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**Editors:**
**Patrick X.W. Zou**
**Jay Sanjayan**
**Morshed Alam**

# Proceedings of 22nd International Conference on Advancement of Construction Management and Real Estate

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Swinburne University of Technology

**Editors**

Professor Patrick X.W. Zou, Swinburne University of Technology
Professor Jay Sanjayan, Swinburne University of Technology
Dr Morshed Alam, Swinburne University of Technology

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## Preface

Welcome to 22nd International Conference on Advancement of Construction Management and Real Estate (CRIOCM 2017) in the world's most livable city Melbourne, Australia. The conference is a joint effort of the Chinese Research Institute of Construction Management (CRIOCM), Swinburne University of Technology and several co-organising universities. The conference offers an international platform for knowledge and technology exchange and is a major event for all experts from industry, public sector and academia to advance the development of construction management and real estate, with a particular focus on construction automation.

This three day event offers in-depth discussions about state-of-the-art research that has been conducted on construction management, construction engineering, 3D concrete printing, building information modelling, sustainable buildings, real estate, urbanisation and occupatnional health and safety. This year the conference has industry and academia from various parts of the world including China, England, Hong Kong, India, Indonesia, Malaysia, New Zealand, Pakistan, Singapore and South Africa. In response to our call for papers, 144 papers have been finally accepted after rigorous peer reviews.

In addition to the traditional presentations, the conference also hosts a series of forums and workshops, including research methodology workshop, Journal Editors' Forum, and a University-Industry collaboration forum where industry experts and ARC (Australian Research Council) panel experts participate. These workshops and forums aim to generate lively debates and discussions and share knowledge.

We extend our warmest welcome to Melbourne and hope you enjoy informative and prestigious meetings with outstanding construction and real estate professionals.

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## Dual process of consumption and investment motives in residential market Indonesia(Conference Paper)

Njo, A., Made Narsa, I., Irwanto, A.

Economic Faculty, Petra Christian University, Indonesia

Abstract

The thinking of dual process between conscious processes and unconscious processes generate a different decision. Thinking consciously produces rational decisions. However, a person's cognitive limitations makes him simplify complex scenarios then makes heuristics decision. This research aims to evaluate the relationship patterns of decision-making and dual motives on house purchases, time for buyer, and family life cycle in Indonesia. The data is collecting by distributing questionnaires to home buyers. The analysis shows that buyers have consumption motives in buying a house and they behave rational, while investors behave heuristics. Time for Buyers are not significant to decision model. Family Life Cycle is significant to decision model. © Advancement of Construction Management and Real Estate, CRIOCM 2017.All right reserved.

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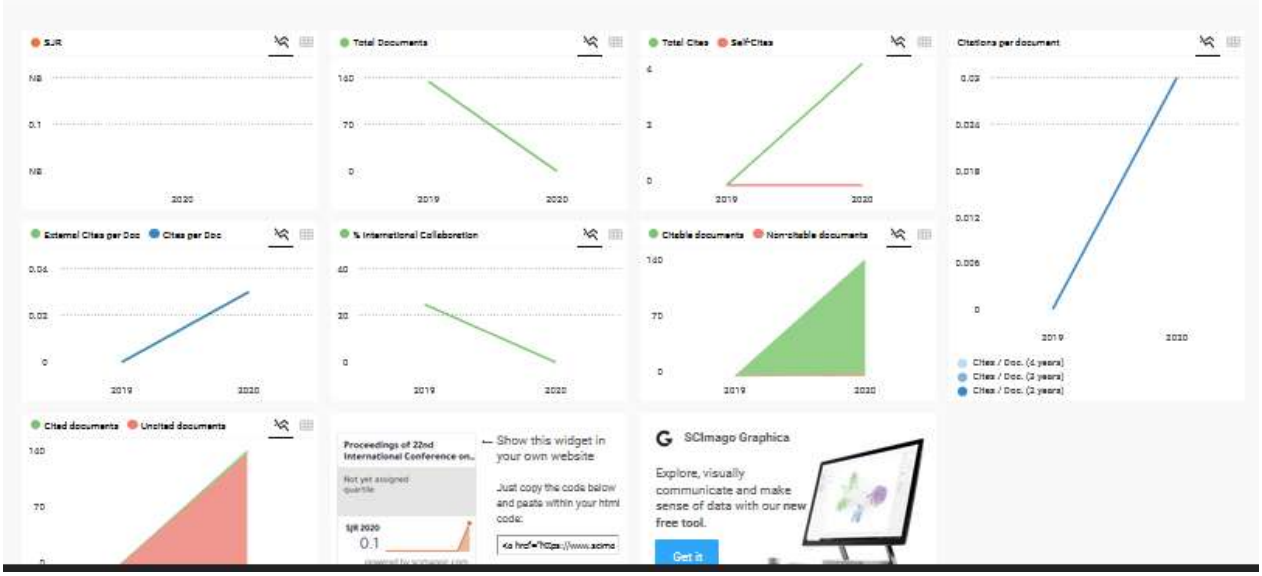

