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ACCEPTABILITY OF VERTICAL HOUSING AMONG INFORMAL SETTLER FAMILIES

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ABSTRACT

Rapid urbanization and limited urban land have intensified the need for socially responsive housing for informal settler families. This descriptive quantitative study examined the stated acceptability of vertical housing among 377 adult household heads or representatives surveyed in Barangays Baybay, Cogon, Culasi, and Dumolog, Roxas City, Capiz. A researcher-developed questionnaire elicited household characteristics, housing preferences, and ratings concerning livelihood distance, utilities, services, inclusive accessibility, safety, tenure, and well-being. Frequency, percentage, mean, and standard deviation were used. Respondents commonly belonged to medium-to-large, low-income households, and fishing was the dominant livelihood. Most preferred concrete, multi-storey housing and three or more bedrooms. Location near work and transportation, functioning utilities, schools, markets and health services, accessible circulation, structural and fire safety, and documented tenure received very high ratings. A separate single item also indicated very high general acceptability (M = 3.538, SD = 0.79), although its greater dispersion showed less uniformity than the domain-specific ratings. The findings indicate favorable stated acceptability among the surveyed households, conditional on livelihood continuity, affordability, essential services, accessibility, safety, suitable unit size, and tenure security. They inform architectural criteria but do not establish citywide acceptance or the technical and financial feasibility of the proposed development.

Keywords: architecture, vertical housing, informal settler families, housing acceptability, inclusive design, Roxas City

INTRODUCTION

Urban housing policy increasingly confronts the combined pressures of population concentration, insecure tenure, environmental exposure, and limited serviced land. Adequate housing is not merely a roof or a unit count; it includes affordability, habitability, accessibility, location, services, and security of tenure. The United Nations Human Settlements Programme (UN-Habitat, 2022) likewise emphasizes that compact urban development must be connected to infrastructure, opportunity, environmental resilience, and inclusive planning. These considerations are especially important for informal settler families whose shelter, livelihood, mobility, and social networks are closely interdependent.

In the Philippines, the Urban Development and Housing Act directs government housing programs to provide decent and affordable housing, basic services, and employment opportunities while encouraging consultation with affected communities (Republic Act No. 7279, 1992). The Pambansang Pabahay para sa Pilipino Program gives priority to high-density and vertical development as part of the national response to the housing need (Department of Human Settlements and Urban Development [DHSUD], 2024). Vertical housing can conserve urban land, but physical density alone does not ensure adequacy. Regional housing evidence shows that affordability, location, infrastructure, and long-term management determine whether a formal housing investment improves household welfare (Lee, 2022).

Roxas City is a coastal and economically active city whose informal settler communities include households dependent on fishing, vending, and other location-sensitive livelihoods. Local housing records cited in the thesis reported 19,049 informal settler households citywide, but the present survey was conducted only in Baybay, Cogon, Culasi, and Dumolog. These four study barangays were selected because they contained identified informal settler communities and represented coastal or hazard-exposed conditions, different livelihood settings, and varying access to roads and services. The study therefore responds to a local evidence gap: whether households in these selected communities would accept vertical housing and what conditions they regard as essential to such housing.

Relocation can produce economic and social losses when it separates households from employment, public services, and established networks. Cernea (1997) identifies joblessness, marginalization, and community disarticulation among the major risks of displacement and resettlement. Philippine evidence also indicates that evaluating socialized housing requires attention to residents' satisfaction with the dwelling, neighborhood, services, and management rather than relying only on housing production (Yares, 2023). For fishing-dependent and irregular-income households, travel cost, access to the coast and market, recurring charges, unit size, and secure occupancy may therefore be as important as the building form itself.

Vertical housing is often proposed where serviced urban land is scarce and where horizontal expansion would push low-income households farther from employment and public services. Its compact form can preserve land for circulation, open space, utilities, and community facilities, but greater density also increases dependence on shared systems. Lifts, pumps, drainage, fire protection, security, waste collection, and common-area management must function consistently. The question is therefore not whether a multi-storey form saves land, but whether it produces a safe, affordable, and manageable living environment for the households expected to occupy it.

Informal settler families are not a uniform population. Household size, age, disability, caregiving, employment, income stability, length of residence, and dependence on local resources affect what relocation means in practice. A unit acceptable to a small salaried household may be unsuitable for a large fishing household that stores equipment, leaves before daylight, returns with wet gear, and depends on proximity to landing and market areas. Describing these characteristics is necessary before housing preferences can be translated into architectural criteria.

Coastal settlements add another layer of complexity. Exposure to flooding, strong winds, salt-laden air, drainage problems, and disrupted utilities may justify safer construction and elevation, yet relocation away from the coast can threaten fishing livelihoods. A viable response must reconcile hazard reduction with economic continuity. This requires evidence on routes, travel time, service capacity, land status, and household costs in addition to residents' stated preferences. No single survey can resolve all of these questions, but it can establish which conditions intended residents consider nonnegotiable.

The acceptability of a proposed dwelling also differs from satisfaction after occupancy. Respondents who have not lived in a vertical development evaluate a description or concept through expectations. Their answers are useful for programming and consultation, but they cannot demonstrate how lifts, corridors, shared facilities, fees, noise, privacy, management, or maintenance will be experienced over time. For this reason, the present study uses the term stated acceptability and interprets the ratings as pre-occupancy evidence rather than proof of future residential satisfaction.

