

Multifunctional Market Design at Mount Sinai

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Abstract

This article explores the design and development of a multifunctional market in Monte Sinai, a growing sector in the northwest of Guayaquil, Ecuador. The proposal responds to the lack of commercial and recreational infrastructure in the area, where the absence of formal markets has led to the growth of informal commerce and has limited the quality of life of its inhabitants. The multifunctional market project seeks to integrate safe and regulated commercial spaces with recreational areas and social interaction areas. In addition, it incorporates ecological criteria through the use of green roofs and facades, addressing both environmental sustainability and social well-being. This design aims to improve the urban environment, foster local economic development and strengthen social cohesion, providing a replicable model of sustainable infrastructure in highly vulnerable urban areas.

Keywords: Multifunctional Market, Informal Trade, Sustainability, Mount Sinai, Ecological Infrastructure, Social Cohesion, Urban Development.

1. Introduction

The project to design a multifunctional market in Monte Sinai responds to the urgent need for infrastructure in this area of northwest Guayaquil. Mount Sinai has experienced exponential population growth, exceeding 350,000 inhabitants in recent years; however, this expansion has not been accompanied by an adequate development of services and equipment. The lack of formal commercial infrastructure and recreational spaces has led to an increase in informal commerce and a reduced quality of life for its residents. This situation affects not only the local economy, but also safety, health and community coexistence, as a large part of the population resorts to buying products in inadequate conditions, while commerce in the streets takes place without the necessary regulations to ensure hygiene and safety.

The proposed multifunctional market has as its main objective to provide a space that facilitates the purchase of basic necessities in a regulated and safe environment, also integrating recreational and socialization areas that improve social cohesion and quality of life in the

community. The proposal seeks to transform informal commerce into a formal and organized activity that, in turn, promotes the economic development of the sector. With a clean and orderly infrastructure, merchants will be allowed to offer their products in a safe space and under adequate hygiene standards, raising commercial standards and improving the perception of safety and trust in the area.

From an environmental perspective, this project incorporates sustainability criteria through the implementation of green roofs and facades. These strategies not only bring aesthetic benefits to the market, but also help to improve the environmental quality of the sector, providing thermal insulation and contributing to the reduction of pollution. In a context where extreme weather conditions and the lack of green areas seriously affect inhabitants, these solutions represent a significant innovation and offer a model of sustainability applicable to other urban projects in vulnerable areas.

The problem is framed by the lack of adequate conditions for trade and recreation at Mount Sinai, which does not meet the needs of a constantly growing population. The creation of this multifunctional market seeks not only to reduce dependence on informal trade, but also to establish a suitable environment for social interaction and recreation, currently limited in the sector. This market, therefore, will not only meet the supply needs of the community, but will also promote the right to a dignified and healthy urban environment for its inhabitants.

It is anticipated that this multifunctional market will positively impact the local economy, not only by creating direct and indirect employment, but also by offering business opportunities that will strengthen the economy of families that depend on commerce in this area. In addition, the new space will promote social cohesion and a sense of belonging by providing a community meeting point, thus fostering coexistence and strengthening ties between inhabitants.

In conclusion, the design of this multifunctional market at Mount Sinai responds to a critical need for infrastructure that houses commercial activities in hygienic and safe conditions, while offering recreation and socialization areas. This comprehensive approach not only addresses the economic and social problems of the sector, but also serves as a model of sustainable development that can be replicated in other areas of Guayaquil, contributing to resilient and sustainable urban growth.

1.1 Problem statement

In the large-scale analysis of the city of Guayaquil, a deficit of equipment in municipal markets and commercial areas was denoted in certain areas, resulting in little support for the trade of products to be bought and sold for retailers in certain sectors northwest of the city of Guayaquil, which leads to the population with commercial scarcity developing their trade informally.

Monte Sinai, located northwest of the city, is one of the sectors affected by the little commercial support mentioned above, which, in addition to lacking these infrastructures, also has a shortage of basic services which hinders the exchange of products. Likewise, in this sector, commercial exchanges are essentially developed in residential areas, since according to Rada, 58% of the families living in Monte Sinai buy their food in neighborhood stores, 37% in the market, and the remaining 5% in supermarkets (Cotrina, 2012).