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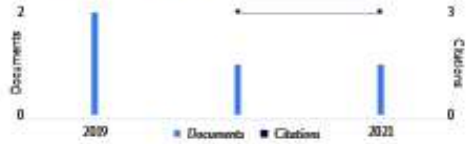


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中華建設管理研究會
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SWINBURNE UNIVERSITY OF TECHNOLOGY

# Dual Process of Consumption and Investment Motives in Residential Market Indonesia

**Njo, A.[1]*, Made Narsa, I.[2], and Irwanto, A.[3]**

**Abstract:** The thinking of dual process between conscious processes and unconscious processes generate a different decision. Thinking consciously produces rational decisions. However, a person's cognitive limitations makes him simplify complex scenarios then makes heuristics decision. This research aims to evaluate the relationship patterns of decision-making and dual motives on house purchases, time for buyer, and family life cycle in Indonesia. The data is collecting by distributing questionnaires to home buyers. The analysis shows that buyers have consumption motives in buying a house and they behave rational, while investors behave heuristics. Time for Buyers are not significant to decision model. Family Life Cycle is significant to decision model.

**Keywords:** Dual Process, Dual Motives, Time for Buyer, Family Life Cycle

[1]* Njo, A.
Corresponding author, Economic Faculty, Petra Christian University, Indonesia
E-mail: anas@petra.ac.id

[2] Made Narsa, I.
Economic and Business Faculty, Airlangga University, Indonesia

[3] Irwanto, A.
Economic and Business Faculty, Airlangga University, Indonesia

# 1 Introduction

Individual can make a decision using logic or heuristic thingking. The logic is associated with reasoning, whereas, heuristic is associated with intuition [1]. This condition happens because dual process way of thinking, which consists of conscious process and unconscious process, results in rational decision or irrational decision. Investors' behavior changes from rational to irrational. It is not at the same time. Their knowledge growth gradually during searching process, then investors should decide in making decision naturally due to their environment [2]. Therefore, one's behavior that is considered as rational cannot be equated to other individual's behavior as everyone has his or her own rationality degree [3].

House has two functions which are consumption and investment [4]. The growth of an individual's worth net will affect consumption motive and investment motive when deciding to purchase a house. Dual motives model is used to measure housing demand in America [5], France [6], and Spain [7], but this model cannot explain the reason for the purchase of a house. Inconsistency results show weakness of model. Contradiction in dual motives researches previous, makes it a necessary to be analyzed in real estate market in Indonesia.

Demographic factors of age, education, income [5][6] and behavior in making decision are stimuli purchase decision. First-home buyers (FHB) need a house for living, but they have financial problem because their income is relatively low. The income and loan amount which is approved affect house price that can be bought. Therefore, consideration of choosing a house related to one's financial decision is made rationally [8][9]. However, Burns shows when investors are looking for a house and specific location, investors involve emotional and sentimental factor [10]. Their need of a house depend on stages in family life cycle. This research will examine about dual motives factor that is inconclusive which has not yet observed a dual process in oneself when making decision. Therefore, this research confirms involvement of dual process in behavioral model of decision-makers related to dual motives in purchasing house.

# 2 Dual Process vs Dual Motive in Real Estate

An investor does heuristic because of limited time in searching information and outcome effort so heuristic decision causes trade-off; the loss of accuracy due to the pace and savings cognition [11]. In 1996, Cognitive Experiential Self Theory (CEST) is changed to Rational Experiential Inventory (REI) [12]. REI-40 is designed to asses preferences information processing. First measurements of dual process in REI-40 were Rational Ability which is an individual's thinking ability using logic and analytics, and Rational Engagement which is the individual involvement in decision-making on pleasure of analytical thinking using logic. Second, Experiential Ability which is an ability that is possessed by an individual based on intuition and feeling, and Experiential Engagement which is an individual involvement in decision-making based on his or her feeling and intuition. Rational thinking is symbolized as slow, discussion or consultative, following rules, especially verbally and consciously. Intuition is symbolized as pre conscious, closely related to affective, quick, operational automatically and holistically. Memories and feelings of an individual affect the process and behavioral tendencies subsequently. If an individual recalls positive feeling, he or she will automatically think and have the tendency to reproduce feelings [13].

