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Innovation Capabilities Vs. Export Capabilities In Entrepreneurs

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Abstract

Excellence in international markets is built on the basis of innovation and product quality. While a favorable business environment and government support can foster the success of Ecuadorian entrepreneurs in exports, it is crucial to evaluate how many of the nascent ventures in the Latacunga canton actually exhibit innovative capabilities and meet the requirements for export. Currently, only three organizations are known to export to other countries. In this context, the objective of the research was to discern the relationship between the innovation capabilities and export skills of these entrepreneurs; The dimensions that encompass innovation capabilities and the criteria for evaluating export skills were investigated by consulting various bibliographic sources. Then, an initial analysis was carried out by applying a survey to 108 entrepreneurs, selected from the database of the Entrepreneurship Center of the Technical University of Cotopaxi and those who are part of the university's linkage programs. . The survey used was based on the methodology developed by Margarita Vicente and José Luis Abrantes in 2014, and was validated by two specialists in the field before its implementation.; The reliability of the instrument was developed at 0.89%, and the results revealed a Spearman's Rho rating coefficient of 0.503. This finding confirms the existence of a moderately positive relationship between the two variables analyzed. In addition, deficiencies were identified in compliance with export requirements.

Keywords: *Capacities, Correlation, Entrepreneurship, Export, Innovation, international markets.*

Introduction

Entrepreneurship in Ecuador has seen significant growth in recent decades, with an increase in the creation of new businesses and an increased focus on innovation and business development. The Ecua[1]dorian government has implemented policies and programs to foster

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entrepreneurship, providing support through incubators, entrepreneurship centers, and financing for startups.

Innovation capabilities are critical to the success of entrepreneurs, allowing them to stand out in competitive environments. The ability to identify opportunities, develop creative solutions, adapt to rapid change, and embrace emerging technologies strengthens entrepreneurs' position in the marketplace. In addition, the ability to establish strategic collaborations, foster a culture of continuous learning, and keep an eye on market trends contributes to the long-term sustainability and growth of their companies

The following is a detailed description of the innovation capacities and export capacities that are variables of this research work.

According to the National Customs Service of Ecuador (SNAE); The export capabilities that a company must have are as follows:

Dimensions of export capacities:

- Productive Capacity
- Staffing and management capacity
- Commercial Capacity
- Economic and Financial Capacity

Dimensions of innovation capabilities:

- Product Development Capability
- A culture of innovation capacity.
- Strategic Capacity
- Technological Capacity

In the methodology, the dimensions of study corresponding to each variable are examined, focusing on the type of research and the instrument used to collect information on firms. This includes the characterization of the businesses and the evaluation of the requirements necessary to export products to international markets, classifying them according to a level of compliance with the following capabilities. Finally, the results and discussion in relation to the hypothesis proposed are presented:

H1: Innovation capabilities are positively related to the export capabilities of Latacunga entrepreneurs

H0: Innovation capacities are not positively related to the export capacities of Latacunga entrepreneurs.

To this end, the objective of this research is to analyze the correlation of innovation capacities with the export capacities of Latacunga entrepreneurs, and for the fulfillment of this objective, the concepts of several authors regarding innovation and export are investigated, which point out that Schwarz, M. (2018) mentions that business innovation capabilities refer to the set of cognitive, aptitude and experience competencies of the staff and the company itself that allow the creation and development of new products, services and/or experiences with a successful commercial insertion in the market, Rodríguez J. (2021) These capabilities are determinant not only in the results of innovation, but also in the competitiveness of companies. The capacity for innovation is developed according to each company and the implementations integrated by each one, and can cover areas such as organizational, productive, commercial and information technology processes. Business innovation is key to exports, as it allows companies to offer products or services that stand out thanks to new creative proposals, which not only better suits the needs of consumers, but also favors companies with insertion in new markets.

Innovation can encompass areas such as organizational, productive, commercial and information technology processes. Innovation plays a key role in companies' export processes. The implementation of innovation in business processes that go hand in hand with exports makes it possible to offer products or services that stand out thanks to new creative proposals, which not only better meets the needs of consumers, but also favors companies with the insertion in new markets. The influence of innovation on export performance is evident, as the efficient implementation of innovation processes is directly associated with positive export performance

Methodology

According to Hernandez (2014), research methodology refers to the set of procedures and techniques used to carry out scientific research in a rigorous and systematic manner.

A methodological framework "includes the type or types of research, the techniques and instruments that will be used to conduct the inquiry. It is the "how" the study will be carried out to respond to the problem posed" (Arias, 2012, p.110).

This methodology includes the definition of the research problem, the formulation of hypotheses and objectives, the selection of the sample, the collection of data, the analysis of the results, and the interpretation of the findings. Ethical aspects and the validity and reliability of the data obtained are also considered. Research methodology is essential to ensure the quality and validity of the results obtained.

