RESEARCH ARTICLE

Beyond Counting Houses: Are We Providing Adequate Housing? An Assessment of Residential Satisfaction of Socialized Housing in Davao City, Philippines

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Abstract

Since 1992, the socialized housing program has been the primary mode of housing delivery in the Philippines. Thus, aside from production concerns, the evaluation of the housing program in terms of housing adequacy is imperative. This paper explores the level of end-users' satisfaction with socialized housing in Davao City, Philippines. Respondents were asked to rate their level of satisfaction with a number of housing variables, which were summarized into six components using Exploratory Factor Analysis and Confirmatory Factor Analysis. Results showed that most end-users are "highly satisfied" with their living conditions. Residents' satisfaction is primarily influenced by the social environment, acquisition and financing, and dwelling units. However, satisfaction levels vary significantly among different house types, with those living in rowhouses being moderately satisfied. This paper also highlights how socialized housing delivery deviated from its mandate by functioning as a free market, leaving out its intended beneficiaries: the underprivileged population. Therefore, this calls for a review of the current socialized housing standards by the Philippines' central housing agency, the Department of Human Settlement and Urban Development, to improve the current housing delivery and condition.

Keywords: end-users · residential satisfaction · renters · rowhouse · socialized housing · target beneficiaries

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Introduction

The provision of adequate housing remains a challenge, especially in developing countries where governments at central, regional, and local levels lack the resources to sufficiently address it. Two main problems have developed in the housing sector: (1) quantitatively, the number of housing units provided does not meet the demands of the low-income group; and (2) qualitatively, the type of housing has not been satisfactory to the family housing needs, comfort, social, cultural, and religious needs (Mohit et al. 2010). The housing supply and its affordability can be viewed as one side of the coin, whereas concerns about housing adequacy are another side as it impacts the quality of life and affects the psychosocial aspects of the inhabitants. While several studies discussed the problems and attempted solutions to the growing housing problem quantitatively, quite a few dwells on the second problem. This is because the primary accomplishment of the National Economic Development Authority's (NEDA) shelter production for the poor is monitored in terms of the number of completed housing rather than promoting liveability, sustainable, and resilient communities (Flores et al. 2021).

As a primary mode of housing delivery, socialized housing is the country's main approach to shelter provision. Republic Act No. 7279 or the "Urban Development and Housing Act (UDHA) of 1992" defines socialized housing as the main housing program for the "underprivileged and homeless citizens". It is specifically designed for the low-income earners belonging to the bottom 30% income decile of the 2015 Family Income and Expenditure Survey (FIES) data of the Philippine Statistics Authority (PSA) (Housing and Urban Development Coordinating Council 2018). The delivery and standards of this housing development are governed by Batas Pambansa 220 (BP 220). Targeted to provide adequate housing for low-income earners, the maximum selling price of socialized housing has a price cap. Since BP 220's enactment in 1982 up to 2018, there have been six price cap increases from PhP 150,000 in 1992. The maximum selling price as of 2018 stands at PhP 480,000 for a 24 m^2 floor area while socialized housing condominiums of 22 m^2 ranges from PhP 600,000 to PhP 700,000 for projects located in urban areas. However, there are talks of another price increase following the recent increase in the price cap of economic housing (Ordinario 2021).

The type of socialized housing adapted to the changes in the price ceiling set by the government along with the availability of suitable and affordable land. This has led not only to the decrease in house and lot sizes but also to changes in house type. Looking closer at the current design standard of socialized housing under the BP 220's Implementing Rules and Regulations (IRR), there is a disparity with the prevailing building standards found in the National Building Code of the Philippines (NBCP). For example, the NBCP specified a minimum ceiling height of 2.7 m for a single-storey building or the ground floor of a multi-storey building while the BP 220 allows a ceiling height or a minimum headroom clearance of 2.0 m where ceilings are not provided. For a two-storey socialized housing, the minimum width of stairs is 0.60 m compared to the 0.90 m of the NBCP. Furthermore, the BP 220 also sets a minimum allowable lot area for a rowhouse at 36 m^2 and a floor area of 18 m^2. Understandably, this is done to provide the minimum possible guidelines to save up on construction. It cannot be overemphasized that savings in the construction cost are directly proportional to the minimization of the housing unit selling price. However, this puts the quality of living in these particular households in question.

According to the Philippine Statistic Authority 2020 data, the Average Household Size (AHS) of Filipino homes is 4.1 (PSA 2022). Considering a household size of four people, the required spaces should have at least two bedrooms, a bathroom with a water closet, a kitchen, a living room, and a dining space (National Affordable Homes Agency 2007, 26). This can hardly fit inside a 24 m^2 unit as suggested by the BP 220, much more on the 18 m^2 row house units. Given this reality, it is very important to assess the user experience and the living quality of households under the socialized housing program using the end-user satisfaction survey.

Homeownership is the primary goal of most Filipinos, among others, when asked how they see

themselves in the future (NEDA 2016). To attain this aspiration, a closer look at the government's primary mode of housing delivery (Urban Development and Housing Act [UDHA] or the RA 7279)—the socialized housing program—is necessary for making sure that what is provided is adequate in terms of housing quality under the lens of the occupants. Particularly, this study aims to determine the levels of residential satisfaction of socialized housing end-users and look at the factors that influence them. This follows the contention that the efficiency and effectiveness of housing provision in meeting housing needs require an estimation of the determinants of housing satisfaction (Teck-Hong 2012, 115).

