



## CLIENTS' PREFERENCE FOR LOW-COST RESIDENTIAL PROPERTIES: A CONJOINT ANALYSIS

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### **Abstract:**

The purpose of this study was to determine the clients' preference for residential property in Digos City in the southern part of the Philippines. Through the examination of the five attributes (location, equity, terms of payment, floor area, and the price) and their corresponding levels using conjoint analysis, the order of relative importance of each attribute was determined together with the utility estimates to determine the client's preference for a low-cost residential property. Twenty placards containing hypothetical combinations were generated via an orthogonal array and were administered to 400 medium-income individuals. Results revealed that price is the most important attribute, followed by location, terms of payment, and floor area, while equity was found the least important attribute. It can also be inferred that the overall sample preferred low-cost housing near the school, outright or staggered payment for the equity, payable in 20 years with a floor area of 45 sqm (single-detached) in a 100 sqm lot and with a price of Php 500,000. The most preferred low-cost residential property is a combination of the following attribute levels: near the school of children, staggered payment for equity, with terms of payment payable in 10 years, with a floor area of 45 sqm (single-detached) in a 100 sqm lot and can be bought for Php 500,000.

**JEL:** R30; R31

**Keywords:** market study, low-cost housing, residential property, client preference, conjoint analysis, Philippines

### **1. Introduction**

One of the most critical consumption and investment decisions that individuals and families make over their life cycle involves the number of housing services to consume and whether to combine consumption with ownership (Banks, Blundell, Oldfield, and

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Smith, 2015). Housing is an important component of consumption, simply because it absorbs a large fraction of the household budget. The scale and design of the home and how much people decide to spend on housing is a key ingredient to the amenities and lifestyle the people chose for themselves and their families. Residents who live in accordance with their preferences have a higher appreciation of life and this implies that residential aspirations or preferences have a large influence on residential satisfaction.

Like most urban areas in the Philippines, good quality housing is expensive. The affordability issues faced by the median income group in the city prompted this research. For instance, Digos City (the capital city of the Province of Davao del Sur) nowadays is one of the growing cities in Mindanao. In 2017, the total Gross Revenue Index grew by 9.5% in the first quarter of 2017. This was higher than the 6.9% growth in the same quarter of the previous year. This performance was led by manufacturing, real estate, and trade; manufacturing posted the fastest growth across industries with 13%. This was followed by real estate with 12.8% (Philippine Statistics Authority). Homeownership might be expected to have a positive impact on a person's life or residential satisfaction. Residential satisfaction should correspond to what one wants and not to what one has (Jansen, 2014). Moreover, life satisfaction is defined as a person's level of contentment with all aspects of his/her life (Huang and Du, 2015).

To date, housing remains a problem for many Digosenos (residents of Digos City). A lot of developers nowadays are investing in residential projects, but then the higher cost of land development dictates higher selling prices of the units. The recent investments of the national players in land development in Digos City will change the perspective of residential property ownership. Often investors tend not to consider the poor as potential consumers of their products hence, the housing provided does not suit the need of the low-income families who constitute a vast majority of our urban populace (Ayoola and Amole, 2014).

In dealing with user preference for housing, there is a need for research for the development of a technological tool to identify the clients' needs and preferences as an aid in decision-making and to provide viable facts for investors and developers. The affordability of housing in Digos City is a pressing social and economic issue, particularly for rural migrants. With these foregoing problems and concerns, the need for this study is considered because locally, no studies were conducted as to the intention of determining clients' preferences for a residential property. The study begins with an investigation of the different attributes of clients and renters to establish a baseline for comparing the social impacts of ownership between the two groups.

## 2. Literature Review

This study hinges on the Random Utility Theory of Domencich and McFadden (1975). The theory assumes that the probability of choice of a product is the sum of a systematic part and a random error part. The systematic part is a function of the product attributes. Random utility theory provides the mathematical basis for relating the probability of consumer choice of a product to the product's attributes. In this study, a random utility

approach is used to model individual's clients' choices for a residential property profile. Moreover, the rational consumer behavior is to choose the residential property that maximize the individual's utility,  $U_{hi}$ , where  $h$  indicates the individual and  $i$  identifies the alternative.  $U_{hi}$  is the sum of the deterministic utility  $V_{hi}$  and of a random error  $\varepsilon_{hi}$ . If the random error terms are assumed to be independently and identically distributed as type 1 extreme values with scale parameter ( $\mu$ ), this distribution generates the multinomial logit model (Ben-Akiva and Lerman, 1985).

