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Surabaya, Indonesia, February 14-15, 2015

Dated: November 28, 2014

NJO ANASTASIA, AILEEN LIANA SUWITRO

Ref: ICESS-15-645

Subject: Acceptance Letter

Dear Sir (s)/Madam (s)

Congratulations! We are pleased to inform you that based on peer review process your submission entitled: **Property Buying Behavior In Bali** has been accepted for oral presentation at 6th International Conference on Economics and Social Sciences (ICESS-2015). Conference will be held in collaboration with Dr Soetomo University, Surabaya at Tunjungan Hotel, Surabaya, Indonesia on February 14–15, 2015. On behalf of International Foundation for Research and Development (IFRD), we invite you to attend the conference and present your paper. Date and time of your session will be emailed to you approximately four weeks prior to the conference.

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Sincerely Yours,

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6th International Conference on Economics and Social Sciences
(ICESS-2015)
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Reviewers Report

Manuscript No.: ICESS-15-645

Manuscript Title: **Property Buying Behavior in Bali**

Evaluation of the Paper: (1 = excellent) (2 = good) (3 = appropriate) (4 = average) (5 = poor)

Rationale of the Study	1
Title of the Study	3
Abstract	2
Introduction	2
Literature Review	3
Methodology	2
Results and Discussion	
Conclusion and Recommendations	
References	3
Technical Quality and Originality	2
Report Writing and Presentation	3

Recommendations: (Mark with √)

Accept without revision:	
Requires minor revision:	√
Requires moderate revision:	
Requires major revision:	
Reject submission:	

Additional Comments (*if any*):

- Provide complete references at the end only for running text citation
- Running text citation should be given properly
- Accepted paper should be formatted using single space, font Cambria, font size 8 and maximum 8-10 single space pages in single column in MS Word format.

RATIONAL AND IRRATIONAL PROPERTY BEHAVIOR (STUDY CASE IN BALI, INDONESIA)

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Abstract: Property buying behavior is part of the development of financial behavior. This research will be focused on the buyers perspectives on residential and commercial properties in Bali Island of Indonesia. Rational and irrational factors are the factors underlying the property buying process. The Physical, Location, Environment, Finance factors were part of the rational; while Psychological (over-confidence, conservatism bias, information and familiarity, herd behavior, mental accounting, and loss aversion), Emotion, Intuitional, Socialization, Evaluation were the irrational part. The purpose of this study was, first, to determine the factors that distinguish buyers behavior toward purchasing a property; second, to determine the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest. The study sample consisted of individuals who are prospective buyers and those who have bought property in Bali. Data were analyzed using Discriminant Analysis. The results showed that only financial factor that had significant impact on buyers decisions. Furthermore, this study also showed that there were significant differences in factors between buyers intending to live in compared to those seeking to invest. The factor were psychology, emotion, intuitional, and evaluation.

Keywords: Rational, irrational, live in, investment, Bali

1. Introduction

Real estate is often approached as a financial asset. In reality, real estate is both a financial asset and a physical resource, a resource that is comprised of the site itself and the externalities that surround it and connect it to other parcels or activities. The prices of this resource is a result of individual negotiations rather than some listing price that is offered to the broader market. Thus, the real estate discipline must be approached as a behavioral science because of its inefficient market. (DeLisle, n.d). Buying a property is one of the most significant financial decisions that people make, and it requires collecting a lot of information regarding its features. Behavioral research focuses on concepts that affect the market search and price-setting processes. Greater knowledge of the factors influencing buyers' behavior will lead to better understanding and prediction of decision making in real estate markets (Daly et al. 2003).

Survey of property behavior will be held in Bali because annual economic growth of Bali is very good at 6.6%, above the national Indonesian economic growth by 6.1%. A survey conducted by Knight Frank proved that land price in strategic areas of Bali has increased rapidly up to 43%, the highest increase in the last 10 years. This land prices continue to rise earlier varies between 8% to 16% ("Bali Property Prices record in 2013", 2013). The Wealth Report 2014 issued by Knight Frank showed that the highest property prices in the world occurs in Jakarta that is equal to 33% and Bali was at third stage after Auckland, 22% (Knight, 2014).