Taking the case of Davao City, this study hopes to mirror the plight of socialized housing developments nationwide. Davao City has an estimated population of 1.77 million as of 2020 Census (PSA 2023), and is one of the highly urbanized cities in the southern part of the Philippines. It ranks as the third most populous city in the country following Quezon City and the country's capital, City of Manila. With its rapid urbanization and population growth, Davao City has seen an increased demand for housing to accommodate its increasing population.

Considering 10 socialized housing projects from 1993 to 2017, the study covered a total of 385 respondents. The housing projects were selected after categorizing the socialized housing projects in terms of the prevailing housing standards and price ceilings. The projects considered were among the list of registered socialized housing from the then Housing and Land Use Regulatory Board (HLURB n.d.). This study used a set of questionnaires to assess the residential satisfaction of the socialized housing end-users. The survey questionnaire has two sections containing socio-demographic data of the respondents and the list of housing variables containing a Likert scale, which the respondent rate based on their housing experience. Among the projects considered, the type of housing provision varied from single-detached, duplex, and rowhouses.

Housing Satisfaction Research for Policy Formulation

As early as 1945, satisfaction has been used as a criterion to describe studies of residential characteristics as it offers a sense of face validity, and a sense of summing up all of the unique problems and advantages that residents experience in their housing environment (Anderson and Weidemann 1997, 291–292). However, some view the satisfaction survey as an inappropriate measure because it tends to be a subjective reflection of an objective condition, and skepticism about subjective measures still exists. Responding to these criticisms, Campbell et al. (1976, 478) noted that exaggerated skepticism about satisfaction surveys is not warranted after the study using objective and subjective variables resulted in acceptable reliability and validity. Furthermore, in housing evaluation research, housing adequacy and residential satisfaction can be used interchangeably and the findings have implications for housing policy formulation and research (Ibem et al. 2015, 12). Either of these two concepts can produce a similar outcome, which may result in informed conclusions on issues such as housing quality, residents' quality of life, housing adjustment behavior, success of housing projects, and performance of housing providers and managers in meeting the needs of users.

In the Philippines, it is seldom to none that the government uses a satisfaction survey to measure the program's effectiveness. Satisfaction surveys are often only used to measure administration leadership and governance through trust ratings, and not as a means to evaluate and hear the voice of the people on the services provided especially in concerns like housing projects.

Available literature considered different variables for residential satisfaction. However, all have agreed that the main respondents should be the users or the residents. In the earlier study by Anderson and Weidemann (1997, 294) where an operational measure of satisfaction was developed, satisfaction was measured using an index. Mohit et al. (2010, 21–22) and Karim (2013, 23) also argued that the notion of residential satisfaction is composed of the indices of satisfaction that respondents perceive. These indices were drawn from residential components and their corresponding factors such as (1) dwelling unit features (living area, dining space, bedroom spaces, and toilet); (2) dwelling unit support services (drains, street, lighting, and garbage collection); (3) public facilities (play area, parking, prayer hall, perimeter roads, and pedestrian walkways); (4) social environment (noise, accident, safety, security control, and community relations); and (5) neighborhood facilities (distances to town center, workplace, school, hospital, and shopping center) (Mohit et al. 2011, 21).

Factors Affecting Housing Satisfaction

Different population groups often have different predictors of satisfaction. This has been the case with high-rise versus low-rise units (Francescato et al. 1975, 4–9), public housing versus non-public housing sites (Anderson and Weidemann 1997, 299), and when looking only at demographic differences within the same site. Similarly, certain age groups like the elderly have a different set of satisfaction predictors (Anderson and Weidemann 1997, 299). Socioeconomic attributes of the residents such as age, family size, and

the like were negatively correlated with residential satisfaction, whereas residents' race, employment type, floor level, and length of residency are positively correlated with residential satisfaction. Teck-Hong (2012, 110) revealed that housing satisfaction is much higher among homeowners compared to renters. The neighborhood stability of homeownership is significantly and positively associated with housing satisfaction (Amerigo and Aragones 1997, 51). The longer the family stays in the household, the more satisfied they become (Amole 2009, 81). This is usually attributed to the tendency of households to adapt to their housing and residential environment over time, and consequently have a high level of satisfaction with their housing and neighborhood. Security is also a determinant of housing satisfaction (Teck-Hong 2012, 114). Households who live in gated and guarded neighborhoods are more likely to be satisfied with their housing situations compared to households who do not live in gated and guarded neighborhoods, holding all other things constant. The price of dwelling units is also significant to housing satisfaction. Moreover, based on the findings of the locational attributes, homeowners are only satisfied with a house that is situated within five kilometers from the workplace. It is reasonable to believe that a long distance to the workplace means incurring more traveling time and cost. However, the results show that the distance to retail centers, hospitals, and sports centers is statistically and insignificantly related to housing satisfaction. Flores et al. (2021, 25) found that socialized housing in Metro Manila was significantly located near places of worship, police stations, hospitals, educational institutions, and public markets as compared to other forms of housing.

In terms of housing reconstruction in disaster-hit areas, beneficiaries' residential satisfaction level was generally higher when the owner is involved in the construction as it leads to the construction of houses that respond to their specific needs (Karunasena and Rameezdeen 2010, 180). Moreover, satisfaction is mainly based on parameters like durability, functionality, beneficiary preference inclusion, and location.

Low-cost or socialized housing is often associated with poorly constructed housing units. Teck-Hong (2012, 108) noted that there is evidence of problems created by errant house builders for buyers. These problems range from leaking roofs and uneven flooring to substandard house quality and unpleasant neighborhoods. This has tainted the overall perception of socialized housing projects as the housing quality of the neighborhood affects the social identity of the residents (Hauge 2009, 17). This has produced unoccupied, low-value, remote, and off-city socialized housing projects (Flores 2021, 15) that were developed to make a profit rather than provide a solution to the burgeoning housing backlog.

