -Little processes and management innovations
Commercial Structure/Strategy	<ul style="list-style-type: none"> -5 firms have office in Buenos Aires (1 has the whole commercial department there) -1 hast office in other Arg. cities -4 have an external markets area (all participate in trade fairs and trade missions) 	Relationships	<ul style="list-style-type: none"> -All firms participate in the local association -Deep use of public programmes to finance innovation -Moderate relationships with public universities, but closed with private ones -2 firms inside Software Law

Results: Internationalization strategies

- **Partners development** (Hispanic markets): Local agent with better results if it works exclusively for the firm. Increases clients confidence (decreases transaction costs). Associated to the objective of positioning in external markets.
- **Subsidiaries establishing**: Mainly commercial, some of them established together with other local firms.
 - Motivation: market seeking, strategy asset seeking
 - Localization advantages: size of market, decreasing of cultural distance (specially relevant for software factory in developed markets)
- **Export**: associated to far away markets or little relevant destinies, and to the objective of having presence abroad.
- Internationalization strategy depends on market characteristics and product segment, and it is subordinated to firm general strategy.

Results: Property advantages

Commercial capacities

- Consultative sale requires trained sellers who know the technical characteristics and opportunities of products (huge investment).
- Firms with best performance: the ones that have detected the markets with the growth potential within their business line (born global).
- Solution to client requirement with a single product or an integral proposal (even in through business agreements with other local firms).
- Very relevant the “trust ties” with clients, require knowing the cultural characteristics of the destiny market.
- Brand registration and potitioning.

Results: Property advantages

Innovation capacity

- Flexibility to reach “difficult” markets through commercial innovations (hours of use, alliances with hardware suppliers, content development) .
- Capacity of generating customized technological solutions.
- Capacity of generating an integral solution, sometimes through alliances with local firms that offer complementary software.
- New products adaptable to small and less developed markets (facility of use in small scales, low initial investment requirements, in Spanish).
- Sources of innovation: internal and external, but little relevance of foreign clients’ demands.

Results: Property advantages

Human resources

- The most important asset for the companies.
- Problems of scarcity of computer technician and English speakers.
- Competition for resources (only source of rivalry between firms), specially big firms dedicated to software factory.
- Permanent training courses on productive and commercial topics.

Agglomeration economies

- Active role in the local association: access to information and business opportunities, experiences exchange, capacitating.

Entrepreneur characteristics

- Proactivity and capacity to overcome adverse situations and find an opportunity in them.
- Strategic vision combined with global positioning ambition.

Policy implications

- Promotion and generation of diverse new firms (e.g. through barriers to importation, universities role in final thesis, State working as a client).
- Attraction of new talents to software and training human resources on specific technical topics and on firms' creation and management.
- Funding for innovation (debate: ¿who appropriates innovation results?).
- Build a national software vision as a supplier of international industry
- Improve access to events according to market segment and firms' profile.
- Promotion of associative programmes.

Muchas gracias

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Software and computer services industry

- Composed mainly of SMEs (the use of external economies is very important).
- Labour intensive activity that employs human resources highly qualified.
- Entry barriers are relatively low.
- Internationalization includes exporting and establishing subsidiaries.
- Innovation can spread through the whole economy.
- Three types of products:
 - Software as a Product: own products very standardized
 - Software Service: consultancy, applications development
 - Software Factory: custom development within global value chains producing software and hardware

Final Remarks: Good internationalization practices

- General:
 - Offer an integral value proposal for clients, exceeding its expectations
 - Generate confidence based on responsibility and knowledge of rule games
 - Use public funding for innovation projects
 - Participate in companies associations
 - Understand the objective market, its legislation, commercial customs
- According to market segment:
 - SaaS: Generate strategic alliances for niches products. Generic SaaS: Position the brand and develop presence in foreign markets according to the relevance of the destiny
 - *Software factory*: Install subsidiaries to gain clients' confidence, choose technological allies