

Y - Generation and Its Supply Chain Strategy for Housing Affordability: An Evidence from Indonesia

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Abstract— Y - Generation of Indonesian has a lack of affordability in purchasing a house. It has become a much-discussed issue and attracted the researcher's attention, both in terms of supply chain strategy on preferences, indexes, and solutions to deal with the problem. Generation Y's preferences in purchasing a house were also investigated in this research to investigate which preferences and its supply chain strategy that will affect the demand and price of the houses because price is also an indicator used to identify the affordability. In addition, those preferences also will help some parties involved in housing transactions to create a supply chain strategy that will increase the affordability index. The data was gathered using mixed methods in which the qualitative is used in the 5 interviews with the property experts to gain the questionnaire items, and the questionnaire as the quantitative method with 206 respondents limited to Generation Y who have fixed income every month and are willing to have a house in Jakarta. The data then further processed using PLS-SEM analysis. This study found that Generation Y's preferences considering its supply chain strategy are divided into four categories which are product specifications, future considerations, supplemental factors, and dweller characteristics (stated in sequence from the most influential to the least influential). In terms of affordability, according to five banks with lowest interest rate, BTN as well BRI and Mandiri have become the most affordable bank for Generation Y compared than KPR because the indexes were 4.41% (can afford) and 95.59% (cannot afford) or the highest compared to BJB and BCA.

Keywords— *Generation Y, Housing Preferences, Supply Chain Strategy, Dweller Characteristics, Supplemental Factors, Affordability, Price to Income Ratio*

1. Introduction

Supply chain strategy plays an important role that can be used by Y generation in choosing which the best financial provider (Bank). Generation Y (or simply Gen Y) is the demographic cohort of Generation X and Previous Generation Z. In Indonesia, Generation Y is described as Indonesian society born between 1991 to 1998 or early 2000 (Junior Gen Y) and 1980 to 1990 (Senior Gen Y). They currently dominate the society on the basis of data collected by the Ministry of National Development Planning back in 2018 and actively contributed to Indonesia's GDP, which, according to the Ministry of Finance and Statistics Indonesia (BPS), increased by 5.07 per cent in the first quarter of 2019 compared to 2018. It is also claimed that most of the contribution is dominated by provincial groups in Java at 59.03 per cent.

Zulham et al. (2019) explained that GDP influences building values and bank credit to stimulate investment needs and thus influences house prices [1]. The Deloitte (2019) shows that only 49% of the 13,416 respondents with 300 Indonesian respondents who put their assets as their priority [2]. Rumah123, as Indonesia's largest property site, stated that more than 95 percent of Indonesia's Gen Y will not be able to own a home based on their survey due to a consumptive lifestyle and a very high price increase in property prices.

Rumah123, as a purchasing and selling property platform, researched karir.com as a job site to find the ability of the Gen Y around Jakarta to have their own property assets by comparing rising prices and salaries. On the basis of this research, data were collected that the increase in house prices in Indonesia was 17 per cent, far higher than the

wage increase of at most only 10 per cent, due to improved economic growth and a decline in inflation.

The government has provided a KPR program as a real solution, but this is not an easy matter. The trust of the bank in your financial capabilities is an important point that Gen Y must have. Banks, of course, are not just about approving applications for KPR, especially for those who have just worked. Gen Y needs to make sure that the bank's loan repayments are paid out smoothly. In addition, KPR will only help Gen Y get their own home based on their ability, and most of it is in the supporting city.

Indonesia's demand for housing is increasing as Indonesia has a population of more than 255 million, consisting of a growing middle class, and half of the population is a young population below the age of 30 who is looking for their first property. The current demand for housing in Jakarta alone is already 11,4 million units by 2018 and will continue to increase by 8 per cent from year to year, while the current supply to the market represents only 400,000 to 500,000 units per year. According to Survei Sosial Ekonomi Nasional (SUSENAS), a research agency under Statistics Indonesia (BPS) in 2017, the Generation Y families living in Jakarta are still very few, particularly in the central and northern areas of Jakarta, with an exact 13 per cent and 15.6 per cent. In conjunction with the present issue, this study aims to investigate the supply chain strategy role to Gen Y in choosing the good one of financial provider (Bank) and Gen Y awareness of owning a house considers the Price to Income Ratio as an indicator of the industry on which the parties need to develop.