Socialized Housing Studies in the Philippines

Most, if not all, residential satisfaction studies are done outside the country and focus on housing units in the context of low-rise residential condominiums or apartments and mid-cost developments. Literature on socialized housing in the Philippine context dwells on the spatial distribution of socialized housing (Flores 2021), social justice (Arcilla 2018), housing affordability (Arcilla 2019), and the effect of the real-estate boom in socialized housing land allocation (Sajor 2001). Earlier works covering extensive discussion on housing studies were done by researcher Marife Ballesteros. Her works cover a variety of topics such as the role of the local housing board in the implementation of socialized housing (Ballesteros and Ancheta 2021), the evaluation of the National Housing Authority (NHA) resettlement program (Ballesteros and Egana 2013), an assessment of the community mortgage program for socialized housing (Ballesteros et al. 2015), and rental housing studies for the urban poor (Ballesteros 2004), among others. This shows that there is room for a socialized housing study that looks at the lived experience of the socialized housing end-users by measuring their residential satisfaction.

This study takes the context of Davao City as a case. As of 2019, socialized housing in Davao City and many parts of the country has been limited to horizontal development with units that are either rowhouse, duplex, or single-detached. This study aims to fill the gap in determining the residential satisfaction of end-users in a socialized housing in a horizontal development. Residential interaction is more restricted in horizontal development as compared to low-rise housing with common spaces like hallways and corridors. Management style also differs as maintenance issues in the dwelling units are often taken cared of by the end-users. Maintenance of the residential subdivision in socialized housing is often given to the homeowners who organize themselves.

Hence, this study conducted a satisfaction survey with respondents being end-users of socialized housing. The residents' satisfaction level gives feedback on the lived experience in the housing community. As argued by Ibem et al. (2015, 12), results produced by satisfaction and perception studies on housing can form informed conclusions on issues of housing quality, residents' quality of life, and the success of housing projects, among others. Moreover, these results will enable housing providers and policymakers to make informed decisions in

catering to the needs of the users.

The measurement of residential satisfaction for this study was guided by the works of Mohit et al. (2014, 60) where residential satisfaction is influenced by six components: (1) social environment, (2) neighborhood facilities, (3) public facilities, (4) housing support services, (5) physical features of the house or the dwelling unit characteristics, and (6) the socio-demographic characteristics. These components are composed of a number of variables that describes it.

The variables composing each component are partially adopted from another study by Mohit et al. (2010, 21). This study also took reference on how the indices of each component and the overall residential satisfaction index were computed. While the socio-demographic data was collected and considered in the study, it was excluded from the computation of the residential satisfaction index but was used to further understand the nature of residential satisfaction. Figure 1 shows the adopted conceptual framework of this study integrating another component: Acquisition and Financing. It hopes to capture an integral dimension of the socialized housing residential satisfaction as it evaluates the effectivity of the housing program in terms of its affordability as a housing product for the low-income beneficiary.

Methodology

A pen-and-paper interview was carried out with a survey questionnaire where the respondents rated their level of satisfaction using a 5-point Likert scale. Selected respondents for the residential satisfaction survey were those living in a socialized housing subdivision regardless of whether they rent or own the unit.

Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) was used to check if the 63 variables for residential satisfaction can be grouped together into a smaller component. The scree plot of components having an eigenvalue of more than 1 is compared with a parallel analysis to validate the result of the EFA. Components in the parallel analysis that provided mean values (eigenvalues) that were greater than the eigenvalue of the EFA were considered for further analysis. Following the derivation of the components for Residential Satisfaction, an internal validity test was conducted using Cronbach's alpha. This validated the decision to group the number of factors into one single component. Based on the conducted Confirmatory Factor Analysis (CFA), variables that do not show a unique manifestation of a single factor were omitted for further analysis. The results of the CFA were then translated into indices of residential satisfaction, which were obtained from the values for all variables included in each construct. Multi-linear regression analysis was then used to determine what factors (independent variables) explained the variation in residential satisfaction (dependent variables).

Lastly, qualitative data such as remarks left by the respondents on why they were "very dissatisfied" and "dissatisfied" were tabulated and entered into a word cloud generator to visually represent repeating themes and housing issues.

Survey Sample Size

For the socialized housing end-user, Stratified Random Sampling was used based on the secondary data obtained from HLURB's official website. There are 35 verified socialized housing projects with issued License to Sell (LTS) in Davao City from 1993 to 2017. This resulted to recorded total of 9,929 houses and lots from socialized housing in a form of the main project, compliance, and those covered by a Memorandum of Understanding (MOU). Projects offering lots only were excluded from the target population. Using Slovin's Formula, the sampling size for the residential satisfaction survey was determined to be 385.

