Comparative Study Between the Management Models of Social Housing Programs: SAV-BID and SIV, of the Province of Azuay Between the Years 2010 - 2020

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Abstract. The creation of management models for the construction of Social Interest Houses in the province of Azuay has been one of the relevant actions to mitigate the existing housing deficit in the territory in the last ten years. Within this period, two management models have played a leading role: the SAV-BID National Social Housing Program and the SIV National Social Housing Program. Models created and promoted by the Ecuadorian State, with the help of various actors, that try to correct the housing problems present in the vulnerable socioeconomic strata of the country. With this background, a comparative study of the management models applied in Ecuador is proposed, through which the similarities and differences between each of them are evidenced, as well as the potentialities and weaknesses that have characterized them, both in their management as in your application. The study begins with a referential framework, where central issues are considered such as: characterization of the concept of Social Interest Housing, housing deficit in Ecuador, and the essential components required for the design and implementation of a housing management model, with the purpose to define and understand the context of the investigation. For the development of the study, a qualitative methodology is proposed, which uses a deductive-inductive system; where dimensions, sub-dimensions and variables are raised in order to approach the study of management models from the general to the particular. The dimensions are defined as the great considerations and aspects that determine the models; The subdimensions are the analysis components where the results of the execution and application of the models are produced, and the variables are made up of the unique aspects or particularities of the study. The results show similarities in the planning and structuring of the two models. However, there are differences in the source of financing and in the characteristics and obligations of the project stakeholders. The study concludes that there are some differences that have allowed the SAV BID National Housing Program management model to generate greater production of Social Interest Housing. These differences are closely related to the active and continuous participation of the managers or home builders, a fundamental aspect that has allowed the success of the projects developed through this management model.

1. Introduction

According to various studies, population growth within Latin American cities in recent decades has generated an increase in housing needs. According to the INEC, the housing deficit in Ecuador is
692,216 units that represent 19% of the total number of constituted homes. These data are alarming for the Ecuadorian State because little more than half of the problems that Ecuadorian families present in terms of housing are directly related to the lack of it [1].

Given the need to face these problems, Ecuador through its constitution, the National Plan for Good Living and government policies has given priority to Social Interest Housing Projects, committing to generate policies that guarantee the development of housing and quality life of its inhabitants, as well as to encourage, implement and control the fulfillment of projects that respond in a pertinent way to housing problems [2].

The development and application of housing projects has occurred through various management models that seek to correct the housing deficit that afflicts Ecuador. Among the management models that have gained relevance in the last decade we find: SAV-BID National Social Housing Program and SIV National Social Housing Program.

The research seeks to develop a comparative study based on a theoretical framework, which identifies and describes the characteristics and results obtained by each of the management models under study. All this, with the purpose of generating a classification that helps us establish the similarities and differences between the management models that have been developed in the province of Azuay to generate Social Interest Housing projects.

2. Theoretical framework
The research seeks to develop a comparative study based on a theoretical framework, which identifies and describes the characteristics and results obtained by each of the management models under study. A comparative study between the management models of Social Interest Housing programs, it is necessary to generate a broad overview that describes the antecedents of each of the concepts that make up the research.

All families that live in a territory have the right to a housing solution that allows them not only to protect themselves from environmental factors but also to develop a set of daily activities that give way to social growth. "Housing is, then, a use value and a basic satisfactory, which must also be of adequate quality" [3].

Pallasmaa describes the house as an individualized space, where its inhabitants can develop fully. According to the author:

The house is not a simple object or a building, but a diffuse and complex state that integrates memories and images, desires and fears, past and present. It is also a scene of rituals, personal rhythms and day-to-day routines. Housing has a temporal dimension and continuity, and is a gradual product of adaptation to the world of the family and the individual [4].

So, when talking about individualized space and adequate quality, we address much more complex concepts that define housing; which within this context acquires a high social and economic value. This value cannot be paid for by the lower income sectors of society. It is there where Social Interest Housing (VIS) projects become relevant because they try to provide financial support or incentives for housing to low-income families; all this in order to guarantee a decent housing solution for all families within a territory [5].

Faced with the aforementioned, based on what is established in the law and with the aim of complying with it; The Ecuadorian State implements the concept of Social Interest Housing (VIS) defining it as:
Social interest housing is adequate and dignified housing for priority attention groups and the population in situations of poverty or vulnerability, especially that belonging to indigenous, Afro-Ecuadorian and Montubio peoples. The definition of the beneficiary population of low-income housing as well as the parameters and procedures that regulate their access, financing and construction will be determined based on what is established by the national governing body on housing and housing in coordination with the governing body of economic and social inclusion. [6].

