

CHARACTERISTICS OF INNOVATION IN SERVICES AT COMPANIES INSIDE THE TEXTILE SECTOR AND CARACTERÍSTICAS DE LA INNOVACIÓN EN SERVICIOS EN COMPAÑÍAS DEL SECTOR TEXTIL

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Abstract: *This article aims to describe the characteristics of innovation in services at small and medium companies (SMEs) in the textile sector at Valledupar, Colombia. The characteristic of innovation are: (1) the formalization and systematization of innovation processes related with the economic activities, (2) The difficulty of make any difference between product innovations and process innovations, (3) The preference in the organizational innovations face to the technological innovations, (4) The difficulty of protecting the innovations, (5) the incremental and flexible role of the innovation, and (6) The origin concentrated on the market. The research is the type descriptive, not experimental and cross-sectional. The population of this research is fifteen small and medium companies at the textile sector of Valledupar, Colombia. The research uses a Likert type questionnaire applied to the managers. The results indicate that the predominant characteristics are the difficult to protect innovations, the difficulty for differentiate between product and process innovation, and its incremental and flexible role. However, the companies analyzed lacks of formalization and systematization in the innovation process.*

Keywords: *Innovation in services, characteristics of innovation in services, trade, textile sector.*

JEL Classification: O30, O31, L81

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1. INTRODUCTION

In the current context, corporate governance is aimed to create value in organizational processes, to ensure the competitiveness and sustainability. In this sense, innovation corresponds to a fundamental element of organizational strategy. Specifically in the services sector, innovation is important to maintain the competitive advantage of companies, in an increasingly service-oriented economy (Chen, Wang, Huang & Shen, 2016, p. 54).

In the same way, Bettencourt, Brown & Sirianni (2013) states service innovation has become a source of competitive advantage for companies that develop the ability to use the knowledge gained from customers, competitors and its own capabilities to create significant and characteristic services.

This paper aims to describe the characteristics of innovation in services in small and medium companies (SMEs) in the textile sector in Valledupar, Colombia. This paper studies the dynamics of innovation in small and medium companies, as well as the realization of innovative processes that impact positively the socioeconomic conditions at the region.

2. THEORETICAL APPROACH

2.1. Innovation in Services

“Service activities have traditionally been exempt from innovation studies because the works have been focus mainly in the field of manufacturing” (Gomez, Zurbano & Etxebarria, 2009, p. 113). However, the recognition of the contribution of services in the innovation system, has been crucial to produce interest in this sector, which has always been relegated to a residual role in the economy (Elche & González, 2011).

More recently, O’Cass, Song & Yuan (2013) conclude the services are priorities for economic development and innovation is considered an important handler of business success. However, the innovation in services remains an area with theoretical limited development and its the empirical work is starting. Similarly, Dursta, Mentionb & Poutanenc (2014) claim that despite the growing literature focused on service innovation, the empirical research focused on its impact remains limited especially in the business atmosphere.

The concept of innovation in services, Chen, Batchuluun & Batnasan (2015) explains that there are several definitions and all of them are relate to improve the performance and the ability and skills of the company to compete. According to Tidd (2003) innovation in services refers to a new or significant change in the concepts of service or delivery processes, which add value to the customer because they provide methods or improvements to solve the problems.

According to the Oslo Manual (OECD & Eurostat, 2005) innovation in services match a continuous process, consisting of a series of modifications introduced progressively in products and processes. This fact may complicate the definition of an innovation as a specific event, for example, the introduction of a major modification in product, in process or other methods.

Meanwhile, Tacsir (2011), states that innovation in services is a continuous, general and collaborative activity in which companies constantly change their products and processes. They develop new ways of working that are not necessarily based on activities or costs of research and development (R & D).

From the point made by Dursta, Mentionb & Poutanenc (2014), the innovation in services is inherently different from product innovation, because it lacks of a tangible nature. In addition, services are highly customizable related on customer needs, and include various stakeholders.

