**The Factors Affecting the Home Buying Decisions Related to House Physical Characteristics in a Middle-Up Estate in Surabaya, Indonesia**



ArchitectureScience, No. 15, pp.1~16, June 2017



**DOI:10.3966/221915772017060015001**

**N. P. Aryani 1**\* **K. J. Tu 2**

1PhD Student, Department of Architecture, National Taiwan University of Science and Technology, Taiwan

2Associate Professor, Department of Architecture, National Taiwan University of Science and Technology, Taiwan

\*Corresponding author Email: d10313802@gmail.com; Tel:+886-2-27333141ext.7277; Fax:+886-2-27376721

(**Received** Jan. 10, 2017; **Accepted** Jun. 20, 2017)

ABSTRACT

The high demand for residential housing encourages Citraland Residential Surabaya, Indonesia to provide many types of houses. The houses are of several sizes, on different size plots, in different densities and varying building styles. This paper studies ten types of house in seven sizes of cluster.

The purpose of this study is to identify the factors homebuyers consider when selecting their houses in a middle-up estate in Surabaya, Indonesia. This study proposes a theory that social factors (family weekend activities, guest visit frequency), psychological factors (psychological needs, expectations from new environment, renovation needs), and demographic factors (age group, type of degree) may affect the physical characteristics (building sizes, plot sizes, cluster sizes and building styles) of the houses homebuyers choose to buy. A questionnaire survey was conducted on 41 respondents randomly chosen. The collected data was further analyzed by chi square test to verify the seven hypotheses proposed.

The statistical results show that the building size of the houses homebuyers choose are influenced by family weekend activities such as eating/dining out, sightseeing and gathering at home. The cluster size of the houses homebuyers choose are influenced by psychological needs such as comfort, security and self-actualization. Finally, the building style of the houses homebuyers choose are influenced by age in three groups from 20-35 years old, 36-45 years old and more than 45 years old. In conclusion, based on the lowest chi square test result *p* value 0.00287, the most important consideration is psychological factors, which is psychology needs namely comfort, security and self-actualization.

***KEYWORDS*:** Chi Square test, Social Factors, Psychological Factors, Demographic Factor

**1 Introduction**

**1.1 Background**

**1.1.1. Interesting phenomena of home buying behavior at Citraland Residential Surabaya**

Citraland Residential Surabaya, Indonesia, is one of the biggest developments established since 1991 for middle and upper income residential housing. Citraland has built 39 sizes of cluster and 64 types of house and grouped by different building sizes, plot sizes, cluster sizes, and building styles. Interestingly, every group has it is own unique qualities, corresponding to social factors, psychological factors, and demographic factors.

Based on the results of questionnaires, the most selected building is Recital, a Mediterranean style, a building of 130 sqm size and on a 210 sqmplot. Recital lies in a small cluster, less than 5000sqm in area, the style is selected by the age group over 45 years old. The second type selected is Conrad, a minimalist style of 247 sqm building size, on a 220 sqmplot in 6.160 sqmcluster areas. Conrad is chosen by people between 20 and 35 years old. The third is Aspial, the transitional style between Mediterranean and minimalist style. The building size is 80 sqm on 150 sqm plots, in cluster size 10.050 sqm; chosen by 36 to 45 year old consumers.

**1.1.2. Deficiencies in existing theories of home buying behavior**

The majority of discussion in previous studies associated internal and external factors; intrinsic and extrinsic housing attributes (Cupchik, Ritterfeld, & Levin, 2003; Dale-Johnson & Phillips, 1984; Greene & Ortuzar, 2002). However, a study in China (Zeng, 2013) stated consumers are also heavily influenced by factors that exist within consumers, who have social considerations and psychological concerns, such as location of facilities and services, aesthetics, age, marital status, consideration of educational background.

There are not many previous studies which discuss and assess for social factors, lifestyles such as weekend activities and social relationships with neighbors or colleagues. Furthermore, there is a lack of research on psychological factors, such as comfort, security, and self-actualization; the expectations from a new environment considering security, clean and green environment; and renovation needs to extend the initial house. Demographic factors, such as which age group buys which house; and how degree of education influences rationales of prospective consumers when buying a house.

**1.2 Research Objectives**

The main objectives of this study are:

(1) To determine the reasons (from consumers) for selecting a home at Citraland Residential Surabaya; (Family weekend activities, guest visit frequency, psychological needs, expectations from new environment, renovation needs, age group, and type of education).

(2) To find out the most important factor (social factors, psychological factors, and demographic factors).

