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## Technological innovations in the textile sector in the canton of Esmeraldas, Ecuador.

### Innovaciones tecnológicas en sector textil del cantón esmeraldas-Ecuador

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#### Abstract

Talking about innovation and entrepreneurship, although it may seem similar, it is not. However, both concepts should always go hand in hand when undertaking any business idea and even more so, those that seek to empower entrepreneurs, in addition to seeking to strengthen the economic sectors of their region. The general objective of the research is to analyze the technological innovations in the textile sector in the canton of Esmeraldas-Ecuador, seeking to know the perception of the people with respect to this particular topic and its inclusion in this new modern era that is currently being lived, which is totally surrounded by technology. The population selected with the people who belong to the textile sector of the canton mentioned above, having a sample of 10 people to whom a semi-structured interview was applied, consisting of five (5) items that are related to the objective of the research, finally the technique and tool used for the processing and analysis of data is the software program Atlas. Ti software, which allows storing and recording the opinions obtained from the sample.

**Keyword:** Business competitiveness, organizational performance, administrative management, business sustainability, MSMEs.

## Resumen

Hablar de innovación y emprendimiento, aunque parezca similar no lo es. Sin embargo, ambos conceptos siempre deben ir de la mano al momento de emprender cualquier idea de negocio y más aún, de aquellas que busquen potenciar a los emprendedores, además de buscar fortalecer los sectores económicos de su región. El objetivo general de la investigación es analizar las innovaciones tecnológicas en sector textil del cantón Esmeraldas-Ecuador, buscando conocer la percepción de las personas con respecto a este tema en particular y su inclusión en esta nueva era moderna que se vive actualmente, que se encuentra totalmente rodeada por la tecnología. La población seleccionada con las personas que pertenecen al sector textil del cantón mencionado con anterioridad, teniendo una muestra de 10 personas a las cuales se le aplicó una entrevista de tipo semiestructurada conformada por cinco (5) ítems que se relacionan con el objetivo de la investigación, finalmente la técnica y herramienta utilizada para el procesamiento y análisis de datos es el programa software Atlas. Ti, el cual permite almacenar y registrar las opiniones obtenidas por parte de la muestra.

**Palabra clave:** Competitividad empresarial, desempeño organizacional, gestión administrativa, perdurabilidad empresarial, Mipymes.

## Introduction

In many aspects of life, when talking about innovation and creativity, it is permissible to say that they are actions that go hand in hand, since the former refers to the use of knowledge, following a structural line to achieve the goal. In turn, creativity is based on using new procedures to move away from the traditional. This is why the importance of these concepts in an organizational context is evident. It is clear that a new vision is fundamental for the growth of companies, especially when all aspects are approached with new and appealing things to society.

This scientific article is derived from the Linkage project of the Faculty of Administrative and Economic Sciences (FACAE) "INNOVATIVE PROMOTION OF BUSINESS MODELS AND QUALITY MANAGEMENT TO ENTREPRENEURSHIPS AND MSMES IN THE COMMERCIAL, ECONOMIC, SOCIAL, ENVIRONMENTAL AND TECHNOLOGICAL ENVIRONMENT OF THE PROVINCE OF ESMERALDAS". In correspondence with the above, from there derives the relevance and justification of the approach to this topic because it is part of the confluence of the substantive functions of the authors as university professors, which are configured in teaching, research and social linkage with the community, within the framework of the above project approved by the university authorities, through the signing of synergies and inter-institutional agreements with the GAD of the province.

In relation to the treatment of innovation, and emphasizing what was mentioned by Espinosa et al., (2014) we agree with them in assuming that:

When referring to innovation and creativity in recent years, it can be understood as the conception and establishment of significant changes in the product, process, marketing or organization of the company, with the purpose of improving its results (p.11).