Additionally, Thakur & Hale (2013) state there are facilitators of innovation in services like customer demand, competition and knowledge-based networks. The obstacles are associated with economic or internal factors. In the other hand, Hidalgo & D'Alvano (2014) note the increased interest of researchers in understanding the processes of innovation in services, because of the importance of services to society and the demand for more complex and customized solutions for customers.

For the purposes of this research, innovation in services is defined as the process of systematic implementation of new services or improvements in aspects associated with the characteristics, processes, market or the organization. The improvements are addressed to the generation of added value, according to meet or exceed the expectations of stakeholders, and develop the skills required to improve the competitive position of the organization.

2.2. CHARACTERISTICS OF INNOVATION IN SERVICES

This section describes the main characteristics of the innovations in the service sector:

2.2.1. The Formalization and Systematization of Innovation Processes Related with the Economics Activities.

Elche (2005) suggests that although innovation in services has been characterized as casual and unsystematic, recently, the companies in the service sector are facing innovative activity with a new approach. They are increasingly aware of the need to innovate and organize its innovation system. Also they are trying to formalize and systematizes the innovation process. Although this ideas has not generalized throughout the sector. In this regard, the degree of formalization of the innovation system in services companies depends largely on the type of activity.

Thus, Elche (2005) states that the most common form of innovation in services is an informal and flexible process, in which individual efforts and formalized groups are combined by projects. However, although the innovation process is informal in many cases, it takes an increasingly collective nature, to the detriment of individual entrepreneurial initiatives. It means the organization, as a whole, is more implicated in innovation.

Likewise, the Oslo Manual (OECD & Eurostat, 2005) states the development process is probably more informal in services than in assets, with an **initial** phase of research, exchange of ideas and commercial evaluation, followed by an **introductory** phase.

In the other side, the Fundación COTEC para la Innovación Tecnológica (2004) make an analysis of the innovation process in six organizations in Spain. The study was applied in the financial, tourism, transport, logistic, advertising and health care. This research provides empirical evidence in face of the formalization and systematization of innovation in services. The results of the analysis indicate that most of the organizations did not have a process of structured innovation, except for the financial and the technological sector (such as telephone operators or software development companies).

2.2.2. The Difficulty of Make Any Difference between Product Innovations and Process Innovations

Elche (2005) utters the services have several inherent characteristics. They include the simultaneity caused by the output nature that prevents the separation between production and consumption. In fact, this causes that services are co-produced by producers and consumers. And the expiration, because the volatile nature of the outputs. These companies should be located as close as possible to the costumers, because the immediate consumption of these services. They are not storable, because its lacking of physical identity.

In the same way, Evangelista & Sirilli (1998) affirm the particularity of innovation in services. It is derived directly from the immaterial nature of these companies' outputs. Due to the difficulty of differentiate the production process and the product generated. In fact, these make serious problems when we try to identify the type of innovation performed (in product or in process). This activity is very easy in the production of tangible goods.

Although, the service sector this weakness does not have the same impact on all activities. In most cases, it is virtually impossible to change the output without changing the production process for its presentation (Sundbo & Gallouj, 1998), (Sundbo & Gallouj, 2000), (Sundbo, 1994). Premise that relates to the approach of the Oslo Manual (OECD & Eurostat, 2005), which states, in services, "the distinction

between product and process is often unclear, as production and consumption occur simultaneously” p.47.

2.2.3 The Preference in the Organizational Innovations Face to the Technological Innovations.

According to Elche (2005) in service companies generally predominates social innovation, than the technological, which prevail in the industry. It is because the production process of services is intensive in labor, and the relevance of organizational factors in service activities. Therefore, a direct consequence of the development of innovation’s research related to the service sector is the need to expand the innovation concept to include other typologies, in addition to the technological.

From the perspective of Gomez, Zurbano & Etxebarria (2009), the innovation in services has a less technological content. The innovation in this sector enters into the economic, preferably innovations related to improvements in marketing and technical market. Additionally, these authors note that “non-centrality of the forms of technological innovation in services is a substantial element in the context” p.114.