It is evident that Social Interest Housing in Ecuador is aimed at the most vulnerable socioeconomic strata, which represent a high percentage of the population. Within the country 9,090,786 inhabitants are in urban areas, where 28% of them live in poverty (2,544,164 inhabitants) and 14.4% live in extreme poverty (1,307,886 inhabitants). On the other hand, poverty is also accentuated in rural areas where there are 5,392,713 inhabitants, of which 30.3% live in poverty and 42.4% in extreme poverty. Thus, with a total of approximately 14,483,499 inhabitants, 53.66% of the Ecuadorian population lives in a situation of poverty or extreme poverty. [one].

Poverty and extreme poverty are measured by the National Institute of Statistics and Censuses (INEC), they use an international measurement system that is based on the comparison of per capita family income. A minimum level of disposable income is established that an individual needs in order not to be considered poor, this level is called the poverty line and all the people who are below this line present characteristics of poverty or extreme poverty. By December 2020, a person is considered poor if they receive a per capita family income of less than USD 84.05 per month and extremely poor if they receive less than USD 47.37 [7].

According to Doré (2008), urban areas where poverty is accentuated are called urban-marginal areas, which share socioeconomic similarities with poor social groups that settle in rural areas.

Consequently, Ecuador, through the Ministry of Urban Development and Housing, has developed several management models that seek to generate Social Interest Housing (VIS) projects. Among the management models that have gained relevance in the last decade we find: SAV-BID National Social Housing Program and SIV National Social Housing Program. These models have carried out projects aimed at various sectors of the population, especially the population living in a state of poverty or extreme poverty and citizens who have some type of disability or have different capacities [8].

"The SAV is an integral system, and of national scope, that allows the management and control of the National Program of Housing Social Infrastructure" [9]. It was born in 2010 when the Ecuadorian State, through the Ministry of Finance, signed a loan contract with the Inter-American Development Bank (IDB), to cooperate in the execution of the National Program of Social Infrastructure for Housing. [9].

Among the most relevant characteristics of this model, the structure by processes that configures it stands out. This structure, in turn, is made up of sub-processes and internal, external and support activities in order to guarantee the main objective of the SAV [10].

The internal processes are those that are executed directly by MIDUVI and consist of organizing the external actors and processes, qualify the applicants, pay for the Economic Support and manage the portfolio of all the support provided to the beneficiaries. On the other hand, the external processes are executed by the external actors of the SAV in charge of: organizing the demand, managing the financing and attracting savings, building the house and evaluating the project processes [10].

For its part, the SIV National Social Housing Program is a management model implemented simultaneously with the SAV BID Management Model. The program is structured around a Housing
Incentive System (SIV), said economic incentive comes from the general state budget, depending on its availability; Additionally, it can be financed through donations from abroad, or from any other source that has been previously qualified by the Ministry of Economy and Finance.

The process of executing this management model consists of annual dissemination and communication mechanisms carried out by the Ministry of Urban Development and Housing so that the interested sector can present Social Interest Housing projects. These calls may be interested in acquiring the voucher, as well as professional technicians or private entities that are able to manage all the processes of construction and home improvement [11].

The application of beneficiaries, as well as of project executors, is given through the Public Procurement Portal, a website in charge of regulating the National Public Procurement System. Once the interested parties have participated to get involved in the Social Interest Housing Projects, it is the MIDUVI who qualifies and selects them to grant them the financing and the execution of the project [11].

Given the above, it is evident that the Ecuadorian State has joined great and different efforts to mitigate the housing deficit in the country. During the last 15 years, and thanks to the support of the Inter-American Development Bank (IDB) and the Housing Incentive System (SIV); Ecuador has obtained important achievements, since in 1998 the national housing deficit was almost a third higher than the current one. However, at present, there are still approximately four hundred thousand households that are unable to access decent housing [12]. For this reason, it becomes pertinent to carry out a comparative study capable of analyzing the management models for the construction of Social Interest Housing that have gained importance and have been applied in the last ten years in Ecuador.

3. Methodology
A qualitative methodology was proposed, which uses a deductive-inductive system, and the comparative method applied to the two management models studied. The analysis system extracts structural elements from the management models to compare them.

The structural elements of the management model describe the planning, programming and execution of the projects to be carried out [13]. Based on this, a hierarchical matrix was proposed that allowed the data to be handled in an operational manner, defining analysis dimensions for the research. The structure disaggregated the fundamental issues to be evaluated, analyzing the projects from the macro to the micro.

