Mobile Application to Market Inventories of Small Merchants in the San Victorino Sector in Bogotá: A Strategy Against COVID

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Abstract. The confinement decreed in Colombia, in order to mitigate the impacts caused by COVID-19, has led small merchants to bankruptcy, since they did not have access to digital tools that would allow them to market their products, or compete with large stores. This article will discuss how to design a proposal for a mobile application for the commercialization of inventories, which allows small merchants in the San Victorino sector in the city of Bogotá to sell their products, generating a marketing strategy through digital platforms, from easy and free access, facing the economic crisis caused by the pandemic, improving sales and incomes of families that depend on daily support. The study is developed through a mixed type research with a triangular approach, which allows obtaining a vision of the problems posed, through the literature review and the application of a survey, demonstrating the benefit obtained with the implementation of a sales system for small businesses. Most traders have access to a smart mobile device, without adding acquisition costs, optimizing their control processes, balancing income, reducing product expiration and helping decision-making.

Keywords: Confinement · Inventories · Small business · E-commerce

1 Introduction

The commercialization of products in times of pandemic has become an inconvenience for small merchants in the San Victorino area in Bogotá, since they do not have access to platforms that allow them to offer their inventories.

Taking into account that the majority of merchants do not have the necessary resources to acquire an application that facilitates the commercialization of their products, the following approach is made: What strategy will minimize the economic impact of confinement and improve sales for small merchants from the San Victorino sector in Bogotá?

To respond to the approach, this study seeks to design a proposal for a mobile application for the commercialization of inventories, which allows small merchants in the San Victorino sector in the city of Bogotá to sell their products, carried out through applied research of the type mixed with triangular approach and descriptive scope, according to Cauas (2015), “The descriptive scope is fundamentally aimed at the description of social

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or educational phenomena in a given temporary and special circumstance” (p. 6). Theories of cost accounting, the phenomenon of informality described by the author Juan Berrio and the incorporation of technologies in small companies according to Galeano, allow us to tackle a topic with social and economic impact, since the economy of Latin American countries and the Caribbean is strengthened by SMEs that are made up of small merchants. Using as a collection instrument the survey applied to a segment of small merchants in the sector.

The Sector known as San Victorino is a main center of commerce of the city of Bogotá, which involves mainly manufacturers, importers and wholesalers and retail, comparable to the Commercial Center of Wholesale and Andean Businesses, Hermano Miguel Shopping Center of the city of Quito.

2 Materials and Methods

The study is developed through mixed applied research, carried out through observation and fieldwork, for Muñoz (2012), “Applied research is closely linked to basic research, depends on the results and advances of the latter; all applied research requires a theoretical framework. In empirical research, what is of interest to the researcher are the practical consequences” (p. 6).

2.1 Scope of the Investigation

The approach of research is triangular as it gathers documentary review and information collection through surveys with a descriptive scope, which allows to specify the important properties of people, groups, communities or any other phenomenon that is subject to analysis. A descriptive study selects a number of issues and measures each one independently, in order to describe those being investigated, (Cauas (2015), 6).

2.2 Information Sources

We go to primary sources of information obtained through the application of surveys, and secondary sources through the review of the State of the Art and theories. Torres et al. (2019) mentions that the primary sources are obtained from the data directly from the population or sample of the population, while the secondary sources are obtained from consulting the bibliographic background, documents by authors that are causally related to the topic in specialized search engines and magazine or book articles (page 3).

2.3 Population and Sample

According to data obtained in Mayor of Bogotá (2019), in the town of Santa Fe there are currently 33797 entrepreneurs of which 50.3% belong to natural persons and the remaining 49. % to legal entities. Of the 33797 entrepreneurs, 7.39% are concentrated in the San Victorino sector, equivalent to 2497 general retail establishments including, sale of appliances, pots, distributors, hardware stores, textiles, groceries and some factories, of these 2497 establishments is taken as samples by traders who are in the sector of St.
Victorino Square known as the Butterfly which is located between race 11 and 13, which has 138 establishments. Taking 102 merchants as a sample, representing a 95% margin of reliability with a 5% margin of error. Surveys will also be applied to 25 customers in the sector to establish the viability of the mobile app (Fig. 1).

