Connection between Residential Product Price and Preferences: A study in Jakarta Metropolitan Region

R. Aswin Rahadi[1], Sudarso Kaderi Wiryono[1],
Deddy P. Koesrindartoto[1], Indra Budiman Syamwil[2]

[1]*School of Business & Management Bandung Institute of Technology, Jl. Ganesha 10, Bandung 40132, Indonesia*
[2]*School of Architecture, Planning, and Policy Development Bandung Institute of Technology, Jl. Ganesha No 10 Bandung 40132, Indonesia*

aswin.rahadi@sbm-itb.ac.id
Tel: +62 22 2531923

Abstract

As part of an ongoing research about value determinant factors for residential product pricing in Jakarta Metropolitan Region, this paper will analyze reasoning behind price allocation for residential products. It will also try to produce a certain pricing approach to measure the level of residential product price uniqueness. Preliminary findings from literature review analysis suggested that planned community (gated) concept, security and prestige helps to determine consumer preferences to purchase a specific residential product, while from interview analysis with property developer suggested additional factors of design, accessibility, facilities and brand also influenced the price of the product.

Keywords**:** consumer preferences; environment and social influence; commercial implication; residential price uniqueness.

DOI: https://doi.org/10.21834/jabs.v3i7.254

1.0 Introduction

Real Estate product is considered as unique product that cannot be compared with other commercial products, because it has two condition which sets up their price. The first is the given condition of the product, and the second is the created condition made by property developer to enhance value of the product.

From the point of view of the customer, when purchasing the product they looked upon several key selection factors, and measures it with the subjected price of the product. Here a process of weighing and decision-making, combined with external influences will take place to produce the agreed price.

From the point of view of property developer, when setting price for a certain product they usually relies on their past experience when setting up the proper price. They assumed what factors which influences customer when purchasing property product, and from that created additional factors which helps to set the price up.

This study is intended to analyze contributing factors that influenced price of a certain property product. Moreover, this study is intended to calculate the price range of a property product when key factors are created and added artificially to a property product by a property developer.

2.0 Literature Review

This literature review is divided into four major sections and provides a context for the study. The sections review essential theories and their development as the basis of the Theoretical framework for this study: References for Developer Perception in Residential Products; Previous and Related Studies on Consumer Preferences; Real Estate Price Modeling; and Speculative Behavior Analysis in Property Industry.

2.1 References for Developer Perception in Residential Products

As the study in developer perception in residential products are considered rare to be found, we tried to conduct a simple research to find initial references for developer perception.

Fig. 1. Residential Property Developer Perception for Pricing Decision (author interview)

The method of research is by interview with one single question asked to the entire respondent: "Name at least three major factors which affects pricing decision for residential property developer?" Thirteen respondents answer this question with working background varied from Property developer, Property consultant, architects, and quantity surveyors. The answer shows that there are four major significant factors which affect pricing decision for residential property developer: design, developer reputation, facilities and accessibility.

2.2 Previous and Related Studies on Consumer Preferences in Real Estate Products

There are several previous and related studies concerning the consumer preferences in Real Estate products. The most coveted and cited study was being conducted by Blakely and Snyder in 1998. They suggested that there are three major factors that contribute to residential consumer purchasing decision: Lifestyle, Prestige, and Security. After their research, number of studies in residential consumer preference has increased with wider perspective, including the research by Daly (2003) discussing the importance of consumer perception in valuation of residential products; pricing of residential product versus the building age (Smith, 2004); planned versus non-planned community development (Eves, 2006); study about residential consumer heterogeneity behavior by Hoshino (2008); and study made by Davison et al (2009) who discussed about the property developer brand and price which affects the consumer preference,

From the following research above we can see that there are several factor that affecting consumer preference when they decided to purchase a property product. Factors such as design, planned development and prestige play significant part in price setting in Indonesia. Design is affecting the price because of the trend. In Indonesia, for example in Serpong area, themed residential cluster was booming back then. Also the concept of smart house was a popular theme in the early of 2000. Planned development or clustered housing is almost become an essential product in Indonesia nowadays. Reasoning on security, privacy, safety has caused clustered housing to be able to be sold at premium price, compared with regular housing products. Prestige of one property product can be seen by the developer brand, the location, facilities embedded, and even the price tagged to the product.

2.3 Previous and Related Studies on Pricing Model in Real Estate Products

For this section we will discussed about approaches being used for Real Estate Valuation and several pricing model that are common to be used in Real Estate Valuation, including Hedonic Pricing Model and Artificial Neural Network.