On the other hand, Monte Sinai has a small percentage of support for the promotion of recreation and sports. This sector had a population of 39,802 inhabitants which was obtained according to data from the 2010 Census, however, an exponential increase in the population was identified years later. With information captured by Google Earth and according to MIDUVI, this exponential growth resulted in a total of 350,000 inhabitants. (MIDUVI, 2011). Therefore, Monte Sinai is a developing sector and therefore needs to offer its inhabitants adequate places to acquire quality goods and services with the appropriate basic services.

It should be noted that, in the Monte Sinai sector, recreation spaces are very scarce, which entails minimal social interaction. This generates not only ignorance among inhabitants, but also unsafe areas where no one wants to travel, in addition to this, being a socially isolated sector, support for the sector is relatively low (Villamil, 2023).

On the other hand, Guayaquil is a gray city that has a low index of green areas, so the WHO recommendation of 9.5 square meters per inhabitant is taken into consideration. Therefore, the high rate of lack of green infrastructure in the Monte Sinai sector is emphasized. Add to all this that, according to national news, they claim that the sector has become the area with the highest risk of flooding due to winter (Televistazo, 2023). Therefore, implementing new systems such as green infrastructure would be a viable option to take advantage of these extreme environmental problems.

1.2 Problem Formulation

What design considerations should be developed to implement a multifunctional market in the Monte Sinai sector, applying ecological strategies to improve the quality of life, promote the reduction of environmental impacts and boost economic development in the community?

2. Objectives

2.1 General objective

Design a multifunctional market in the Monte Sinai sector, which integrates ecological strategies in order to improve the quality of life and promote economic development in the community.

2.2 Specific objectives

- To investigate the current environment of the Mount Sinai sector in terms of environmental conditions, socio-economic aspects and opportunities for the development of a multifunctional market.
- Determine the demand and need of a market, in addition to the products of scarce consumption of the inhabitants of Mount Sinai.
- Design indoor and outdoor spaces for a multifunctional market using ecological and green infrastructure criteria.

3. Methodology

3.1 Research Approach

A mixed research approach will be carried out. Qualitative since the site can observe the social and economic characteristics, as well as their cultural behaviors, priorities, experiences, and other subjective aspects. Quantitative because the survey-sampling technique will be applied to know the needs of spaces, the results of which will be processed and analyzed to obtain the statistical data that allow decisions to be made for the project proposal.

3.2 Type of research

This work uses descriptive research, since it specifies the main existing problems in the study area, related to the trade of basic necessities with the main objective of proposing a response to the problem through a design proposal (Valle, Manrique, & Revilla, 2022).

3.3 Data collection method

The proposed research and the techniques for collecting information and data corresponding to the characteristics of the project will be acquired by obtaining data from primary and secondary sources.

3.3.1 Inductive-Deductive Method

The inductive method is based on generating a general conclusion through the analysis of particular phenomena from observation (Andrade Zamora, Alejo Machado, & Armend, 2018).

This will be applied in the analysis of the four analogous models and in the observation of the study area. The spatial solutions, construction techniques and architectural concepts of the four models analyzed: two international and two national, provide a guiding basis to follow to produce an effective solution in the proposal to create the multifunctional market. On the other hand, the deductive method uses general statements as a resource to reach a specific conclusion about the phenomenon studied (Palmero Suárez, 2021). This method is applied through the legal, historical and social bases presented in the frame of reference. Inductive research methods are used to analyze the observed phenomenon, while deductive methods are used to verify it. Inductive approaches are associated with qualitative research and deductive approaches with quantitative research. Because of this, the approach that will be used will be the inductive-deductive method of mixed approach. (Urzola, 2020).

3.4 Techniques and instruments

The following techniques and accompanying instruments will be used:

- Observation: To acquire data on the main problems of the area due to the deficit of markets and recreation areas.
- Interviews: they are a very useful technique for collecting data in qualitative research. Defined as a conversation that has a specific purpose other than the simple fact of dialogue.

- Surveys: to find out through a sample of the entire population the needs of the sector through optional answers and a bar analysis of the results.

3.5 Population and sample

3.5.1 Sample Calculation applied to the Population of the Valle Verde Cooperative

For the analysis of the study, the population of the Valle Verde de Monte Sinai cooperative, where the project is located, is taken as a reference. According to the National Institute of Statistics and Census (INEC) for 2022, the population to be projected in the Valle Verde cooperative will be 22,594 inhabitants.