With the aforementioned dimensions, sub-dimensions and variables were defined. The dimensions are the basic guidelines that guide the administration and application of the management models, the sub-dimensions are the components in which the analysis dimensions are disaggregated and in which the results are produced as a consequence of planning, programming and execution of management models. These sub-dimensions operate through variables that are specific aspects of each of the projects analyzed in the sample (table 1).

The instruments used to collect information to evaluate and compare the management models are:

- Information collection sheets: made through the information obtained in the MIDUVI and allow synthesizing and ordering the data obtained.

- Bibliographic review: an extensive search is carried out on the management models applied in Ecuador between 2010-2020 for the execution of social housing; regulations, laws, decrees that
govern them, as well as bibliographic reference on the issues at the international, national and local level to locate ourselves within the context of the research.

- Comparative tables: result of the analysis process of the data obtained from each of the projects.

| Table 1. Matrix of dimensions, sub-dimensions, variables and tools of the comparative study. |
|---------------------------------------------------------------|
| DIMENSIONS | SUB- DIMENSIONS | VARIABLES | INSTRUMENTS |
| PLANNING | REGULATORY FRAMEWORK | -Objective -Scope | Bibliographic review |
| PROGRAMMING | HUMAN RESOURCES | -Obligations of the Ministry of Urban Development and Housing (governing body). -Obligations and characteristics of the possible beneficiaries -Obligations and characteristics of project managers / executors. -Funding Source. -Contribution of the state to the project. -Contribution of the beneficiary to the project. | Bibliographic review and primary collection files SOURCE: MIDUVI and surveys carried out among professionals who participated in the projects. |
| ECONOMIC RESOURCES | | | |
| EXECUTION | RESULTS OF THE PROJECT | -Number of new projects. -New housing solutions. -Compliance with the objectives of MIDUVI to provide housing for the most vulnerable sectors of the population. | Comparative tables. |

4. Results and discussions
The results are shown through the comparisons made based on the dimensions determined in the methodology: Planning, Programming and Execution.

4.1. Planning

| Table 2. Comparisons of the dimension referring to planning of the SAV BID and Fiscal Funds management models. |
|---------------------------------------------------------------|
| VARIABLES | SAV BID | SIV |
| OBJECTIVE | Facilitate low-income and vulnerable Ecuadorian households, located anywhere in the country, access to housing in livable conditions and basic services, essential for a decent life. | Provide help to families with limited economic resources in the rural or marginal urban sector and deteriorated urban homes nationwide for the improvement or construction of their home. - Avoid migration from the rural sector to the centers with the largest population. - Promote, in the case of rural housing, an adequate housing solution, respecting the cultural environments of the beneficiaries and improving their quality of life. |
| RENTAL | Urban, rural and marginal urban | Urban, rural and marginal urban |
| | Rural and Marginal Urban: Economic Support is intended to build a home on their own land or improve an existing home. | Rural and Marginal Urban: Economic Support is intended to build a home on own land or improve an existing home |

4.2. Programming

In this dimension, the variables that make up the human and economic resources that allow the development of the project were analyzed and compared.

4.2.1 Human Resources: In this sub-dimension, all the actors and entities that are involved in the programming and development of the management model were covered.

- Ministry of Urban Development and Housing: MIDUVI, as the governing body of the two management models under study, complies with the same obligations in each of them. These obligations are detailed below. (table 3).
Table 3. Obligations of MIDUVI.

| Obligations of MIDUVI                                                                 | Note                                                                 |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1. Prepare the regulations, instructions, contract formats, guides, technical manuals, etc., deemed necessary for the proper operation of the management model. | 2. Verify in any phase of the housing projects compliance with its applicable rules and regulations. |
| 3. Manage the dissemination and social communication mechanisms of the management model. | 4. Take corrective actions and necessary measures for immediate application aimed at meeting the objectives of the housing projects. |
| 5. Manage the registry of beneficiaries of Bonds.                                    | 6. Qualify the applicants and inform the beneficiaries according to the mechanisms established in these Regulations. |
| 7. Verify compliance with the Regulations, Instructions and Process Manual of the Management Model. | 8. Execute the guarantees if applicable                                |
| 9. Carry out the social accompaniment of the process                               | 10. Allocate land and homes if applicable                             |

- Beneficiaries: The characteristics that the beneficiaries must meet were compared, finding differences in the mandatory contribution for the construction of new housing and in the requirements for application (table 4).