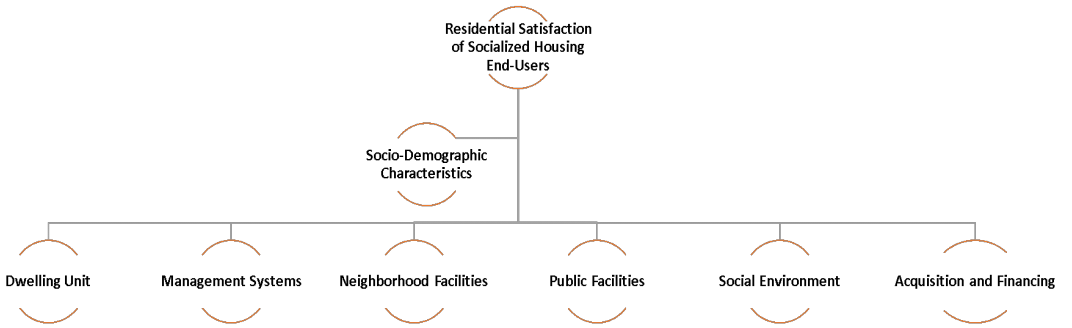


FIGURE 1 Conceptual framework for the residential satisfaction of socialized housing end-users

The 35 house and lot projects were categorized based on the year of issuance of its License to Sell (LTS) to allow the stratification of the socialized housing projects based on price point and prevailing design standard as stipulated in the BP 220. With some price points having a limited number of projects and actual house and lot units, the projects in consideration were reduced to 26. Maintaining the original sample size of 385 respondents, 10 projects were selected by prorating the total number of house and lots per category to the required sample size. The respondents' size per project was also set to a minimum of 30 respondents. Table 1 shows the final projects selected and their housing types.

Davao City has three legislative districts. Three of the projects considered in the study are in the first district (Talomo), four in the second district (Buhangin), and three housing developments in the third district (Toril).

Of the ten socialized housing projects, six projects (single-detached) were built earlier in 1995 to 2009 and feature a floor area of 30–36 m^2, and a relatively larger lot area (100–150 m^2). Two projects with duplex-type housing were built in 1997 and 2012. These housing units have a floor area of around 30 m^2 and a typical lot area of around 60 m^2. The rowhouses, developed in 2017 and 2011, have a typical floor area of 22 (on a 36 m^2 lot) and 36 m^2 (on a 50 m^2 lot), respectively.

Data Collection

Prior to the conduct of the actual survey, written permission from the *purok* leader or the homeowner association's (HOA) president was sought. The survey respondents within the identified project were done using convenience sampling as the survey was administered only to willing end-users. Moreover, the end-users' identity disclosure was optional. The residential satisfaction survey was conducted from 02 February 2019 to 03 March 2019. In administering the survey, only one respondent was taken per household.

Demographic Profile of Survey Respondents

The majority of the residential satisfaction survey respondents were women (60%) between the ages of 31–50 (54%) (Table 2). Respondents commonly have college-level education (62%). The length of stay of the respondents varied and was well distributed within one to 20 years since socialized housing projects as early as 1993 were considered. Respondents living in single-detached housing comprised 50% of the total population while those living in the duplex and rowhouse housing composed the other half at 34% and 16%, respectively.

Results and Discussion

Components of the Residential Satisfaction

Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) was used to check if 63 variables can be grouped together into a smaller component. The scree plot revealed nine components having an eigenvalue of more than one. A parallel analysis was performed to validate the result of the EFA. Components in the parallel analysis that provided mean values (eigenvalues) that is greater than the eigenvalue of the EFA were considered. In effect, this reduced the residential satisfaction into six components namely: (1) Residential Satisfaction in Dwelling Unit (RSDU), (2) Residential Satisfaction in Management System (RSMS), (3) Residential

TABLE 1 Actual list of sampled projects with number of surveyed population

Year*	Project name	Type of housing	Number of house and lot units	Sample size
1995	Emily Homes Phase I	Single detached	192	31
1996	Pag-ibig Country Homes	Single detached	257	27
1996	Wellspring Village 1	Single detached	576	31
2002	Elenita Heights Phase 1	Single detached	189	34
2009	Santiago Villas	Single detached	119	31
1998	Indangan Socialized Housing Project	Single detached	653	38
1997	St. Joseph Homes Subdivision	Duplex	852	81
2012	Catalunan South Pointe Homes	Duplex	393	50
2011	Villa Grande Heights	Row house	128	30
2017	Deca Homes Mulig (SHC)	Row house	304	32
Total respondents			3663	385

*Release of License to Sell per HLURB records

TABLE 2 Respondents' demographic and socio-economic characteristics (Yares 2021, 24)

	Residential satisfaction	
Socio-demographic characteristics	Frequency (n=385)	Percentage
Gender		
Male	128	33%
Female	232	60%
No answer	25	6%
Highest education attained		
Elementary	9	2%
High school	73	19%
College	239	62%
Post graduate	15	4%
No answer	49	13%
Age of respondents		
Less than 20	11	3%
20–30	74	19%
31–40	123	32%
41–50	85	22%
51–60	36	9%
Over 60	31	8%
No answer	25	6%
Employment sector		
Private	137	36%
Government	68	18%
Self-employed	91	24%
Others	65	17%
No answer	24	6%
Marital status		
Married	189	49%
Widowed	22	6%
Separated	8	2%
Single	83	22%
No answer	83	22%
Current housing		
Single-detached	145	38%
Single- attached	43	11%
Duplex	126	33%
Row-house	53	14%
Others	18	5%
Type of end user		
Owner	301	78%
Renter	69	18%
Others	10	3%

No answer	5	1%
Family size		
2-5 Persons	268	70%
6-9 Persons	69	18%
10-11 Persons	3	1%
Persons per bedroom	2.3	1%
Length of residency		
Less than 1 year	36	9%
1–2 Years	47	12%
3–5 Years	57	15%
6–10 Years	60	16%
11–15 Years	43	11%
16–20 Years	48	12%
More than 20 years	19	5%
No answer	75	19%
Monthly household income (PhP)		
Less than 10,000	39	10%
10,001–15,000	52	14%
15,001–20,000	52	14%
20,001–25,000	34	9%
25,001–30,000	28	7%
More than 30,000	73	19%
No answer	107	28%
Improvements made in the dwelling unit		
Fence and gate	111	29%
Kitchen	88	23%
Bedroom	79	21%
Balcony	51	13%

Satisfaction on Neighborhood Facilities (RSNF), (4) Residential Satisfaction on Public Facilities (RSPF), (5) Residential Satisfaction on Social Environment (RSSE), and (6) Residential Satisfaction on Acquisition and Financing (RSAF).