Architecture enters this problem at several scales. At the urban scale, the site must connect residents to work, transport, schools, markets, healthcare, and government services. At the community scale, buildings, streets, open spaces, livelihood areas, and support facilities must permit safe and inclusive daily use. At the building scale, structure, fire protection, accessibility, ventilation, sanitation, circulation, and maintenance systems must work together. At the dwelling scale, space, privacy, storage, cooking, sleeping, caregiving, and adaptation must respond to household composition. The study links survey evidence to these scales without treating preference as a substitute for professional technical assessment.

Roxas City provides a relevant setting because the surveyed communities combine urban land pressure, coastal exposure, long-established settlement, low or irregular income, and livelihood dependence on place. These conditions make a purely peripheral or unit-centered response particularly risky. They also make it necessary to ask whether residents would accept a vertical arrangement and which features would make that arrangement credible. The study addresses this local planning need while limiting its conclusions to the participating communities and the descriptive evidence collected from them.

The study determined the stated acceptability of vertical housing among informal settler families surveyed in the four barangays. It described household and socioeconomic characteristics; identified preferences concerning storeys, bedrooms, materials, and support facilities; assessed acceptability in relation to livelihood distance, utilities, services, accessibility, safety, tenure, and well-being; and translated the empirical findings into architectural design criteria. The architectural proposal was an output informed by the survey; the proposed site and buildings were not separately tested for technical performance, financial feasibility, or post-occupancy satisfaction.

REVIEW OF RELATED LITERATURE

Maslow's (1943) theory of human motivation provides a basic explanation for the prominence of shelter and safety in housing decisions. A dwelling must first protect physiological well-being and security before it can support belonging, esteem, and personal development. Applied cautiously, this perspective suggests that households are unlikely to value a new housing form if it fails to provide dependable water, sanitation, protection from hazards, privacy, and a secure right to remain.

The Theory of Planned Behavior explains intention through attitude, subjective norm, and perceived behavioral control (Ajzen, 1991). In a relocation setting, residents may view vertical housing favorably yet remain unwilling to move if they believe costs, travel, building rules, or accessibility make occupancy difficult. The theory is used here as an interpretive lens rather than as a tested causal model because the study did not separately operationalize all of its constructs or conduct predictive analysis.

Housing acceptability is also shaped by the risks accompanying relocation. Cernea (1997) argues that displacement can lead to joblessness, marginalization, loss of access to common resources, and disruption of community networks.

These risks are directly relevant to households whose income depends on fishing or informal work and whose daily survival depends on proximity to the coast, transport, customers, and social support. Republic Act No. 7279 (1992) similarly links housing provision with basic services, livelihood, and consultation.

Philippine urban-development evidence likewise cautions against treating relocation as a unit-delivery exercise. The World Bank (2017) documented the growth of informal settlement alongside deficits in serviced urban land and emphasized the need to connect housing with transport, employment, infrastructure, and local governance. Its national affordable-housing assessment further identified land, finance, subsidy design, and institutional coordination as interdependent constraints on socialized housing provision (World Bank, 2016). These findings support an in-city or near-livelihood approach when feasible and reinforce the need to assess the full recurring cost of relocation rather than the dwelling payment alone.

National planning policy also frames housing as part of livable, inclusive, and resilient communities. The Philippine Development Plan 2023–2028 calls for better-planned human settlements that bring households closer to work, services, recreation, and opportunity (National Economic and Development Authority, 2023). This policy direction is consistent with Republic Act No. 7279 (1992), which links resettlement to basic services, employment, consultation, and affordability, and with the Pambansang Pabahay para sa Pilipino program's emphasis on closing the housing gap through coordinated national and local implementation (Department of Human Settlements and Urban Development, 2024).

Accessibility is a substantive component of housing adequacy. Batas Pambansa Blg. 344 (1983) requires architectural features that enhance the mobility of persons with disabilities, while the World Health Organization (2022) identifies inaccessible physical environments as a major source of health inequity and restricted participation. Ramps, handrails, safe paths, accessible toilets, reliable vertical circulation, lighting, and evacuation arrangements therefore benefit not only persons with permanent disabilities but also older adults, children, caregivers, and temporarily injured residents.

The World Report on Disability similarly explains that disability is intensified when physical and social environments create barriers to participation (World Health Organization & World Bank, 2011). For vertical housing, universal access therefore extends beyond the presence of a ramp: routes must remain continuous from the site entrance and transport drop-off to common facilities and dwelling units, while lifts, handrails, sanitary facilities, lighting, wayfinding, and emergency evacuation must work as an integrated system. Compliance with Batas Pambansa Blg. 344 must also be read together with the safety, occupancy, and permitting requirements of the National Building Code (Presidential Decree No. 1096, 1977).

Housing adequacy also has a social and management dimension. UN-Habitat (2020) treats the value of urbanization as dependent on inclusive planning, access to public goods, and institutional capacity to manage density. In a vertical settlement, residents share circulation, utilities, open spaces, waste systems, and safety responsibilities; design decisions therefore shape everyday interaction and collective action. Common spaces must be visible, accessible, and usable without obstructing emergency movement, while management rules must be proportionate to residents' income and communicated before relocation. These considerations are especially important for households with long-established neighborhood, caregiving, credit, worship, and livelihood ties.

Affordability must likewise be understood as a continuing household condition rather than the initial price of a dwelling. Lee (2022) identifies land, infrastructure, finance, and institutional capacity as recurring constraints on adequate and affordable housing across developing economies. The World Bank (2016) reaches a comparable conclusion for the Philippines, where the housing gap cannot be closed by construction targets alone. For low- and irregular-income households, transport fares, electricity and water charges, association dues, repairs, and livelihood disruption can make an ostensibly subsidized unit unaffordable. A credible assessment of acceptability must consequently distinguish approval of the housing concept from willingness and ability to sustain the full monthly housing burden.