**2 Literature Review**

**2.1 The important factors of home buying behavior from existing theories**

Studies of housing and residential choice (Friedman, 1980; Gabriel & Rosenthal, 1989; Hua, 2007) have stated that neighborhood quality; local public services and quantity of housing services affect choice of residence. Also, research to determine the factors which have effects on residential development (Susilawati & Anunu, 2001) has stated that building quality, design, price, building area, land area, affordable down payment, interest rate, payment period, cleanliness, safety, and aesthetics, electricity, and other factors are important.

Many researchers into house buying behavior have not been greatly concerned with subconscious processes and the roles of needs, goals, and emotions (Bargh, 2002). In research into buying behavior for commercial housing in Nanning, China, (James & Luo, 2013) found that it was important to understand and comprehend the perception and behavior of homebuyers. Furthermore, a conclusion of a study in China (Zeng, 2013) stated, that social and cultural considerations have heavy impacts on the relative’ importance of housing attributes and they influence consumer’s final house purchase decisions. Based on relevant research in Saudi Arabia (Al-Nahdi, et al., 2015) declared that attitude, subjective norm, perceived behavioral control, and finance, affected a consumer’s intention to purchase a house.

**2.2 Plausible Theory**

In general (Koklic & Vida, 2009) have stated that current research on consumer behavior focuses on psychological and social decision factors. In addition, recently conducted research about consumer behavior (Hansen, 2005; Erasmus, Boshoff & Rousseau, 2001; Loewenstein, 2001; Peter & Olson, 2002) has proposed a new concept of consumer buying behavior.

Based on research on culture and housing preferences in a developing city (Jabaren, 2005) proved that social factors and cultural factors, determined by religion, kinship and social relations, played a significant role in the relative importance of housing preferences. In terms of social relations, human’s lifestyle is the result of social influences and frequently provides the basic motivation and guidelines for purchases (Hawkins, et al., 2007). Furthermore, the values of various properties attributes change due to lifestyle change. For example, modern people at Citraland spend more time outside the house for work and social activities, especially on weekends, providing reasons for potential consumers to prefer smaller homes and several small areas for particular activities. Hence, the function of each space is reduced (Ahluwalia, 1996). People often consider their houses to be parts of personal identity like symbols of experiences and relationships; a home can develop a distinctive identity over time (Csikszentmihalyi & Rochberg-Halton, 1981; Hummon, 1989; Somerville, 1997).

A study for residential appraisal (DeLisle, 2012) determined that psychological factors which affect the most probable perception of real estate purchasers should be considered. This means, stimuli from outside of human feelings encourage people to take an action, which can be translated into hopes, wishes, and expectations, which can be an important consideration in purchasing a home. Thus, psychological factors can form a self-concept of the house consumers want to buy and occupy. Self-concept can be explained to be the totality of the individual's thoughts and feelings having reference to him or herself as an object (Hawkins, et al, 2007). According to a study of consumers (Belk, 1988), a house presents a strong source of personal identity. Furthermore, the expectations of living in a new environment, which is more secure, clean, and green are the demands of today's consumers in Surabaya. A study about consumers purchasing housing (Gibler & Nelson, 2003) stated that people want a house to reflect their actual or ideal self-concept.

Based on the research for strategic household purchase for consumer house buying behavior (Nelson & Gibler, 1998) did research which stated that search might be related to several demographic characteristics (Beatty and Smith, 1987). Age has a special role in people’s experience; older consumers have greater experience with many products so they can rely on internal information. Older consumers will choose the appropriate style of a building according to their experience. Besides, more educated consumers search more, perhaps because of their greater confidence in their ability to undertake the search and use the information gathered effectively (Duncan & Olshavsky, 1982). For certain types of degrees, consumers care more about a style of building in accordance with the level of education they have.