Table 4. Comparison of the characteristics that the beneficiaries of Social Interest Housing projects must meet.

| CHARACTERISTICS OF BENEFICIARIES                                                                 | SAV BID | SIV |
|------------------------------------------------------------------------------------------------|---------|-----|
| Be an Ecuadorian citizen, head of a family nucleus and over 18 years of age or an adult minor. Over 15 years old, the head of the family must apply with a tutor. | x       | x   |
| Marital status married, divorced, widowed or in a legally recognized de facto union, with family responsibilities. Individuals who are over 50 years of age may apply. | x       | x   |
| Be in the Social Registry within the established scores to qualify their socioeconomic condition. | x       | x   |
| Comply with the mandatory savings or the contribution of materials or labor in the cases contemplated and in agreement with the OVTP. | x       |     |
| Support your application with a Housing Offeror on Own Land. (Applies in rural and marginal urban areas) | x       |     |
| None of the family group must be the owner of real estate in the national territory, except in the case of the modality on own land or improvement where the applicant must be the owner of the land on which the home will be built or improved. | x       | x   |
| Not having been a beneficiary of any other type of Economic Aid for housing granted by MIDUVI or any other entity of the State. | x       |     |
| Be part of an organized housing group, with a maximum of 50 applicants, considering the minimum required for the formation of the board. | x       |     |
| Define with the Home Land Offeror, a complementary basic infrastructure project. If basic infrastructure services are available, the complementary project may be related to production, health, education, social assistance or technical assistance. | x       | FAILS |
| Participate in the design of a new housing proposal together with the Housing Offeror on Own Land, which must be approved by MIDUVI. | x       | FAILS |
| Sign the corresponding act of commitment for the execution of the complementary project. | x       | FAILS |
| Sign the certificate of acceptance of the housing design and the housing implementation proposal on the land agreed in the participatory design process. | x       | x   |
Managers or Executors: Comparisons were made between the characteristics, conditions and obligations of the managers or home builders, finding significant differences in both the obligations and the requirements to be met. (table 5).

**Table 5. Comparison of the managers / executors of Social Interest Housing projects.**

| CHARACTERISTICS | SAV BID | SIV |
|----------------|---------|-----|
| Denominated Offerors of Housing on Own Land (OVTP) to: Non-Governmental Organizations, universities or affiliated entities with activity in the field of housing, consortia or professional associations in the area of construction in free exercise without dependency relationship with the state or technical professionals in free exercise. | X | They are public law organizations, bodies of the autonomous sectional regime, legally recognized non-governmental organizations, organizations that legally represent the human group that needs to build or improve their home. |
| TERMS | SAV BID | SIV |
| To be registered in the RUP Unique Registry of Suppliers as qualified providers for the construction of housing. | x | x |
| Obtain the qualification as OVTP in the MIDUVI and annually update your registration in the SAV registry | x | FAILS |
| Have a minimum annual construction management of 15 homes with Economic Support to stay in the registry of bidders who act in rural and marginal urban areas. | x | FAILS |
| Prepare and agree with the applicants for a new home on their own land, the design of the home in accordance with the environment, as well as develop a proposal for implementation on the land of each of the beneficiaries. | x | FAILS |
| OBLIGATIONS | SAV BID | SIV |
| Establish the location of the program and organize the demand for housing. | x | Obtain the necessary permits and licenses from the corresponding Decentralized Autonomous Government, based on current regulations. |
| Inform interested families about the regulations and operating conditions of the SAV. | x | Build the houses complying with the technical specifications and market them with the beneficiaries of the SIV, in accordance with the provisions of the project qualification report, regulations and instructions. |
| Support those interested in meeting the requirements and submitting documents for the application, withdrawal and payment of Economic Support | x | Comply, if required, with the procedure for credit qualification before any Public or Private Financial Institution, regulated by the Superintendency of Banks or the Superintendency of Popular and Solidarity Economy. |
| Sign the application form and take responsibility for the documentation so that the application is complete and contains the correct information. | x | FAILS |
| Advise the applicants, applicants and beneficiaries of the SAV throughout the process. | x | They participate only in the design and construction process. |
| Support in obtaining credit or granting credit | x | x |
| Provide facilities for monitoring and follow-up of the processes that MIDUVI carries out periodically in any phase of the project development. | x | x |

4.2.2 Economic resources: Sub-dimension that includes the sources of financing of the management models, as well as the amounts invested in the analyzed projects. Table 6 shows the great difference that exists between the financing mechanism of each of the models.
Table 6. Comparison of Financing Sources.