Further, the general assumption is that the decision to purchase a product follows the utility maximization rule. The rule assumes that every user will select a product with the highest utility or part-worth between alternative products offered in the market as users are known to be wealth-maximizers (Samuelson, 1938). The total worth of a particular product is then determined by the different part-worth of each attribute level (Sayadi, Roa, and Requina, 2005). The conjoint method can involve the identification of the level of utility of a respondent, with a certain array of factors and stimuli by using the part-worth model to enable a number of parameters to be measured (Green and Srinivasan, 1978). This model assumes that the relationship between utility and each attribute is linear, thus, a straight-linear curve connects the utility points to different attribute levels. In forming stimuli, a fractional factorial design reduces the number of profiles that must be evaluated, while ensuring enough data are available for statistical analyses, which results in a carefully controlled set of "profiles" for the consideration of the respondents (Hair et al., 2006; Raghavarao, Wiley, and Chitturi, 2010).

Grounding on these theories, the study considers the five attributes for the choice of a residential property. This includes the location which is one of the most important considerations in residential choices. Distance to work is the most relevant factor in knowledge-workers' residential choice (Lawton, 2013); the home equity requirement associated with a home purchase can be thought of as an important, well-defined borrowing constraint that most households face (Engelhardt and Mayer, 1995); terms of payment which refers to the payment by progress which is generally specified to be monthly (Sun, Zheng, Geltner and Wang, 2016); floor area consist of the size of living hall and dining hall, built-up size, and a number of bedrooms and bathrooms (Opoku and Abdul-Muhmin, 2010); and the price which refers to the affordability of the property which also varies according to the demographic and socio-economic background of the households (Almaden, 2014).

The lack of well-structured residential investment vehicles and low returns are critical issues in residential property investment (Kupke, Lee, and Newell, 2015). Therefore, it is important for the residential property developers to explore opportunities in developing an effective residential investment vehicle to expand the supply of rental housing, particularly affordable rental housing, and contribute to meeting Digoseños' housing needs in the medium to long term.

Preferences and choices are lifetime phenomena. Each of us lives and operates within the framework of choosing from alternatives to life's challenges in whatever area. Housing preferences and choices like any other life interests, therefore, operate within this framework (Dhar and Gorlin, 2013; Zinas and Jusan, 2017). Generally, housing is the

process of providing a residential environment made up of shelter, infrastructure, and services but to others, it serves as one of the best indicators of a person's standard of living and his or her place in society. In this context housing refers not only to the physical structures and buildings meant for people to live in, the neighborhood, and infrastructure but it also involves the process of acquiring land, labor, and finance. On a policy level, the goal of home ownership is an important social marker. Homeownership may be seen as generating an array of social and individual benefits (McCabe, 2013; Mok and Lee, 2013).

The determination of an appropriate combination of housing preferences requires a significant deal of involvement to balance a complex interplay of factors (Moghim and Jusan, 2015). This is attributable to the fact that housing preferences actually involve multiple-criteria decision-making, because each element has its own perceived relative importance. Succinctly put, there are a lot of factors to consider in preferring for residential properties. The first was associated with neighborhood characteristics, e.g., accessibility, green areas, commercial services, and cultural services, and the second with dwelling characteristics e.g., flat size, and cleanness (Frenkel, Bendit, and Kaplan, 2013). However, there are only a few researches on housing aspirations among residents in informal settlements in developing areas. The financial attribute is also taken into consideration by property investors. Several key areas regarding the financials are identified. These include mortgage interest rates, household income, house prices, and the ability to obtain financing. As an investor, the financials might be the utmost important factor among all factors (Reed and Mills, 2006; Sean and Hong, 2014). This study, therefore, investigated housing aspiration among the residents. This implies that to meet the housing preferences and aspirations of residents in informal urban settlements, housing developers need to give adequate attention to the marital, age, employment, and tenure status of the residents and place emphasis on developing affordable single-family houses and blocks of flats, as well as strategies for improving access to basic social amenities and services.