The research was developed with a quantitative approach, according to Hernandez (2014) The quantitative research approach focuses on the measurement and analysis of numerical data to obtain objective and generalizable conclusions about a phenomenon or research problem. This approach uses statistical methods and techniques to collect and analyze data, and is based on the assumption that phenomena can be measured and quantified accurately and objectively.

Thus, in the present research, an instrument with the questionnaire technique was applied with closed and selection questions to determine export capacities and objectively quantify the number of businesses belonging to the EPS that are able to export their products to international markets and classify them according to a traffic light.

Type of research: the research was exploratory, descriptive and correlational, which collects data on the export capacities of the EPS businesses, in situ, in the Latacunga canton, according to Bernal (2010) the descriptive exploratory research is useful to generate hypotheses and establish a basis for future more detailed research. For this reason, this

research aims to provide useful information for future research and interventions in the businesses of the EPS associations.

Population and sample: A census is applied to the entrepreneurs registered in the entrepreneurship center and the entrepreneurs benefiting from the linkage processes, with a database of 108 entrepreneurs.

Techniques and instruments: The instrument for assessing innovation capacity and export capacities is based on a survey that collects information on the different dimensions of each variable.

Dimensions of innovation

1. Product Development Capability
2. A culture of innovation capacity.
3. Strategic Capacity
4. Technological Capacity

Almache E. (2020) mentions that: "Innovation does not only imply new knowledge, in an organization innovation can be perceived by a subject, but he or she can have a culture that generates inconvenience to help develop it"

For Peter F. Drucker (1989) "systematic innovation consists of the organized, goal-oriented search for change, and the systematic analysis of the opportunities that they (changes) can offer for social or economic innovation"

The Competitiveness and Innovation Division of the Inter-American Development Bank (IDB) reports that "innovation and competitiveness in Ecuador are at low levels compared to other economies in the region and the OECD. The results of innovative activity in Ecuador are scarce" (Guaipatin & Schwartz, 2014, p.106).

According to Adolfo A. (2008), innovation is the process that allows the creation of competitive advantages in organizations. It is part of the business strategy as a source of competitiveness and differentiation.

Export Dimensions

1. Productive Capacity
2. Staffing and management capacity
3. Commercial Capacity
4. Economic and Financial Capacity

According to the legal basis of the Production Code (2010), it determines that export consists of marketing goods and services that are registered outside the country's circumscription, destined for another customs area.

Agreed with the Ministry of Production, Foreign Trade and Peca (2023) indicates that the requirements that an enterprise must meet to export to international markets:

- Electronic signature
- Web page
- Product Catalog
- Ecuapass

Once the information is collected, an analysis is performed using Spearman's correlation coefficient.

Spearman's correlation coefficient
This is the coefficient used to calculate the correlation of the Likert scale. This coefficient can range from -1.0 to 1.0. The first value represents a completely negative correlation, a value of 1.0 represents a completely positive correlation, and 0 represents no correlation. between variables (Hernández et al., 2014, p. 323).

Table 1 Spearman's correlation coefficient

Rho Value Range	Meaning
–1,00	Large and perfect negative correlation
-0.90 to -0.99	Very high negative correlation
-0.70 to -0.89	High Negative Correlation
-0.40 to -0.69	Moderate Negative Correlation
-0.20 to -0.39	Low Negative Correlation
-0.10 to -0.19	Very low negative correlation
0,00	No Correlation / Null Correlation
+0.01 to +0.19	Very low positive correlation
+0.20 to +0.39	Low Positive Correlation
+0.40 to +0.69	Moderate Positive Correlation
+0.70 to +0.89	High Positive Correlation
+0.90 to +0.99	Very high positive correlation
+1,00	Large and perfect positive correlation

It statistically relates Likert scales, this coefficient can vary between –1.0 to 1.0

Instrument Validation:
The instrument used in this study was a survey that was applied to entrepreneurs. This survey was conducted personally at their workplace and in the activities they participated in as part of linking with society from the Technical University of Cotopaxi, in a period of two months of May and June 2023, Therefore, the survey confirmed experts and divided into two parts: Capacity for innovation, which includes thirteen questions developed by Margarida Vicente and José Luis Abrantes (2014). They were measured on a Likert scale of 1 to 5, where 1 is "strongly disagree" and 5 is "strongly agree" and the ability to export contains six questions Claudia P. Ribau, António C. Moreira, and Mario Raposo (2017), said, the questions were measured similarly on a Likert scale of 1 to 5, where 1 is "Strongly disagree" and 5 is "Strongly agree". (See Appendix No. 1)

Below are the technical sheets of the instrument of the relationship between the innovation capacity and export capacity of Latacunga entrepreneurs for the year 2023.

The surveys were submitted to validation by teaching experts from the Technical University of Cotopaxi: Ramírez Jiménez, Santiago Fernando and Jorge Bautista, Zonal Technician of the IEPS, Likewise, they went through an analysis of the reliability of the instrument using Cronbach's alpha of 0.89%, being a reliable instrument. Finally, Spearman's Rho statistical test was used to test the hypothesis.