High-density housing also requires reliable infrastructure and resilient management. UN-Habitat (2022) and Lee (2022) emphasize that affordable urban housing must be connected to transport, water, sanitation, energy, public services, and viable financing. In coastal communities, housing and livelihood planning should also recognize the resilience needs of small-scale fishing households, including access to work areas, storage, markets, and climate-responsive infrastructure (Food and Agriculture Organization of the United Nations [FAO], 2022).

The relevance of Maslow's framework extends beyond the initial provision of shelter. Physiological protection depends on ventilation, water, sanitation, thermal comfort, and sufficient space, while safety involves structural reliability, fire protection, secure circulation, and protection from arbitrary displacement. Belonging is affected by whether relocation preserves family and neighborhood relations and provides usable common space. Esteem and self-development are supported when residents retain control over daily routines and livelihood. The theory therefore cautions against evaluating housing through construction output alone (Maslow, 1943).

The Theory of Planned Behavior further distinguishes favorable evaluation from intention and actual behavior. A household may approve of vertical housing in principle but lack perceived control when payment, travel, eligibility, tenure, or building-management arrangements are unclear. Subjective norms may also matter when relatives, neighbors, livelihood groups, or community leaders support or resist relocation. In this study, the ratings are best interpreted as reported attitudes toward specified conditions. They do not establish actual uptake because the survey did not observe an allocation decision, move, or post-occupancy behavior (Ajzen, 1991).

Relocation risk is particularly relevant to households whose income depends on place. Cernea's (1997) model shows that displacement may create interrelated risks of landlessness, joblessness, marginalization, food insecurity, reduced access to common resources, and social disarticulation. These risks can persist even when the replacement dwelling is structurally better. The model supports examining the distance between residence and work, the cost and reliability of travel, the continuity of customer and supplier relationships, and the preservation of mutual-support networks before interpreting a formal unit as an improvement.

Philippine law already reflects this multidimensional understanding. Republic Act No. 7279 (1992) associates socialized housing and resettlement with consultation, affordability, basic services, and access to employment. These are not peripheral benefits to be added after site selection; they are conditions that shape whether relocation is equitable and sustainable. The law also places responsibilities on national agencies and local governments, making coordination essential where housing, transport, utilities, social services, beneficiary selection, and land-use approval fall under different institutions.

The World Bank's Philippine urbanization review identifies constraints in serviced land, metropolitan coordination, infrastructure, and access to opportunity that contribute to informal settlement and unequal urban outcomes (World Bank, 2017). Its affordable-housing assessment likewise indicates that land cost, finance, subsidy design, regulation, and institutional capacity interact with household income (World Bank, 2016). These analyses explain why moving households to less expensive peripheral land can generate higher transport and livelihood costs and why housing supply cannot be assessed independently of the urban systems surrounding it.

The Philippine Development Plan 2023–2028 treats human settlements as part of inclusive, resilient, and well-connected communities (National Economic and Development Authority, 2023). For a smaller coastal city such as Roxas, this means that housing decisions should respond to local hazards, employment patterns, and service geography rather than merely replicate a metropolitan prototype. Vertical development may conserve land and support compact service provision, but its advantages depend on site suitability, access, building operation, and the capacity of local institutions and residents to manage shared systems over time.

Accessibility in vertical housing must be continuous. Batas Pambansa Blg. 344 (1983) establishes minimum requirements intended to enhance mobility, while the World Report on Disability explains that exclusion arises from the interaction between impairment and environmental barriers (World Health Organization & World Bank, 2011). A compliant ramp at the entrance does not make a development inclusive if pathways, lifts, doors, toilets, controls, transport stops, common facilities, or evacuation routes remain unusable. The relevant design question is whether a person can complete an ordinary or emergency journey safely and independently.

The World Health Organization (2022) further connects accessible environments with health equity. Poorly designed housing can increase isolation, injury risk, dependence on caregivers, and difficulty obtaining health services, especially among older persons and people with disabilities. Inclusive design therefore benefits more than the households formally identified as having special needs: level routes, clear wayfinding, adequate lighting, handrails, resting places, safe crossings, and usable toilets also support children, pregnant persons, caregivers, and residents experiencing temporary injury or illness.

Density can improve land efficiency, but it concentrates both benefits and failures. UN-Habitat (2020, 2022) emphasizes that sustainable urbanization depends on access to public goods, effective planning, resilience, and capable institutions. In a multi-storey development, a failed pump, lift, drainage line, alarm, or waste system affects many households at once. Shared facilities also require rules for use, maintenance, repair funding, and accountability. The long-term acceptability of vertical housing consequently depends on operational design as much as on the initial architecture.

Adequate housing also requires affordability throughout occupancy. Lee (2022) notes that developing economies face linked constraints involving land, infrastructure, finance, and institutional delivery. For households with irregular income, a low nominal rent or amortization may still be unsustainable after utilities, association dues, transport, repairs, and lost work time are considered. Assessment should therefore distinguish stated acceptance, willingness to pay, ability to pay, and resilience to income shocks. Only the first of these was directly measured in the present study.