2.3.1 Approaches for Real Estate Valuation

For Real Estate price modeling, there are several approaches being used by valuer. Some of the most common method for it usually being done by these three approaches: cost approach, sales comparison, and income approach. The cost approach is used properly can produce highly accurate valuations. Cost approach is to analyze cost structure of real property being estimated, and try to get the replacement price of the property. The basic steps in the sale comparison approach: find the most similar houses, located near the subject property, sold not too long ago; and select a balanced subset of the most promising

comparable to derive the final estimate. The income approach is based on the idea that the current value of a property is the present worth of future benefits to be derived through income production by property over the remainder of its economic life.

2.3.2 Hedonic Pricing Model

According to Sherman Rosen in 1974 a theory of hedonic prices is formulated as a problem in the economics of spatial equilibrium in which the entire set of implicit prices guides both consumer and producer location decisions in characteristics space. This method was first introduced to calculate the different quality factors related with the price of vegetable products (Wough, 1928). After that the method was expanded to other fields such as automobile, tractor, electrical goods, and other. For Property product, the initial studies were conducted by studying historical landmark and design as quality factors for deciding the price allocation for certain real estate products (Hough & Kratz, 1983).

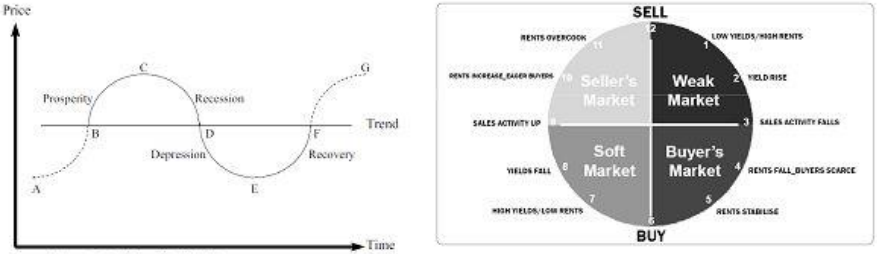
2.3.3 Artificial Neural Network

Artificial Neural Network originates from a network of brain nervous cells (Rossini, 1997). An Artificial Neural Network (ANN) is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. It is composed of a large number of highly interconnected processing elements (neurons) working in unison to solve specific problems.

2.4 Speculative Behavior Analysis in Property Industry

Real estate is an industry which is vulnerable to speculation, and speculation is one of main factors that caused property cycle. According to Malpezzi and Wachter in 2004, most of the property cycles which happened are caused due to speculative action in land or real estate markets. Property cycle is defined as a series of oscillating event in property market where in an assumed time the market will go up and down (Reed and Wu, 2010). According to Yusof (2001), property cycle will go through several steps before it recycles:

- Business upturn and development
- Business downturn and over building
- Adjustment
- Slump
- New Cycle



Source: University of South Australia, 2003: 29.

Fig. 2. (a) Property Cycle (Pornchokchai, 2011) (b) Property Market Clock (Simanungkalit, 2009)

The first stage of property cycle happened at the beginning of a recovery period, when excess supply has been absorbed and the demand has increased. Price of a Property product will gradually increase over time. The increase in price can be caused by four major factors (Pornchokchai, 2011):

- The market recovery, after the slump period
- Improvement of infrastructure and services
- Improvement of economy
- Availability of Property product at discounted price

According to Simanungkalit (2009), property cycle can be viewed as a clock. The clock itself can be divided into four period of time:

- Weak market: Started with market with low yields/ high rents. The yield will gradually rise and sales activity falls.
- Buyer's market: In this period of time the rent will slowly falls and stabilize. The customer started to buy the product.
- Soft market: Here, customers are enjoying high yields, and they can rent property product with low rent. The market beginning to adjust and gradually yields falls. Sales activities are going up.
- Seller's market: In this period the rent rate increasing until overcooked. This caused customer to speculate and choose to sell their product. The cycle begins again with the weak market period.

One definition of speculation is that when we invest on something in a rising market, we tend to do that to safeguard our financial condition and to provide comfort to the future, while when someone else does it, then its speculation. Speculation can mean investment, sometimes in short-time horizon. It can also define as mean of arbitrage (Malpezzi and Wachter, 2004). Speculation is seen as the driving force behind the major booms in real estate markets. In this term, if we relate with the consumer we can see that although the main driving factors behind their preference is still the same, however their purchasing behavior will be very much influenced by the market condition. In the boom period, people are very optimistic and tend to be over-investing, while in the bust period, people become very pessimistic and panicking (Pornchakchoi, 2011).