Results

The results obtained for both the innovation variable and the export capacity are summarized in Table 2 and Table 3 respectively, where it can be seen that the average innovation reaches 4.07 points out of 5, while the average export capacity scores 3.71 out of 5.

Table 2 Average of innovation indicators

Dimension	Indicator	Average Indicator	Average Dimension
Product Development Capability	X1	3,86	4,01
	X2	4,22	
	X3	3,95	
Culture of innovation capacity	X4	4,09	4,30
	X5	4,36	
	X6	4,41	
	X7	4,33	
Strategic Capacity	X8	4,19	4,24
	X9	4,40	
	x10	4,14	
Technological Capacity	X11	3,86	3,64
	X12	3,74	
	x13	3,33	
Average innovation			**4,07**

Table 3 Average Export Capacity Indicators

Dimension	Indicator	Average Indicator	Average Dimension
Production Capacity	Y1	4,21	**4,09**
	Y2	3,93	
	Y3	4,00	
	Y4	4,26	
	Y5	4,22	
	Y6	3,95	
Staffing and management capacity	Y7	4,16	**3,73**
	Y8	4,16	
	Y9	2,69	
	Y10	3,53	
	Y11	4,12	
Commercial Capacity	Y12	3,19	**3,35**
	Y13	4,07	
	Y14	3,69	
	Y15	2,84	
	Y16	3,88	
	Y17	2,45	
Economic and Financial Capacity	Y18	3,72	**3,66**
	Y19	3,19	
	Y20	3,45	
	Y21	4,26	
Average Export Capacity			**3,71**

Variable correlation: innovation and export capacity

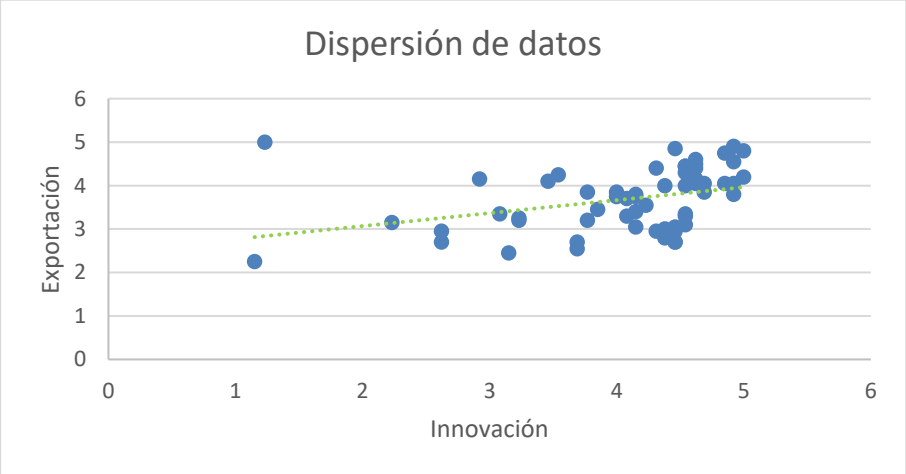
With the survey data tabulated in the SPSS statistical software, the innovation average was constructed that measured the indicators X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12, and X13. Likewise, the average export capacity was constructed with the average of indicators Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10, Y11, Y12, Y13, Y14, Y15, Y16, Y17, Y18, Y19, Y20 and Y21. The independent variable corresponds to the innovation indicators, while the dependent variable was assigned the export capacity indicators.

Table 4 Correlation with innovation and export capacity

Correlations			**Innovation Average**	**Export Capacity Average**
Spearman's Rho	Innovation Average	Correlation coefficient	1,000	,503**
		Follow-up (bilateral)	.	,000
		N	108	108
	Capacity Export Average	Correlation coefficient	,503**	1,000
		Follow-up (bilateral)	,000	.
		N	108	108

In the case study, a Spearman's coefficient of 0.503 was obtained. This indicates that there is a moderate positive correlation between the two variables, i.e. between innovation and export capacity.

Figure 1 Correlation between innovation and export capacity



On the other hand, in this calculation, the significance value was also obtained, represented by a p-value, which indicates whether the correlation coefficient obtained is statistically significant or if it could have occurred by chance. A significance value of 0.000 indicates that the probability of obtaining such a strong or stronger correlation by chance is extremely low. In other words, it is highly unlikely that the observed correlation is the result of chance. Therefore, it is concluded that there is a significant correlation between the variables analyzed.

Hypothesis Testing

Returning to the hypotheses proposed:

H0: The capacity for innovation is not positively related to the export capacities of Latacunga entrepreneurs' products.
H1: The capacity for innovation is positively related to the export capabilities of Latacunga entrepreneurs.