Good locational attributes are generally linked to the proximity and accessibility to local amenities such as schools, shopping malls, and transportation centers (Clark 2006; Kauko, 2007), thereby they were found to be significant considerations for house buying. It was revealed that the transport costs in the cause of making decisions on where to live are traded off against other variances such as rental cost and land prices (Catherine, 2007). In addition, one of the elements that affect residential location decisions at the micro-level is that decision-making on residential location involves more than one individual (Dielman, 2001). Accessibility is considered a normal good, in which consumers of housing place a positive economic value; as such, they value access to workplaces and shopping opportunities more importantly in making a decision about where to live (Wadell, 1995).

Most location-specific factors, such as local public goods accessibility are found to be significant and of the expected signs in determining the location choice odds of households (Wu, Zhang, and Dong, 2013). In addition, individual's socioeconomic characteristics such as income, educational attainment, and ownership status have

similar effects and still play significant roles in residential location choices. Also, developers focus on the following attributes when choosing a location for residential property: first, the physical suitability for development: slopes, soils, hydrology, land availability, second the existing land use patterns and location of other residential development, third the distance to markets with employment opportunities, fourth the neighborhood factors: age of surrounding housing stock, schools, universities, fifth the health care, sixth the recreational areas, including parks, forests, water reservoirs, and finally the air pollution (Smersh, 2003, Renigier-Biłozor and Wiśniewski, 2013).

Ideally, a client tends to focus initially on the equity of property upon deciding which to choose. Only a few can afford the outright payment for the equity of the property to buy which is why developers are offering staggered payment to clients. For most housing entities, the reservation fee for a unit is being waived to attract clients to choose their products. There are some developers who offer long-term payments for home equity. With these housing schemes, a number of low-income families have a greater chance to avail of it, hence, homeownership increases. The issue of down payment size is important because it relates directly to access to home ownership. The down payment or home equity requirement associated with a home purchase can be thought of as an important, well-defined borrowing constraint that most households face (Engelhardt and Mayer, 1995; Adelino, Severino, and Schoar, 2015).

As downpayment requirements increase, the pool of those who might be eligible for mortgages shrinks, unless, of course, borrowers have access to additional funds to put down on their homes. However, it is unlikely that access to additional financial resources is equal across the population of would-be homeowners: research has shown that lower-income households benefit from affordable lending programs, because these programs address what is especially difficult for lower-income owners, namely, accumulating the full amount that must be applied to home purchase (Quercia, McCarthy, and Wachter, 2003; Freeman and Harden, 2015).

Considerations on house financing and different mortgage choices to determine the extent of reducing payment are also given emphasis by the clients. Credit for house purchases offered by banks and building societies is dependent upon two factors: first, the security of the property offered against the loan, and second, the financial status of the borrower. In simple terms, the more one earns, the more one can borrow therefore providing the individual the power to purchase the preferred house units.

The addition of mortgage contracts that allow for lower down payments or increasing payment schedules over time is what increases the homeownership rate because homeowners face adjustment costs (Hurst and Stafford, 2004) and subsequent researchers study how households use home equity to smooth consumption. They show that a combination of low liquid asset holdings and a bad income realization predict borrowing against home equity, and the borrowing allows for better consumption smoothing. Basically, several payment schemes are offered by the developer and clients would tend to opt for a longer term to pay such to make sure that any other needs of the family will not be compromised. Young clients would likely have the chance of choosing

longer terms of payment because they still have more opportunities to gain income other than their salaries.

It is widely known that housing markets have largely explored the requirement for structural attributes of housing. These structural attributes of housing have been brought up in many kinds of literature as influencing households' house-buying preferences (Fierro, 2009; Opoku and Abdul-Muhmin, 2010). Structural attribute considers all physical conditions as well as the quality of the property. The number of rooms or bathrooms in a house is a feature that one considers before making home-ownership decisions (Hurtubia, 2010). Common structural attributes consist of the size of the living hall and dining hall, the built-up size, and the number of bedrooms and bathrooms.

However, the alternative of choosing the house area as one of the individual's preferences does not come as the primary option. Though house type with the specified area is very essential for clients depending on the size of their family, they normally would base their choices on their financial status. Therefore, for low-income families, satisfaction with a residential property does not always achieve. To guarantee comparability among models, three criteria are used to select house types: the duplex (32 sqm), single-detached (36 sqm), and single-detached (45 sqm.).