Following the derivation of the six components for Residential Satisfaction, an internal validity test was conducted using the Cronbach's alpha. Test result revealed that all components have a Cronbach's alpha greater than 0.9, which is an excellent value for internal reliability. The results were then subjected to a Confirmatory Factor Analysis (CFA), wherein 18 variables were omitted for further analysis as they did not show a unique manifestation of a single factor. This resulted in the final component for residential satisfaction that is grouped into six components with 45 retained variables as reflected in Table 3.

Levels of Socialized Housing Residential Satisfaction

Born out of the six components, the Residential Satisfaction Index (RSI) for socialized housing in Davao City is recorded to be 70.74. Furthermore, the respondents also rated their general satisfaction with their current living conditions. The general satisfaction also utilizes a 5-point scale with 1 being very dissatisfied and 5 being very satisfied. This is converted to a General Satisfaction Index (GSI) and found to be 81.67.

An independent sample T-test was conducted between the two satisfaction indices and the result revealed their means are statistically different. This is verified using the range from the Region of Satisfaction by Mohit (2010, 25) wherein the level of total Residential Satisfaction is found to be moderate using the RSI (70.74), and high using the GSI (81.67).

TABLE 3 Result of confirmatory factor analysis for residential satisfaction

Confirmatory factor analysis	Residential satisfaction on neighborhood facilities	Residential satisfaction in dwelling unit	Residential satisfaction on public facilities	Residential satisfaction on social environment	Residential satisfaction in management system	Residential satisfaction on acquisition and financing
Distance to recreation parks	0.791					
Distance to police station	0.853					
Distance to place of worship	0.730					
Distance to nearest school	0.729					
Distance to fire station	0.803					
Distance to workplace	0.725					
Distance to nearest town center	0.783					
Distance to restaurants	0.835					
Distance to hospital	0.737					
Distance to public market	0.859					
Distance to shopping center	0.881					
House quality/ workmanship		0.740				
Width of corridor		0.785				
Access to emergency exit		0.749				
Quality of construction materials		0.715				
Space for storage		0.791				
House lay-out		0.781				
Bedroom		0.822				
Living area		0.758				
Toilet and bath		0.783				
Dining area		0.745				
Local shops			0.749			
Open space/ Parks and playground			0.739			

Perimeter fence	0.741			
Material recovery facility	0.860			
Sewage treatment facility	0.793			
Multi-purpose halls	0.746			
Swimming pool	0.715			
Frequency of accident		0.743		
Security		0.766		
Crime prevention		0.879		
Peace and order		0.869		
Safety		0.787		
Traffic rules inside the subd.			0.730	
Road/drainage maintenance			0.756	
Collection of monthly dues			0.699	
Maintenance of subdivision facilities			0.873	
HOA community activities			0.931	
HOA rules and restrictions			0.920	
HOA management			0.916	
Construction duration and turn-over of units				0.793
Contract price				0.898
Application for financing				0.823
Mode of payment				0.900
Monthly amortization				0.936

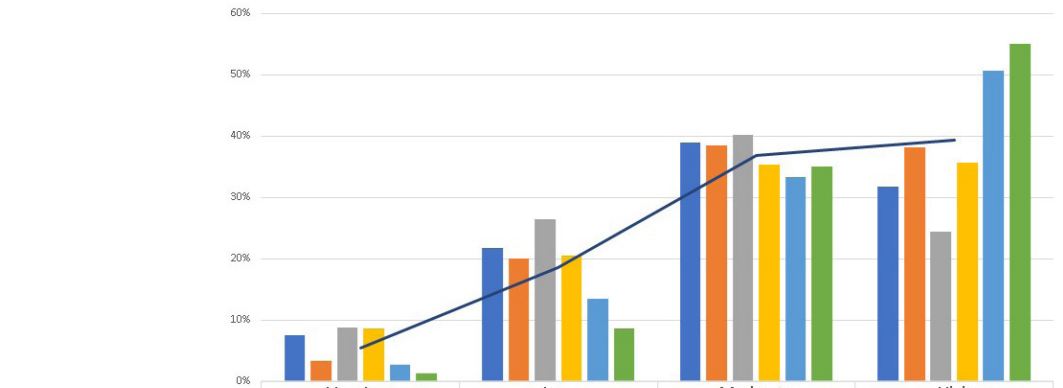
This implies that the six components of Residential Satisfaction do not totally explain the factors affecting the general satisfaction of the residents. On average, there were four out of 10 (39%) respondents with a high level of satisfaction and another four out of 10 (37%) with a moderate satisfaction level. The data also revealed that there is an aggregate of 2 out of 10 respondents (23%) with Low and Very Low levels of satisfaction with individual scores at 5% and 18%, respectively (Figure 2).

Among the six residential satisfaction components, the main factor why 5% of the end-users have "very low" levels of satisfaction were the RSMS and RSPF (9% each). The "low satisfaction" of 18% of the respondents was due to the high components of RSPF (26%) and PSNF (22%). Similarly, 37% of respondents who have a "moderate" satisfaction level identified RSPF (40%) and RSNF (39%) as the main causes. Lastly, respondents with a "high" level of satisfaction were most satisfied at RSAF (55%), RSSE (51%), and RSDU (38%) (Figure 2).