**3 Theoretical Framework**

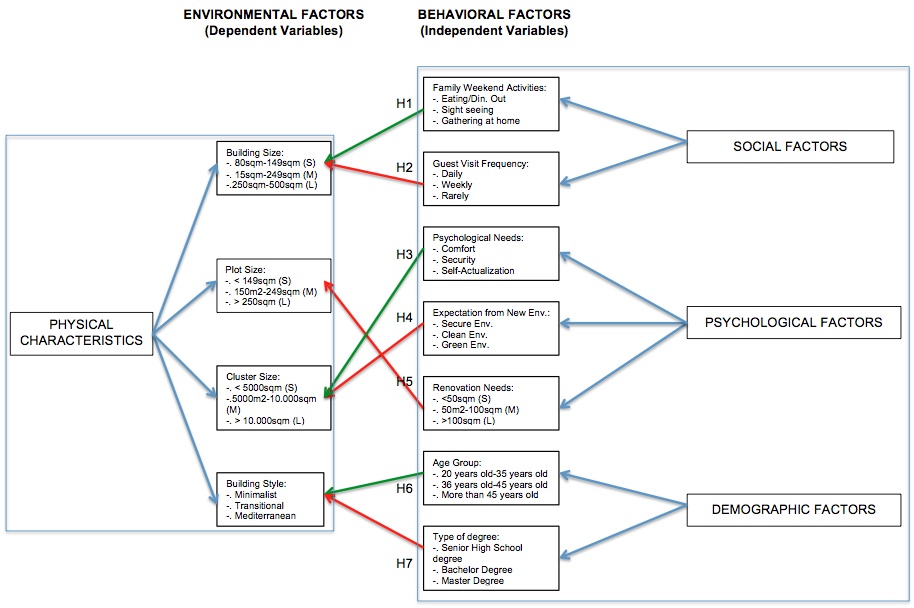
## 3.1 Social, Psychological and Demographic Concepts

In order to explain home buying behavior in this paper, the theoretical framework has recourse to two clusters of factors, behavioral and environmental. Behavioral factors include social, psychological and demographic considerations. Weekend activities and frequency of visits are social factors; psychological needs, expectation from the new environment and renovation needs are psychological factors; age group and type of degree are demographic factors.

Environmental factors can be translated to physical characteristics which are building size, plot size, cluster size, and building style. Building size, plot size and cluster size are three different groups, which relate to size, and depend on the design by the developer. Building style consists of three group styles, which are mediterannean, transitional and minimalist.

**3.1.1. The proposed research model**

The research model is shown in Figure 1 rests on two groups, which are Behavioral Factors and Environmental Factors. The two groups comprise seven hypotheses from independent variables and dependent variables.



**Figure 1 Theoretical Framework**

Independent variables have seven variables, which are family weekend activities, the decisive factor fordetermining space requirements. Guest visit frequency as social relation activities is also a consideration to determine the size of space. The psychological needs have an important role in selecting a new home related to feelings. Consumer expectations from the new environment, such as security, cleanliness and green environment get special consideration before the decision is made. The possibility to renovate the initial building based on the needs has some influence on selecting plot size. While the demographic factors for age group and type of degree mean that age gives more experience to help people consider; and type of degree perhaps gives better methods to analyze purchases based on the information and their knowledge.

Dependent variables have four factors, which are the physical characteristics of housing in Citraland. Building size is determined by layout plan, type of rooms, room sizes and building sizes. Plot size is the total square meters of land on which the building is erected. Cluster size is the total area of housing complex with one or two particular building styles. Finally, building style is the appearance of house determined by developer and depends on the year of construction.

## 3.2 Hypotheses development

The hypotheses were designed based on the theories used as framework, and the explanations are as follows:

* + 1. **Family weekend activities and Building size (H1)**

*H1: Residents who have eat-out weekend activity tend to choose smaller buildings. Residents who have sightseeing weekend activity tend to choose medium buildings. Residents who have family gathering weekend activity tend to choose larger buildings.*

Hypothesis 1 predicted that family weekend activities are positively related to building size.

* + 1. **Guest visit frequency and Building size (H2)**

*H2: Residents who rarely have guests visit tend to choose a smaller building size. Residents who are once in a week have guest visittend to choose medium building size. Residents who are every day have guest visit tend to choose larger building size.*

Hypothesis 2 predicted that guest visit frequency is positively related to building size.

* + 1. **Psychological needs and Cluster size (H3)**

*H3: Residents who look for comfort tend to choose small cluster area. Residents who prefer security tend to choose medium cluster area. Residents who prefer self-actualization tend to choose larger cluster size.*

Hypothesis 3 predicted that psychological needs are positively related to cluster size.

* + 1. **Expectations from new environment and Cluster size (H4)**

*H4: Residents who prefer secure environment tend to choose small cluster area. Residents who prefer clean environment tend to choose medium cluster area. Residents who prefer green environment tend to choose larger cluster area.*

Hypothesis 4 predicted that the expectations from new environment are positively related to cluster size.