And with the processing of the survey data by obtaining Spearman's Rho correlation coefficient with the SPSS software, the report delivers the significance value whose statistical nomenclature is p, of 0.000 when comparing this value with what is expressed by Ferrero (2020) definition when p is less than 0.05 H0 is rejected and the existence of a significant correlation H1 is established, In this case, the null hypothesis is rejected, which implies the acceptance of the alternative hypothesis, i.e., the capacity for innovation is positively related to the export capacities of Latacunga entrepreneurs.

OTHER RESULTS

The survey also provided information regarding the fulfillment of requirements that are met in case of internationalization, the analysis of the results revealed:
Regarding the Electronic Signature, 36% of respondents indicated that the company complies with this requirement, while 64% indicated that the company does not comply with it.
In relation to the Product Catalog, it was found that 48% of respondents meet this requirement, while 52% indicated the opposite.

Regarding the website, it is observed that 43% of those surveyed said that the company owns it, while 57% indicated that it does not have an internet presence at the moment.

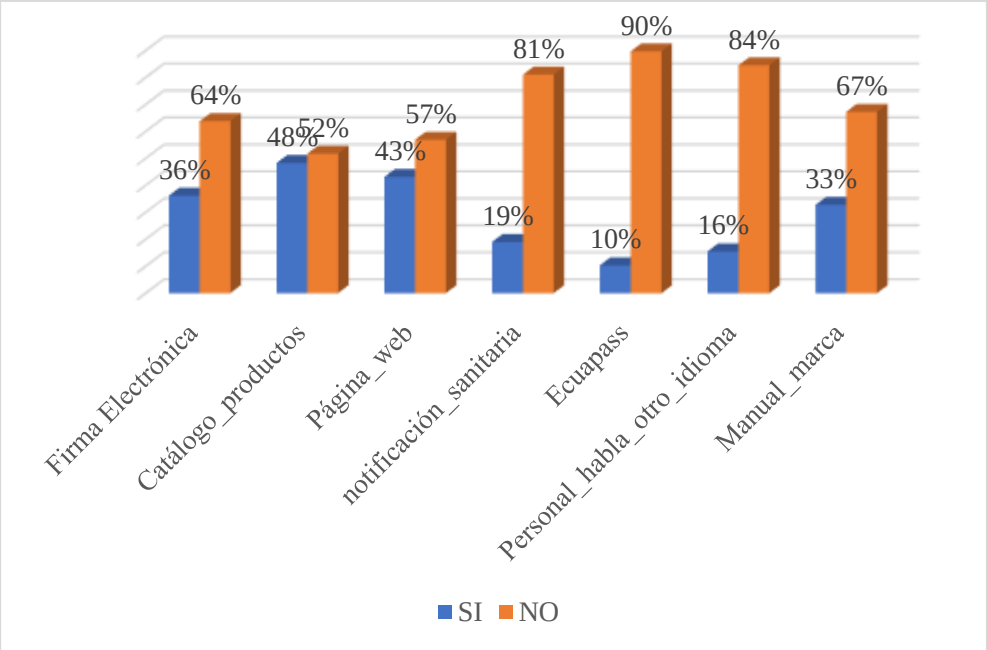
Regarding the Health Notification, it was found that only 19% of respondents comply with this requirement, as opposed to 81% who do not.

In relation to Ecuapass, only 10% of respondents stated that the company complies with this requirement, while 90% indicated that the company does not comply with it.

Regarding having an English-speaking person in the company, it was found that only 16% of respondents meet this requirement, while 84% indicated that the company does not meet it.

In relation to the Brand Manual, it is observed that 33% of respondents comply with this requirement, while 67% indicated that the company does not comply with it.

Figure 2 Export Requirements. In original Spanish language



Correlations by dimension

With the data obtained, the correlation analysis between innovation and the different dimensions of export capacity was carried out, obtaining the following results:

Table 5 Correlation, innovation and export capacity dimensions

		Average Innovation Correlation coefficient	Follow-up (bilateral)	N
Export Capacity Dimension	Production Capacity	,504	0	108
	Staffing and management capacity	,496	0	108
	Commercial Capacity	,342	0,009	108
	Economic and Financial Capacity	,384	0,003	108

The results indicate that the correlation of the average innovation with exports in its dimensions: productive capacity and personnel and management capacity reached a Spearman's Rho coefficient of 0.504 (p=0) and 0.496 (p=0), respectively, i.e., its correlation is positive, moderate and significant; In the case of the third and fourth dimensions, commercial capacity and economic and financial capacity, they reached a Spearman's Rho coefficient of 0.342 (p=0.009) and 0.384 (p=0.003), respectively, which implies that the existing correlation is positive and low and there is also significance.