Fig. 1. Location La Mariposa sector

In order to validate the figures found in the secondary sources, field work was carried out in the San Victorino sector, which consisted of conducting an observation and a double cross count of commercial establishments located in this commercial sector, the information was collected in low season and consisted of identifying permanent commercial activities.

Information was collected from a total of 3,323 premises located in the centers and commercial passages of the sector of San Victorino, were not included in the measurement were the traders we call floatings that arrive in high season and the rest of the year on Wednesdays and Saturdays in the so-called mid-mornings, who rent corridors from shopping centers and parking lots. Nor is it incorporated into the study traders who carry out their activities informally as street vendors, so the commercial activity is higher than that identified.

Within the collection of information, a margin of error of 5.6% equivalent to premises that were closed and about which it was not possible to obtain information.

With regard to the information collected it was established that 55% of the establishments i.e. 1,827 premises are engaged in the marketing of clothing, footwear, lingerie and manufactured products, in terms of employability 4,743 people were identified working in the premises, of which 65% are women, the above figure does not reveal the number of employees working linked to the premises but in the street, nor is it included traders called with floating activity or street vendors.

Another important figure to consider is the use of computer equipment, of which 14% of the establishments have a computer, the remaining 86% does not make use of these, this figure is important for the development of the instrument because it tells us the low use of technologies in its commercial activities.
The fieldwork resulted in a total of 1,827 trade establishments specialized in the textile, manufacturing and clothing sector confirming a majority group, which is detailed below.

| Type of establishment      | Quantity |
|----------------------------|----------|
| Womenswear                 | 348      |
| Mixed Outerwear            | 316      |
| Children’s clothing        | 266      |
| Jean                       | 225      |
| Men’s clothes              | 171      |
| Underwear                  | 78       |
| Shoes                      | 62       |
| Suitcases                  | 51       |
| Hats                       | 40       |
| Lingerie                   | 40       |
| Sportswear stores          | 38       |
| Jackets                    | 35       |
| Others                     | 34       |
| Diaper bags                | 31       |
| Hats                       | 18       |
| Crochet clothes            | 17       |
| Formal dresses             | 17       |
| Pajamas                    | 14       |
| straps                     | 12       |
| Costumes                   | 7        |
| shirts                     | 7        |
| **Total**                  | **1827** |

2.4 Equation

The following equation is used to find the sample.

\[
n = \frac{NZ^2 \cdot pq}{d^2 (N - 1) + Z^2 \cdot pq}
\]

(1)

Where:

- \( N \) = Total population
- \( Z\alpha = 1.96 \) squared (if the security is 95%)
- \( p \) = expected proportion (in this case 5% = 0.05)
- \( q = 1 - p \) (in this case 1 − 0.05 = 0.95)
- \( d \) = precision (use 5% in your research).
2.5 Background