Quiroga & Padilla, (2014); Sánchez et al., (2012) it is evident that technological, economic and even social progress is indispensable for a country, that is where the textile industry comes in, since it belongs to a fundamental sector for human beings. Each garment, or any element that comes from the manufacture and handling of fabrics, plays an important role in the whole world, hence the relevance of addressing issues related to innovation in this economic sector. Entrepreneurship, innovation and even creativity must be taken into account when creating a piece of clothing. Likewise, it is of vital importance to point out that the Conócenos Noticias page refers to the following: On the one hand, to innovate is to create something by introducing a novelty. Marulanda & Morales (2017) On the other hand, entrepreneurship, a term that has gained great prominence, means starting a business in which a product or service idea is developed through a business, aimed at meeting a need in the market.

The textile market needs continuous innovation. Para Molina-Morales & Expósito-Langa, (2013) It is true that many times the classic returns to be the center of attention, however, progress in this area is still visible and unstoppable, the manufacture of micro fabrics or even the inclusion of smart technology is the creative and innovative point of recent years. Now, the province of Esmeraldas innovation in this sector has been affected by the fact that innovation has diminished and with it decreases the capacity for entrepreneurship, which entails a problematic situation, which according to the United Nations Program 2018 argues that the large amount of productive and landscape wealth, especially small groups of producers face some complications to be able to float their ventures.

This consideration reflects the existence of a problem for small producers of textile materials, goods and services, because they have difficulties in placing and offering their products for sale in the market, making their entrepreneurial activity very complex. Therefore, in order to solve this problem, the Esmeraldas prefecture together with the United Nations Development Program (UNDP) created a program called "Growing your business" with which they have already helped more than 25 enterprises. A key piece in the development of entrepreneurship in Esmeraldas is technological innovation in all its areas, in this way and remembering the above mentioned, we seek to find the turning point to clearly and constantly develop the textile industry, hand in hand with creativity and generate strong income in the territory, so it is important to note that the main objective of this research is based on analyzing the potential of technological innovation in the field of commercial entrepreneurship, which in this case is the textile sector in the canton of Esmeraldas in Ecuador.

## Materials and methods

The methodology used for the development of the research is based on the qualitative type methodology, which is defined by Sánchez & Reyes, (2015) as follows: "uses the collection and analysis of data to refine the research questions or reveal new questions in the process of interpretation" (p.7).

It should be noted that the research is within the constructivist paradigm, which is expressed as follows Galván et al. (2016) expresses as follows:

Constructivism is a support for qualitative research, and indicates the following statements as main contributions of this paradigm: - Reality is socially constructed from different ways of perceiving it. - Knowledge is socially constructed by the participants in the research process. - Research is not alien to the values of the researcher. - The results cannot be generalized outside the context and time.

Due to the aforementioned, the reason why the constructivist approach is used is because it seeks the collection of data from the selected population, being them who perceive the daily reality of the exposed problem, which in this case is the technological innovation in the textile sector of the Canton of Esmeraldas in Ecuador. It is pertinent to mention that in relation to what was previously mentioned, the research has a documentary and field design, since its purpose is to investigate, observe, analyze, register and describe the information collected by means of figures. In addition, use was made of research methods, which are focused on analytical-deductive, being the appropriate methods for obtaining data that serve as reference, guide or structure for future research, taking into account what was mentioned by (Moreira, 2002, p. 59) who defines the inductive method as follows: "This method makes it possible to identify the general tendencies of the research problem. This procedure is what today is called inductive reasoning, which was to become the fundamental principle of all sciences".

Accessorily, the selected population are people belonging to the textile world of the Esmeraldas canton in Ecuador, being the relevant and appropriate people for the collection of information and data that serve for this research and in the future. Given that it is an infinite population, a sample of 10 people was selected, to whom a data collection instrument was applied. It should be noted that this selection was made by means of a technique called non-probabilistic sampling, with reference to (Martí et al., 2014, p. 98) who defines it as follows: "Non-probabilistic sampling is a sampling technique, where samples are collected in a process that does not give all individuals in the population equal opportunities to be selected".

Marulanda & Morales (2017) In addition, this type of sampling is also classified as intentional or opinionated sampling, in order to establish certain criteria or rules to be met to be part of the experimental sample. Therefore, the criteria established are the following: being part of the Esmeraldas canton, being part of the textile world, and having at least 5 years of experience in this field.