Furthermore, this study is micro-oriented which investigates individual behaviors and the reasons behind them. The factors consisted of rational and irrational factors. This kind of studies has not much been investigated in the Indonesian market, particularly in the real estate. From previous studies, researcher classified the important factors affecting the decision to buy a property which are consist of Physical, Location, Environmental, Financial for the rational part; and Psychology, Emotion, Intuitional, Socialization, Evaluation for the irrational part.

Statement of the problem:

1. What are the factors that distinguish buyer buyers behavior toward purchasing a property?
2. What are the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest?

Objective of the study:

1. To determine the factors that distinguish buyers behavior toward purchasing a property.
2. To determine the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest.

2. Review of Literature

The researches about real estate buying behavior in Indonesia were not yet to be found in public literatures. This research uses a summary of existing variables identified in previous researches. Since the previous researches were conducted in countries that have significantly different conditions and cultures compared to Indonesia, particularly Bali Island, some adjustment were made. The increasing volume of real estate transaction in Bali over the past few years has been a phenomena that increases the most of the investors' awareness of real estate. Therefore, this study will provide a better understanding of decision making context and influences to all real estate participants which are the investors, buyers, and agents.

Traditional financial theory is based on idea or notion that investors act rationally and consider all information properly in decision-making process (Kishore, 2006). Salzman and Zwinkels (2013) agree that this theory deals with utility maximization concept (UM), which ended on Efficient Market Hypothesis (EMH). Consumer behavior theory comes from demand analysis in microeconomics to reducing the marginal utility and indifference curves. This study was able to explain how humans will behave in market if goods are in ideal conditions and able to explain importance of income and determining purchase price level. However, this study was not able to explain reasons behind their behavior and actions. Therefore, researchers add another factor to enhance this theory. Koklic and Vida (2009) focus on psychological factors and social decision. Katona (1953) adds psychology, sociology, and anthropology factors to a better understanding of consumer problem solving (in Black et al., 2003).

This study of buyers behaviour in the real estate purchase decision have provided the foundation of the factors affecting property buying decision, both rational and irrational. Ratchatakulpat et al. (2012) have provided an overall view of variables. The influences selected were physical, distance, locational, environmental, financial, legal, psychological, and evaluation. One problem study is that the irrational factors were not thoroughly discussed. A minority studies behavioural phenomena, with an eye for consumption function that pays attention to social and emotional side of homeownership (Salzman & Zwinkels, 2013). Beracha & Skiba (2014) have explained some of most common micro-level bias, such as overconfidence, mental accounting, loss aversion, familiarity bias, slow reaction to information. Salzman & Zwinkels (2013) also provided a broader explanation of psychology and social determination of real estate decision making. The limitations bias the households' view on property are over-optimism, over-confidence, confirmation bias, momentum effect, herd behaviour, irrational exuberance, regret theory, money illusion, mental accounting, loss aversion, and home bias. Moreover, the study explained relationships of emotions and buyers decision making.

Physical influences or property features is an important determinant of a household choice of residence (Quigley, as cited in Haddad, 2011). Physical influences include design, property quality and property size have positive impacts on buyers' decision to purchase a property (Adair et al., 1996; Daly et al., 2003; Ratchatakulpat et al., 2009). Lindberg, Gärling, & Montgomery (1989); Louviere and Timmerman (1990) found that another important influences is property location (in Lan, 2011), it was included in the most of previous researches (Adair et al., 1996; Si, 2012; Haddad, 2011). Furthermore, Wang & Li (2004) found that environmental influences were more important than property itself. Gabriel & Rosenthal (1989) stated that households individual characteristics neighborhood quality was concluded as one of the determinants of a household's residential choice (Si, 2012).