Tenure security has legal, administrative, and psychological dimensions. Written occupancy rights may reduce fear of eviction, but residents also need understandable rules on eligibility, succession, transfer, arrears, improvement,

and dispute resolution. Ambiguous or frequently changing arrangements can undermine confidence even in a physically adequate development. Conversely, secure tenure can encourage household investment and community participation when responsibilities for the unit, common areas, and services are clearly allocated (Republic Act No. 7279, 1992).

Taken together, the literature indicates that acceptability is conditional and relational. Residents evaluate a dwelling through its connection to work, transport, schools, markets, healthcare, social networks, utilities, safety, accessibility, cost, and tenure. The present study therefore organized acceptability into concrete domains rather than relying solely on a general approval question. This approach allows the architectural program to be informed by the conditions residents value while preserving the distinction between preference evidence and the technical feasibility of a specific proposal.

The conceptual framework therefore treated household characteristics and housing preferences as descriptive inputs, domain-specific acceptability ratings as the main empirical evidence, and the architectural design criteria as a professional translation of those findings. The framework did not test causal paths between demographic variables and acceptability, and it did not measure the actual performance or success of the proposed design. This distinction prevents design judgments from being represented as survey results.

METHODOLOGY

The study employed a quantitative descriptive design to document household characteristics, housing preferences, and stated acceptability of vertical housing. Descriptive analysis was appropriate because no variable was manipulated and no causal, predictive, or comparative hypothesis was tested. The design thus supports statements about the surveyed respondents and their reported ratings, but not citywide prevalence, causal determinants of acceptance, or actual adjustment after relocation (Creswell & Creswell, 2023).

The study was conducted in Barangays Baybay, Cogon, Culasi, and Dumolog in Roxas City, Capiz. The barangays contained identified informal settler communities, including coastal or hazard-exposed households, and represented differing livelihood and service-access conditions. Eligible respondents were household heads or adult household representatives who had lived in their settlement for at least one year and could report on their household circumstances.

The sampling calculation used the four-barangay informal-settler household counts supplied for Baybay (6,568), Cogon (2,526), Culasi (2,375), and Dumolog (7,579). These counts total 19,048 households. Using the Raosoft calculator at a 5% margin of error, the target sample was 377. Proportional allocation produced 130 respondents from Baybay, 50 from Cogon, 47 from Culasi, and 150 from Dumolog. The barangays were included because they contained substantial informal-settler communities in coastal or hazard-exposed settings. Random selection was applied within the barangay strata; the four-barangay coverage itself limits inference to the participating communities.

A researcher-developed questionnaire recorded civil status, household size, income, livelihood, household members with special needs, length of residence, and preferences for storeys, bedrooms, construction materials, and support facilities. Four-point rating items measured livelihood distance, utilities, service access, inclusive accessibility, structural and residential safety, security of tenure, and well-being. A separate single item asked about general acceptability. Its result was reported independently from the multi-item domains because one item cannot represent their internal consistency or full conceptual breadth.

Fifteen subject-matter experts reviewed the instrument for clarity, relevance, and alignment with the study objectives. Essentiality judgments were assessed using Lawshe's (1975) Content Validity Ratio (CVR), with 0.600 adopted as the retention criterion for 15 validators; four items below the criterion were removed. Relevance ratings were also summarized through the Item-Level Content Validity Index (I-CVI), with values of at least 0.78 treated as acceptable. The reported Scale-Level Content Validity Index values were S-CVI/Ave = 0.923 and S-CVI/UA = 0.703.

The original thesis reports that the instrument was pilot-tested among respondents with characteristics similar to the target population and that two independent raters evaluated ordinal ratings. Cohen's weighted kappa was 0.509 (SE = 0.155, 95% CI [0.206, 0.813]), indicating moderate agreement but a relatively imprecise estimate (Cohen, 1968). Weighted kappa evaluates agreement between raters; it does not establish the internal consistency of the final multi-item respondent scale.

After institutional and local permission had been obtained, the researcher coordinated with the four barangays, approached eligible adults, explained the study, and secured informed consent. Questionnaire administration generally required 10–15 minutes. For participants who requested reading assistance, the items were read neutrally and their answers were recorded without altering their meaning. Completed questionnaires were checked, coded, encoded, and verified, producing a final dataset of 377 responses.

Frequencies and percentages summarized categorical variables, while means and standard deviations summarized the four-point ratings. Scores of 3.26–4.00 were interpreted as very high, 2.51–3.25 as high, 1.76–2.50 as low, and 1.00–1.75 as very low. Only quantitatively documented findings were retained in the empirical Results.

Prior to implementation, the study underwent internal research ethics evaluation and approval by the Graduate School panel of evaluators. At the time, a separate institutional research ethics review board had not yet been constituted; therefore, the panel itself evaluated the study's compliance with applicable research ethics requirements as part of the proposal review and approval process. The researcher observed ethical safeguards throughout the study, including voluntary participation, written informed consent, the right to refuse to answer questions or withdraw without penalty, privacy and confidentiality, and aggregate reporting. No names or direct identifiers were included in the research report. Completed questionnaires and encoded records were handled securely and used only for the stated research purposes in accordance with Republic Act No. 10173, or the Data Privacy Act of 2012. The researcher declared no conflict of interest and ensured that participation or refusal did not affect access to housing assistance or public services.

RESULTS

Table 1
Selected household and housing characteristics (N = 377)

Characteristic	n	%
Household size: 5 or more	264	70.03
Income below PHP 12,030	155	41.12
Irregular/no fixed income	143	37.93
Fishing as primary livelihood	298	79.05
Residence longer than 10 years	319	84.62
Preferred 3 or more bedrooms	324	85.94
Preferred concrete construction	376	99.74

The final analysis included 377 household heads or adult household representatives: 130 from Baybay, 50 from Cogon, 47 from Culasi, and 150 from Dumolog.