* + 1. **Renovation needs and Plot size (H5)**

*H5: Residents who plan less than 50 sqm of renovation needs tend to choose a smaller land area. Residents who plan 50 sqm-100 sqm of renovation needs tend to choose a medium land area. Residents who plan more than 100 sqm of renovation needs tend to choose a larger land area.*

Hypothesis 5 predicted that renovation needs are positively related to plot size.

* + 1. **Age group and Building style (H6)**

*H6: Residents between 20-35years old tend to choose minimalist buildings. Residents 36-45 years old tend to choose transitional buildings. While residents more than 45 years old tend to choose mediterranean buildings.*

Hypothesis 6 predicted that group by age is positively related to building style.

* + 1. **Type of' degree and Building style (H7)**

*H7: Residents who have Senior High School degree tend to choose transitional buildings. For residents who have Bachelor degree tend to choose minimalist buildings, and residents who have Master degree tend to choose mediterranean buildings.*

**Table 1 Operation Definition-Independent Variables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Factor** | **Concept** | **Independent variables** | **Definition** |
| **Social** | Family Activities | Family weekend activities | The special activities on weekend especially to refresh after weekdays (eating/dine out, Sight seeing, gathering at home). |
| Social Relationship | Guest visit frequency | The chance to have guest (s) visit at home after office hours, classed by daily, weekly, rarely. |
| **Psychological** | Psychological expectation | Psychological needs | The main psychological needs or feelings expected by respondents (comfort, security, self-actualization). |
| Psychological expectation from the new environment | Expectation from the new environment | The wish from physical condition/new environment (secure environment, clean environment, green environment). |
| Psychological desire to alter extent of the initial house | Renovation needs | The needs to extend sizes of initial house categorized into (small, medium, and large). |
| **Demographic** | Category of years life time | Age group | The age category of a respondent, grouped into (20-35 years old, 36-45 years old, more than 45 years old). |
| Level of education | Type of degree | The highest education degree of respondents earned (Senior High School degree, Bachelor degree, Master degree). |

Hypothesis 7 predicted that type of degree is positively related to building style.

## 3.3 Variables (operation definitions)

Behavioral factors and environmental factors can be translated into variables to be used to analyze the relationships between all variables. The categories of variables may be described by an operational definition as shown in Table 1and Table 2.

For Independent variables, family weekend activities are the special activities on weekend, especially to refresh after weekdays; determined by three activities such as eat/dinner out with family, sight seeing/window shopping at mall/department store, and gathering with family at home. Guest visit frequency is the chance to have guest (s) visit at home-after office hours, which can be used to determine the size of living room/family room; this is split into three categories daily, weekly and rarely.

Psychological needs is the main psychology needs or feelings expected by respondents to be met comfort, security, and self-actualization; these needs encourage consumers to choose the area they want to live in. The expectation from the new environment is the wish from physical condition/new environment as secure, clean, and green. While the renovation needs to extend size of initial house classed as small, medium and large.

**Table 2 Operation Definition-Dependent variables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Factor** | **Concept** | **Dependent Variables** | **Definition** |
| **Physical Characteristic** | Building area | Building size | The size of the total floor area of a house, it is divided into three groups (small,medium, and large). |
| Land area | Plot size | The total area of property on which to build the house, it is divided into three groups (small,medium, and large). |
| Cluster area | Cluster size | The total area of a zone with different number houses and styles, it is divided into three groups (small, medium, and large). |
| Building design | Building Style | The style of a particular house, depending on the year of construction, it is determined into three groups (minimalist, transitional, and mediterannean). |

The age group is the age category of a respondent, grouped into 20 to 35 years old, 36 to 45 years old and more than 45 years old. While level of education is the highest education degree of respondents earned, group into Senior High School degree, Bachelor degree and Master degree.

The dependent variable for building size is total floor area of a house, which is designed and planned by the in-house architect. In this study building size is divided into three groups, there are 80 sqm to 149 sqm (S), 150 sqm to 249 sqm (M), and 250 sqm to 500 sqm (L).Plot size is total area of property on which to build the house and divided into three groups, less than 149 sqm (S), 150 sqm to 249 sqm (M), and more than 250 sqm (L).

Cluster size is the total area of a zone with different numbers of houses and styles and it is also divided into three groups, less than 5000 sqm (S), 5000 sqm to 10.000 sqm (M) and more than 10.000 sqm (L). Finally, building style is the style for a particular house, dependent on the year of construction. Building styles at Citraland residential Surabaya aredivided into three groups, minimalist, transitional, and mediterannean.