3. Methodology

A survey was both hand-delivered and sent online amongst prospective real estate buyers and those who already bought at least one property such as house, villa and condotel in Bali, Indonesia, spesifically property in Badung and Denpasar Region. The questionnaires were given to 100 respondents. They consisted of three main sections: background information of respondents, the rational factors and the irrational factors from the literature that are created for this research (see Appendix 1). Questions used a

five-point Likert scale from 1 = 'highly unimportant' or 'strongly disagree' to 5 = 'highly important' or 'strongly agree'.

The research population consisted of both potential real estate buyers and those who already bought a property in Bali from anywhere in the world. Recruiting respondents was purely on the basis of convenience and gathered from Bali community including expats. The purpose was to obtain a large number of completed questionnaires quickly and efficiently. The survey was completed in 2 weeks.

Discriminant Analysis using SPSS program was used in analyzing the data to test the hypotheses. Discriminant analysis is used to analyze relationships between a non-metric dependent variable and metric or dichotomous independent variables. Discriminant analysis attempts to use the independent variables to distinguish among the groups or categories of the dependent variable.

4. Results and Discussion

The first stage of survey analysis describes respondent demographic. The property purchasers are shown in table 1. There are 57 respondents who have not bought property in Bali and 43 respondents who have bought at least one property in Bali. 31 respondents in the group that have not bought property in Bali are intending to live in, while 26 respondents intending to invest. As many as 27 respondents have bought a property in Bali for live in, while 16 have bought one for investment. The largest group of age is 25-35 years and the largest group that have bought property in Bali is 46-55 years. Most of the respondents are married with children (60%). The majority are from Bali (40 respondents), and among 33 non-Indonesians, 15 of them are from Australia.

Table 1 Respondent Demographic Characteristics

Respondent Characteristics	Have not bought		Have bought	
	Live In	Investment	Live In	Investment
Gender :				
Male	17	17	20	11
Female	14	9	7	5
	31	**26**	**27**	**16**
Age group :				
Under 25 years	4	5	0	0
25-35 years	11	11	4	4
36-45 years	8	6	8	3
46-55 years	6	3	8	5
Over 56 years	2	1	7	4
Marital Status :				
Single	10	11	2	2
Married without	5	2	6	2
Married with	16	13	19	12
Nationalities :				
Indonesian	22	21	12	12
Not Indonesian	9	5	15	4
Origin Continent :				
United States	2	1	4	0
Europe	3	2	7	0
Australia	4	2	5	4
Asia (Indonesia)	22	21	11	12
Origin City/				
Bali	18	7	11	4
Surabaya	1	8	1	7
Jakarta	0	2	2	1
Others	12	9	13	4

Table 2 provides the details of respondent purchase characteristics. More than half of respondents already have their own house (52 respondents). The largest group has not bought a property anywhere (38 respondents) and the majority of respondents have considered purchasing a house (51 respondents) rather than a villa (38 respondents) and a condotel/apartment (11 respondents).

Table 2 Respondents Purchasing Characteristics

Characteristic	Have not bought		Have bought	
	Live In	Investment	Live In	Investment
Living Status :				
Parents/relatives home	9	11	0	4
Rent	14	5	4	1
Own house	8	10	23	11
Number of Property Bought (anywhere)				
None	21	17	0	0
1	1	5	13	5
2	0	1	1	3
3+	9	3	13	8
Type of Property :				
House	20	13	13	5
Villa	10	10	14	4
Condotel/Apartment	1	3	0	7

Before analyzing rational and irrational factor using discriminant analysis, the data were tested for the validity, reliability, and normality.

Validity and reliability analysis: The validity analysis was conducted to see if the questions given were valid. It was conducted by calculating the r-value (corrected item-total correlation). The r-value for 47 items were positive and well exceeded r-table (0.195), hence, the validity was established. The reliability analysis following the validity analysis was conducted by calculating the Cronbach's alpha for each factor. Cronbach's alpha for the eight constructs well exceeded 0.195, hence, established their reliability. The results of Corrected item-total correlation and Cronbach's alpha were reported in Table 3A for rational fa.ctors and table 3B for irational factors.