Thus, innovation in services corresponds to the creation of new information or knowledge, or new ways of managing people or things (new types of behavior on staff) (Sundbo & Gallouj, 2000). On the other hand, the advances in information and communications technology help the increase of technological innovations in the sector. This fact influences the training activities, which are constituted as an input of the innovation process. (Evangelista & Sirilli, 1995). Gomez, Zurbano & Etxebarria (2009, p. 115), suggest the development and adoption of new information and communication technologies (ICT) are crucial in the development in service innovations; such as new supply networks, relationships with customers and competitors, or new forms of integration of the company with its value chain.

Another factor is the predominance of organizational innovations than the technological in the service sector. It is based on the fact that innovations in services are rarely science based: in most companies there are not specialized departments or research laboratories for activities. The services innovation is developed in any of the basic functional areas of the company. This does not mean that the innovation process is chaotic. In fact, the empirical evidence reveals several ways of organize and direct the service innovation activities. It includes cases in which innovation is developed by an informal process (Elche, 2005).

2.2.4 Difficulty to Protect Innovations

The service companies have difficulties to protect their innovations because the patents used by manufacturing companies, are not suitable for service companies.

The regimes of intellectual properties rights in the service sector are very different from the used in the industrial sector. Actually; the innovation services are protected by copyright and trademarks, rather than patents (Elche, 2005).

Therefore, “the design of tools to protect innovations in services is an arduous and urgent work by the public sector. It is given by the sector’s characteristics and because the traditional instruments of innovation’s protection are extremely limited to the case of service’s sector “ (Organisation for Economic Cooperation and Development, 2005).

In addition, the innovations in services are imitated easily due to their own characteristics. They are not discoveries about products or processes that may be hidden; on the contrary they are behavior changes in individuals, quite evident, and therefore easily imitable (Elche, 2005).

In the same way, Gomez, Zurbano & Etxebarria (2009) suggest the complexity and diversity of services impedes the identification of a unique (even dominant) way to protect these innovations. In this regard, the authors note the so-called business methods are not patentable in all patent offices. Also, the patents are not the ideal way to protect intellectual property in various services; so, many companies choose copyright or industrial secrets.

2.2.5. Incremental and Flexible Character

In general, the innovation in services have a less radical character than in industry often consist of combinations of existing services, the inclusion of a new item, or small changes in the provision procedures. These innovations respond to small changes that do not modify the essential role of the service. In this sense, the new services reflect the current trend of some companies to combine inputs (goods or services) from different sectors to provide individualized and tailored solutions (Elche, 2005).

Likewise, Chenga & Krumwiedeb (2012, p. 488), determines that the incremental innovation in services, defined as a new creation of value through incremental addition of existing values, corresponds to the most common form of innovation in the service sector.

In addition, the particular features of services causes the system innovation in these businesses is much more flexible than in the industrial. The particularities in question have the informal contributions from individuals involved in the service’s production, without underestimating the importance of interdepartmental groups and formalized by projects. By the way, the literature notes that many innovation activities in the service sector are organized in ad hoc formalized groups (Elche, 2005). According to her, the service companies have flexible organizational forms that can be a starting point for innovative activities.

2.2.6 Origin Concentrated on the Market

Most service innovations have their origin in the market, rather than internal research, due to the involvement of consumers in the activities of production and supply, and the fact that innovation consists in solve a given problem to a customer. Thus, the consumers play a key role in the introduction of services innovations. The innovative activity is not based on the assumption of “science push”, adopted by manufacturing companies, although predominate the “demand pull” integrated with the business strategy (Elche, 2005).

Hence, the author argues that the most important sources of information for innovation are consumers, followed by sales staff and employees. So, the more dynamic and innovative the company, the consumers are more relevant in the innovation process. Furthermore, due to the big information content present in the services; the information and communications technology play a key role, even articulated as a tool, for the management and distribution services that are not based directly on these technologies (Sundbo & Gallouj, 1998); (Sundbo & Gallouj, 2000).

Moreover, due to the approach to the market, Sundbo & Gallouj (2000) state the time needed to develop innovations in services is relatively short compared with the process of industrial innovation, because it is not necessary research or seek scientific knowledge. Consequently Andersen & Howells (2000) suggest that companies use this fact to offset their disadvantages and imitation protection of innovations, specifically, shortening the cycle of the innovation process. More recently, Hidalgo & D’Alvano (2014), conclude that customer participation in service innovation has a positive impact on the technical quality and speed of innovation.