For the projection of the sample, the following formula will be used:

$$n = \frac{N * (Z)^2 p * q}{e^2 * (N - 1) + Z^2 * p * q}$$

Z = Confidence Level

P = Percentage of the population that has the desired attribute

q = Percentage of the population that does not have the desired attribute

N = Size of the universe

e = Maximum Estimate Error

n = Sample size

N	22.594	
Z	1.96	
p	0.50	50 %
q	0.50	50 %

Table 1. Sample calculation of the valley cooperative

Source: Own elaboration

Sample calculation.

$$n = \frac{22.594 * (1.96)^2 0.5 * 0.5}{0.05^2 * (22.594 - 1) + 1.96^2 * 0.5 * 0.5}$$

$$n = \frac{21699.2776}{57.4429}$$

$$n = 377.75$$

$$n = 378 \text{ habitantes}$$

3.5.2 Sample Calculation applied to the informal Merchants of the Valle Verde Cooperative

For this study analysis, the number of informal workers found on the main road "casuarina" and in other sectors of the study area is taken as a reference, and according to the count of the authors of theses in the respective visits to the sector, 110 merchants were counted in total.

N	97	
Z	1.96	
p	0.50	50 %
q	0.50	50 %

Table 2. Sample calculation of the merchants of the valley cooperative

Source: Own elaboration

Finite sample calculation:

$$n = \frac{97 * (1.96)^2 * 0.5 * 0.5}{0.05^2 * (97 - 1) + 1.96^2 * 0.5 * 0.5}$$

$$n = \frac{93.1588}{1.2004}$$

$$n = 77.60$$

$$n = 78 \text{ comerciantes}$$

4. Results

4.1 Analysis and interpretation of the results

The data obtained were based on the collection of information through the interview and survey technique carried out with 378 residents of the sector.

4.1.1 Analysis and Interpretation of the Results of the Surveys Carried Out on the Population of the Sector.

The results of the survey of each question are presented directly and through Google forms.

Question 1.- What gender do you identify with?

	Answer	Percentage
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Male	150	40 %
Female	213	56 %
Other	15	4 %
Total	378	100.00 %

Table 3. Gender of the sample obtained

Source: Own elaboration

Through the survey, the most predominant gender is female with 56% of the total sample, followed by 40% of men. There is a difference of 16% between the two predominant sexes in the sector.

Question 2.- Indicate your Age Range

	Answer	Percentage
12 – 18 years old	97	26 %
19 – 24 years old	79	21 %
25 – 35 years old	110	29 %
36 – 59 years old	62	16 %
+ 65 years	30	8 %
Total	378	100.00 %

Table 4. Age range of respondents

Source: Own elaboration

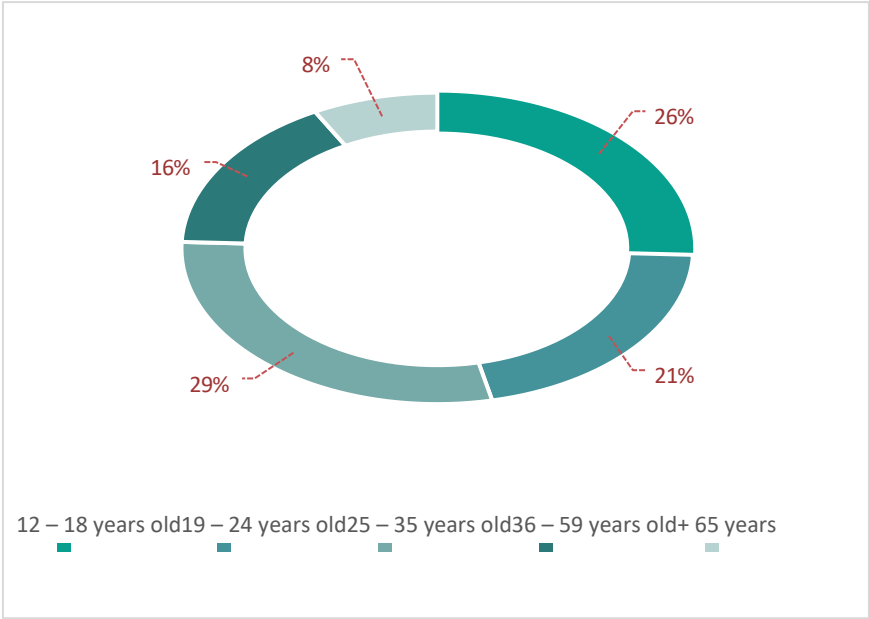


Figure1. Age Range Percentage

Source: Authors. In original language English

Most of the groups surveyed were under 35 years of age with 76% of the entire sample. The age ranges that predominated were 25-35 years old with 29%, followed by 26% in the age range of 12-18 years. These results may indicate that most of the people who reside in the sector are young people and that the equipment to be designed will have to benefit this population.