In relation to the structural order of a research, one of the important components is the technique and tool for data collection and analysis, having as a technique in this particular research a semi-structured interview, which consists of twelve (12) items, which have a direct relationship with the objective of the research, which is based on analyzing the potential of technological innovation in the field of commercial entrepreneurship, focusing on the textile sector. It is important to emphasize that the interview was chosen because the interviewee has the power to express his opinion openly, freely, and as directly as possible. It is important to note that the interview used for data collection for this research was taken from the thesis entitled: "Innovation management for business competitiveness", which is directly related to the research, not only with the treatment of the consumer, but also with the quality of the products to be manufactured and with the efficiency and good management of the textile industry.

Based on the above, the technique and tool used for the processing and analysis of the data and information collected is the software program Atlas. Ti, which is a computer program used in research with a qualitative approach, since it allows to analyze in a general and deep way the information obtained from the selected sample in relation to the research problem.

### Results

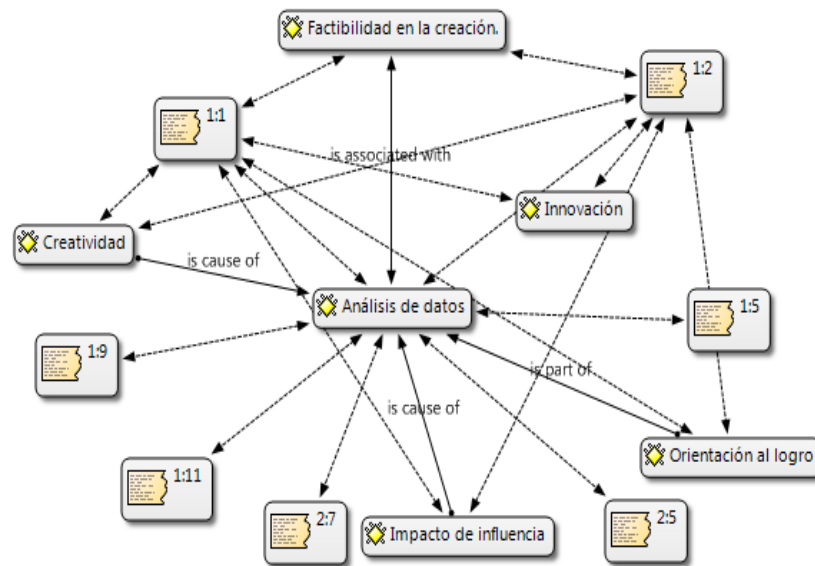
For the analysis and interpretation of the results, we used the software program, referred to above, called Atlas ti, which helps to relate all the data provided by the interviewee, allowing the collection of the necessary information to serve as a guide for this and future research, the results obtained by the Atlas.ti software program are shown below. Due to the adequacy of interpersonal relationships, the interviewees will be urged to feel comfortable and confident, so that, hoping in the freedom of expression, they can build their vision of reality in relation to the questions asked and in correspondence with the subcategories: creativity, achievement orientation, innovation, data analysis. The questions of the instrument in question have the following order.

**Table 1.** *Sequential order of the interview questions and their indicators.*

Sequence	Indicator	Sub-Category
No. 1 to No. 6	Innovation in technology in the textile sector	-Feasibility in the creation. -Data analysis -Innovation