Housing Environment Influencing Residential Satisfaction

A Multiple Linear Regression Analysis (MLRA) using a stepwise method was employed with the GSI as the dependent variable to understand the factors influencing residential satisfaction. It was found that out of the six components, predictors of general satisfaction include satisfaction in RSSE, RSAF, and RSDU with an adjusted R-square equal to 0.397. This means that 39.7% of the variance in the dependent variable, GSI, is explained by the movement in the predictor variable (RSSE, RSAF, and RSDU). Table 4 shows the significant variables under the three components. Another MLRA was conducted to show the effect of socioeconomic and demographic determinants on housing satisfaction. The second equation increased its explanatory power by 11.59% compared to the first equation with the new adjusted R-square of 0.443. This also revealed that aside from the three components that predicted residential satisfaction, the type of end-user (P-value – 0.024), previous housing conditions like the type of occupancy (i.e. renting), and others (previous housing in the province) also displayed significant values (P-values: 0.007 and 0.016, respectively).

To understand this behavior further, this study evaluated the end user's qualitative responses based on their answers: (1) very unsatisfied or (2) unsatisfied in the survey question (Figure 3). The most common reason for dissatisfaction with Public Facilities was caused by the lack of facilities provided. Street lights that do not function well were frequently mentioned in most of the socialized housing communities. A HOA officer expressed that the street lights, which are supposed to be a basic utility provided by the developer before they turn over the subdivision were not provided, leaving the HOA to facilitate the provision of this utility. Cars and trucks parked along



	Very Low	Low	Moderate	High
Neighborhood Facilities (RSNF)	8%	22%	39%	32%
Dwelling Unit (RSDU)	3%	20%	38%	38%
Public Facilities (RSPF)	9%	26%	40%	24%
Management System (RSMS)	9%	21%	35%	36%
Social Environment (RSSE)	3%	14%	33%	51%
Acquisition & Financing (RSAF)	1%	9%	35%	55%

FIGURE 2 Region of end-user's residential satisfaction
Region of satisfaction (Mohit 2010): very low :20–39, low: 40–59, moderate: 60–79, high: 80–100

TABLE 4 Predictors of residential satisfaction components

Social environment	Acquisition and financing	Dwelling unit
Safety	Contract price	Bedroom
Security	Monthly amortization	Dining area
Peace and order	Application for financing	Living area
Crime prevention	Payment method/facility	Toilet and bath
Frequency of accident	Construction duration and turn-over	House layout
		Space for storage
		Access to an emergency exit
		House quality/workmanship
		Quality of construction materials

the subdivision road left most of the respondents unsatisfied. The management system (RSMS) did not predict residential satisfaction on common complaints like irregular collection of garbage. Drainage systems within their subdivision were also poorly maintained, which causes clogging and overflow during heavy rains. There is also a great dissatisfaction with the mobile network signal among socialized housing projects. Moreover, one major comment of the residents, especially the newer communities, is the distance of the housing developments to services. The distance takes a chunk out of their monthly income as they need to pay more for transportation while others resort to buying a motorcycle to compensate for the lack of public transport. Lastly, most of the residents also noted that the HOA is not functioning, (except for the socialized housing development that is mixed with mid-cost housing).

While the three predictors of residential satisfaction were established, they did not escape the comments of dissatisfaction. For Social Environment, residents in socialized housing projects expressed concern about the lack of visible security in the area. Most of the developments do not have designated entrance/exit routes and guards, allowing anyone to freely go in and out of the community. Some residents even narrated incidents of stealing and murder within the community. End-users also mentioned issues like delayed delivery of the housing units vis-à-vis the committed schedule, expensive price, and high interest. For the Dwelling Unit, most of the respondents mentioned that the space provided is not enough. The word "gamay", which means small or cramped, was often mentioned as a cause of dissatisfaction. To address the lack of space, 45% of the residents' introduced improvements to their houses like additional bedrooms, kitchens, fences, and the like. In terms of construction quality, some respondents said that materials are substandard, and others mentioned poor workmanship manifesting through misaligned walls and termite infestation, which made them spend more on renovations. Several residents also complained of poor ventilation inside the housing units, especially during noontime.

Housing Type Influencing Residential Satisfaction

In determining the relationship between the type of housing versus residential satisfaction, Figure 4 shows a graphical illustration of respondents' RSI and GSI per type of dwelling unit. The satisfaction level of those who live in rowhouse development is notably lower than end-users in single-detached and duplex housing units. Simply put, in terms of GSI, those who live in rowhouse are moderately satisfied with their housing condition, unlike the end-users of single-detached and duplex units that are highly satisfied using Mohit et al.'s (2010) region of satisfaction.