Question 3.- Do you have job stability?

	Answer	Percentage
YES	179	47 %
No	199	53 %
Total	378	100.00 %

Table 4. Job stability of the population sample

Source: Own elaboration

Most of the population in the sector does not have job stability, since they do not have a permanent job and, therefore, no regular salary. 53% of people work informally, either as street vendors in the locality or in other sectors, while others are engaged in various ventures, but without a stable income. Only 47% have regular compensation every fortnight or monthly.

Question 4.- What is your monthly income level?

	Respuesta	Porcentaje
No tengo	27	7 %
Menos de \$100	45	12 %
\$101 - \$200	12	3 %
\$201 - \$300	47	12 %
\$301 - \$400	136	36 %
\$401 - \$500	70	19 %
Más de \$500	41	11 %
Total	378	100.00 %

Table 5. Monthly economic income of the population sample

Source: Own elaboration

66% of the people who reside in the sector have a monthly economic compensation of \$300 or more and 34% less than that amount. In the sample carried out, only 36% have a monthly income of \$301 - \$400, followed by 19% with a remuneration of \$401 - \$500

Question 5.- How often do you go to buy food products for your home?

	Answer	Percentage
Daily	273	72 %
Weekly	55	15 %
Biweekly	17	4 %
Monthly	33	9 %
Total	378	100.00 %

Table 6. Frequency of purchase of food products

Source: Own elaboration

72% of the inhabitants in this area choose to buy their food daily, because the products in that locality are not very varied, and also their income does not allow them to buy provisions in the long term. People who have a high income are characterized by long-term planning, and making their purchases in 1 or 2 times a month.

Question 6.- Where do you buy basic food products?

(Open Question)

	Answer	Percentage
Vendors	248	66 %
Neighborhood Stores	40	10 %
Supermarkets	55	14 %
Outside the cooperative	35	7 %
On request or delivery	10	3 %
Total	378	100.00 %

Table 7. Where you buy food products

Source: Own elaboration

Given that there are very few staple supply centers, the inhabitants choose to make their purchases daily in informal shops with 66% of the total sample and 14% who go to supermarkets.

Question 7.- What is the time it takes to travel from your home to the place where you buy the food products?

	Answer	Percentage
5 – 10 min	42	11 %
11 – 20 min	72	19 %
21 – 30 min	153	41 %
31 – 40 min	83	22 %
More than 40 min	28	7 %
Total	378	100.00 %

Table 8. Length of time of the population sample

Source: Own elaboration

41% travel approximately 21 – 30 minutes from their residence to the sector where they buy their products and 22% between 31 – 40 minutes. Only 30% of the population takes less than 20 minutes to get to the place where they make their purchases.

Question 8.- What is the mobility that you frequently use to go to buy food products?

	Answer	Percentage
Walking	30	8 %
Bus	181	48 %
Motorcycle taxi	57	15 %
Motorcycle-Bikes	57	15 %
Bicycle	30	8 %
Vehicle P.	15	4 %
Taxi	8	2 %

Table 9. Transport use of the population sample

Source: Own elaboration

92% of the inhabitants go to buy their food in the different means of transport due to the distance they have to travel to get to the commercial post. It can be analyzed that 48% use the public transport bus.

Question 9.- Have you had any difficulty obtaining food products in the sector?

	Respuesta	Porcentaje
SI	293	78 %
NO	85	22 %
Total	378	100.00 %

Table 10. Difficulty in obtaining a food product from the population sample

Source: Own elaboration

78% of people have difficulty obtaining their different products, while only 22% have no problem. The possible causes of this will have to be analyzed.