2. Literature Review

2.1 Real Estate Industry

Real estate can be defined as the property, land, buildings, air rights above the land and underground rights below the land. The term of real estate means real or physical property. The industry can be classified into four types, the first one is residential. It includes the undeveloped land, houses, condominiums, and townhouses, which the structures may be single-family or multi-family dwellings and may be owner-occupied or rental properties. Different from the residential, the second type of real estate is commercial (CRE). It is property used exclusively for business purposes

rather than a living space and usually leased to tenants to conduct business [3]. While the third one is industrial or it can be simply understood as a region that consist everything such as industrial warehouses and any other special purposes real estate over long-term agreements, and the last one is retail where the landlord also receives a percentage of sales generated by tenant in addition to the rent fees.

2.2 Global Problematic Issues, Trends, and Challenges in Real Estate Industry

After nine years of continuous expansion, Asia's real estate market is currently facing an unstable condition. It is shown by the strictly competitive market, increasing interest rate, tightening access to credit, and decreasing buyer's affordability in purchasing property assets. Mass and luxury home prices are likely to increase by 5 to 10% in 2013 due to rising minimum wages and electric costs leading to higher building material costs. It is also affected because of the limited land and secondary market supply. With average prices expected to grow 10-20% in 2013 despite prices already reaching an all-time-high [4].

Indonesian real estate market condition itself was first discussed in ref [5]. He recommended on his paper that due to the urban crisis, the real estate market has been negatively affected. It resulted in the increasing price of property assets that unconsciously affected the economic condition in Indonesia as a whole. The price of the real estate in Indonesia is increasing at a serious phase because of the significant number in just 5 years shown in various growing areas near Jakarta such as Serpong, Bogor, Bekasi, and areas within Jakarta itself.

2.3 Housing Affordability

Housing affordability is one of the elements that can determine the socioeconomic stability and development of a region with the goal to understand is the house provided affordable for every income group [6]. Stone (2006) defined housing affordability as a process of decision function which is made by a family between housing and non-housing product expenditure [7]. After comparing two countries, it came to conclusion that measurement of housing affordability can be measured into three; purchase

affordability, repayment affordability, and income affordability [8].

2.4 Solution in Improving Housing Affordability

As a solution to improve housing affordability, Rijavec (2013) argues that affordability can be improved by matching housing demand and supply to a more deliberative way [9]. While Sharam (2015) suggested that there needs to be a structure of housing providers that is able to respond to the purpose of housing planning scheme while the public policy needs to facilitate housing development so it will affect the project viability and further affect the housing price and supply [10]. The increases in new housing supply will help to improve the housing affordability, this statement further added by The Baker Review (2012) that changes in the planning system were needed not only to increase the housing supply but also to make the supply more sensitive to the demand [11].

2.5 Generation Y Preferences in Purchasing a House

Before we further determine the Generation Y preferences, it is important to first understand the general customer preferences in purchasing a house. Those preferences are presented on the Figure 1.

Based on 18 possible reasons offered on a survey conducted by Lachman Associates Survey (2014), Generation Y preferences in deciding which house to purchase is mostly because of wanting more space (24%) and job location accessibility with the same amount of percentage (24%). While their least reasons are educational facilities (10%) followed by their indecisive choice of living by wanting to try new places to live with the same amount of percentage (10%). Still from the Lachman Associates Survey (2014) Gen Y preferences mostly focus on management handles repairs and maintenance, flexibility in how long the buyer can do the mortgage, and the commitment duration between the seller and the buyer. Several facilities such as garage parking, internet connection, and eco-friendly features as energy saving appliances are also considerations. While in the neighborhood aspect, they prefer neighbors that have the same lifestyle as them.