Based on the analysis being made by Simanungkalit in 2009, we can see that Indonesia has already experienced the property market clock for several times. The cycle happened once in every ten years. Indonesia reached seller's market period in 1996, 2005, and expected to happen again in 2014. Indonesia reached buyer's market period in 2000 and 2009. Currently in 2012, we are in soft market period going to Property booming period. In seller's market period, Indonesia also suffered several crises, such as in 1999 when Asian economic meltdown happened, and in 2009 when global economic meltdown happened. In buyer's market period, Indonesian economic is also reaching out its full advantages, such as happened in 1996, 2005, and expectedly in 2014.

This data is also supported with the property accumulative loans in Indonesia. As seen in the table below, when the Property market is bullish, most customers choose to loan money to purchase property product, and when Property market is bearish, the number of loan is reducing.

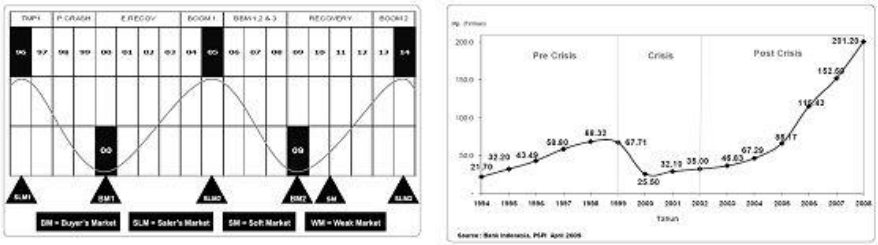
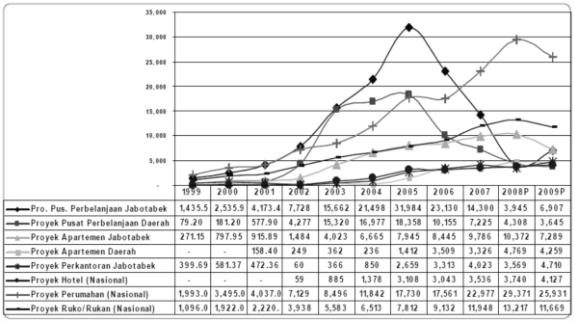


Fig. 3. (a) Property Cycle in Indonesia (b) 2009 Property Accumulative Loans in Indonesia (Simanungkalit, 2009)

As seen in the table below, the sales turnover for property, especially for housing product is growing according with the Property cycle trend in Indonesia. For example in 2004 to 2005, when the market is booming, the sales turnover for housing product increased from 11.842,0 to 17.730,0 billion rupiah. While in 2008P to 2009P when the market is crashing, the sales turnover for housing product decreased from 29.371,0 to 25.931 billion rupiah.



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008P	2009P
Pro. Pus. Perbelanjaan Jabotabek	1,435.5	2,535.9	4,173.4	7,728	15,662	21,498	31,984	23,130	14,300	3,945	6,907
Proyek Pusat Perbelanjaan Daerah	79.20	181.20	577.90	4,277	15,320	16,977	18,358	10,155	7,225	4,308	3,645
Proyek Apartemen Jabotabek	271.15	797.95	915.89	1,484	4,023	6,665	7,545	8,445	9,786	10,372	7,289
Proyek Apartemen Daerah	-	-	158.40	249	362	236	1,412	3,509	3,326	4,769	4,259
Proyek Perkantoran Jabotabek	399.69	581.37	472.36	60	366	850	2,659	3,313	4,023	3,569	4,710
Proyek Hotel (Nasional)	-	-	-	59	885	1,378	3,108	3,043	3,536	3,740	4,127
Proyek Perumahan (Nasional)	1,993.0	3,495.0	4,037.0	7,129	8,496	11,842	17,730	17,561	22,977	29,371	25,931
Proyek Ruko/Rukan (Nasional)	1,096.0	1,922.0	2,220.	3,938	5,583	6,513	7,812	9,132	11,948	13,217	11,669

Fig. 4. Property Business Sales Turnover, 1999-2009 (Simanungkalit, 2009)

3.0 Analysis and Conclusion

From the literature review we can see that factors that builds developer perception and consumer preferences can be developed into price modeling. Previous studies has found many factors that constructs the price modeling, however from the developer point of view, there are not many literature to be found. From the findings above, a general pricing model will be constructed. This is considered as the first step of our research. The next step is to analyze to speculative behavior which affecting the price externally. This is considered as the second step on our research. Final expected product would be the modified pricing model.

Fig. 5. Literature Review Mapping for this Research

As viewed in the mapping above, we have concluded the main factors which contribute to the developer perception and consumer preference for residential product pricing in Jakarta Metropolitan Region. For developer perception, based on interview result, there are four factors that affecting price: *design, accessibility, facilities, and brand*. For consumer preference, based on literature review studies and its relationship with Indonesian condition, there are three factors that affecting price: *planned community concept, prestige, and security*. These factors are generated based on the assumption made by previous working experience made by the authors as the most likely factors with Indonesian context. They will become the main hypotheses for this research. To produce more accurate result, these factors combined with the research on developer perception findings, then will be combined and retested to residential consumers via mixed-method paradigm.