Figure 3 Correlation between innovation and the productive capacity dimension. In original Spanish language

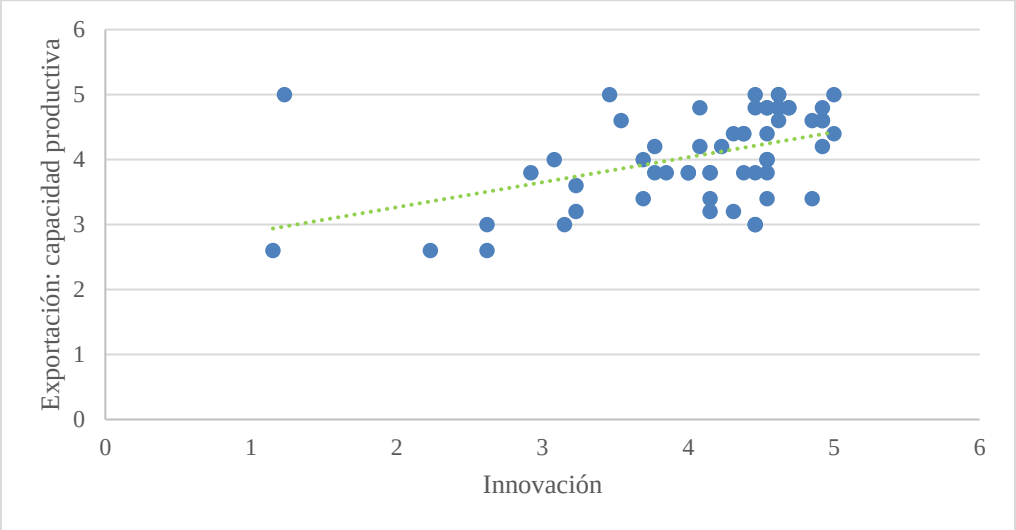


Figure 4 Correlation with innovation - the dimension of personnel and management capacity. In original Spanish language

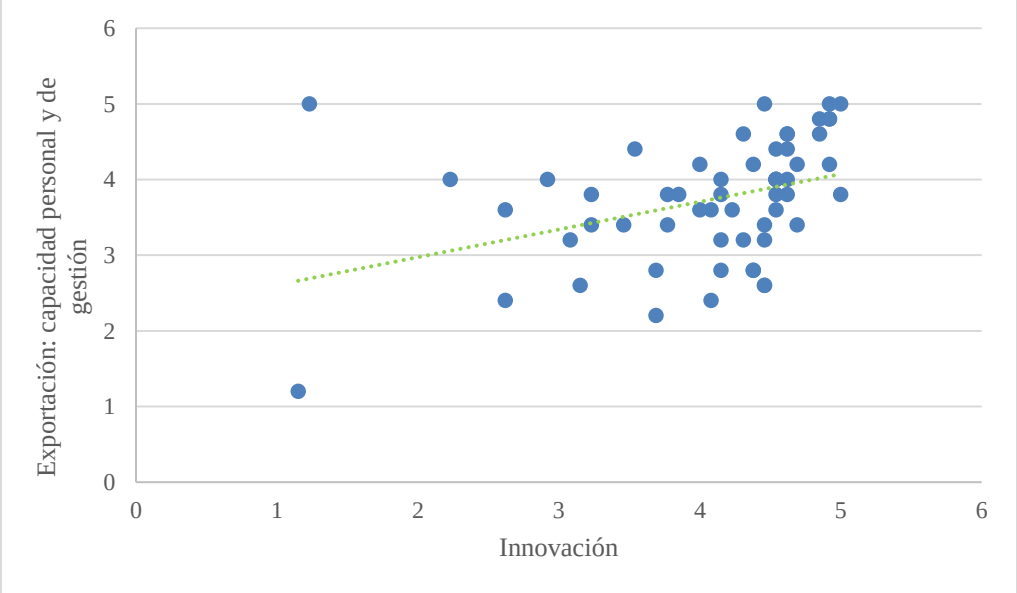


Figure 5 Correlation between innovation and the trade capacity dimension. In original Spanish language