Civil-status responses included 210 participants (55.70%) living in a domestic partnership, 93 (24.68%) married, 41 (10.87%) single, 23 (6.10%) widowed, and 10 (2.65%) separated. Household size was generally large: 231 households (61.27%) had five to six members and 33 (8.75%) had seven or more. Thus, 264 households (70.03%) had at least five occupants.

Income was concentrated at low or irregular levels. One hundred fifty-five households (41.12%) reported less than PHP 12,030 monthly, and 143 (37.93%) reported irregular or no fixed income. Fishing was the primary livelihood of 298 households (79.05%). Further, 319 households (84.62%) had lived in their informal settlements for more than 10 years, indicating that relocation would affect long-established livelihood and community routines.

Housing preferences favored multi-storey and durable construction. Three storeys were preferred by 222 respondents (58.89%), two storeys by 88 (23.34%), four storeys by 43 (11.41%), and one storey by 24 (6.37%). Four bedrooms were preferred by 203 respondents (52.85%), three bedrooms by 86 (22.81%), and five bedrooms by 35 (9.28%); altogether, 324 respondents (85.94%) preferred at least three bedrooms. Concrete construction was selected by 376 respondents (99.74%).

Table 2
Acceptability results by measured domain

Domain	Reported mean range	Interpretation
Livelihood distance	3.39–3.99	Very high
Utilities	3.08–3.98	High to very high
Service access	3.87–3.98	Very high
Inclusive accessibility	3.83–3.99	Very high
Structural/environmental safety	3.84–3.97	Very high
Tenure and well-being	3.80–3.96	Very high
General acceptability (single item)	M = 3.538; SD = 0.79	Very high

Livelihood-distance ratings ranged from 3.39 to 3.99 and were interpreted as very high. The strongest statement concerned willingness to relocate only when housing was near employment opportunities (M = 3.99, SD = 0.05).

Respondents also emphasized protection of daily earning capacity, access to public transportation, manageable commuting cost, and convenient travel to work. Utility ratings ranged from high to very high. Stable electricity (M = 3.98, SD = 0.15), clean and safe water (M = 3.97, SD = 0.16), and functioning basic utilities before relocation (M = 3.97, SD = 0.18) were among the strongest conditions. Good drainage and sewage obtained M = 3.92 (SD = 0.27). The item stating that poor infrastructure would lead respondents to reject a vertical-housing offer was reported as M = 3.08 (SD = 0.17), which falls in the high—not very high—range under the study's interpretation scale.

The separate single item on general acceptability yielded M = 3.538 (SD = 0.79), interpreted as very high. Its standard deviation was considerably larger than those reported for the specific domains; consequently, this item indicates favorable but less uniform general acceptance and was interpreted separately from the multi-item domain results.

Access to public schools, emergency healthcare, transportation, markets, government services, and clinics was rated very high, with item means from 3.87 to 3.98. Proximity to schools and emergency care each obtained M = 3.97 (SD = 0.18), while ease of daily routines through quick access to essential facilities was highest (M = 3.98, SD = 0.14). Inclusive-accessibility indicators ranged from M = 3.83 to 3.99. Ramps and elevators, accessible paths and handrails, child-friendly space, daycare, drop-off areas, and safe emergency routes were consistently endorsed; concern for the movement of persons with disabilities and the usability of emergency routes each obtained M = 3.99 (SD = 0.07). Reported structural and environmental safety items ranged from M = 3.84 to 3.97. Proper lighting was highest (M = 3.97, SD = 0.18), followed by fire extinguishers, alarms, and sprinklers (M = 3.95, SD = 0.21). Secure access, evacuation plans, child-safe common areas, resistance to earthquakes and typhoons, overcrowding control, and continuous security were also rated very high. Tenure and well-being indicators ranged from M = 3.80 to 3.96. Legal documentation of the household's right to the unit received the strongest response (M = 3.96, SD = 0.19), followed by long-term residence without fear of loss (M = 3.92, SD = 0.27) and housing that provides both shelter and lasting security (M = 3.91, SD = 0.31).

DISCUSSION AND ANALYSIS

The results show favorable stated acceptability of vertical housing among the 377 surveyed households, but the finding is conditional. Respondents were most consistent when rating concrete requirements—livelihood access, functioning utilities, services, accessibility, safety, and tenure—while the single general-acceptability item showed wider variation. Verticality was therefore not accepted as an isolated building form; it was evaluated as part of a complete settlement system, consistent with the multidimensional conception of adequate and affordable housing advanced by UN-Habitat (2022) and Lee (2022).

Livelihood continuity is central because 298 households (79.05%) depended primarily on fishing, while 298 households (79.05%) also fell into either of the two lowest-income categories: 155 households (41.12%) reported monthly income below PHP 12,030, and 143 (37.93%) reported irregular or no fixed income. Additional fares, longer travel, association dues, or service charges could undermine the apparent benefit of a new unit. The near-unanimous ratings for proximity to employment and transportation are compatible with Cernea's (1997) warning that resettlement may produce joblessness and marginalization. They also reinforce the statutory expectation that socialized housing be linked with basic services and employment opportunities (Republic Act No. 7279, 1992).