The external and internal design of the residential property has an impact and their attitudes toward a certain type of property. As the quality of homes has risen notably over the past 140 years, the long-run trends could be upwardly biased if the quality improvement of houses is understated. In addition to providing precise information about housing structure e.g., square footage, year built, lot size, transaction price, and house location, a key feature of these data are that they provide important demographic and economic information concerning the buyers and sellers themselves, which permits us to follow households over time as they move within the metropolitan area (Hendel and Nevo, 2016). With these data in hand, we develop a model of neighborhood choice.

Assumptions about house prices vary. Sometimes they are fixed or growing at a predetermined rate. The price of land and house is reflected in good locations or areas that are near schools, shopping centers, and public transport. The location has a major impact on buyers' preference in purchasing residential properties (Daly, 2003). House price experiences within an individual's social network affect her perceptions of the attractiveness of property investments. Most often than not, families would likely choose the house with the least price rather than choosing their ideal home which goes beyond their budget. It is important to stay within the budget to make sure that they can pay for the monthly payments.

Housing affordability is a complex issue that must not only be assessed in terms of economic viability. Those who allocate a large proportion of their income to housing often must make difficult financial decisions with significant short-term and long-term implications for adults and children. For economists there is no price like home at least not since the global financial crisis: fluctuations in house prices, their impact on the balance sheets of consumers and banks, as well as the deleveraging pressures triggered

by house price busts have been a major focus of macroeconomic research in recent years (Case and Quigley, 2008; Mian and Shiller, 2009; Su, 2014). Housing demand in the Philippines is determined by housing affordability, which includes income, price, and credit accessibility (Marife, 2002). In addition, housing prices in Philippines rapidly increase when compared with income.

Cost-burdened households often must spend less money on food, health care, insurance/pensions, and savings than those who are not cost-burdened (Lipman, 2005; Joint Center for Housing Studies, 2012). There are also significant links between housing affordability problems and health and educational outcomes for children (Brennan and Cohen, 2011).

One critique of the housing cost burden as a standard of housing affordability is that it does not differentiate between those who have sufficient income to meet household needs after shelter expenditures and those who do not (Stone, 2006). Another critique is that spending a large proportion of income on housing does not necessarily reflect a housing affordability problem. For higher-income households, spending thirty percent of their income on housing may be a deliberate decision based on preferences for more spacious and higher-quality housing (Kutty, 2005).

On the other hand, for lower-income households, spending thirty percent or more of their income on housing likely represents an involuntary allocation of what are already limited economic resources (McConnell, 2013). The present analyses focus on lower-income respondents, which makes it more likely that spending thirty percent or more of income on housing represents a "true" housing affordability problem that constrains other non-housing expenditures. Housing market measures have traditionally fallen into three segments: housing demand: a calculation of the number of housing units needed based on job and population growth, as well as the demand for second homes and the need to replace aging housing stock; housing supply: the number of homes being built; home prices as the equalizer: when demand exceeds supply prices go up, and vice versa (Calixijan and Murcia, 2015; Suraya, 2015; Murphy, 2015).

Access, affordability, location, and the quality of accommodation are major issues confronting low to medium-wage earners generally. In addition, these people who have affordability problems have limited housing choices. For example, unemployment is high and even employed young people receive low wages. The housing market is unaffordable for this group and/or limited in the case of subsidized housing by long wait lists and fierce competition. In contemporary society, there are structural constraints for low to medium earners; thus, they will have to accept low quality. As a result, they are often forced into areas of inappropriate housing, which is usually located in areas where there are few or no employment opportunities or housing and are distant from education and training facilities. Furthermore, they are often forced to accept low-quality accommodation, which has attendant negative implications for physical and emotional health. By providing primary information about how potential buyers of a new house prioritize the different elements of a house design, the obtained results can make a useful contribution to the knowledge of individuals engaged in the housing development industry. Furthermore, by understanding the motivation behind purchasing residential

properties, investors would be able to gauge the factors that matter most before investing in property development.