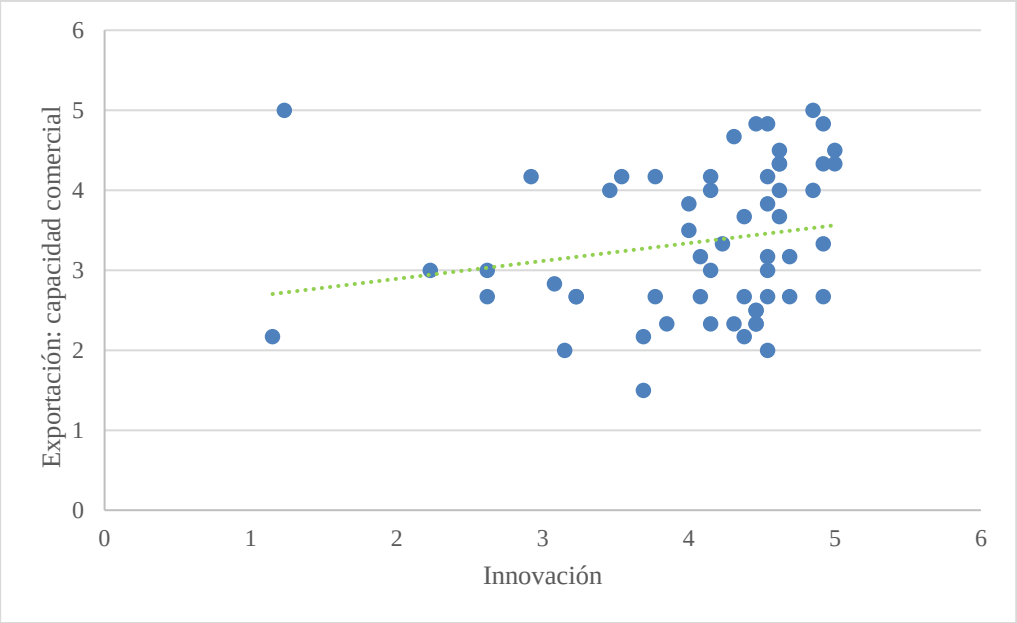


Figure 6 Correlation between innovation and economic and financial capacity. In original Spanish language

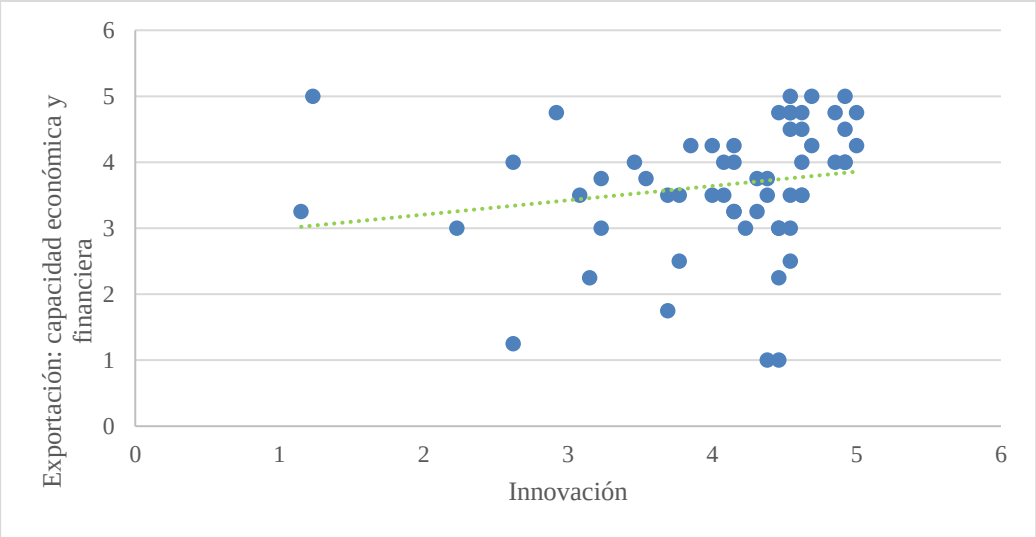
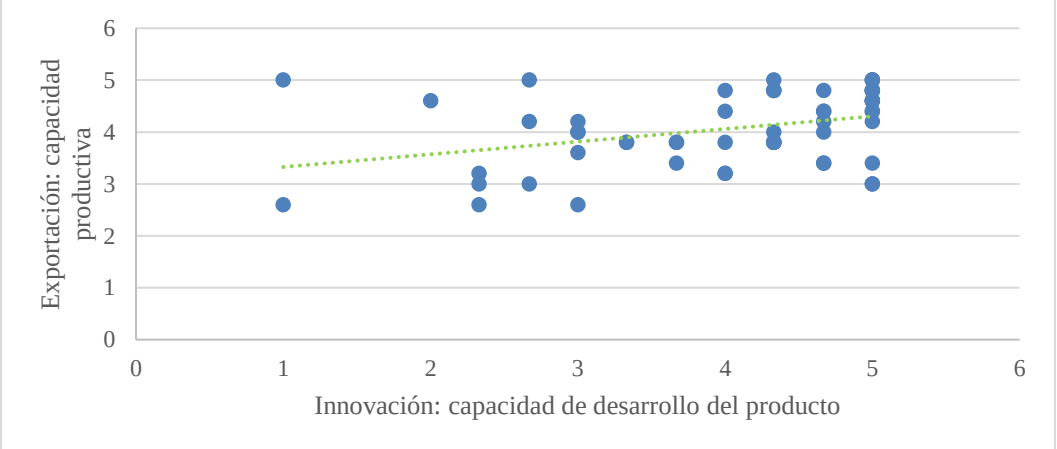


Table 6 Correlation of innovation dimensions and export capacity dimensions

			Export Capacity Dimension			
			Production Capacity	**Staffing and management capacity**	**Commercial Capacity**	**Economic and Financial Capacity**
Spearman's rho	Innovation dimension: Product	Correlation coefficient	**,380****	,375**	,315*	,272*