This pattern is consistent with Philippine urbanization evidence showing that housing outcomes depend on access to productive opportunities and networked services, not simply transfer to a formal unit (World Bank, 2017). The affordable-housing literature also shows that apparent affordability can be undermined by land, finance, transport, and service costs that are shifted to low-income households (World Bank, 2016; Lee, 2022). For the surveyed fishing-dependent households, site selection and transport planning are consequently part of the housing intervention itself.

The relationship between dwelling and livelihood deserves particular design attention. Fishing households may require early-morning and night access, safe routes between the waterfront and residence, areas for washing or drying equipment, secure storage that does not obstruct corridors, and separation of wet or odorous activities from living and play areas. Vendors and home-based workers may have different requirements for loading, visibility, storage, and customer access. These needs cannot be satisfied by adding generic commercial rooms after residential blocks are laid out; they must be mapped through participatory programming and reconciled with sanitation, fire safety, circulation, and land-use controls.

Household composition also changes over time. Children mature, older relatives may join or leave the household, caregiving demands increase, and home-based livelihood activities may require storage or workspace. A rigid unit designed around a single household type may reproduce crowding even when the structure is formally compliant. The reported preference for three or more bedrooms should not be translated mechanically into identical large units; it justifies testing several code-compliant configurations, transparent allocation criteria, and limited forms of adaptation that do not compromise structure, ventilation, fire separation, or shared circulation.

Household size and bedroom preference challenge a single standardized unit. More than 70% of households had at least five members, and 85.94% preferred at least three bedrooms: 52.85% preferred four bedrooms, 22.81% three bedrooms, and 9.28% five bedrooms. The two-bedroom, 44-square-meter prototype in the architectural chapter is therefore only one professional design option and does not reflect the predominant preference. The empirical evidence supports alternative or adaptable unit types, with allocation based on verified household composition. This is a design implication, not evidence that any particular unit has been evaluated or accepted.

The near-unanimous preference for concrete construction expresses a desire for durability, but material choice alone does not demonstrate resilience. Coastal and hazard-exposed housing requires appropriate siting, structural and fire-safety review, drainage, ventilation, safe egress, and maintainable utilities. Respondents' very high safety ratings and the broader urban-resilience evidence indicate that these systems must be designed and operated together (UN-Habitat, 2022).

The architectural proposal must therefore be developed through code-compliant technical studies rather than inferred directly from preference ratings. Presidential Decree No. 1096 (1977) provides the overarching regulatory basis for building design, permitting, occupancy, and safety, while UN-Habitat (2020, 2022) emphasizes that resilient urbanization requires coordinated land-use planning, infrastructure, environmental management, and access to opportunity. The survey can identify priorities, but it cannot substitute for structural calculations, geotechnical investigation, fire-safety review, flood and drainage modeling, or lifecycle-cost analysis.

Accessibility ratings demonstrate that usable movement is a core condition of acceptance. Ramps, handrails, safe paths, elevators, lighting, drop-off areas, and evacuation provisions are not optional embellishments. They are consistent with the Accessibility Law's barrier-free requirements and with evidence that inaccessible environments restrict participation and deepen health inequity (Batas Pambansa Blg. 344, 1983; World Health Organization, 2022). Technical compliance must still be established during detailed design; the survey measured importance, not code compliance.

Tenure documentation received the strongest rating within the tenure domain. This aligns with Republic Act No. 7279 (1992), which treats secure and affordable housing as part of a continuing urban-development program. Occupancy instruments should explain eligibility, payment, succession, maintenance, transfer restrictions, grievance mechanisms, and circumstances affecting continued occupancy in language residents can understand. The survey does not identify which tenure arrangement households can afford, so willingness-to-pay and financing analysis remain necessary.

The findings can be interpreted through Ajzen's (1991) Theory of Planned Behavior only with restraint. Favorable attitudes are suggested by the acceptability ratings, while the conditions attached to acceptance resemble perceived control over cost, mobility, service access, and tenure. However, subjective norms and behavioral intention were not measured as validated TPB constructs. The theory therefore helps organize interpretation but does not establish a tested causal explanation of relocation behavior.

The proposed Culasi site, its reported area of approximately 74,291 square meters, and the clinic, daycare, market, boat storage, worship, recreation, waste, solar, and rainwater components originated in the thesis's architectural-design chapter. They were not variables in the household survey and were not separately evaluated by respondents. These features should therefore be presented as professional proposals informed in part by the survey, subject to independent land-title, zoning, geotechnical, coastal-hazard, drainage, environmental, accessibility, fire-safety, utility, transport, cost, and management assessments.

Fishing-related facilities are conceptually responsive to the livelihood profile. FAO (2022) emphasizes resilience, participation, market access, and sustainable livelihoods in small-scale fishing communities. Nevertheless, the type, capacity, location, sanitation, safety, and operating model of boat and gear storage or market space cannot be determined from the present frequencies alone. Co-design with households and relevant agencies is necessary before these elements are fixed.

The service-access findings support a community-scale rather than building-only response. Schools, health care, markets, transportation, and government services were consistently rated as conditions of acceptance. A clinic, daycare center, multipurpose space, and market may respond to these priorities, but constructing a room does not by itself guarantee a functioning service. Each proposed facility needs an operator, staffing plan, equipment, operating budget, accessibility route, hours of service, and maintenance responsibility. Where a nearby existing service can meet the need more effectively, safe and affordable connection may be preferable to duplicating a facility within the site.