3. METHODOLOGY

This study allows us to consider a descriptive research (Tamayo, 2011); with a design non experimental, transversal field research (Hernandez S, Fernandez & Baptista, 2010). The population of this work is finite and objective type (Hernandez et al, 2010). It consists of fifteen small and medium enterprises in the textile sector in the municipality of Valledupar, 13 small and 2 medium-sized enterprises. The primary data were obtained through the survey technique, using as instrument a questionnaire Likert scale with five answer choices: (5) strongly agree, (4) agree, (3) neutral (neither agree nor disagree), (2) disagree, (1) strongly disagree. The instrument in question consisted of 12 items (Annex 1).

For purposes of this investigation, the validity of the instrument was evaluated by experts. The instrument designed underwent consultation of four (4) expert judges, specialists in the field of research methodology as well as in the area of Project Management Research and Development. For its part, the estimation of reliability was performed using Cronbach’s alpha coefficient. A pilot test with 5 small and medium enterprises in trade in textiles and clothing in Valledupar, which

represent 33.33 % of the target population identified in the research study. This test reliability of 0.99 is obtained, indicating that the instrument is highly reliable, with a high level of internal consistency.

The key informants of this research were the managers of the fifteen companies in the textile sector, considered as an object of research study (Table 1). The data analysis was performed using descriptive statistics specifically measures of central tendency (mean) and dispersion measures (standard deviation) using the programs Microsoft Excel 2010 and Statistical Package for the Social Sciences (SPSS) 24. For purposes one for the mean (Table 2) and one for the standard deviation (Table 3): the analysis two scales were established.

Table 1
Key informants characterization in the companies under study

<i>N°</i>	<i>Company name</i>	<i>Charge</i>	<i>Size of the company</i>
1	Vitrinas De Impacto S.A.S	CEO	Small
2	Montes Zuluaga Gloria Elena	CEO	Small
3	Mhanna De Sajin Youmana Mohamad	CEO	Small
4	Acosta De Peinado Carmelita	CEO	Small
5	Kilómetros Valledupar S.A.S	CEO	Small
6	Valledupar 82 S.A.S	CEO	Small
7	Sajim El Azal Wissan Kamal	CEO	Small
8	Inversiones Alta ModaCalidad Y Precio S.A.S.	CEO	Small
9	Inversiones May's & Cia S. En C.	CEO	Small
10	AlmacenesProgreso S.A.S.	CEO	Small
11	Inversiones Tierra Santa y Cía. S.A.S.	CEO	Small
12	Ortiz Ramon Heli	CEO	Small
13	DazaNurysMaría	CEO	Small
14	Lindatex y cia.Limitada	CEO	Median
15	RoperoHermanos S.A.	CEO	Median

Fuente: Autores (2014) with information from (Cámara de Comercio de Valledupar, 2014)

Table 2
Average scale indicator

<i>Interval $[I_i, I_s >$</i>	<i>Level presence</i>
4,87 a 4,09	Very high
4,09 a 3,32	High
3,32 a 2,55	Intermedia
2,55 a 1,77	Low
1,77 a 1,00	Absent

Fuente: Autores (2015).

Table 3
Standard deviation scale

<i>Interval [l_i; l_s></i>	<i>Dispersion level</i>
1,67 a 1,33	Very high
1,33 a 1,00	High
1,00 a 0,67	Intermedia
0,67 a 0,33	Low
0,33 a 0,00	Absent

Fuente: Autors (2015)

4. RESULTS

This section presents the results and the discussions with the theoretical foundations are compared.