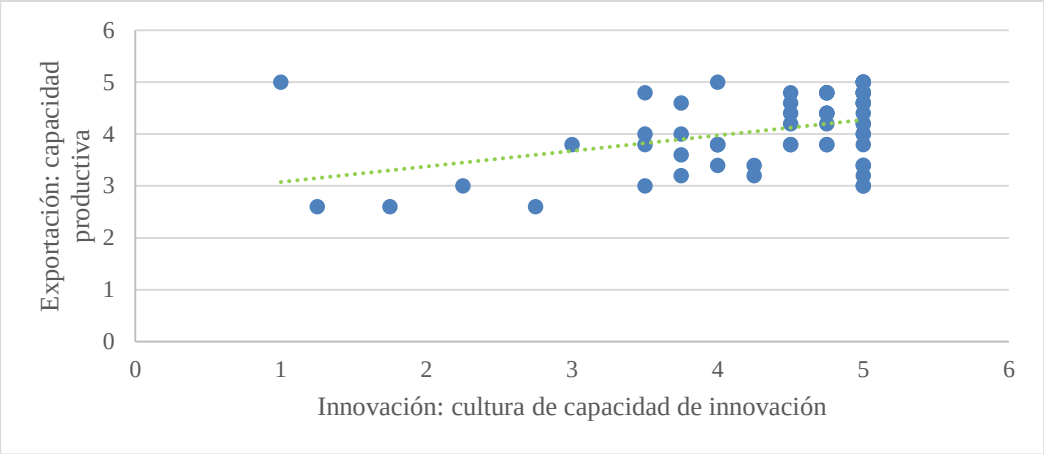
development capacity	Follow-up (bilateral)	,003	,004	,016	,039
	N	108	108	108	108
Innovation dimension: Culture of innovation capacity	Correlation coefficient	**,355****	,252	,184	,115
	Follow-up (bilateral)	,006	,056	,167	,389
	N	108	108	108	108
Innovation Dimension: Strategic Capacity	Correlation coefficient	,424**	**,493****	,266*	,346**
	Follow-up (bilateral)	,001	,000	,044	,008
	N	108	108	108	108
Innovation Dimension: Technological Capacity	Correlation coefficient	**,366****	,363**	,190	,292*
	Follow-up (bilateral)	,005	,005	,154	,026
	N	108	108	108	108

Figure 7 Correlation between product development capacity and production capacity. In original Spanish language



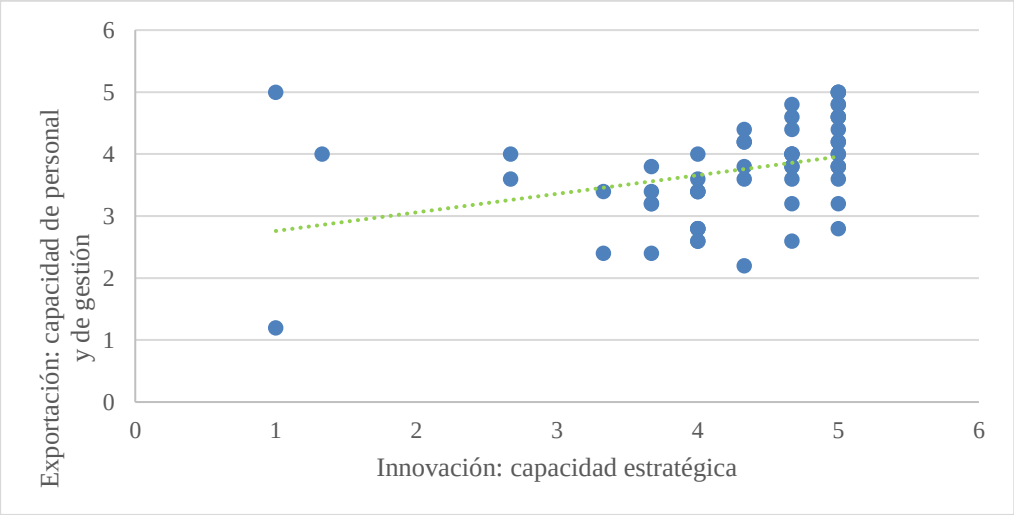
As for the most representative value of the correlations of the dimension of innovation, product development capacity, it stands out with a Spearman's Rho of 0.380 and p=0.003, the positive correlation with the export dimension of productive capacity.