Table 3A Validity and Reliability Rational Factors

Factors	Variables	Cronbach's Alpha	Corrected Item-Total Correlation
Physical	**P1**	0,856	0,649
	P2		0,630
	P3		0,508
	P4		0,525
	P5		0,700
	P6		0,659
	P7		0,571
	P8		0,575
Location	**L1**	0,806	0,592
	L2		0,459
	L3		0,546
	L4		0,694
	L5		0,690
	L6		0,329
	L7		0,608
	L8		0,517
	L9		0,234

Environmental	**E1**	0,804	0,531
	E2		0,610
	E3		0,549
	E4		0,587
	E5		0,490
	E6		0,658
	E7		0,417
Financial	**F1**	0,920	0,491
	F2		0,893
	F3		0,920
	F4		0,933
	F5		0,927
	F6		0,478

Table 3B Validity and Reliability Irrational Factors

Factors	Variables	Cronbach's Alpha	Corrected Item-Total Correlation
Psychology	**PS1**	0,646	0,400
	PS2		0,286
	PS3		0,330
	PS4		0,339
	PS5		0,374
	PS6		0,550
Emotion	**EM1**	0,578	0,244
	EM2		0,530
	EM3		0,277
	EM4		0,436
Intuitional	**I1**	0,528	0,298
	I2		0,333
	I3		0,404
Socialization	**S1**	0,713	0,518
	S2		0,609
	S3		0,564
	S4		0,318
Evaluation	**EV1**	0,527	0,458
	EV2		0,298
	EV3		0,304

The ratio of skewness = 0.008 / 0.241 = 0.0332; and the ratio of kurtosis = 0.197 / 0.478 = 0.412. Because of the ratio of skewness and kurtosis are between -2 to +2, it can be concluded that the data are normally distributed.

Table 4 Normality test

	Skewness		Kurtosis	
	Statistic	**Std.**	**Statistic**	**Std. Error**
Unstandardized Residual	0,008	0,241	0,197	0,478

Analysis will be continued by discriminant analysis to determine differences in rational and irrational factors that influence consumers in making decision to buy a property in Bali. Subsequently also to know their purpose which is to buy for live in or investment a property for the future.

Table 5 Box's M

	'Have not bought' and 'Have bought'	'Live In' and 'Investment'
F	14,108	0,792
Sig.	0,000	0,637

Box's M test results for group to buy and have bought yet demonstrated that F-value is 14.108, it is significant at 0.000 and the probability is below 0.05, it can be concluded that covariance matrix between groups is different and in this case violates discriminant assumption. However, a discriminant function analysis remains robust despite the assumption of homogeneity of variance was not met with data requirements and did not have outliers (Ghazali, 2008). Box's M test results for the group to live in and investment shows that F-value is 0.792 and it is significant at 0.637 > 0.05, which means that data between groups live in and investment have a covariance matrix equation.

Table 6 Test of Equality of Group Means (Have not bought and Have bought)

Faktor	Wilk's	Sig.
Physical	0,966	0,065
Location	0,966	0,068
Environmental	0,978	0,144
Financial	0,809	0,000
Psychology	0,931	0,008
Emotion	0,970	0,084
Intuitional	0,992	0,369
Socialization	0,943	0,017
Evaluation	0,946	0,020

The above table 6 shows that all variables except financial have Wilk's Lambda values above 0.9. Getting closer to 1, the data tend to be equal for each group. The significant value (F-test), there are four significant variables that have value < 0.05, which shows the difference between group ' Have not bought' and 'Have bought', ie financial, psychology, socialization, and evaluation. However, these results still need to be processed to ensure validity.

Table 7 Variables entered in discriminant (Have not bought and Have bought)

Step	Entered	Statistic	Sig.
1	**Financial**	23.191	5.341E-006

Inclusion of variables using stepwise process (stages), starting with variable which has F-test (statistics) the highest one. It can be seen, only one variable, financial. Thus, purchase consideration of respondents who have not bought property and have bought property influenced by financial factor only.