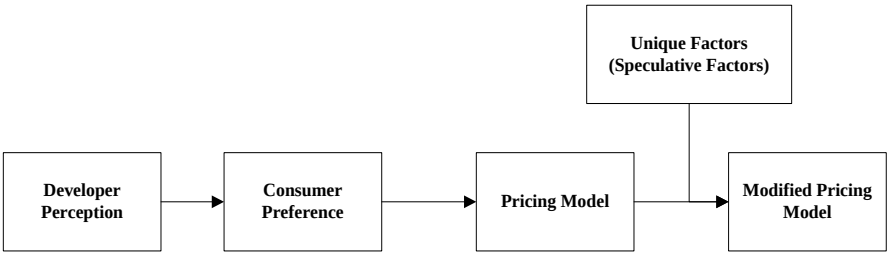


Fig. 6. Conceptual Model for this Research

From all of these findings a further analysis will be conducted to create a general pricing model. There are several options of pricing model to be used, with their own strengths and weaknesses. For this research, modified or combined approach will be used to produce more accurate result. After a general pricing model has been created, the next step of this research is analyzing the unique factors, which in the research we assumed being influenced by speculative behavior of the consumer and the seller. Although their consumption preference might be the same, but if influenced by the market condition in a specific time frame, their value proposition can be adjusted accordingly. If the market condition if bullish/ bearish, consumer might perceive value with more relaxed/ uptight perspective, which might biased their normal value if viewed only from their consumer preference. By integrating the unique factors with general pricing model it is expected to produce a final modified pricing model that is suitable for Jakarta Metropolitan Region area.

Acknowledgements

We would like to thank the organizing committee and reviewer from AcE-Bs 2012 International Conference, for giving us the opportunity to present and deliver our concept about value determinant factors for residential product in Indonesia.

References

Blakely, E. J., & Snyder, M. G. (1998). *Fortress America: gated communities in the United States*. Washington, D.C.: Brookings Institution Press.

Daly, J., Gronow, S., Jenkins, D., & Plimmer, F. (2003). *Consumer behavior in the valuation of residential property: A comparative study in the UK, Ireland and Australia*. Journal of Property Management , 295-314.

Davison, N., Goodier, C., Gibb, A., Austin, S., Saker, J., & Gregory, C. (2009). *Factors Influencing the Market for Branded Mass Costumized Buildings*. Loughborough University , 1-10.

Eves, C. (2007). *Planned residential community developments: do they add value?*, Journal of Property Management , 164-179.

Hoshino, T. (2008). *Estimation and Analysis of Preference Heterogeneity in Residential Choice Behavior*. Department of Geography and Environment, London School of Economics , 1-29.

Hough, D. E., & Kratz, C. G. (1983). *Can 'good' architecture meet the market test?,* Journal of Urban Economics , 56-67.

Malpezzi, S., Wachter, S. M. (2004), *The Role of Speculation in Real Estate Cycles*. Zell/Lurie Center Working Papers 401, Wharton School Samuel Zell and Robert Lurie Real Estate Center, University of Pennsylvania.

Pornchokchai, P. (2011). *Real Estate Cycles: What Can We Learn?*. 17th AVA Pre-congress, Thailand 9 July 20-22, 2011, Siem Reap, Cambodia.

Reed, R., Wu, H., (2010), *Understanding property cycles in a residential market*, Property Management, Vol. 28 Issue: 1, 33 – 46.

Rosen, S. (1974). *Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition*. The Journal of Political Economy , 34-55.

Rossini, P. (1997). *Application of Artificial Neural Networks to the Valuation of Residential Property*. Third Annual Pacific-Rim Real Estate Society Conference , 1-9.

Simanungkalit, P. (2009). *Property Investment Strategy in the Global Crisis.* Tjiptono Darmadji Network, Investment in Property Seminar, April 14, 2009, Le Meridien Hotel, Jakarta.

Smith, B. C. (2004). *Economic Depreciation of Residential Real Estate: Microlevel Space and Time Analysis*. Journal of Real Estate Economics , 161-180.

Wough, F. (1928). *Quality factors influencing vegetable prices*. Journal of Farm Economics , 1-18.

Yusof, A. (2001). *Economy and Commercial Construction Cycle in Malaysia*, PRRES Conference 2001, January 21-24, 2001. Adelaide, the Pacific Rim Real Estate Society (PRRES).