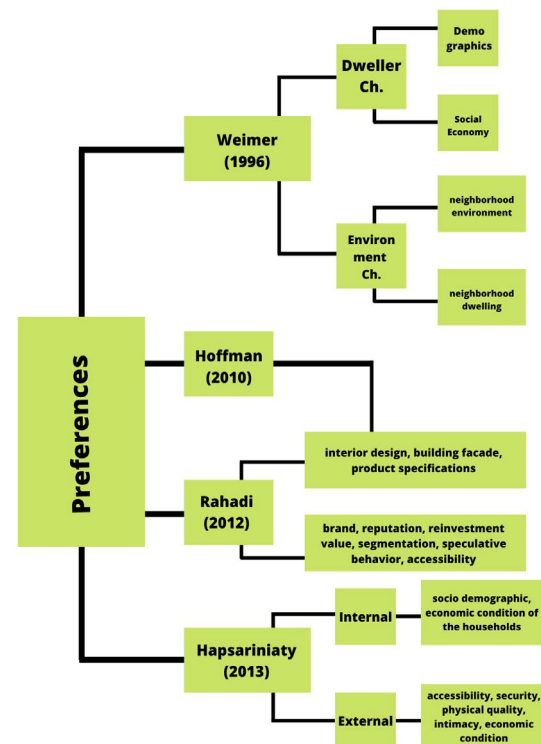


Figure 1. Housing Preferences from Various Literature Resources

2.6 Indonesian Generation Y Population Profile

There are 63 million Generation Y in Indonesia or equals to 24% of working age populations and categorized as a majority group in Indonesia demographic structure, which further it can be classified into two categories; Junior Gen Y who was born in 1991 to 1998 and or early 2000, and Senior Gen Y who was born in 1983 to 1990. According to IDN Research Institute (2019); when it comes to priority, Senior Generation Y differentiate it into three which are becoming good parents (58%), buying a house (51,5%), and making parents happy (52,7%). Like it, Junior Generation Y classified it into two which are buying a house on their top priority list (56,7%) and making parents happy (55,9%). Generation Y mostly spends their salary or income focusing on 5 products. Defined as clothes or garment, mobile phone, computer or laptop, and household items. While in entertainment and recreation expenses it is divided into music, movies, games, photos, and traveling.

2.7 Jakarta's Real Estate Problem

The retail industry continues to grow, housing in Jakarta remains a problem. According to Perumnas Official Website, Perumnas finally decided to do massive improvement by building 30.000 low-cost housing units as a solution while in fact it is not. Global Business Guide Indonesia (2014) reported that Jakarta required an additional 800.000 new housing units annually because of the increasing population caused by urbanization.

2.8 Price to Income Method

The price to income ratio can be defined as a "Median Multiple" or median house price divided by median annual gross pre-tax household income. Simply as the average house price divided by average household income.

Table 1. Previous Research using Price to Income Ratio

Year	Author	Research Title	Method
1996	Steven C. Bourassa	Measuring the Affordability of Home Ownership	Used the Deposit Gap which is based on the median wages and house prices. The house prices include the mortgage payments, maintenance expenses, and property taxes. To further validate, the writer also adapted the Grigsby and Rosenberg (1975) Expense to Income Ratio.
2011	M. S. Suhaida	Housing Affordability: A Conceptual Overview for House Price Index	Used the Price to Income Ratio where housing markets were divided into four categories; affordable, moderately unaffordable, seriously unaffordable and severely unaffordable. Primary data gathered from interview, while the secondary data came from literature review.
2018	Alain Bertand	15 th Annual Demographia International Housing Affordability Survey: 2019	Used the Price to Income Ratio specified as "Median Multiple" which can be described as median house price divided by median annual gross pre-tax household income. The income data gathered from regional's not grouped individual income.
2019	Unison	2019 Home Affordability Report	Used the combination of home price data and income data to compare different housing markets. The index gathered will show how affordable a particular market is by estimating the number of years it takes to save for the down payment.

2.9 Mixed Method Analysis

Mixed methods research classified as a research where the researcher combines the elements of qualitative and quantitative research to gain wider and deeper understanding [12]. To fulfil the research objectives, researcher need to use the mixed methods analysis and convinced by the previous research.