**4 Method**

## 4.1 Physical Context

This research was conducted at Citraland Residential Surabaya, Indonesia and was limited to construction years 2003 to 2010, with 21 clusters and 44 styles of house. Based on the answers from the questionnaire, there are only ten house style designs most preferred and seven clusters most preferred, as shown on Figure 2.

Table 3 shows the Styles of House at Citraland Residential Surabaya, the figures provide name style, cluster location, layout plan, elevation and pictures. There are ten styles as Conrad, Astrid, Auris, Aspial, Pistia, Marcellia, Victoria, Recital, Royal Queen, and Royal Prince. The seven clusters are Golf Avenue, Royal Park,Greenwood, Villa Taman Telaga, South Emerald Mansion, Fullerton, and Queenstown.



**Figure 2 Site Plan and Seven Clusters Studied**

(Source: Citraland Residential Surabaya, 2012)

Based on the result of questionnaires, the data is divided into two main groups, the data that is associated with social factors, psychological factors, and demographic factors, named Behavioral Factors.

The physical characteristics of the property such as building size, plot size, cluster size and building style, named Environmental Factors. After collecting the data according to size, location, and style of the building, then names and codes are assigned.

Through the above three stages, the key data of research were typed into the software program for analysis. The data in this study was entered into the Chi-square test to analyze the relation between two main groups.

**Table 3 Styles of House Researched (Source: Citraland Residential Surabaya, 2012)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **STYLE** | **CLUSTER** | **FLOOR PLAN** | **ELEVATION** | **PICTURE** |
| 1 | CONRAD | GOLF AVENUE |  |  |  |
| 2 | ASTRID | ROYAL PARK |  |  |  |
| 3 | AURIS | GREENWOOD |  |  |  |
| 4 | ASPIAL | VILLA TAMAN  TELAGA |  |  |  |
| 5 | PISTIA | SOUTH EMERALD MANSION |  |  |  |

**(Continued) Table 3 Styles of House Researched (Source: Citraland Residential Surabaya, 2012)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **STYLE** | **CLUSTER** | **FLOOR PLAN** | **ELEVATION** | **PICTURE** |
| 6 | MARCELLIA | SOUTH EMERALD MANSION |  |  |  |
| 7 | VICTORIA | ROYAL PARK |  |  |  |
| 8 | RECITAL | FULLERTON |  |  |  |
| 9 | ROYAL QUEEN | SOUTH EMERALD MANSION |  |  |  |
| 10 | ROYAL PRINCE | QUEENSTOWN |  |  |  |

**4.1.1. Data analysis methods**

Chi test was employed to test the seven hypotheses proposed with excel software (statistical functions), which are commonly used to compare data according to a specific hypothesis. The chi squaretest was used to obtain the relationship between the two variables, and how independent variables influenced dependent variables. Excel software was used to specify the percentages for each data category for independent variables and dependent variables.

**4.2 Descriptive statistic of variables**

**4.2.1. Independent variables**

The statistical data for independent variables is at Table 4, characterizing family weekend activities, 48.78% (ET) eat/dinner at restaurants; while 34% of respondents cited sightseeing (SS) at mall, and 17.07% repliedgathering (GT) with family at home. This indicates almost half of respondents have eat/dinner out as a family weekend activity. Guest visit frequency showedthat 78.04% very rarely (RR) have guests visit at home, only 7.31% have guests visit every day (ED), and 14.63% have guests visit once a week (OW). This means, most of the respondents do not spend social time at home, especially for respondents who are very busy on weekdays.

The data demonstrated the most pressing psychological needs are comfort (CM) cited by 63.41% of respondents, self-actualization (SA) cited by 21.95%, and security (SE) by 14.63%. Secure environment is expected (SE) by 56,09%, while clean environment (CE) is expected by 14.63% and green environment (GE) by 17.07%. This data indicates security is the most important consideration. The renovation needs start at the process of evaluation, respondents who want to renovate the initial house by a small number of square meters (LT) are 51.21%, medium number of square meters (MD) is 34.14%; and many square meters (MN) is 14.63%.

The age groups 20 years old to 35 years old and more than 45 years old have similar percentages, which is 43.1%; while aged 36 years old to 45 years old for 31.7%. the type of degree, bachelor degree is the highest, it is held by 58.53% of respondents; and master degree is held by 12.19% while senior high school degree by 29.26%. This indicates that most of the respondents have bachelor degree for their level of education.

In this study, the objectsdesignated as physical characteristics are divided into four namely: building size,plot size, cluster size, and building style as shown at Table 5.