This interpretation also reflects the Philippine Development Plan's conception of livable communities as integrated spaces that connect housing with health, education, mobility, livelihood, and social infrastructure (National Economic and Development Authority, 2023). The very high service-access ratings therefore justify coordinated planning with actual providers, but they do not establish that every proposed on-site facility is financially or institutionally feasible.

Density increases the consequences of system failure. Interruption of water, lift service, drainage, sewage treatment, lighting, or waste collection can affect many households simultaneously, including residents who cannot easily use stairs or travel to distant alternatives. Project appraisal should identify service-capacity assumptions, redundancy, emergency operation, responsible providers, preventive-maintenance schedules, replacement funds, and complaint-response procedures. The World Bank (2017) and UN-Habitat (2020) both situate infrastructure and governance at the center of inclusive urban development; this supports treating operations planning as part of housing design rather than a matter deferred until occupancy.

Tenure security likewise depends on administration after turnover. Residents must know who owns the land and building, what document establishes their right to occupy, whether that right may be inherited or transferred, how arrears are handled, and which body is accountable for repairs and common services. Republic Act No. 7279 (1992) emphasizes consultation and equitable housing provision, but the survey did not compare rental, lease-to-own, usufruct, condominium, or other arrangements. The high tenure ratings therefore support documented and understandable occupancy, not any particular legal instrument.

Utilities must likewise be evaluated as operational systems. The high ratings for water, electricity, drainage, sewage, roads, and flood safety mean that occupancy should not precede commissioning and service testing. Solar lighting and rainwater collection may supplement resilience, but they require specifications for storage, treatment or restricted use, overflow, component replacement, and long-term maintenance. Drainage design must follow verified site hydrology and should not transfer flooding or polluted runoff to neighboring settlements or mangrove areas. These requirements arise from professional and regulatory assessment; they were not tested by the household questionnaire.

Long settlement duration indicates that relocation may disrupt relationships built over many years. Most households (84.62%) had lived in their settlements for more than 10 years. Allocation should therefore consider neighbor, kinship, caregiving, worship, credit, and livelihood networks rather than assigning units solely through an administrative sequence. Cernea's (1997) community-disarticulation risk is particularly relevant: structurally improved housing can still produce loss when social and economic support systems are fragmented. Resident participation should extend from site and unit review to allocation, management rules, grievance procedures, and post-occupancy monitoring.

Affordability was not measured through a formal willingness-to-pay exercise, yet the income profile makes it impossible to separate acceptance from recurring cost. The total monthly housing burden includes rent or amortization, electricity, water, transport, association charges, and contributions to common-system maintenance. A project may receive favorable design ratings and still be inaccessible to irregular-income households. Financing models, subsidy eligibility, arrears management, and protection during temporary income shocks should therefore be assessed transparently before households are asked to commit.

The architectural response should be understood as a community system rather than a stack of dwelling units. The scheme described in the thesis combines residential blocks with livelihood areas, a clinic, daycare and multipurpose facilities, recreation space, utilities, and circulation. This integrated approach is consistent with the finding that respondents judged acceptability through daily access to work, services, safety, and tenure. Nevertheless, the survey establishes priorities rather than technical feasibility; every component still requires site-specific programming, engineering, costing, and consultation.

For fishing-dependent households, the relationship between the waterfront and the dwelling is especially important. Elevated residential floors and a multifunctional ground level may reduce exposure of living spaces to routine wet conditions, but open or active ground floors must not be assumed safe without flood-depth, storm-surge, drainage, wind, and structural studies. Storage and handling areas for nets, gear, catch, and small boats should be separated from residential circulation while remaining convenient, ventilated, washable, secure, and connected to water, drainage, and waste systems. These provisions would protect both livelihood continuity and sanitation.

The proposed residential unit likewise requires testing against actual household routines. A compact prototype can combine living, dining, cooking, sleeping, and sanitary functions efficiently, yet the prevalence of households with five or more members and the preference for at least three bedrooms indicate that one fixed layout is unlikely to fit all beneficiaries. Several unit types or carefully controlled adaptable layouts should be evaluated. Storage, cross-ventilation, daylight, privacy, laundry, food preparation, caregiving, and home-based work must be considered alongside nominal floor area and bedroom count.

Common and support spaces should be evaluated through daily-use scenarios. A clinic must be reachable by barrier-free routes and capable of receiving a patient without conflict with residential traffic. A daycare center requires controlled access, child-safe toilets, shaded play space, visibility, and emergency egress. Multipurpose rooms need acoustic control, storage, booking arrangements, and routes that allow community use without compromising residential security. These details determine whether social facilities remain usable after turnover rather than serving only as labels on a plan.

Market and vendor areas are important because many households depend on fishing and informal work. Stalls require water, drainage, waste separation, ventilation, fire protection, delivery access, and rules for allocation and operating hours. Their location must balance visibility and customer access with hygiene, noise, and residential privacy. Livelihood space should also be linked to training, cooperative organization, credit, and market support; a physical stall alone does not guarantee income continuity. Participation by intended users is therefore necessary when determining the size, arrangement, and management of these areas.

Environmental systems must be planned as linked infrastructure. Solar lighting requires specifications for storage, replacement, protection, monitoring, and maintenance. Rainwater collection requires calculations based on catchment area, rainfall, demand, filtration, overflow, and safe end use. Solid-waste systems require segregation points and dependable collection, while wastewater and drainage must account for peak occupancy and flooding. These features can improve resilience and operating efficiency only when responsible parties, maintenance budgets, and failure procedures are established before occupancy.