2.10 Hypothesis Development

2.10.1 Product Specifications towards House Pricing

Product specifications can be further determined as building façade and interior design [13], brand [14], security and accessibility in affecting customer preferences to buy a house. Those preferences gathered from literature review and

Table 2. Previous Research using Mixed-Methods Analysis

Year	Author	Research Title	Method
2015	Raden Aswin Rahadi Sudarso Kaderi, Wiryono Deddy Priatmodjo, Koesrindartoto Indra Budiman Syamwil	Factors Influencing the Price of Housing in Indonesia	The study is conducted using the sequential mixed-methods approach. This approach is divided into five different phases. The first phase is literature review study to identify the factors influencing housing product price from previous researchers. The second phase is theoretical model construction. The third phase is the data collection for questionnaire development via interview. The fourth phase is questionnaire delivery and data gathering. The last phase includes the analysis, validity checks and factor analysis before reaching a conclusion.
2015	Jenna Beeson, Amber Beyer, Coryn Dahlquist, Clarissa Ipema, Dakotah Jordan, Andrew Powell, Kelsie Scarlett, Hannah Twedt, and Anthony Wubben	Housing Research Realities and Perceptions: A mixed model study of quantitative data for Sioux County, Iowa and Orange City, Iowa with qualitative data collected in Orange City, Iowa	Combining qualitative and quantitative methods where the quantitative research was conducted by examining and compiling existing data and the qualitative research further divided into two, major and minor themes. The major themes are the unknown needs and bias, while the minor themes are the community situation, developments and taxes.
2018	Marziyeh Riazi, Ali Emami	Residential Satisfaction in Affordable Housing: A Mixed Method Study	It was conducted using the mixed-methods research by first adopting an exploratory and qualitative approach to analyse satisfaction factors using the semi-structured interviews. Further continued by doing the quantitative approach along with structured questionnaires.

interview questions conducted in [14], with ten questions focusing on underlying reasons for real estate developers when deciding to set a price. Based on that interview the data can be concluded that seven respondents agreed that design affects housing price, six respondents considered brand, five respondents considered facilities, and four respondents considered accessibility. Based on the statements above, it can be concluded the hypothesis formula as follows:

H1: Product Specifications has a significant positive influence on the growth of housing price

2.10.2. Future Considerations towards House Pricing

Future considerations consist of the reputation and reinvestment value which can be further described the influence of low interest rate and the continued investment of multinational corporations and easy homeownership have developed new property investors from a wealthy group. At the same time, the rising market has increased the housing price [15].

H2: Future considerations has a significant positive influence on the growth of housing price

2.10.3. Dwellers Characteristics towards House Pricing

Dwellers characteristics consist of the demographics, social economy and neighborhood which can be further determined as the population

increases and can be attributed to migration of local citizens and foreign workforce also the returns of people from overseas has contributed to the increasing of demand that is positively related to the house price. While the social economy is affected by the increasing construction cost that isn't aligned with the increasing of dwellers' income.

H3: Dwellers characteristics has a significant positive influence on the growth of housing price

2.10.4. Supplemental Factors towards House Pricing

Bourassa (1996) stated a concept where house pricing is affected by the supplemental factors such as mortgage payments, maintenance expenses and property taxes [16]. While other factors focus on the developer point of view, supplemental factors affected by the government policy also and financial factors. Abdullah (2012) said that for the first-time buyer, financial factor is the most crucial consideration for them in purchasing a house [17].

H4: Supplemental factors has a significant positive influence on the growth of housing price

2.10.5 House Pricing towards Affordability

In calculating the affordability, house price is the most-used factor in the ratio. An already high or increasing price-income ratio should immediately signal to urban managers that they should take urgent action in fixing the condition. A high price-income indicates a discrepancy between housing supply and demand, so when the demand is high and the supply is low it causes the house price to increase and lower the affordability.

H5: House pricing has a significant negative influence on the growth of affordability.

2.12 Conceptual Framework

The following conceptual framework is developed to meet the objectives of this study. This conceptual framework explained the correlation between the independent variables toward house pricing and affordability. The conceptual framework of this research can be seen in Figure 2.

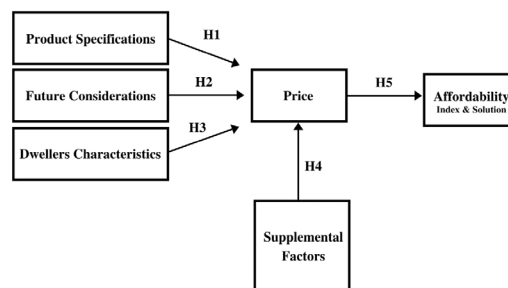


Figure 2. Conceptual Framework

3. Methodology

3.1 Research Framework

A framework has been established to provide a clear overview of the research framework of this study, as shown in Figure 3.