Thestatistical datafor dependents variables demonstrated that more than half respondents select small (S) buiding area cited by 53.65%, medium (M) by 31.70%, and large (L) by 14.63%. This means small building size is selected by more than half respondents. Plot size discribed most respondents choose medium (M) cited by 82.92%, small (S) cited by 9.75%, and large (L) cited by 7.31%. It indicates that medium plot is chosen by more than seventy five percent respondents. Cluster size has almost the same percentages for every groups, small (S) by 34.16%, medium (M) cited by 39.02%, and large (L) by 26.82%. This means every cluster is enthused by almost similar number respondents. Building style variables are defined into three different groups based on the style; there are MN=minimalist; TR=transition and MD=mediterannean. The minimalist building style had been selected by 48.78%, this means almost half of respondents select minimalist. Nearly equal to minimalist is mediterannean chosen by 43.90% and the lowest percentage is transitional for 7.31%.

**5 Results**

**Table 4Descriptive Statistics for Independent Variables**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Social** | | **Psychological** | | | **Demographic** | |
| **Family Weekend Activities** | **Guest Visit Frequency** | **PsychologicalNeeds** | **Expectation from the New Environment** | **Renovation Needs** | **Age Group** | **Type of Degree** |
| ET = 20 (48.78%) | RR = 32 (78.04%) | CA = 26 (63.41%) | SE = 23 (56.09%) | LT = 21 (51.21%) | 20-35 = 14 (34.1%) | SHS = 12 (29.26%) |
| SS = 14 (34.14%) | ED = 3 (7.31%) | SE = 6 (14.63%) | CE = 11 (14.63%) | MD = 14 (34.14%) | 36-45 = 13 (31.7%) | GRD = 24 (58.53%) |
| GT = 7 (17.07%) | OW = 6 (14.63%) | SA = 9 (21.95%) | GE = 7 (17.07%) | MN = 6 (14.63%) | Over 45 = 14 (34.1%) | MAS = 5 (12.19%) |
| Total = 41 | Total = 41 | Total = 41 | Total = 41 | Total = 41 | Total = 41 | Total = 41 |

**Table5DescriptiveStatistics for Dependent Variables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Physical Characteristics** | | | |
| **Building Size** | **Plot Size** | **Cluster Size** | **Building Style** |
| S = 22 (53.65%) | S = 4 (9.75%) | S = 14 (34.16%) | MN = 20 (48.78%) |
| M = 13 (31.70%) | M = 16 (82.92%) | M = 16 (39.02%) | TR = 3 (7.31%) |
| L = 6 (14.63%) | L = 3 (7.31%) | L = 11 (26.82%) | MD = 18 (43.90%) |
| Total = 41 | Total = 41 | Total = 41 | Total = 41 |

The research performed chi test result shown in Table 6.

## 5.1 H1 is supported; there is relation between family weekend activities and building size.

Table 6 shows the result of chi square test for H1 is 0.00882(*p* value <0.05). This means family weekend activities were significant, and have a positive effect on selecting building size. Smaller building is selected by eat/dine out weekend activity relate to lifestyle, medium building is chosen by sight seeing weekend activity because of the trend of modern family, while larger building is chosen by gathering at home weekend activity concerned to family togetherness. Thus, H1 is supported.

**5.2 H2 is not supported, no relation between guest visit frequency and building size.**

Table 6 shows the *p* value for H2 is 0.90092(*p* value> 0.05).It indicates, guest visit frequency did not affect residents in choosing building size. Thus, H2 is not supported.

**5.3 H3 is supported; there is relation between psychological needs and cluster size.**

Table 6 shows the chi square test result for H3 is 0.002287(*p* value <0.05). This shows psychological needs and cluster size have relation, and this measure was significant with regard to cluster size. Smaller cluster is selected by respondents who need comfort because easy to know others, medium cluster is chosen by respondents who need more secure since secure is very important in Surabaya, and larger cluster is selected by respondents who need more self-actualization to show the personal identity. Thus, H3 is supported.

* 1. **H4 is not supported, no relation between the expectation from new environment and cluster size.**

Table 6 shows the expectations from new environment was not significant with cluster size; the result of chi test for H4 is 0.52424(*p* value> 0.05). Thus, H4 is not supported.

* 1. **H5 is not supported, no relation between renovation needs and plot size.**

Table 6 shows the *p* value for H5 is 0.82279(*p* value> 0.05).It proves, renovation needs was not influential in choosing plot size. Thus, H5 is not supported.