### 3. Material and Methods

The study was conducted in Digos City, a second-class city and capital of the province of Davao del Sur, Philippines. According to the 2015 census, it has a population of 169,393 people and has a total land area of 28,710 hectares (70,900 acres) consisting of 26 barangays; nine (9) of which comprise the *poblacion* or urban center. The total gross revenue index grew by 9.5% in the first quarter of 2017. This was higher than the 6.9% growth in the same quarter of the previous year. This performance was led by Manufacturing, Real Estate, and Trade. Manufacturing posted the fastest growth across industries with 13.0%. This was followed by Real Estate with 12.8%; Trade with 8.6%; and Transportation and Communication with 8.1%. Total Employment Index posted an upturn at 1.4% growth. Industries that pulled up the index were Real Estate with 9.8% followed by Transportation and Communication with 5.5%; Finance with 2.8%; Private Service with 1.5%; Electricity and Water with 1.3%; Manufacturing with 1.0%; and Trade with 0.8%. On the other hand, Mining and Quarrying contracted by 5.6%.

The study tapped 400 individuals who belong to a median-income group in Digos City, the capital of the Province of Davao del Sur in the southern part of the Philippines. The respondents must be of legal age, naturally born Filipino citizens living in Digos City, can be male or female, employed or self-employed. The majority of the respondents belong to the age bracket from 26 years old to 33 years old followed by the individuals who belong to ages 34 to 41 and very few are in above 50 years old. This means that majority of the median-income individuals are in their early stage of family life and would most likely yet to own residential property.

In addition, the study made use of non-probability sampling as this study's sampling technique in the form of purposive sampling. The purposive sampling technique was done by listing all possible clients who belong to a median-income group, both in private and government sectors which include teachers, nurses, office workers, farmers, market vendors, and sales agents. Each client was contacted to be included as this study's final respondent sample. Orme and Huber (2000) reported that the sample sizes of conjoint analysis generally range from 150 to 1,200 respondents, sufficient to obtain a reliable conjoint-estimating tool to address the concerns of the study (Orme and Huber, 2000).

Key Informant Interview (KII) was conducted to determine the five (5) most preferred attributes of residential property derived from the review of related literature and studies, before finalizing the survey questionnaire. After the identification of the attributes, the researchers conducted a key informant interview (KII) which involved 10 representatives from the median-income group in Digos City who were identified as prospective clients for owning/renting a residential property. They were asked to rank the attributes based on their preferences. The next step was establishing the levels of attributes which were then identified by the ten (10) initially surveyed individuals who

were considered clients for a residential property. Attribute levels were suggestively defined by the key informants, the same people in the earlier key informant interview. Finally, the plancards contain 20 profile combinations containing a level of each of the five attributes (location, equity/down payment, terms of payment, floor area, and price). The scale was scored from 1 to 5 according to preference with 1 as the most important and 5 as the least important.

Thereafter, choices of conjoint methodology such as the full-profile method were utilized by the researcher in designing clients' preferences for evaluation by establishing combinations of attribute levels. The full-profile method was adopted as it shows a more realistic and more open presentation of the stimuli in the portrayal of the trade-offs among attributes. In addition, this approach is the most popular due to its ability to reduce the number of comparisons. This study used fractional factorial as a design of the experiment to avoid the need to evaluate all possible combinations of the five (5) attributes by choosing a smaller number of these alternatives. It also used the orthogonal array design of the Statistical Package for Social Sciences Version 16 to generate 20 plancards which was used in the survey questionnaire. The main function of this design was to reduce the number of evaluations collected so that respondents' preferences for the five (5) attributes can be fixed to meet the statistical criteria.

After the data-gathering, the responses from the respondents were tabulated, processed, and interpreted using the conjoint methodology in preparation for data analysis. Conjoint syntax was used to run the analysis which included the relative importance of the five attributes and the part-worth estimates of each level of the five attributes. The total utility will be calculated by adding the constant and the highest utility estimations of levels of the five attributes.

#### **4. Results and Discussion**

The relative importance of the five determining attributes of respondents' preference for a residential property in Digos City is shown in Table 1. Importance measures are relative and within this study. If the range of the attribute levels that were tested changes, the relative importance of that attribute will also be likely to change. Based on the results in Table 1, conjoint analysis reveals that the price is the most important attribute for the respondents' preference for residential property (33.104%). This conforms to the study of (Stone 2006), pointing out that housing affordability does not differentiate between those who have sufficient income to meet household needs after shelter expenditures and those who do not. Furthermore, spending a large proportion of income on housing does not necessarily reflect a housing affordability problem. Other attributes that followed according to preference are location (18.894%), terms of payment (17.498%), and area (17.229%), while the least important attribute among the five is equity (13.275%). However, no matter how least preferred equity is on the preference for a residential property, it should not be totally excluded from the decision-making process as stressed out by Engelhardt and Mayer (1995) and Adelino, Severino, and Schoar (2015) that down

payment or home equity requirement associated with a home purchase can be thought of as an important, well-defined borrowing constraint that most households face.