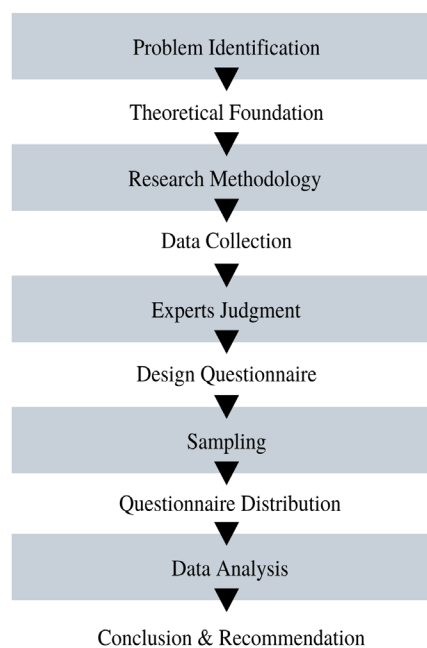


Figure 3. Research Framework

In this study, three research questions are developed to meet the objectives of this research. The problems described in this research is to analyze the Generation Y preferences in purchasing a house and how it affects the price and further analyze their affordability. The literature review was the basis of the research. The aim of the theoretical foundation is to find secondary sources, including substantive findings. In addition, the theoretical foundation also supports the theoretical background of this study on the affordability of

Generation Y housing using the price-to-income ratio.

Both quantitative and qualitative methods are used in this study, or it can simply be stated that this study uses mixed methods. The qualitative approach used in this study by several property experts to assess questions to the questionnaire, such as other preferences based on the developer's point of view. This approach occurred prior to the sampling and distribution of the questionnaire to maximize the data obtained, so that the questions do not only come from the literature review, but also from the issue of the real world. The quantitative approach used in this study is the distribution of questionnaires to the targeted respondents. It would be beneficial to test whether all independent variables would have a significant impact on house pricing, either positive or negative, and to prove the hypothesis that has been developed in the previous chapter. The respondents are limited to people who have gross income every month, willing to have a house in Jakarta, and were born between 1980 – 2000.

3.2 Data Collection

There are several different types of data tools, each type has different functions. The variety of methods of data collection can range from questionnaires, interviews, observations to interviews.

3.2.1 Interview Questions

Questions asked to property experts based on the Rahadi (2012) dissertation research hypotheses to find the gap between 2012 research results with 2019 research results. From the research questions created, experts expected to provide their own answers for the main questions of this research:

- What are the characteristics that underlie the preferences of customers for housing products in Jakarta?
- What are the external attributes that influence the price of housing products in Jakarta?
- Experts tasked to comment on the housing preferences gathered from the literature review that will affect the price in Jakarta region housing.
- Product specifications play a significant part in price setting for property developers when dealing with housing products.

- Future considerations play a significant part in price setting for property developers when dealing with housing products.
- Dwellers characteristics play a significant part in price setting for property developers when dealing with housing products.

3.2.2 Population and Sample

As this research investigates the Generation Y housing preferences and its supply chain strategy role in affecting their affordability using the price to income ratio, the population of this study are Indonesian Generation Y. The respondents are chosen from people that lived in Jakarta, both female and male, born between 1980 – 2000.

a. Sampling Technique

This study uses non-probability sampling as a method of sampling. Non-probability sampling is a sampling technique in which the researcher selects samples based on the researcher's subjective judgment rather than on random selection. The sample for this research is Jakarta's Generation Y, both male and female, have gross income every month, willing to have a house in Jakarta, and born between 1980 – 2000.

b. Sample Size

To determine the sample size, *Sampling the Evidence of Extension Program Impact* method is used in this study.

Size of Population	Sample Size (n) for Precision (e) of:			
	±3%	±5%	±7%	±10%
500	a	222	145	83
600	a	240	152	86
700	a	255	158	88
800	a	267	163	89
900	a	277	166	90
1,000	a	286	169	91
2,000	714	333	185	95
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	959	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99
20,000	1,053	392	204	100
25,000	1,064	394	204	100
50,000	1,087	397	204	100
100,000	1,099	398	204	100
>100,000	1,111	400	204	100

a = Assumption of normal population is poor (Yamane, 1967). The entire population should be sampled.