**Table 6 Hypotheses Testing Results**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Social Factors** | | **Psychological Factors** | | | **Demographic Factors** | |
| **Physical Characteristics** |  | **Family Weekend Act.** | **Guest Visit Frequency** | **Psychological Needs** | **Expectation from the New Environment** | **Renovation Needs** | **Age Group** | **Type of Degree** |
| **Building Size** | H1 supported Chi-test = 0.00882 | H2 rejected Chi-test = 0.90092 |  |  |  |  |  |
| **Building Style** |  |  |  |  |  | H6 supported Chi-test = 0.02557 | H7 rejected Chi-test = 0.59536 |
| **Cluster Size** |  |  | H3 supported Chi-test = 0.00287 | H4 rejected Chi-test = 0.52424 |  |  |  |
| **Plot Size** |  |  |  |  | H5 rejected Chi-test = 0.82279 |  |  |

**5.6 H6 is supported; there is relation between age group and building style.**

Table 6 shows the result of chi square test for H6 is 0.02557, (*p* value <0.05). This indicates age group has a positive effect on selecting building style, minimalist is chosen by young respondents regard to modern lifestyle, transitional is chosen by middle age respondents relate to the needs, and mediterannean is chosen by old respondents since timeless and long lasting. Thus, H6 is supported.

* 1. **H7 is not supported, no relation between type of degree and building style.**

Table 6 shows the chi square test result for H7 is 0.59536, (*p* value> 0.05). This means, type of degree was not significant with regard to building style, so type of degree did not affect choice of building style. Thus, H7 is not supported.

* 1. **Hypotheses Testing Results**

There are three affected factors that have been found from the analysis as family weekend activities, psychology needs, and age group. The reason for consumers to select building size is family weekend activities, to select cluster size is psychological needs, and to select building style is age group. The most powerful factor is psychological needs, which has the lowest *p* value= 0.00287. This proves psychological factors have the most important influence on consumers.

# Conclusion and practical implication

## 6.1 Research Findings

Relate to the research objectives for the reasons and to find out the most important factor to selecting a home at Citraland Residential Surabaya; and based on the social factors on the research on culture and housing preferences in a developing city(Jabaren, 2005), the psychological factors which affect the most probable perception of real estate purchasers(DeLisle, 2012), on the basic motivation and guidelines for purchases(Hawkins, Mothersbaugh, & Best, 2007); and demographic factors for consumer house buying behavior(Nelson & Gibler, 1998) related to several demographic characteristics (Beatty and Smith, 1987)to physical characteristics as building size, plot size, cluster size and building style, the seven hypotheses was tested.

The study has shown chi square test analysis of the most influential factor on house buying behavior on family weekend activities, psychological needs, and group by age (*p* value < 0.05), which have tested as valid predictive hypotheses. For guest visit frequency, expectation from the new environment, renovation needs, and type of degree the *p* values are > 0.05; these are not valid. Thus, the seven hypotheses testing results asserted three hypotheses supported and four hypotheses rejected. Based on chi square test results and hypotheses test, there are three factors that affected consumer house buying which are family weekend activities, psychological needs, and group by age; and psychological needs have the lowest chi square test result (*p* value) 0.00287, which is the most important role for homebuyers in choosing one of the houses at Citraland Residential Surabaya.

* + 1. **Contributions to the environment-behavior field**

This research has identified some important factors for selecting a home (Jabaren, 2005), especially social factors. In modern social relationships, the values of various properties attributes change due to life stylechange (Hawkins, et al., 2007); that is because the function of each space is reduced (Ahluwalia, 1996). The study also generalizes the importance of psychological factors (DeLisle, 2012), to support the self-concept of real estate purchasers (Hawkins, et al., 2007). It also supports theories about several demographic characteristics such as age and education (Gibler & Nelson, 1998). Age has a special role in people’s experience; education helps people to search more, and use the information gathered effectively (Duncan and Olshavsky, 1982).

* + 1. **Limitations and Future Research**

This study only focused on the housing purchase decision process, as influence by social factors, psychological factors, and demographic factors for individual residential purchases at medium price level and higher at Citraland Residential Surabaya, Indonesia. The research for this study cannot provide a general picture of all customers in Surabaya, Indonesia. A number of further research opportunities are suggested, for additional research in many different locations and similar developers in big cities in Indonesia can be conducted to generalize the findings.

# REFERENCES

Ahluwalia, G. (1996). What Today’s New Home Buyers Want. *Housing Economics*, *44*(2), 6-7.