Question 10.- If in the previous question you answered "YES", describe in a few words: What is the difficulty you had in obtaining food products? If your answer was "NO", ignore the question (Open-ended question)

	Respuesta	Porcentaje
No hay el producto deseado	117	40 %
Muy alejado el sector	95	32 %
Precios muy elevados	46	16 %
El producto está en mal estado	35	12 %
Total	293	100.00 %

Table 11. Main causes of obtaining a product

Source: Own elaboration

Given the previous question, 78% have difficulties obtaining their products, and the main reasons are: there is no variety of products to offer, the place where the merchants work is very far away and with high prices or they are in poor condition.

Question 11.- What do you consider to be the food products that are currently not available or are not so varied in the sector? (Open Question)

	Answer	Percentage
Seafood	121	41 %
Condiments	85	29 %
Root Vegetables (cassava, potato)	45	16 %

Table 12. Scarce products in the sector

Source: Own elaboration

In the surveys carried out, most of the people surveyed were able to answer that the largest product they do not consume is seafood, due to its little variety and is in bad condition, without any type of refrigeration. Other products are condiments, due to their high price since they are scarce.

Question 12.- Do you know the term Multifunctional market?

	Answer	Percentage
Yes	305	78 %
No	73	22 %
Total	378	100.00 %

Table 12. Knowledge of the term

Source: Own elaboration

The synthesis of the data obtained on the term "multifunctional market" indicates that 78% of the population does know the term, while 22% does not know it. Most people relate a multifunctional market to equipment that not only fulfills a simple activity, but also encompasses other activities.

Question 13.- Do you think it is necessary to create a multifunctional market in the area?

	Answer	Percentage
Yes	371	98 %
No	2	0.5 %
Maybe	5	1.5 %
Total	378	100.00 %

Table 13. Need for the creation of a market

Source: Own elaboration

The answer to the question about the need to create a multifunctional market in the area is extremely positive, with 98% approval of the respondents and only 0.5% indicated that it is not necessary to create such equipment and 1.5% in only a "Maybe".

Question 14.- Apart from the creation of a market, what other space for social interaction do you think is necessary for the Valle Verde cooperative? (Open Question)

	Respuesta	Porcentaje
Espacios recreativos	112	30 %
Espacios deportivos	180	47 %
Espacio para actividades físicas	48	13 %
Parques	38	10 %
Total	378	100.00 %

Table 14. Other equipment

Source: Own elaboration

The answers obtained from the open question about other spaces for social interaction in the sector, most highlighted the lack of sports spaces for entertainment and sports for people of all ages.

4.1.2 Analysis and Interpretation of the Results of the Surveys Carried Out on Informal Traders in the Sector.

Question 1.- What gender do you identify with?

	Answer	Percentage
Male	58	73 %
Female	19	24 %
Other	2	3 %
Total	78	100.00 %

Table 15. Sample Genre to Traders

Source: Own elaboration

Most of the survey carried out on informal traders indicate that 73% are male who work to have an economic income for their livelihood, and 24% are female people who work daily in the sector.

Question 2.- Indicate your Age Range

	Answer	Percentage
12 – 18 years old	11	14 %
19 – 24 years old	25	32 %
25 – 35 years old	30	38 %
36 – 59 years old	10	13 %
+ 65 years	2	3 %
Total	78	100.00 %

Table 16. Indicate Your Age Range

Source: Own elaboration

Most of the people surveyed are under 35 years of age, 38% are in the age range of 25 – 35 years, followed by 32% of 19 – 24 years of age and 14 % are under 18 years of age. 13% are between 36-59 years old and only 3% are over 65 years old.

Question 3.- What is your monthly income level?

44% of informal traders make profits of \$401 - \$500, followed by 32% with \$301 - \$400. Only 15% of the population earns less than \$300 and 9% earn more than \$500 per month.

	Respuesta	Porcentaje
Menos de \$200	1	1 %
\$201 - \$300	4	5 %
\$301 - \$400	25	32 %
\$401 - \$500	34	44 %
Más de \$500	7	9 %
Total	78	100.00 %

Table 17. Indicate your monthly income

Source: Own elaboration

Question 4.- How long have you been operating your business in the sector?

	Answer	Percentage
Less than 1 year	9	11 %
1 – 5 years	28	36 %
6 – 10 years	32	41 %
11 – 15 years old	7	9 %
15 – 20 years old	2	3 %
More than 20 years	0	0 %

Table 18. Period of operation in your business

Source: Own elaboration

Most businesses in the sector have been operating for 6-10 years, equivalent to 41% and 36% for 1-5 years. These businesses have occurred recently, due to the population growth of the sector and the lack of opportunities for stable employment.