Demographic Factors Influencing Residential Satisfaction

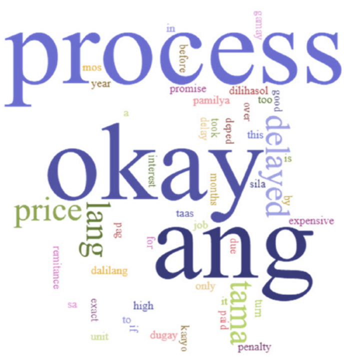
As mentioned earlier, three components predict the satisfaction of the end-users. However, evaluating the demographic profile of the respondents further, it is worth highlighting that about 2 (18%) out of every 10 respondents were renters (Table 2). This finding is alarming as it implies that somebody else —landlords —is benefiting from the housing program meant for the poor and underserved population. As previously established, socialized housing is intended for low-income earners, and UDHA specified that its beneficiaries should have no existing housing property. Moreover, the relative affordability of the socialized housing units predicted the high satisfaction levels of the end-users. Earlier published articles of the same study area and respondents noted that only around 2 out of 10 (18%) homeowners were eligible beneficiaries in terms of income during the home acquisition (Yares 2021, 19). This implies that the

Comments on Public Facilities

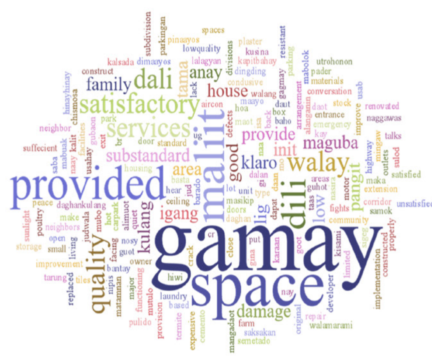
Comments on Social Environment

Comments on Management Systems

Comments on Social Environment



Comments on Acquisition and Financing



Comments on Dwelling Units

FIGURE 3 End-user's comments on housing components

high level of residential satisfaction is influenced by the Acquisition and Financing (RSAF) because a lot of these homeowners were benefiting from relatively low-priced housing. Hence, it is not surprising that there is a constant deficit in the socialized housing stock while the mid-cost and high-end housing markets continue to be in surplus (Ballesteros 2022). This is the result when housing intended for low-income earners is consumed by either investors who benefit from renting business, or those who cannot afford the cost of economic or middle-cost housing who resort to the unregulated socialized housing market.

Type of Occupancy Influencing Residential Satisfaction

A significant number of end-users were found to be renters and their residential satisfaction was compared to the owners to check if they fall in different levels (Table 5). It was found that the residential satisfaction of the homeowners and renters is not significantly different ($p = 0.734$ for GSI and $p = 0.062$ for RSI). This is consistent with the levels of residential satisfaction using Mohit et al.'s (2010) region of satisfaction.

Overall Residential Satisfaction

The respondents of the study were highly satisfied with their housing environment based on the General Satisfaction Index and based on their comments as reflected in Figure 5. Although respondents' length of stay did not significantly predict Residential Satisfaction, Amole (2009, 81) argued that the duration of stay in the neighbourhood makes the residents adapt to the environment, which make them more satisfied. With an aggregate of 44% of the respondents living in their socialized housing units for more than five years, it can be said that they have adopted to their housing environment. These locations have also transformed and are now thriving suburban areas with commercial development sprouting along the periphery. The composition of respondents during the time of the study may have influenced the result as around 38% of respondents' housing type were a single-detached, and 44% were living in a single-attached/duplex units, hence higher satisfaction has been recorded. Since recent socialized housing provision is already limited to rowhouses, if not duplex type, it is expected that a movement in the levels of overall satisfaction will follow.

TABLE 5 Predictors of residential satisfaction components

	General Satisfaction Index	Residential Satisfaction Index
All end-users	81.67	70.74
Homeowners	82.16	70.42
Renters	81.38	74.01

Respondents' Housing Intention

A large number of end-users (62%) indicated their intention to stay in the same neighborhood as long as possible. The other 13% said they wanted to stay in the community for the next five years, and only 5% said they intend to move out as soon as possible. Eight percent said they are moving out in the next two to five years. Interestingly, when asked if they want to move to another socialized housing environment, 49% of the respondents said "no" while the other 48% indicated the intention to move to another socialized housing. Lastly, eight out of 10 (85%) respondents would recommend socialized housing to someone who is looking for permanent accommodation.