Al-Nahdi, T. S., Nyakwende, E., Banamah, A. M., & Jappie, A. A. (2015). Factors Affecting Purchasing Behavior in Real Estate in Saudi Arabia. *International Journal of Business and Social Science*, *6*(2).

Bargh, John A. (2002). Losing Consciousness: Automatic Influences on Consumer Judgment, Behavior and Motivation. *Journal of Consumer Research*, *29* (September), 280-285.

Belk, R. W. (1988). Possessions and the Extended Self. *Journal of Consumer Research*, *15*(September), 139-168.

DeLisle, J. R. (1985). Behavioral Theory and Residential Appraisal. *Appraisal Journal*, *53*(4), 493-506.

Duncan, C. P., & Olshavsky, R. W. (1982). External Search: The Role of Consumer Beliefs. *Journal of Marketing Research*, *19*, 32-43.

Friedman, J. (1980). A conditional legit model of the role of local public services in residential choice. *Urban Studies*, *18*, 347-258.

Gabriel, S., & Rosenthal, S. (1989). Housing location and race: estimates of a multinomial logit model. *The Review of Economics & Statistics*, *71*, 240-249.

Hawkins, D. I, Mothersbaugh, D. L., & Mookerjee, A. (2011). *Consumer Behavior: Building Marketing Strategy (11th ed.)*. NY, USA: Tata McGraw-Hill.

Howard, J., & Sheth, J. N. (1969). *The Theory of Buyer Behaviour*. NY, USA: Wiley.

Jabaren, Y. (2005). Culture and housing preferences in a developing city. *Environment and Behavior*, *37* (1), 134-146.

James, P. T. J., & Luo, Q. (2013). Influences on the buying behavior of purchasing commercial housing in Nanning City of Guangxi Province, China. *Journal of Management and Marketing Research*.

Koklic, M. K., & Vida, I. (2011). Consumer strategic decision making and choice process: prefabricated house purchase. *International Journal of Consumer Studies*, *35* (6), 634-643. http://dx.doi.org/10.1111/j.1470-6431.2010.00953.x

Kotler, P., & Keller, K. L. (2009). *Marketing Management (5th ed.)*. New Jersey, USA: Pearson Education, Inc.

Solomon, M. R. (2009). *Consumer behavior: buying, having and being (5th ed.)*. New Jersey, USA: Prentice Hall.

Susilawati, C., & Anunu, B. F. (2001). Motivation and perception factors influence buying home behavior in Dilly, East Timor. *PRRES 7th Annual Conference*.

Zeng, R. (2013). 'Attributes influencing home buyers' purchase decisions: a quantitative study of the Wuhan residential housing market. DBA thesis, Southern Cross University, Lismore, NSW.

**印尼泗水購買中上等級房地產時購屋者的決定因素之研究**

**N. P. Aryani1**\* **杜功仁2**

1國立台灣科技大學建築系博士生

2國立台灣科技大學建築系副教授

\*通訊作者Email: d10313802@gmail.com; Tel:+886-2-27333141ext.7277; Fax:+886-2-27376721

(2017年3月10日投稿；2017年6月20日通過)

**摘 要**

印度尼西亞的泗水對於住宅房屋有高需求量，因而有許多不同類型的住宅。不同大小的土地面積、不同的建物密度、不同的建築樣式等造就許多住宅類型。本文探討泗水七種建築物規模中的十種住宅類型。

研究目的在於確立印度尼西亞的泗水購屋者,在購買中上等級房地產時的考量因素。在本研究中提出了四項因素;分別是社會因素(家庭活動、來客拜訪頻率)，心理因素(心理需求、對於新環境的期望、建築物的更新需求)，人口因素(年齡層、學歷)以及個人喜好(建築物的面積、土地大小、建築樣式)。本研究以41位受訪者作隨機性問券調查，運用卡方檢驗分析數據，藉以驗證本研究的七種假設。

經由統計結果發現，購屋者會因為考量家庭活動、家庭聚會等因素，而影響購屋者對於建築物面積需求的選擇。在選擇建築物群規模時，受到舒適度、安全性及自我實現等心理因素而受到影響。最後，建築物樣式的選擇,依據三種不同年齡層級的購屋者20-35歲、36-45歲、45歲以上者,而受到影響。在結論中，基於卡方檢驗結果p值為0.00287，影響購屋者的最大考慮原因為心理因素，即舒適度、安全性、自我實現等。

**關鍵字：**卡方檢驗、社會因素、心理因素、人口因素