Question 5.- What variety of product do you offer in your business?

	Answer	Percentage
Meat	18	24 %
Supply	12	15 %
Dairy	12	15 %
Seafood	3	4 %
Fruit/vegetables	12	15 %
Food Stalls	15	19 %
Miscellaneous Articles	6	8 %

Table 19. Variety of products offered

Source: Own elaboration

Many of these stores offer their products, and most offer products related to meat, which is equivalent to 24%, while fruits/vegetables, dairy products and food stores are equivalent to 15% each.

Question 6.- Have you had any difficulty in offering any product that you offer in your business?

	Answer	Percentage
Yes	63	81 %
No	15	19 %
Total	78	100.00 %

Table 20. Variety of products offered

Source: Own elaboration

81% of merchants have had difficulty offering their different products to the general public, while 19% have no problem doing this work.

Question 7.- If in the previous question you answered "YES", describe in a few words: What is the difficulty you had in offering the product? If your answer was "NO," ignore the question. (Open question).

	Answer	Percentage
There is no direct distributor	18	29 %
Instability in the place	5	8 %

Work Competence	8	13 %
Storage problems	15	24 %
Lie		
Vulnerability to conditions	11	17 %

Table 20. Variety of products offered

Source: Own elaboration

This question inquires about the different difficulties presented by workers. 29% do not have a distributor directly, which causes them to have to sell their products at a high price and are vulnerable to the climate of the sector and have nowhere to store their products and many times, have to discard it, causing great losses for their businesses.

Question 8.- Are you happy to offer your products in this place?

	Answer	Percentage
Yes	4	5 %
No	74	95 %
Total	78	100.00 %

Table 21. Merchants Compliance Offering Products

Source: Own elaboration

95% of merchants are not satisfied with offering their products in the place where they are, due to the different difficulties presented in the previous question. Given this, only 5% in total of the entire sample surveyed are satisfied in their workplace.

Question 9.- Do you know the term Multifunctional market?

	Respuesta	Porcentaje
Si	4	5 %
No	74	95 %
Total	78	100.00 %

Table 22. Knowledge of the term to traders

Source: Own elaboration

The results of the question on the concept of the term multifunctional market indicate a significant difference. 95% of merchants know that it is a public facility that is used for several activities, while only 5% do not know it.

Question 10.- Do you think it is necessary to create a multifunctional market in the area?

	Answer	Percentage
Yes	74	95 %
No	3	4 %
Maybe	1	1 %
Total	78	100.00 %

Table 23. Need for the creation of a market by merchants

Source: Own elaboration

95% of informal traders agree with the creation of a market in the sector as they consider it a positive change. Alone, 4% believe that it is not necessary to create this equipment and 1% in a perhaps. This percentage of support results in support for the implementation of this public equipment.

Question 11.- If a market is to be designed and built, would you agree to sell your products in this building?

	Answer	Percentage
Yes	75	96 %
No	3	4 %
Maybe	0	0 %
Total	78	100.00 %

Table 24. Willingness to offer their products in the market

Source: Own elaboration

Given the previous support for the implementation of such equipment, the majority agree to sell their products, with 96% approval, since it would not only improve their local economy, but would also give opportunities to large companies as new partners and distributors directly.

4.1.3 Analysis of the Interview

Mr. Jorge Oswaldo Altamirano Jarrin, president of the merchants' committee of the Valle Verde cooperative, has been interviewed about the current situation of the merchants and his opinion in relation to the creation of a market in the sector.

Current outlook for traders:

First of all, he tells us a little about the current situation of the merchants, since it is a bit discouraging due to the low economic income that each of the merchants has, either because of the place where they sell their products or the issue of the wave of violence that the country is going through.

Description of the services offered:

The services offered by merchants are marked by the limitation of small spaces since they do not have furniture, tricycles, carts that are in good condition to offer several products at the same time. It could be said that the service they offer, most of the time they are in terrible condition because the products are on the roads, others in poor condition due to the issue of storage and refrigeration.