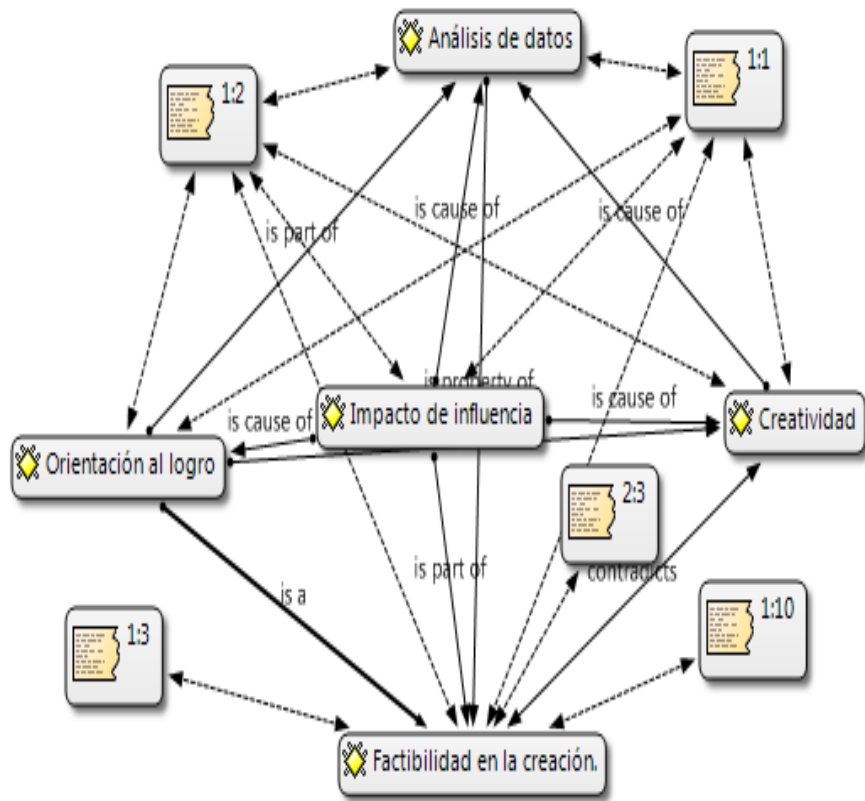
Figure 2. Data Analysis



Elaboration: Atlas software program. Ti  
 Source: persons belonging to the textile sector

The impact of influence is important because it allows us to have a clear idea about the benefits and advantages that technological innovation in the textile sector brings to potential consumers, because innovation in recent decades has become the engine that drives the transformation and growth of companies, since innovation allows taking advantage of resources to achieve better advantages, both economic and social. In addition, the sub-category impact of influence formed a semantic network where creativity, data analysis, achievement orientation and feasibility of creation are included, in addition to the direct relationship with five quotations related to the impact of influence that technological innovation has on the textile sector in the canton of Esmeraldas.

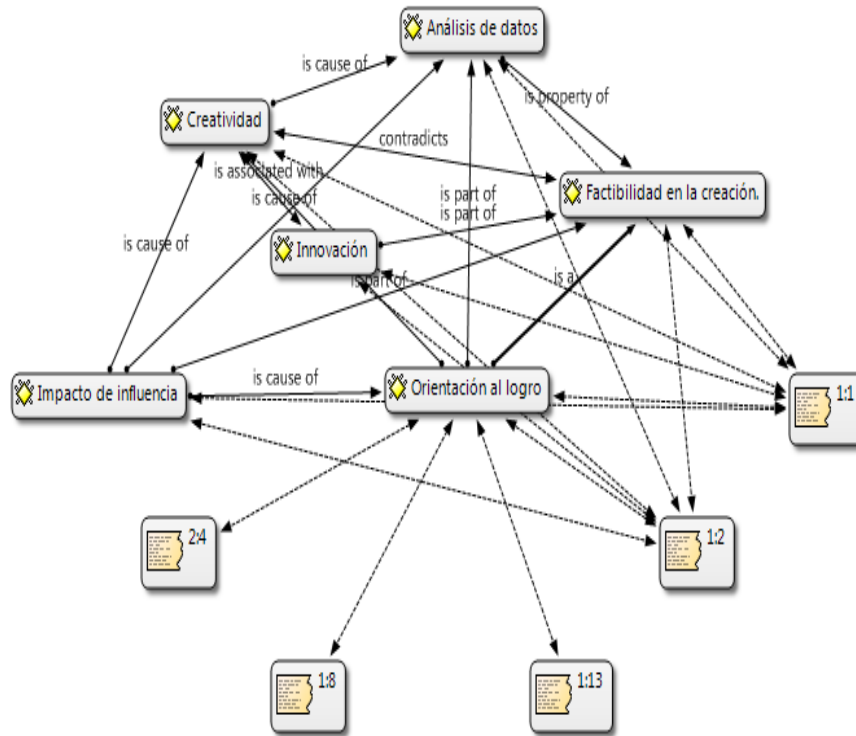
Figure 3. Influence impact



Elaboration: Atlas software program. Ti  
Source: persons belonging to the textile sector