Table 4
Statistics for the dimension characteristics of innovation in services

Dimension: characteristics of innovation in services

<i>Indicator</i>	<i>Escala De Likert Por Reactivo</i>										<i>Total</i>		<i>X</i>	<i>S</i>
	<i>TDA (5)</i>		<i>DA (4)</i>		<i>N (3)</i>		<i>ED (2)</i>		<i>TED (1)</i>					
	<i>Fa</i>	<i>%</i>	<i>Fa</i>	<i>%</i>	<i>Fa</i>	<i>%</i>	<i>Fa</i>	<i>%</i>	<i>Fa</i>	<i>%</i>	<i>Fa</i>	<i>%</i>		
The formalization and systematization of innovation processes related with the economics activities	0	0,00	0	0,00	1	6,67	1	6,67	13	86,67	15	100	1,23	0,68
The difficulty of make any difference between product innovations and process innovations	10	66,67	5	33,33	0	0,00	0	0,00	0	0,00	15	100	4,67	0,49
The preference in the organizational innovations face to the technological innovations	7	46,67	8	53,33	0	0,00	0	0,00	0	0,00	15	100	4,47	0,52
The difficulty of protecting the innovations	12	80,00	3	20,00	0	0,00	0	0,00	0	0,00	15	100	4,80	0,41
The incremental and flexible role of the innovation	9	60,00	5	33,33	0	0,00	1	6,67	0	0,00	15	100	4,50	0,82
The origin concentrated on the market	6	40,00	5	33,33	1	6,67	0	0,00	3	20,00	15	100	3,68	1,56
Mean	7	48,89	4	28,89	0	2,22	0	2,22	3	17,78	15	100	3,89	0,74

Fuente: Autors (2015).

The Table 4 shows the results of the dimension characteristics of services innovation in small and medium business enterprises in the textile sector in Valledupar, Colombia. These results indicate a high presence of the dimension analyzed, with an intermediate level of dispersion in the responses of key informants.

In a first step, the principal characteristic is the difficulty of protecting the innovations with a very high prevalence and low dispersion in the answers. These results indicate it is difficult to protect the new services, or the changes made inside them. The innovations are easily imitated by other companies. The previous finding supports the points made by ISEA S.Coop, Ministeriode Industria, Turismo y Comercio de España (2008) and Gomez, Zurbano & Etxebarria (2009) who are agreed with there is a difficulty of innovations protection, because patents are not the appropriate tool to protect them.

In a second step, the analyzed companies have a very high level and low dispersion in the difficulty of make any difference between product innovations and process innovations, as characteristic of innovation in services. Which shows the making changes in the service includes the activities change to provide it. This result are agreed with the point made by Evangelista & Sirilli (1998); Sundbo & Gallouj (1998); Sundbo & Gallouj (2000); Sundbo (1994) who state that due to the immaterial nature, generally, changes in service generate modifications in its production process.

In a third step, the results indicate a very high presence of incremental and flexible, with an intermediate level of dispersion. Finding that states that new or modifications implemented in the service, generally consist of small changes that do not modify the essential function thereof, and respond to a flexible process. This result corresponds to the issues raised by Elche (2005) and Chenga & Krumwiedeb (2012) who argue that incremental innovation is the most common type in the service sector. Also, Elche (2005) states that the system of innovation in service companies is much more flexible than in industry.

In fourth step, the results indicate a very high presence indicator associated with organizational innovations vs. technological and feature innovation in services, obtaining a low level of dispersion in the answers. This result is agreed with Elche (2005) and Gomez, Zurbano, & Etxebarria (2009)in reference to the predominance of organizational innovations against technology in the service sector.

In fifth step, this research demonstrates a high presence related to the origin concentrated on the market. However a very high level of dispersion is evidenced. The results shows high orientation innovation based on market needs and consequently the valuation of the customer as the most important source of innovation in companies. This result is consistent with the principles of Elche (2005) and Hidalgo & D' Alvano (2014)who refer to the participation customer and market as a stimulus for innovations in service companies.

Alike, the companies analyzed shows non-valuation of employees as a source of information for the innovation system, which is a weakness of the innovation system, and evidence a lack of innovation culture. In contrast to the points made by Elche (2005) who recognizes the importance of employees in the innovation. In another way, the time to develop innovations in services is relatively short, results supported by the theory of Sundbo & Gallouj (2000) referring to the short time of service innovations, product market approach.