**Table 1:** Relative importance of the attributes and utility estimates of the attribute levels of a low-cost housing project

Attributes	Importance Value	Attribute Level	Estimate	Std. Error
Price	33.104%	Php 500,000.00	-0.509	0.047
		Php 750,000.00	-1.017	0.093
		Php 1,000,000.00	-1.526	0.14
Location	18.894%	Near the market	-0.077	0.052
		Near the school	0.059	0.060
		Near the mall	0.018	0.060
Terms	17.498%	10 years	0.172	0.047
		15 years	0.343	0.093
		20 years	0.515	0.14
Area	17.229%	32 (duplex) in a 60 sqm lot	0.178	0.047
		36 (single-detached) in a 90 sqm lot	0.356	0.093
		45 (single-detached) in a 100 sqm lot	0.534	0.14
Equity	13.275%	Outright payment	-0.136	0.039
		Staggered payment	0.136	0.039
		(Constant)	3.712	0.147

According to the findings, the most crucial attribute for respondents' preference for residential property is the price. Buyers will consider design, accessibility, facilities, community concept, and security, and costs may vary based on these considerations (Bajari, 2015). Price is regarded as a crucial element for most first-time buyers of a property when making any decision to purchase one (Chin, 2016), and most buyers will seek out the most inexpensive property price. When it comes to acquiring a home, buyers must sometimes forgo what they truly desire to obtain what they can afford.

The location is the next favored attribute, which also has a significant impact on the success of residential development. Your surroundings are also a significant consideration when purchasing a home. Varying dwelling designs and locations will provide different values in terms of social status, the presence of public goods, career prospects, and the use of personal objects (Jansen et al., 2011), with the location being one of the most important elements that lead to quality living.

Other important considerations are payment terms, house size, and equity or down payment. Homeowners who reside in different types of houses may have an impact on the length of tenure and property values. Larger house sizes may be associated with better property prices and longer tenancy. Some homeowners desire to acquire a larger house because it represents their social position. As a result, these investments may result in increased property values and enhanced household stability in the community (Noor & Zaimi, 2012). When deciding to live in a residential building, buyers frequently evaluate different types of homes (duplex, semi-detached, and detached).

Succeeding equation panels show the preferences of individual respondents and the overall sample towards residential property. It can be inferred that overall,

respondents prefer low-cost housing that is near the school, outright or staggered payment for the equity, payable in 20 years with a floor area of 45 sqm (single-detached) in a 100 sqm lot and with a price of 500,000 pesos. To model individual preferences, the following panels present the individual models for their preference for a residential property. Taking Respondent 1, he/she prefers a property near the school, either outright or with staggered payment for equity, payable in 20 years, with a floor area of 32sqmtr (duplex) in a 60 sqm lot and with a price of 1,000,000 pesos. Total utility is computed as:

$$U = 0.333 + 0.625 + 0.136 - 0.318 + 0.409 + 4.155 = \mathbf{5.34}$$

On the other hand, Respondent 2 prefers a residential property near the mall, either outright or with staggered payment for equity, payable in 20 years, with a floor area of 32 sqm (duplex) in a 60 sqm lot and with a price of 1,000,000 pesos. Total utility is computed as:

$$U = 0.292 + 0.312 + 2.659 - 0.205 - 1.023 + 4.055 = \mathbf{6.09}$$

Lastly, Respondent 3 prefers a residential property near the market, either outright or with staggered payment for equity, payable in 20 years, with a floor area of 45 sqm (single-detached) in a 100 sqm lot and with a price of 500,000 pesos. Total utility is computed as:

$$U = 0.250 + 0.062 + 0.477 + 0.205 + 0.841 + 3.199 = \mathbf{5.034}$$

On the other hand, Table 2 shows the most and least preferred combination of attribute levels for a low-cost housing project. Based on the utility estimates, low-cost housing projects represented by Card IDs 9, 10, and 13 were found to be the most preferred plancards.