Real estate investment is a commitment on individual's fund with purposes to maintain and improve asset and get benefit. Benefits that are expected by real estate investors are income which consists of active income (salary, bonus, commission); passive income (rental income, dividend); and portfolio income (interest income, stock dividend, capital gain, royalty) [14]. Home-buyers have different purposes because of investment booster or consumption booster [15]. Investors are sellers of property who want portfolio in some properties and do not have to stay in every of those properties [16]. Investment decision or consumption involves trade-off process when deciding a location. Individuals or families with high income choose desired location with better quality of public places and facilities. Otherwise, Individuals or families with lower income choose less-desired location based on the level of their wealth and nowadays "compatibility" condition.

Empirically, characteristics of social economy (size of household, age of each members of the household, education, income) also affect preferences and choices of location on individuals or families [17]. Marriage and children are main factors that drive someone to buy the first house, therefore, people have the tendency to choose a residence that is not an investment opportunities area. Younger families have stronger relationship between house's price and consumption needs than older families. Younger families bound the needs of minimal house size because it is related to financial needs and the loan to be provided. Furthermore, buyers' experience changes in house needs because of high income, price of the house, capability to pay debt, interest rate, and inflation [18].

H1 : When an individual buys a house with consumption motive, his or her decision model tends to be rational compare to an individual with investment motive.

H2 : An individual who buys a house for the first time, his or her decision model tend to be rational compare to an individual who buys a second house and subsequent.

H3 : When a younger families buy a house, their decision model tend to be rational compare to older families..

## 3 Methodology

This study uses primary data by questionnaires to home buyers who have done transactions in 2013-2016. Respondents are domiciled in Surabaya, but the location of the purchased property is located in all areas in Indonesia. Sample search is done incidentally at the housing exhibition, the developers' office, the property broker's office, and the online way through Google forms. The psychology questionnaire uses REI 40 as a measure of buyer rationality. Before distributing the questionnaire, REI 40 is translated into *Bahasa Indonesia* by involving linguists and psychologists who provide inputs, so the questionnaire can be understood easily by the respondents. Questionnaire obtained 254 respondents, and further data that can be processed are 231 data. The data is tested for its validity and reliability. The data analysis using ANOVA contained in SPSS program.

**Table 1. Research Variable**

| Variable | Keterangan |
|---|---|
| Dual Motives | 1 = Consumption; 0 = Investment |
| Time For Buyer | 1 = First Home Buyer; 0 = Not First Home Buyer |
| Family Life Cycle | 1 = Younger Family (less than 10 years marriage) ; |
| | 0 = Older Family (more than 10 years marriage) |
| Dual Process | 20 item Rational; 20 item Experential, with likert scale: 1 = very not true; 2 = not true; 3 = true enough; 4 = true; 5 = very true |

Table 2 shows descriptive data respondents who have consumption and investment motive separated by Time For Buyer (TFB), Family Life Cycle (FLC), dual process, age, and income. The majority of respondents is non-FHB, dominated by younger families, married below 10 years, has a rational decision-making model. Buyers are dominated by 31-40 years old people, have an income of 10-25 million Rupiahs.

**Table 2. Respondents' Demographic Data**

| | Consumption | Investment |
|---|---|---|
| Time For Buyer | | |
| First-Home Buyer | 42 | 13 |
| Non-First-Home Buyer | 88 | 88 |
| Family Life Cycle | | |
| Younger Family | 97 | 51 |
| Older Family | 33 | 50 |
| Dual Process | | |
| Rational | 120 | 86 |
| Heuristic | 10 | 15 |

Measuring the level of rationality of home buyer using REI 40 which separates the question items into Rational and Experential. Both group were searched for their average score, then used in ANOVA analysis. The test of decision-making model of dual motives, Time for Buyer (TFB) and Family Life Cycle (FLC) are listed in Table 3. Homogeneity test is performed before ANOVA test on variable of dual motives, TFB, and FLC. Levene statistical motive of ownership (L=2.685, p-value = .103) and TFB (L=.212, p-*value*=.646) show that the data have the same variance (homogeneous). However, Levene statistical of FLC (L=11.079, p-*value*=.001) shows that the data has not the same variance. The result of F test on the motive of ownership (F=3.408; p-value=.066) show there is statistically significant differences in decision-making model on consumption motive (M=2.7190) and investment motive (M=2.6041). Therefore, an individual with consumption motive has a decision model that tends to be rational compared to an individual with investment motive. The result of F test on the TFB (F=.611; p-value=.435) show there is not statistically significant differences in decision-making model on first home buyer and not first home buyer. The result of Welch test on FLC (W=12.127, p-value=.001) show there is statistically significant differences in decision-making model on younger family (M=2.7534) and older family (M=2.5177). A younger family has a decision model that tends to be rational compared to older family.