In sixth step, the companies' doesn't have formalization and dependent on economic activity systematization, obtaining an intermediate level of dispersion in the answers. In line with the above, Sundbo & Gallouj (2000) conclude that the system of innovation in services is very weak and has not yet been consolidated. In the same way, Fundación COTEC para la Innovación Tecnológica (2004), showed that most Spanish organizations did not have a structured innovation process, except for the financial sector and greater technological base.

Similarly, Elche (2005) suggests that the degree of formalization depends on the type of activity. However, she argues that the weak formalization is an advantage for flexibility in the process.

5. CONCLUSIONS

In general, small and medium companies in the textile sector there is a high presence of the characteristics of innovation in services identified in the literature. In this regard, the predominant features correspond to the difficulty to protecting innovations; to differentiate between product and process innovation, and its incremental and flexible factor. However, in commercial textile companies, the process of innovation in services lacks of formalization and systematization.

Specifically, the innovations in the analyzed companies are characterized by the difficulty of protection, so these are easily imitated by other companies in the sector. Also there are the difficulties of differentiating product innovations and process, because in the services, the phase of production and consumption occur simultaneously. In parallel, the innovations in the field of textile trade, have an incremental basis and develop in a flexible process. These are predominantly organizational type, with low technological content.

In Addition, innovations in services analyzed are based on market needs, so that companies value the customer as an important source of innovation process. However, the employees do not represent a relevant source for the process. The time to innovate in services is shorter than in industrial sector due to its predominant focus on the market.

Finally, the innovation process in services is not formalized and systematized in the companies analyzed. Which means, they do not have a team working organized

and formally in the development of innovations, and additionally, innovation is not characterized by its collective character

6. RECOMMENDATIONS

This research recommends setting a set of general parameters to formalize innovation processes in service companies. It is also appropriate to establish incentive systems for the personnel involved in innovation activities, procedures for the selection and evaluation of ideas that can be implemented, and select a committee innovative company formed by employees of different areas of the organization in order to involve all collaborators in the innovation process. Similarly, it is recommended to establish strategic alliances with universities or companies, to enable the development of an active and dynamic research to support the innovation process.

On the other hand, it is important to assess the experiences and knowledge of employees as a source of information in the process of innovation in services. In another way, it is recommended to implement information and communication technologies to boost knowledge management as an input in the innovation process in the companies analyzed.

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Annexure

1. Items of data collection instrument

In the company in which you work:

<i>The formalization and systematization of innovation processes related with the economics activities</i>					
1.	There are a group of people working and formally organized in the implementation of new products or making changes in them.	11	22	33	44 55
2.	The realization of new products or product changes arising from the joint work of all employees of the company	11	22	33	44 55
<i>The difficulty of make any difference between product innovations and process innovations</i>					
3.	Any changes in the service offered involves necessarily change the activities to provide it.	11	22	33	44 55
<i>The preference in the organizational innovations face to the technological innovations</i>					
4.	Most of the changes relate to the internal structure and ways of relating with the stakeholders of the organization	11	22	33	44 55
<i>The difficulty of protecting the innovations</i>					
5.	It is difficult to protect new products offered or modifications made to them.	11	22	33	44 55
6.	The new products offered or changes are easily imitated by other companies.	11	22	33	44 55
<i>The incremental and flexible role of the innovation</i>					
7.	The new or modifications implemented in the services, generally consist of small changes that do not modify the essential function.	11	22	33	44 55
8.	The implementation of new products or changes in existing responds to a flexible process.	11	22	33	44 55
<i>The origin concentrated on the market</i>					
9.	The implementation of new or changes in the products offered responds primarily to the needs of the market.	11	22	33	44 55
10.	The most important to implement new or changes in the products offered are your customers.	11	22	33	44 55
11.	The most important to implement new or changes in the products offered are collaborators source.	11	22	33	44 55
12.	The time to develop new products or to make changes in them, is relatively short compared to the industrial sector.	11	22	33	44 55

Response options: 1. Strongly disagree. 2. Disagree. 3. Neutral (neither agree nor disagree). 4. Agree 5. Strongly agree