Figure 8 Correlation between culture and innovation capacity and productive capacity. In original Spanish language



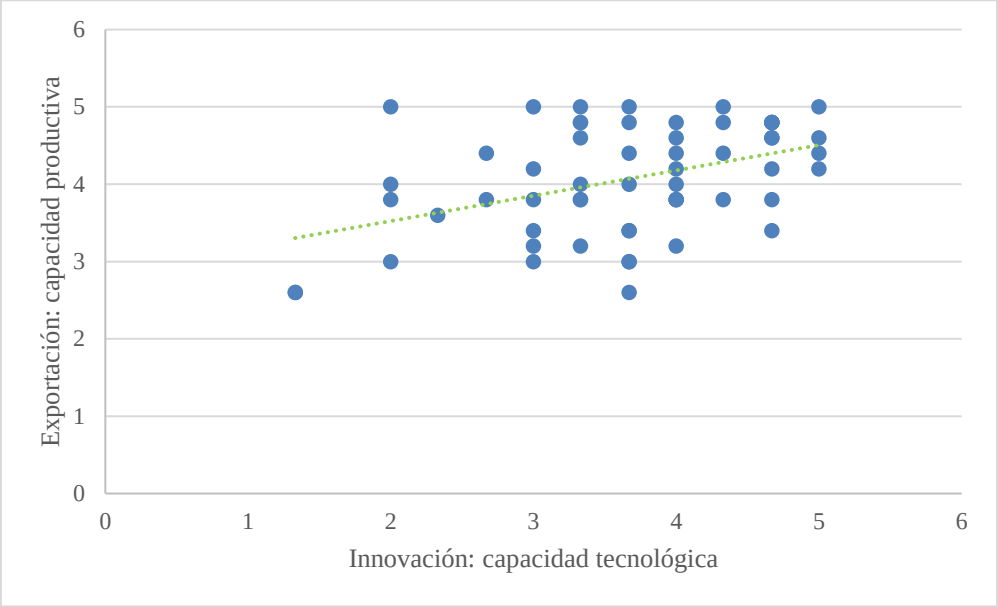
The dimension of innovation culture of innovation capacity reaches in its most representative value a Spearman's Rho of 0.355 and p=0.006 with the dimension of export productive capacity, this is a significant low positive correlation.

Figure 9 Correlation between culture and innovation capacity and productive capacity. In original Spanish language



As for the most representative value of the correlations of the dimension of innovation, strategic capacity, it stands out with a Spearman's Rho of 0.493 and p=0.00, i.e. a moderately significant positive correlation with the dimension of export, personnel and management capacity.

Figure 10 Correlation between technological capacity and productive capacity. In original Spanish language



The dimension of innovation, technological capacity, reaches in its most representative value a Spearman's Rho of 0.366 and p=0.005 with the dimension of export, productive capacity, this is a significant low positive correlation.

Discussion

The most outstanding result of this research is that innovation has an impact on the export capacity of Latacunga entrepreneurs. Due to the current circumstances, associations must develop their innovative capacity and focus on meeting the requirements and generating the necessary documents to be able to export, which will allow them to expand their market and generate higher revenues.

A limitation of this research is that the study population may be included in artisanal, agricultural, agricultural, agricultural, food, industrial and timber associations, but excludes other fields, such as professional services, transport and accommodation activities, its advantage lies in the fact that it has provided essential information for further research into how innovation affects the processes and export capacity of associations.

Currently, the innovation capabilities of Latacunga entrepreneurs have a moderate positive relationship with export capacity, with a Spearman Rho value of 0.503. This correlation is significant, i.e., there is a statistically confirmed relationship between the variables studied.

Through the bibliographic research carried out on the different factors or dimensions of innovation and the capabilities necessary for a company to be able to export, several key dimensions for both innovation and export were identified, in the former the product development capacity, the culture of innovation capacity, strategic capacity and technological capacity stand out. In terms of exports, four fundamental aspects were found: productive capacity, personnel and management capacity, commercial capacity, and economic and financial capacity. In order for a company to export successfully, it is crucial to develop capabilities in both dimensions, the combination of these will allow companies to face the challenges and take advantage of the opportunities that arise in the global market.

The results obtained show that there is a significant correlation between the innovation average and the export dimensions evaluated. Specifically, it was found that both productive

capacity and personnel and management capacity have a moderate and significant positive correlation with the innovation average. This is favorable for exports, as an association with greater innovative capacity will be better able to strengthen its productive capacity, manage its staff efficiently, develop effective business strategies, and have solid economic and financial resources to expand in international markets.

In summary, the results support the idea that innovation and the dimensions of exports, specifically their productive capacity and personnel and management capacity, are related and therefore are determining factors in the export process of Latacunga entrepreneurs. These findings can serve as a basis for the implementation of strategies that foster innovation and strengthen the capabilities needed to successfully expand internationally.

In summary, the results show that the minority of entrepreneurs meet the requirements for their internationalization. This indicates that associations need to take actions to meet these requirements and strengthen their capacities in these areas, which will contribute to improving their internationalization process.

Conclusion

It can be said that the innovation capacities of Latacunga entrepreneurs have a moderate positive relationship with export capacity. This is supported by Spearman's correlation coefficient of 0.503, which indicates a significant correlation between these two variables. This statistically confirmed correlation suggests that there is a real, non-random connection between innovation capabilities and export capacity in these partnerships, so it is important that every partnership looking to export starts the process to complete the requirements needed to internationalize.

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