Figure 4. Sample Size Distribution.

Hence, the respondents needed for this research is at least 100 respondents because Jakarta's population is above 100,000.

3.2.3 Questionnaire Design

This study used a questionnaire that included closed-ended questions and was constructed using the Likert scale. The rule of measurement and estimation of attitudes by asking people to respond to statements on the subject to the degree to which they agree with them. 31 questions in the survey are measured with the 6-point Likert-scale from strongly disagree to strongly agree. Additional methods such as checkboxes and short-answer answers are also included in this questionnaire. The questions focus on four variables which are Product Specifications (PS) with 11 indicators, Future Considerations (FC) with 3 indicators, Dweller Characteristics (DC) with 9 indicators, and Supplemental Factors (SF) with 11 indicators. Additional variables also needed which are the Price (PR) itself with 3 indicators, and Affordability (AF) with 1 indicator. Stated as:

- Product Specifications: Interior design, building facade, developer's reputation, accessibility, security, physical quality (public facilities), size of land and building, age of building, location, green concept, and housing size.
- Future Considerations: House reputation, reinvestment value, and the purpose of the house.
- Dweller Characteristics: Demographics, personal economic condition (financial stability and availability of cash), family background, current job and hobbies or interests.
- Supplemental Factors: Mortgage payments, maintenance expenses, property taxes, transaction time, result from family discussion, house surroundings, and customer's belief.
- Price: Desired house price, desired region, real price based on preferences.
- Affordability: Income distribution.

3.2.4 Questionnaire Distribution

The questionnaire was distributed on 7 March - 21 March 2020 and distributed online through google form. Total of 208 respondents have responded to the questionnaire and 206 respondents considered it to be valid.

3.3 Data Analysis

This study uses the Partial Least Square (PLS) method with an analysis tool using SMARTPLS 3.0. PLS is a model of structural equation modelling (SEM) based on components or variants, SEM is a set of statistical techniques that allow the testing of a relatively complex set of relationships at the same time. The data further is being analyzed using descriptive analysis, validity test, reliability test, outer model (measurement model), and inner model (structural model).

In addition to calculate the affordability, a formula from Bourassa (1996) is adapted with the equation as follows.

$$AL = \left(\frac{\alpha}{1 - \beta} \right) \left(\frac{1 - (1 + i)^{-N}}{i} \right)$$

In which the AL stands for Affordability Limit, and it should be equal or bigger than the price to income ratio to be considered as affordable. Mathematically stated as $\frac{Y}{X} \leq AL$.

4. Results and Discussion

4.1 Expert Judgement Results

Expert judgement results can be seen in Table 3.

4.2 Respondent Profile Analysis

Respondent profile analysis can be seen in Table 4 for detail.

4.3 Descriptive Analysis

Based on the questionnaire data it can be concluded that Product Specifications (PS) has become the most influential variable since it has the highest mean of 4.87 followed by Future Considerations (FC) of 4.37, Supplemental Factors (SF) of 4.03 and Dweller Characteristics (DC) of 3.87. The data is classified as homogeneous because the mean values are above the standard deviation (See Table 5).

Table 3. Expert Judgement Results

Source	Preferences Gained
<i>X, 20 Years Working in the Field of Property</i>	Location, budget, developer's reputation, design, building age, purposes, time consideration, house improvement, tax & notary, third-party involvement.
<i>Y, Construction Company Worker</i>	Developer's target market, competitor benchmarking, location, specifications, zone, facilities, legality, discussion, land price, raw material price, contractor or sub-contract price and mortgage rates.
<i>Z, 12 Years Associate Property Analyst</i>	Ownership of liquid assets, additional costs, family background, location, timing, facilities, access, and design.
<i>A, 3 Years Senior Manager-Research and Consultancy in Property Company</i>	Land cost, building cost, target market, concept, location, price, residential specifications, brand, specific features, prospective value.
<i>B, 2 Years Sales Agent in Property Company</i>	Location, price, design, certain beliefs, management rights, building use rights, freehold title.