| SAV BID | SIV |
|---------|-----|
| Economic Support System (SAV) with resources from the credit agreement signed between the Government of Ecuador and the Inter-American Development Bank (IDB). Intended for low-income families in Ecuadorian territory. | Housing Incentive System (SIV), with resources from the general state budget (fiscal funds) and foreign donations, or from any other source that has been qualified by the Ministry of Economy and Finance. Intended to help families from the lowest socioeconomic strata. |

Economic contributions to projects: The economic contribution to the housing project, both from the Ecuadorian State and from the beneficiaries, is essential for the development of the management model. Within the SAV BID and SIV programs, it is established that the mandatory minimum savings will be five hundred dollars, which can be: 60% monetary contribution and 40% contribution with materials or labor.

The study shows that during the last ten years there has been great investment from the state to correct the problems of housing deficit, while investment by the beneficiaries was low. This, as mentioned above, is part of the nature of the management models, which seek to financially help the construction of houses for the most vulnerable people in the country.

The State investment represents 95% of the total investment, both in the SAV BID management model and in the SIV. On the other hand, the investment of the beneficiaries in neither of the two models exceeds 5% of the total amount of the project (Figure 1).

Figure 1 shows that the investment in the SAV BID management model was $6,700,567.08 while that of the SIV management model was only $3,723.00.00. The comparison of these values shows that the amount invested in the first management model almost doubles compared to the investment value of the SIV management model.

![Economic contributions of the actors to the SAV BID management model and SIV management model during the period between 2010-2020](image)

**Figure 1.** Economic contributions of the actors to the SAV BID management model and SIV management model during the period between 2010-2020 [14].
4.3. Execution
The last dimension analyzed shows the results obtained after executing the proposed projects. We compare the results obtained by each of the management models, in the period from 2010 to 2020.

The management models developed projects that propose a certain number of housing solutions, aimed at a specific territory (Azuay Province) and a specific population (people with socio-economic stratum of poverty and extreme poverty).

The SAV BID management model shows a total of 54 projects where 880 homes were executed, while the SIV program generated 26 projects executing 681 new homes (Figure 2).

When comparing the percentages of project generation, we find that the SAV BID management model generated 67.50% of the total projects developed in the last ten years. While the SIV management model carried out almost half the projects as SAV BID with a percentage of 32.50% (Figure 2).

Figure 2. Number of Executed Projects and number of new homes built by the management models [14].

The evaluation of the final results of a management model is essential to know the success of their planning, programming and execution. Figure 3 shows the results obtained by the management models under study.

A total of 1,561 new homes were projected in the period between 2010 - 2020, where 15 cantons in the province of Azuay were supplied. The SAV BID model shows a higher housing production in the different cantons, projecting an average of 59 homes in the province of Azuay.

The SIV management model shows a lower housing production, showing a lack of project execution in three of the fifteen cantons where projects were developed between the years 2010-2020. It shows an average of 46 homes within the province of Azuay.
5. Conclusions

Based on the comparative analysis, it was concluded that the management models under study show great similarities in their planning, seek to achieve the same objectives, and are aimed at mitigating the housing deficit of families located in the lowest socioeconomic strata; through acquiring, building or improving a home.

The comparative study made visible the differences that have marked the management models, both in their development and in their results. Among the main differences is that which refers to the source of financing for housing programs. Showing that the amount of financing for the SAV BID model, developed with funds from a loan granted to the country by the Inter-American Development Bank (IDB), exceeds the amount that the State allocates for housing in the SIV management model; This difference allowed the production of housing through the SAV BID model to be higher compared to the production of the SIV Social Housing Program.

There is another difference that marks the development and production of housing in the models studied, and it is related to the intervention of Housing Offerors on Own Land, which belong to the SAV BID management model. The comparison makes it clear that it is the bidders who acquire greater obligations to the beneficiaries. This direct supplier-beneficiary relationship allows the project to develop in a more agile and efficient way, since the problems are known first-hand and real solutions to them are proposed.

Finally, the data analyzed regarding the project proposals for the models reveal that: The SAV BID model has generated approximately twice as many projects compared to the SIV management model. By generating a greater number of projects, more job opportunities are generated for executors or housing providers, as well as for the construction industry both in labor and in the sale and production of materials. It is evident that this fact contributes significantly to the economic growth of the country.

Therefore, the SAV BID management model has great potential in aspects related to its processes and financing, thus generating higher results in housing construction. These potentialities can be considered as starting points when proposing and developing new management models in the future.
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