Colombia, like many Latin American and Caribbean countries, strengthen its economy through SMEs, companies that are usually made up of families. According to the DANE (2019), micro, small and medium-sized enterprises in Colombia account for 80% of the country’s employment and 90% of the national production sector. SMEs handle low cash flow and rely heavily on daily sales to survive. The arrival of the pandemic by COVID – 19 highlighted the precarious economy of a large percentage of small and medium-sized enterprises, including small traders in the San Victorino sector, who do not have technological or economic resources to cope with the temporary closure of their establishments and did not have that it would last more than a month. Many of the merchants have returned to their establishments, but with many restrictions, which has reduced their daily income, from there arises the need to generate a strategy that allows them to market their products without incurring higher expenses, but that also allows them to sustain their small business and their employees. It is necessary to understand the essence of costs and expenses, and the importance of inventories when starting a business. Traders in the San Victorino sector move within a competitive market which makes surviving the passage of time more difficult, cost analysis plays an important role as each trader has to evaluate the cost of each product to offer it and many have at least two employees. Competing with large areas or chain warehouses leads them to assume a very low profitability. “Cost accounting not only includes the study of costs in the strict sense, but also in productivity and returns,” says García Pérez De Lema et al. 2006, who continue their exposure indicating that cost calculation and productivity determination are an essential part of the business model. Traders in the San Victorino sector contribute significantly to the economy and job creation in Bogotá and Colombia, understanding that they cannot ignore their corporate social responsibility by emphasizing the social and environmental part according to Corporate Social Responsibility (CSR) of small retail distributors “Small and medium-sized enterprises are a fundamental part of any economy and their contribution to job creation and the GDP of a territory is well known. Improving the business competitiveness of this group of companies becomes one of the key elements for developing both Latin American economies and societies” (Sanclemente Tellez (2015), 43).

A mobile app will offer significant advantages for the trader, as you will have updated inventory of your merchandise minimizing losses, showing you what you have available and what are the goods that are most demanded. According to Toro (2017), small and medium-sized retail establishments are currently at a commercial disadvantage to the country’s large areas or commercial chains and it is not precisely because of the difference in assortment or the wide sales areas that these large establishments have, but because of marketing alternatives, including the use of technology in their strategies. These large stores have their own web pages, mobile applications, credit and debit card payment services, home services, etc., which effectively make up a high percentage of the market, while limiting the common junkyards - varieties, bookstores, meals. Rapids, Hardware Stores, Drugstores, Liquor Stores, Stationers and Fruit Shops, among others, which do not have mobile applications based on their inventories that allow their geographically close customers to purchase their products using services from a smartphone (page 1).
The implementation of an automated system for the marketing of inventory helps to better establish the margin of profitability, for the business as it will allow them to have a control of the inflows and outputs of the goods, as well as have a detailed control of the stocks of the products, in addition they will be able to know the products most demanded by the population and thus have a better organization of the information. (González Pérez et al. 2018, 16). SMEs in Latin American and Caribbean countries represent 98% of the economy, being an important factor in the development and generation of employment, but they have been displaced by large stores due to their lack of access to new technologies, to Galeano et al. (2016), the productivity of SMEs in Colombia and the world are an integral part of the economies, to the point that they have become a fundamental part of the model for their competitiveness. However, at present, the use of technology is not available to everyone, due to an outdated and lagging status on issues such as distribution, use and access. This prevents such companies in Colombia from achieving an ideal state and contributing to closing the digital divide that still affects us in a relevant way (Acuña Peña 2016).

2.6 Impact of Confinement Due to COVID-19 on the Incomes of Small Merchants

According to an express survey developed by the union, 90.5% of businessmen reported a drop in their sales, of which 72.1% reported an alarming drop and 18.4 indicated a significant drop. For 6.4% the levels were normal and only for 3% reported an increase in their income.

Jaime Alberto Cabal, president of Fenalco said that with the exception of shops dedicated to the supply of food, basic necessities and medicines, the fall in the other subsectors is dramatic and tends to worsen with national confinement (Revista Dinero 2020, párr. 2–3).

2.7 Revival of Sales

Most traders, especially those living from informality or those who, despite having a trade establishment, are not formalized, urgently need to reactivate their sales in order to earn income, it is clear that health goes first, but in underdeveloped countries like Colombia a confinement of more than 3 months is not good for the economy, as a high percentage of people who do not have stable employment live on a day-to-day basis. Indeed, informality cries out to return to the street, and the private sector lives with an artificial respirator and runs out of oxygen.

A matter of a month, the pandemic has pulverized all the records for the disaster, and projections for this year show that 2020 will be a black year for history. GDP per capita will decline by 170 countries and the world economy will contract by 3%, according to the International Monetary Fund, for what will be the “worst recession since the Great Depression”, (Revista Semana 2020, párr. 14).
(Cepal 2020), to address this situation, companies will need to move forward in the search for greater efficiency and productivity. In both cases, the role of policies is key to generating stimulus for companies to target higher value-added products, change energy consumption, have greater interaction with each other (collective efficiency) and incorporate new technologies (Fig. 2).