4.3.1 Descriptive Analysis of Indicators

In the Product Specifications variable, the security preference got the highest mean or average value of 5.76 and the size of housing preference got the lowest mean or average value of 3.67. In the Future Considerations variable, the future selling price got the highest mean or average value of 5.09 and the area stereotyping got the lowest mean or average value of 3.34. In the Dweller Characteristics, the highest mean or variable is for the financial stability statement with the amount of 5.48 and the lowest is the inflexibility of owning a house statement with mean or variable of 2.64. From the Supplemental Factors, the highest mean or average is for the consideration of mortgage payment statement with the amount

of 4.92 and the lowest mean of 3.14 is for the no involvement in legal regulation statement.

4.4 Partial Least Square (PLS)-SEM Result

4.4.1. Outer Model (Measurement Model) Analysis

There are two construct validity measures in the PLS measurement model that are convergent and discriminant.

a. Validity Test

- *Convergent Validity*

The indicators are considered as valid as if the CR is above 0.6 [18], the results of the calculation can be seen in Table 6.

- *Discriminant Validity*

Based on Table 7. it is shown that the value of the indicators based on Fornell and Larcker criterion is all below the composite reliability stated on Table 8. it means that these variables are classified as valid according to the discriminant validity.

b. Reliability Test

Reliability test in this research is generated using two kinds of tests which are the indicator reliability test and internal consistency reliability.

- *Indicator Reliability Test*

There are several indicators that are below and very close to the valid limit or classified as inconsistent. It means that these indicators have a huge gap between one respondent's answer to another that indicates different perceptions in Generation Y. It also can be used for the developer's consideration in supplying houses, that several factors inconsistent are determined as unimportant.

- *Internal Consistency Reliability*

According to Ghazali & Latan (2014) variables are classified as reliable if the composite reliability and Cronbach's alpha value is higher than 0.7 [19]. It also can be classified as moderate reliable from 0.5 to 0.6.

Table 4. Respondent Profile Analysis

Socio Demographic Profile			
Gender	Male	78	37.9%
	Female	128	62.1%
Age	18 - 23	184	89.33%
	24 - 30	12	5.83%
	31 - 40	10	4.84%
Income	IDR 1 Million - 3 Million	103	50%
	IDR 3.1 Million - 6 Million	67	32.51%
	IDR 6.5 Million - 20 Million	33	17.48%
	Above IDR 20 Million	3	1.46%
Source of Income	Scholarship	2	0.97%
	Scholarship and Work	1	0.49%
	Work	84	40.78%
	Parents	105	50.97%
	Parents and Work	14	6.80%
Behavioral Profile			
Desired House Region	West Jakarta	20	9.71%
	Central Jakarta	23	11.17%
	South Jakarta	106	51.46%
	East Jakarta	47	22.82%
	North Jakarta	10	4.85%
Desired House Price	< IDR 1 Billion	47	22.82%
	IDR 1 Billion - 4 Billion	113	54.85%
	IDR 4.1 Billion - 20 Billion	39	18.93%
	> 20 Billion	7	3.40%

Table 5. Descriptive Analysis

	N	Mean	Min	Max	Std. Dev.
Product Specifications	206	4.87	1	6	1.05
Future Considerations	206	4.37	1	6	1.23
Dweller Characteristics	206	3.95	1	6	1.28
Supplemental Factors	206	4.03	1	6	1.40
Price	206	4.87	3	6	0.53
Valid N (listwise)	206				

Table 6. Result of Composite Reliability (CR)

	CR
Product Specifications (PS)	0.77
Future Considerations (FC)	0.74
Dweller Characteristics (DC)	0.66
Supplemental Factors (SF)	0.77
Price (PR)	1.00

Table 7. Fornell and Larcker Criterion for Discriminant Validity

	DC	FC	PS	Price	SF
DC	0.49				
FC	0.43	0.69			
PS	0.49	0.35	0.48		
Price	0.66	0.42	0.60	1	
SF	0.48	0.25	0.35	0.69	0.52

Table 8. Result of Composite Reliability (CR) and Cronbach's Alpha

	Composite Reliability	Category	Cronbach's Alpha	Category
PS	0.77	Reliable	0.71	Reliable
FC	0.74	Reliable	0.55	Moderate
DC	0.66	Reliable	0.53	Moderate
SF	0.77	Reliable	0.70	Reliable
PR	1.00	Reliable	1.00	Reliable

4.4.2 Inner Model (Structural Model) Analysis

From the information generated in the table above it can be concluded that the Price (PR) R-square value is 0.70 and R-square adjusted value is 0.694, which means that it is indeed a good category. This calculation also can be shown as a percentage of 70% and 69.4% and will further help this research in interpreting the meaning. Path coefficient result can be seen in Table 10.