Public open space and recreation are not peripheral embellishments. Courts, play areas, landscaped spaces, and shaded gathering places can support physical activity, youth engagement, informal supervision, and social cohesion. Their design should prevent conflicts among children, older persons, vendors, vehicles, and emergency access. Visibility, lighting, drainage, seating, planting, and hours of use affect whether such spaces remain inclusive and safe. The very high ratings for child-friendly and community facilities provide a clear basis for retaining these functions during later cost and design reviews.

Governance must be designed alongside the buildings. A resident association or comparable management body may participate in maintenance, emergency preparedness, common-area scheduling, dispute resolution, and coordination with service providers. Its authority, fees, accountability, and complaint procedures should be transparent and proportionate to household income. Without workable governance, lifts, pumps, fire systems, lighting, drainage, and shared spaces can deteriorate even when the initial construction is sound. Tenure documentation and management rules should therefore be explained together and reviewed with residents before occupancy.

Affordability remains a critical qualification. Most households reported either very low monthly income or irregular earnings, but the survey did not conduct a formal willingness-to-pay or household-expenditure assessment. Project appraisal should calculate the combined burden of amortization or rent, association dues, utilities, transport, repairs, and livelihood transition. Subsidy assumptions must be explicit, and payment arrangements should accommodate seasonal or irregular income without creating rapid displacement from the project. Stated acceptance of a concept cannot be treated as proof that households can sustain its full recurring cost.

The location findings also require a rigorous understanding of proximity. Straight-line distance to the coast, market, school, hospital, or transport stop does not by itself demonstrate access. Walking conditions, travel time, fares, schedules, lighting, flood exposure, disability access, and the transport of children, older persons, catch, or equipment all shape the real burden of a trip. Site appraisal should therefore combine geographic mapping with route observation and household travel analysis. This is particularly important when a relocation site appears geographically near but is functionally disconnected by unsafe or costly routes.

Long settlement histories indicate that relocation involves social reconstruction. Most respondents had lived in their communities for more than 10 years, allowing relationships of kinship, childcare, informal credit, worship, work, and mutual assistance to develop. Building allocation should avoid unnecessary fragmentation of these networks and should provide transparent opportunities for neighbors or extended families to express adjacency needs. Community mapping can identify valued relationships and shared resources without assuming that every existing arrangement must remain unchanged.

The findings should guide, but not predetermine, the site and architectural solution. Preference for concrete construction, multiple storeys, larger bedroom provision, accessible routes, and nearby services identifies a performance brief. It does not validate a particular parcel, building height, structural system, unit area, or facility schedule. The proposed Culasi site and design require independent verification of land status, zoning, geotechnical conditions, hazards, infrastructure capacity, environmental effects, code compliance, capital and lifecycle cost, and institutional responsibility. This distinction preserves the value of the survey while preventing descriptive responses from being overstated as technical approval.

Interpretation is limited by the four-barangay coverage, the descriptive and self-reported nature of the data, the use of a forced-choice response scale, and reliance on a single item for general acceptability. The proposed site and architectural scheme were not subjected to technical, environmental, financial, or post-occupancy evaluation. These limitations do not negate the reported preferences, but they restrict generalization, causal interpretation, and conclusions about actual relocation outcomes.

CONCLUSION

The study establishes favorable stated acceptability of vertical housing among 377 adult household heads or representatives surveyed in Baybay, Cogon, Culasi, and Dumolog. Acceptance was consistently associated with livelihood and transport access, reliable utilities, proximity to services, inclusive circulation, structural and residential safety, suitable household space, and documented tenure. The findings describe the surveyed households; they do not establish citywide acceptance, willingness or ability to pay, actual post-relocation satisfaction, or the technical and financial viability of a particular project.

The household profile strengthens the need for a livelihood-sensitive and adaptable response. Fishing dependence, irregular income, large households, long settlement histories, and the preference for three or more bedrooms mean that location, recurring cost, unit configuration, and continuity of community networks must be resolved together. The proposed architectural scheme may use these results as design criteria, but each site, unit, facility, and operating arrangement requires separate participatory and technical validation.

RECOMMENDATIONS

The city government, housing agencies, and design team should conduct participatory, technical, environmental, and financial feasibility studies before treating the proposal as implementable. Site assessment should cover ownership, zoning, geotechnical conditions, coastal and flood hazards, mangrove and drainage impacts, transport, utility capacity, fire access, lifecycle cost, and maintenance responsibility. Total household cost should include rent or amortization, utilities, transport, association dues, and foreseeable maintenance.

Architects should test multiple or adaptable unit types that respond to household size and the strong preference for three or more bedrooms. Universal accessibility must be integrated from site entrance to dwelling and community facilities in accordance with Batas Pambansa Blg. 344 (1983). Livelihood spaces for fishing, vending, storage, loading, and market activity should be co-designed so that they remain sanitary, safe, lawful, and compatible with circulation and child protection.

Tenure, beneficiary selection, project management, and grievance arrangements should be written in plain language and reviewed with intended residents before occupancy. Utilities, drainage, waste systems, transport access, fire protection, lighting, and essential community services should be operational before transfer. Post-occupancy evaluation should measure affordability, stress, livelihood continuity, accessibility, service reliability, safety, crowding, management performance, and resident satisfaction.

Future research should use a documented probability frame across additional Roxas City barangays, validate the acceptability scale, examine willingness and ability to pay, and use qualitative inquiry to explain conditional acceptance. Longitudinal and post-occupancy studies are necessary to determine whether favorable stated preferences are sustained under actual unit sizes, costs, building rules, service performance, and livelihood conditions.

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