**Table 3. ANOVA Findings for *Dual Motives*, TFB and FLC in Decision-Making Model**

Panel A: Table ANOVA

| Variable | | Sum of Squares | Df | *Mean* Square | Hypothesis | F | Sig. |
|---|---|---|---|---|---|---|---|
| *Dual* | Between groups | .751 | 1 | .751 | $H_1$ | 3.408 | .066 |
| *Motives* | Within groups | 50.458 | 229 | .220 | | | |
| TFB | Between groups | .136 | 1 | .136 | $H_2$ | .611 | .435 |
| | Within groups | 51.073 | 229 | .223 | | | |
| FLC | Between groups | 2.955 | 1 | 2.955 | $H_3$ | 14.024 | .000 |
| | Within groups | 48.254 | 229 | .211 | | | |

| | Variable | Categories | Mean | Std. Dev. | N |
|---|---|---|---|---|---|
| Decision | *Dual Motives* | Consumption | 2.7190 | .44616 | 130 |
| Model | | Investment | 2.6041 | .49779 | 101 |
| | TFB | FHB | 2.7122 | .45374 | 55 |
| | | *Not* FHB | 2.6552 | .47782 | 176 |
| | FLC | Younger family | 2.7534 | .41102 | 148 |
| | | Older family | 2.5177 | .53443 | 83 |

# 4 Discussion

Memory and feelings of an individual affect process and behavior tendency further. Experience system has a positive or negative effects in rational system. A person reacts an incident emotionally, the order of reaction will automatically directed to experience system and instantly looking for a memory bank that related to incident. That process is proven in individuals who buy a house. Buyers choose a house with many considerations to be a residence that provides comfort [19]. Those many considerations are processed in a longer time by collecting many information from parents or relatives, friends, or newspaper, brochure, or internet. Buyers' experience in searching process for a desired house in a time will affect their experience in another time. Buyers will consider their financial ability such as availability and capability in paying. Numbers of consideration will make buyers tend to use rational system in making decision.

From investors' point of view, purchasing a house or apartment is portfolio allocation. Investors have purposes to get additional income from rent, to get capital gain when the house is sold, and to prefer property as their investment product instead of other products. Time needed for investors to make decision is shorter; through property broker, house exhibition, and products launching. This media creates interaction between investors and developers or mediators, so that investors' position will be influenced and pushed to make quick decision with bait; direct profit. The influence of spouse, children, friends, even oneself really affects in making decision if it is dominated by emotional factor. Resulting in driving investors to use experience system or intuition in purchasing house, because problem-solving is made quickly and has the tendency to ignore the information especially in a situation with high complexity level, uncertainty, and time-pressure [1][20].

Newly married FHB or married but not yet have children need to own a house as a place to build new families and to live comfortably. FHB have a desire to build an independent household without depending on parents, so that FHB try to find information and take consideration about the first-purchased-house. However, dual process of FHB cannot be differentiated significantly to not FHB. Information processing process in FHB and not FHB uses rational system and experience system at the same time and they interact to one another [12] [18]. A younger families with marriage age less than 10 years tend to be rational in making purchasing-decision compare to older family. The amount of income will affect family in accumulating wealth. That condition illustrates a family's ability to decide purchasing a house. If you are still an obstacle, then purchasing-decision through many consideration is not yet decided. On the other hand, good financial condition will ease the family in making purchasing-decision faster. Knowledge improvement and investment experience allow older families to make better investment decision by studying the risks more accurately and having better understanding in risk and return relationship in real estate market which is considered more stable compare to stock market [21][22]. However, emotional factor that binds older families related to environment location and condition in their surroundings, social condition, and personal relationship with the neighbours, will direct older families act irrational to fulfil their want. Repetitive experiences in purchasing houses also drive older families to use intuition in making decision [19].

## 4 Conclusion

Dual motives and family life cycle show the differences in making purchasing-decision model, whereas first home buyers have no differences in making purchasing-decision. Research on decision-making behavior is important to be developed to create an efficient real estate market. Subject's involvement in real estate market such as developers, can focus in deciding developing strategy and selling residential house product and better, more efficient apartment. Further research can be developed by going deep into demographic background and family life cycle structure of families related to dual process. A house shows a family's wealth and saving in retirement, so that demand will always take place. Dynamical needs occur according to shift in family cycle.

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