4.5 Measuring Affordability Result

A house is classified as affordable for Generation Y if the affordability limit (AL) is greater than the price to income ratio or can be said mathematically as $\frac{Y}{X} \leq AL$. The affordability limit itself can be calculated using Bourassa (1996) method as follows.

$$AL = \left(\frac{\alpha}{1 - \beta} \right) \left(\frac{1 - (1 + i)^{-N}}{i} \right)$$

Five banks with the lowest mortgage were used as a reference for this calculation shown in the Table 11.

Other variables such as percentage of income for mortgage (α) is gathered from Bank Indonesia regulation which is 30%, and the down payment ratio (β) for banks is commonly known for 15%. From data that has been collected and assumptions from information that has been obtained, the affordability measurement can be seen in Table 12.

Based on the hypotheses testing result it is stated that Ha_1, Ha_2, Ha_3, Ha_4 are accepted which means that all those variables have a positive major impact to the house prices in the Jakarta region.

Table 9. R-Squared and Adjusted Value

	R-Square	R-Square Adjusted
Price (PR)	0.70	0.694

Table 10. Path Coefficient Result

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Hypotheses
PS -> Price	0.28	6.20	0.00	Ha_1 is accepted
FC -> Price	0.09	1.98	0.05	Ha_2 is accepted
DC -> Price	0.28	5.41	0.00	Ha_3 is accepted
SF -> Price	0.44	9.77	0.00	Ha_4 is accepted

Table 11. Five Banks with Lowest Interest Rate in Indonesia

		BTN	BJB	BRI	BCA	MANDIRI
<i>i</i>	Interest Rate	8,88%	9,75%	7,60%	8,75%	7,58%
<i>N</i>	Term of Loan	25 years	15 years	20 years	20 years	20 years

Table 12. Affordability Calculation

	BTN	BJB	BRI	BCA	MANDIRI
Can Afford	4.41%	1.96%	4.41%	3.92%	4.41%
Cannot Afford	95.59%	98.04%	95.59%	96.08%	95.59%
Total	100%	100%	100%	100%	100%

3 Conclusions

In conclusion, this study finally found that the supply chain strategy is essential tool that can used by Generation Y's in preferences. It is divided into four categories which are product specifications, future considerations, supplemental factors, and dweller characteristics (stated in sequence from the most influential to the least influential). In terms of affordability, according to five banks with lowest interest rate, BTN as well BRI and Mandiri have become the most affordable bank for Generation Y to do KPR because the indexes were 4.41% (can afford) and 95.59% (cannot afford) or the highest compared to BJB and BCA. This research still has several limitations and based on that, further research with more respondents and wider demographic aspects is needed to really understand which preferences really affect house prices and are relevant in Indonesia's context generally and Indonesian Generation Y especially, seen from some of the SEM-PLS results classified as inconsistent. Adding the questions to the questionnaire such as their investment priorities and percentage of savings also might help in determining the affordability of Generation Y.

Further research about Jakarta's supporting areas such as Bekasi, Depok, and so on also needed to understand whether Generation Y is able to purchase any house there and does it include in their considerations so it will increase the affordability index. Productive ages in Indonesia are very high and it will be difficult to get focused data. The researcher finally picked the Gen Y range ages because according to Statistics Indonesia, two-thirds of Gen Y Generation enters the workforce and contributes quite a lot of roles in the Indonesian economy. Not all of those Gen Y will be included in this research, only the ones who already had fixed income every month which is the amount in accordance with the classes specified by the researcher. The property asset itself defined as anything that a person or business has legal title over, can be either tangible or intangible and

having legal title to it grants the owner certain enforceable rights which the researcher narrowed it into house and to be more specific the location of the house should be in Jakarta. The research is expected to be done in May 2020.

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