Unmet Product Demand:

Yes, there is a clear demand for several products because there are no direct distributors, and very often customers express their desire to have more variety of products offered. Many times some merchants choose to purchase the merchandise outside the cooperative, causing the products to rise.

Main current challenges:

Currently there are some intense labor competitions between the same merchants on the same block, which sometimes causes losses. Another thing that cannot be overlooked is the unhealthiness due to the location of the products on the sidewalk and the lack of variety as products.

Knowledge of the multifunctional market.

Altamirano Jorge said that the term is a little limited for his knowledge, however, he clarifies that it is a building that is not only for the purchase and sale of things or products, but also that serves for other types of activities.

Opinion on the creation of a multifunctional market.

The president of the sector's merchants' committee said that the creation of this equipment could be a positive opportunity, since it would improve the conditions of merchants as long as it has the priority of helping merchants who work in the sector.

Potential benefits for traders.

By giving them the opportunity, they could benefit from a store or stall that offers a more orderly space, thus being able to attract large investors from large companies to be the direct distributors, offering a wide variety of products and a reduction in labor competition on the streets.

Challenges associated with market creation.

One of the main challenges that could arise is the adaptation of merchants to a new environment, since some merchants have been working on the streets for more than 5 years. Another challenge could be internal competition, but for this a fixed price system could be implemented for all products.

Diversification of income and opportunities.

The creation of this market could diversify income and even explore new types of ventures. This would be beneficial currently for traders who face limitation in terms of space and variety.

Strengthening cohesion between traders

It could help strengthen cohesion among the entire partnership, as a common space and a shared goal are being provided.

Another space for social interaction.

Finally, Altamirano concluded that in addition to the creation of the market, it would be essential to have sports and social areas. A place where merchants can interact with each other in a more relaxed way, strengthening the bonds of the community, supporting each other.

5. Conclusions

First, the results obtained through surveys of the Mount Sinai community reveal an urgent need for formal commercial infrastructure. Most of the inhabitants were dissatisfied with the current

situation of commerce in the area, since informal commerce predominates in unregulated public spaces, which compromises both the quality of the products and the safety of the environment. This informal market generates circulation problems and presents products in inadequate conditions, exposed to the elements, which negatively affects the health and well-being of residents.

Another relevant finding was the lack of recreational areas and healthy spaces for the community, which contributes to environmental deterioration and limits options for social interaction. Surveys indicate that the population considers it necessary to create a multifunctional market that not only houses commercial activities, but also offers recreational and ecological areas. The absence of these spaces has led to a perception of environmental deterioration in the area, exacerbated by the lack of green areas and the poor state of the existing infrastructure.

In terms of the distribution of the population by age and occupation, the analysis of the data shows that the majority of Mount Sinai's inhabitants are young people under the age of 35, suggesting that the market should be designed with a focus on accessibility and the offer of activities for a working population. In addition, more than 50% of the population lacks job stability, with many working in informal commerce or in occupations without a fixed income. This situation highlights the relevance of a formal commercial infrastructure that can offer better economic opportunities to the inhabitants.

The analysis of business needs revealed a significant demand for fresh, quality products, such as seafood and vegetables, which are difficult to obtain in the area due to the lack of a suitable market with preservation conditions. The population expressed concern that currently available products are sold in poor condition, underscoring the importance of a market that meets hygiene and storage standards to ensure safe and quality products for residents.

In addition, the data indicated that a high proportion of respondents not only support the creation of a cross-functional market, but also showed willingness to participate in its implementation, both in commerce and in recreational activities. This support is key to the viability and success of the project, as it demonstrates a strong commitment of the community to the improvement of its environment. Community acceptance and support are key factors for the long-term sustainability of the MFM.

The market's green approach, which includes the use of green roofs and facades, also received positive feedback, especially in relation to its ability to improve the urban environment and reduce environmental impact. The incorporation of natural elements, such as green areas, not only contributes to the physical well-being of the inhabitants, but also improves the aesthetics of the area, encouraging the use of the market as a space for recreation and socialization.

In conclusion, the creation of a multifunctional market at Mount Sinai represents a comprehensive solution to the commercial and recreational infrastructure problems in the area. This project not only responds to the need to regulate commerce and improve the quality of life of residents, but also promotes sustainable development, social cohesion and local economic development. With a design that meets the needs of a young and working population, the multifunctional market could be transformed into a model of urban development that can be replicated in other areas of the city.

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