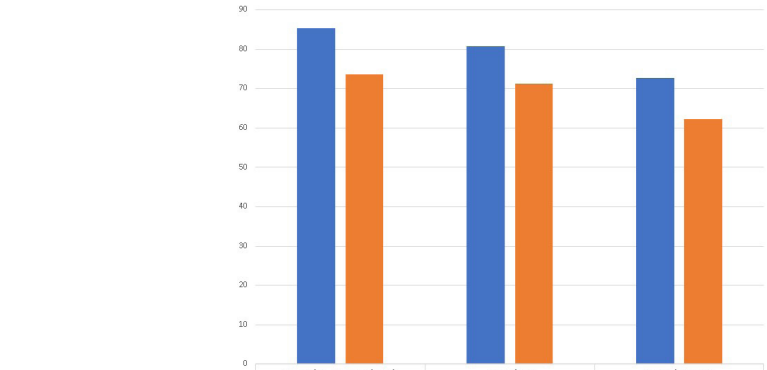


FIGURE 4 End user's satisfaction index per house type

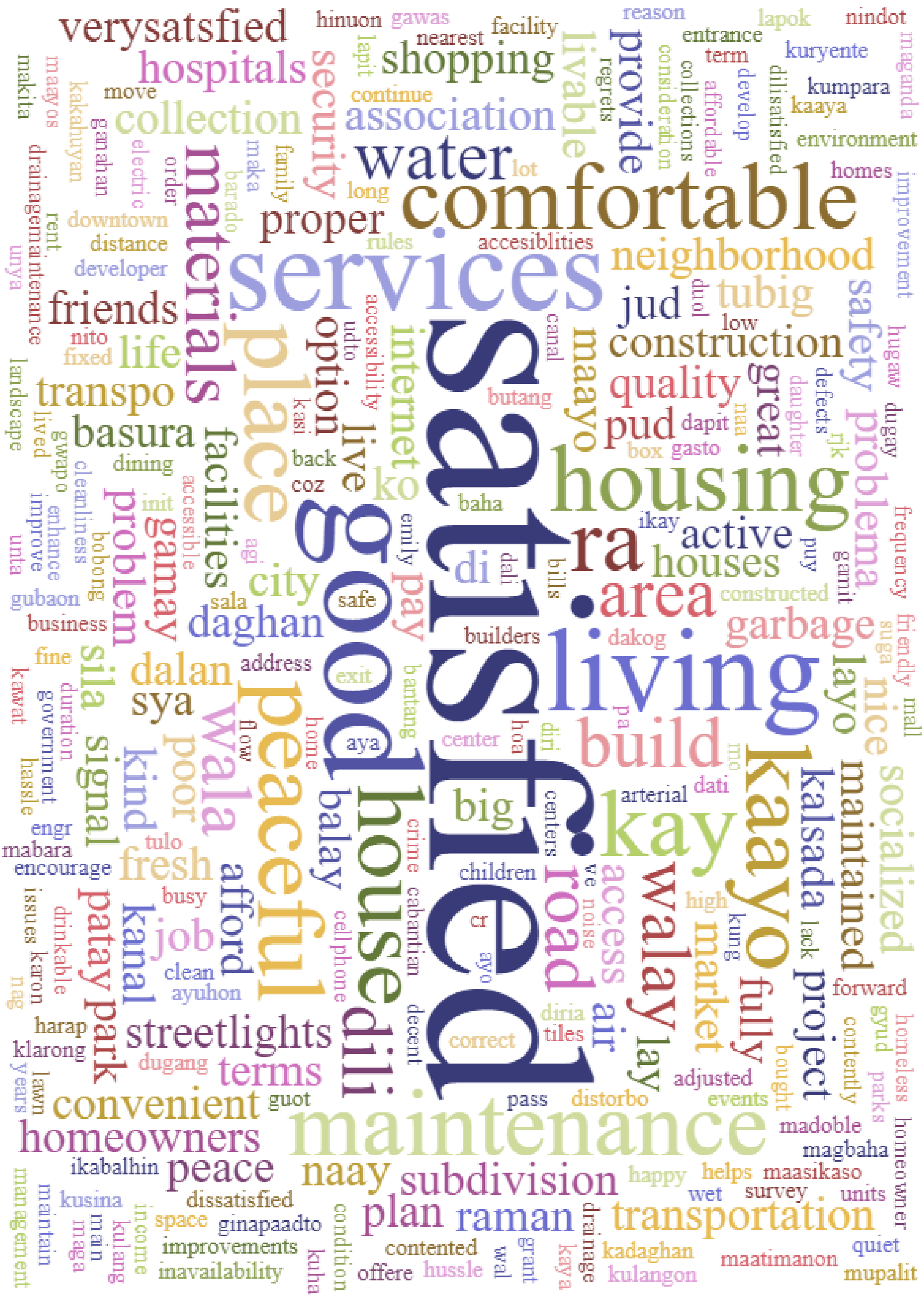


FIGURE 5 Word cloud for respondents' general comment on socialized housing

Conclusion and Recommendation

This study aimed to find the levels of Residential Satisfaction as well as the housing externalities affecting it. As a result, the components Dwelling Unit, Social Environment, and Acquisition and Financing turned out to be the predictors of residential satisfaction. It was also found that the end-users have a "high satisfaction". This is true regardless of the end-user's housing tenure status—whether they are homeowners or renters. This finding runs contrary to the findings of Teck-Hong (2012, 110), which states that homeowners exhibit higher satisfaction levels compared to renters.

It is also apparent from the findings of this study that the space allocated (floor area [FA] and lot area [LA]) for the housing unit directly influences residential satisfaction. As the floor and lot area decreases, residential satisfaction also decreases. This is evident in the levels of residential satisfaction among end-users of single-detached houses (FA:30–36 m^2, LA: 100–150 m^2) and duplex houses (FA: 30 m^2, LA: 60 m^2), who have a higher residential satisfaction than those living in a row-house type of housing (FA: 22–36 m^2, LA: 36–50 m^2) who have moderate satisfaction. Majority of the households (70%) cater to two to five members, which means a smaller personal space available for a smaller sized dwelling unit. This finding should help reconsider the existing policy of prescribing a dwelling unit size as small as 18 m^2.

While the study is limited to Davao City, it pointed out two general concerns in socialized housing delivery. First is that the type of housing significantly contributed to the satisfaction of the end-user with those living in the rowhouse development exhibiting a lower level of satisfaction compared to those who reside in other types. This is backed by the comments on ventilation issues, the limited space, and flexibility within the row house units. This is an important concern that the newly established DHSUD should consider as most socialized housing developments are geared towards row-house types.

Second, created as a housing program for the underprivileged, the socialized housing in Davao City has functioned as a free market, allowing non-intended beneficiaries to purchase the housing units. It somehow explains the high satisfaction, which makes the component Acquisition and Financing a significant predictor. Despite the UDHA specification that only the non-homeowners can avail of socialized housing, non-intended beneficiaries may purchase the housing unit because there is no specific IRR that prohibits its sale to the buyers even if they do not belong to the target low-income earners. A significant number of units rented out by landlords who are clearly not the target beneficiaries validated this claim. With this, DHSUD should attend to the manner of socialized housing delivery by means of the full implementation of the Section 16 of RA 7279, or the Eligibility Criteria for Socialized Housing Program Beneficiaries. Otherwise, the current practice will just continue, and we will keep wondering why the target beneficiaries are still homeless.

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