Card ID 9 has the highest total utility having a combination of an attribute as near the school of children as to location, staggered payment for equity, having a term of payment for 10 years, with a floor area of 45sqm (single-detached) in a 100sqm lot and with a total price of 500,000 pesos. The result was derived from the constant value of 3.712 + 0.059 utility for location + 0.136 utility for equity + 0.172 utility for terms of payment + 0.534 utility for floor area + -0.509 utility for the price.

Card ID 10 is the second most preferred plancard, which is a low-cost housing that is near the mall (location), staggered payment (equity), with a floor area of 32 sqm (duplex) in a 60 sqm lot, with a price of 500,000 pesos, and payable in 15 years.

Card ID 13 ranks third, which is a low-cost housing that is near the market (location), staggered payment (equity), with a floor area of 36 sqm (single-detached) in a 90 sqm lot to be paid for 15 years, and priced 500,000 pesos, having a total utility of 3.961.

Card ID 15, however, is the least preferred combination for real property. Using the same formula, results showed that respondents were not into this combination. As shown in the table, the total utility value of 2.323 represents low-cost housing that is near

the market as to location, outright payment for equity, the total price of 1,000,000 pesos payable in 10 years, and with a floor area of 32 sqm (duplex) in a 60 sqm lot. The proximity and accessibility to local facilities such as schools, retail malls, and transportation centers are often associated with good locational qualities (Clark, 2006; Kauko, 2007; Tan, 2011). Furthermore, when it comes to acquiring a property, financial variables account for about 30% of the choice (Reed and Mills, 2006).

**Table 2: Most and least preferred placards**

ID	Constant	x1	x2	x3	x4	x5	Total Utility	Rank
9	3.712	0.059	0.136	0.172	0.534	-0.509	4.104	1
10	3.712	0.18	0.136	0.343	0.178	-0.509	4.04	2
13	3.712	-0.077	0.136	0.343	0.356	-0.509	3.961	3
11	3.712	0.18	-0.136	0.172	0.534	-0.509	3.953	4
12	3.712	-0.077	-0.136	0.515	0.356	-0.509	3.861	5
7	3.712	0.059	-0.136	0.515	0.178	-0.509	3.819	6
8	3.712	-0.077	0.136	0.515	0.534	-1.017	3.803	7
6	3.712	-0.077	0.136	0.172	0.178	-0.509	3.612	8
2	3.712	-0.077	-0.136	0.172	0.178	-0.509	3.34	9
14	3.712	0.18	-0.136	0.172	0.356	-1.017	3.267	10
4	3.712	0.18	0.136	0.515	0.178	-1.526	3.195	11
1	3.712	0.059	-0.136	0.343	0.178	-1.017	3.139	12
5	3.712	-0.077	0.136	0.172	0.178	-1.017	3.104	13
3	3.712	0.059	0.136	0.172	0.356	-1.526	2.909	14
16	3.712	-0.077	-0.136	0.343	0.534	-1.526	2.85	15
15	3.712	-0.077	-0.136	0.172	0.178	-1.526	2.323	16

## 5. Recommendations

Finding the perfect property to invest in involves a lot of information, and if one does not have it, the investment could cost him/her a lot of money.

According to this study, price and location were key variables in client desire for a residential property; consequently, these should be considered by investors. Hence, real estate companies will use these findings to create marketing strategies to capture specific market segments that are price- and location-conscious. In addition, market researchers may look at these baseline findings to further investigate the market and do some sort of market validation for each type of real property investment they promote in addition to low-cost housing projects. After all, since the findings are specific to Digos City market, further conjoint studies are encouraged, covering the entire Province or region, or targeting specific markets for other types of real property investments. Optimizing the study's findings would allow uncertain purchasers to find the best property for them.

## 6. Conclusion

The study's findings revealed that low-cost housing attributes are quite essential in clients' decision-making for owning one. Price is the most preferred attribute among

clients, as seen by the results. As a result, the property's affordability, and the clients' ability to pay for it are important considerations.

In addition, individual choices for a residential home, on the other hand, vary. A responder preferred property near a child's school, independent of outright or staggered equity payment, but chose a longer term to pay for 20 years for a 1,000,000.00 peso-property and a duplex type. As a result, at the end of the study, most of the clients selected a property near a child's school, with staggered payment for the equity, a greater floor space, and a price of less than a million. And most respondents did not choose a near-market duplex-type home with outright payment for equity and a one-million-peso payment due in ten years.

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### **Conflict of Interest Statement**

The authors declare no conflicts of interest.

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