Fig. 2. Changes in the organization and operation of companies. Source (ECLAC 2020)

3 Results

3.1 Results Small Traders

Below are the results of the survey of the 102 small traders of the San Victorino Sector (Graph 1).

Graph 1. Own elaboration

27% of respondents have a place where they sell mobile accessories, followed by 19% of merchandise or sale of clothing and shoes (Graph 2).
Of the 102 respondents, 66% are not formalized and were unable to access subsidies offered by the government to support small entrepreneurs (Graph 3). Despite the confinement and contingency due to the pandemic, 88% of those surveyed have reinvented themselves and are selling their products (Graph 4).
51% of small merchants turned to the OLX application to market their products, none of the respondents used a mobile application due to its high costs (Graph 5).

![Graph 5. Own elaboration](image)

Although small merchants have tried to use other strategies to market their inventories, 78% mention that their sales have decreased (Graph 6).

![Graph 6. Own elaboration](image)

76% of merchants consider that if they had a mobile application to market their products, their sales would increase. Proving feasibility to use an APP that encourages sales of your products (Graph 7).
93% of small merchants have not acquired a PPP that allows them to market their products due to cost (Graph 8).

Of the 102 small merchants surveyed, 100% would agree to use a free APP to be able to market their inventories.

3.2 Results of the San Victorino Sector Clients

The results of the survey of the 25 clients of the San Victorino Sector are presented below (Graph 9).
Of the 25 customers in the San Victorino sector surveyed, 80% like to buy in that sector because it is cheaper than in chain warehouses or large areas (Graph 10).

72% of customers surveyed say they have not purchased products from the San Victorino Sector during confinement (Graph 11).

Of the 7 respondents who responded that during confinement they had purchased products from the San Victorino sector, 43% did so through the home provided by the business owner, as they had the mobile number (Graph 12).

Of the 18 customers who answered that they have not purchased products from the San Victorino sector, 67% answered that they did not do so for fear of catching (Graph 13).

92% of customers in the San Victorino sector assure that, if the small merchants in the sector had a mobile application to market their products, they would access to purchase those products, without having to travel and put their health at risk.
3. How you managed to acquire the products

Graph 11. Own elaboration

4. Why couldn't you buy again in the San Victorino sector

Graph 12. Own elaboration

5. If there was a mobile application to purchase the products, you would access it

Graph 13. Own elaboration
4 Conclusions

SMEs and micro-enterprises are a key link in economic development in Colombia and generally for Latin America, largely support employment generation and contribute directly and indirectly to, however the current crisis due to the health emergency caused by COVID-19 has revealed a problem for which small businesses were not prepared, on the one hand their low level of formalization has prevented them from accessing financial resources and state subsidies, on the other hand their lack of preparedness in the use of technologies to reach their customers have deepened the crisis generated by confinement.

According to the figures, a mobile application provides a solution that would facilitate the meeting between buyers and merchants in a virtual and interactive way, it is important to consider that customers are willing to buy for their affordable prices and variety of products, however they do not want to move to the places of high flow of people as is the center of Bogota, on the other hand, sales through applications would generate a significant increase in merchants’ incomes, which would benefit the country’s economy and people’s income, given that trade establishments employ nearly five thousand people directly without indirect jobs. An alternative to combating difficult economic situation experienced by small traders is to sell their products online, without exposing their health and that of their customers.

A mobile application has a number of strategic advantages such as ease of making purchases, high consumption through them, the possibility of offering products to a targeted market, the study also identifies that the application must have a low cost or if possible free, taking into account that the current situation of the economy, making an expense involves a high effort, in fact traders who have to date dabbled in online sales have done so mostly through applications that do not generate charges or commissions.

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