It is extremely important to highlight this sub-category, where the proposal is extremely clear and concise and is none other than achievement orientation, which seeks to provide the necessary tools to build a structure with a solid foundation that generates relevant ideas and strategies to achieve a line of benefits over the years and with the skills acquired on the proper management of technology in the textile sector in the canton of Esmeraldas, This sub-category is important, since it has a direct relationship with other sub-categories such as creativity, feasibility of creation and impact of influence, since they all go hand in hand, allowing to have a clear idea of the importance of innovation in the area of technology in the textile sector, generating an adequate inclusion in the technological world that is currently gaining prominence every day.

Figure 4. Achievement orientation



Elaboration: Atlas software program. Ti  
 Source: persons belonging to the textile sector

It is clear that, over the years, the introduction of technological advances in the textile industry in Ecuador has become crucial and indispensable, much more so at Esmeralda, which seeks to find ways to continue producing quality, innovative and creative items that will keep the attention of consumers. In addition, customer expectations about the garments they wear and the exposure of their comments to manufacturers have changed dramatically in recent years. The customer's opinion now has a much greater impact, due to technological advances.

In the same vein, it is necessary to highlight what is mentioned by the blog Sanper (2018) where it is emphasized that "Automation in textile production involves different stages: from handling, stretching and cutting, to finishing and pressing techniques, along with advanced tools to evaluate productivity in manufacturing". Similarly, (Vargas, Zuñiga and Muño, 2020: page 244) define the importance of technological innovation as a new marketing method for the textile sector, through strategies that allow promoting and expanding the knowledge of people regarding this topic, so it is of utmost relevance to highlight the aforementioned by the previously mentioned authors, as follows:

Studies on this subject have become more relevant due to the fact that a broad initiative has been generated to turn a need into an opportunity, which has an impact on the improvement of people's living conditions and their environment.

Due to the above, it is important to highlight the importance that technology has today, especially in the commercial area through innovation in the textile sector where it seeks the inclusion of the technological world, in addition to providing people with the necessary knowledge on this particular topic.

## Conclusions

After analyzing, studying and reviewing all the information gathered, it is necessary to highlight that it was concluded that the textile sector is decisive for the economic growth of the area in the short and long term, because it presents great opportunities to generate income and is perfectly related to innovation and creativity. Taking into account the above, it was possible to understand that the low incidence of issues such as innovation has prevented the different companies in the area from successfully achieving much more benefits in this area. It is of vital importance to take risks and try new things, to move away a little from the classic and create innovative and eye-catching garments for the customer. Likewise, and taking into account that the efficiency in production and the growth of the textile and apparel sector depend to a great extent on them, it is ideal to pay much more attention to the opinions and constant recommendations of consumers. This is to try to create a lasting loyalty between the textile industry and the customer.

Additionally, it is of utmost importance to generate a constant investment fund, which in the long term will be of great benefit to the industry, since it will lead to an improvement in the efficiency of the production processes through innovation and creativity. For this reason, it is identified that not having the indispensable tools and opportunities will be a major limitation for a gradual growth in the textile area. Finally, it is clear that innovation is a double-edged tool; what may seem original and incredible to some may seem a bad idea to others. It is evident that these types of concepts are linked to the customer's subjectivity. However, it is the responsibility of the industry to seek a balance between the classic and the modern, between the original and the conventional, this will generate benefits if it is done well and consistently, that is where innovation in the textile industry becomes essential to attract new consumers and maintain the loyalty of previous ones.

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