Table 8 Wilk's Lambda (Have not bought and Have bought)

Wilk's Lambda	Chi-Square	Sig.
0,809	20,709	0,000

Table 8 indicates a significant difference between two groups on discriminant model. So respondent behavior between the two groups is significantly different (significant 0.000 < 0.05).

Table 9 Classification Results (Have not bought and Have bought)

Original	67%
Cross-validated	67%

The results of classification on original and leave-one-out-cross validation methods, both produce a figure 67%, which is the accuracy rate is high. That is various table interpretation that are valid for use.

Table 10 Mean (Have not bought and Have bought)

Indicators	Have not bought	Have bought
F1 (Price)	4,67	4,23
F2 (Interest rate)	4,35	3,42
F3 (Mortgage)	4,21	3,26
F4 (Monthly payment)	4,28	3,28
F5 (Term of payment)	4,32	3,19

F6 (Length of period property was on the market)	3,91	3,21

From the table 10, it can be seen that all financial factors indicators factors in have not bought group has a mean value higher than have bought group. This means that respondents who have bought property in Bali more attention to property prices, interest rates, mortgage amount, maximum amount of monthly installments, payment terms, and length of the property market

Table 11 Test of Equality of Group Means (Live In dan Investment)

Factors	Wilk's	Sig.
Physical	1,000	0,833
Location	0,991	0,346
Environmental	0,988	0,278
Financial	0,983	0,200
Psychology	0,956	0,037
Emotion	0,925	0,006
Intuitional	0,928	0,007
Socialization	0,982	0,188
Evaluation	0,950	0,025

Table 11 shows that all variables except psychology, emotion, intuitional, and evaluation have significant value (F-test) < 0.05. The three variables showed the difference between group 'Live in' and 'Investment'. However, these results still need to be processed to ensure validity.

The significant value (F-test) in table 12 showed there are three significant variables value < 0.05, ie psychology, emotion, and intuitional. This means that the difference between purchase consideration properties respondents intended to live in and respondent intended to investment lies in factors psychology, emotion, intuitional, and evaluation.

Table 12 Variables entered in discriminant (Live In and Investment)

Step	Entered	Statistic	Sig.
1	**Emotion**	7,991	0,006
2	**Psychology**	9,461	0,000
3	**Intuitional**	9,664	1.235E-005
4	**Evaluation**	8,932	3.628E-006

Stepwise process were conducted to select the variables that are significantly affect the live in and investment buyers behavior. The variables selected are emotion, psychology, intuitional, and evaluation (Table 12).

Table 13 Wilk's Lambda

Wilk's Lambda	Chi-Square	Sig.
0,727	30,649	0,000

Table 13 indicates that there is a significant difference between two groups (live in and investment) in discriminant model.

Table 14 Classification Results (Live In and Investment)

Original	73%
Cross-validated	68%

The original classification result is 73%. With the leave-one-out cross validation method conducted, the classification result becomes 68%. The results are still high and therefore the discriminant model are valid.

Table 15 Mean (Live In and Investment)

Faktor	Indikator	*Live In*	*Investment*
Psychology	**PS1** ***(over-confidence)***	3,43	3,93
	PS2 ***(conservatism bias)***	3,12	2,90
	PS3 ***(familiarity bias)***	3,95	3,93
	PS4 ***(herd behavior)***	3,21	3,48
	PS5 ***(mental accounting)***	3,36	3,79
	PS6 ***(loss aversion)***	3,36	3,76
Emotion	**EM1** ***(safety)***	3,67	3,93
	EM2 ***(self-image)***	3,62	3,40
	EM3 ***(comfortable)***	4,60	4,14
	EM4 ***(meaning)***	4,28	3,93
Intuitional	**I1** ***(first impression)***	4,05	3,64
	I2 ***(self opinion)***	3,88	3,62
	I3 ***(assurance)***	3,76	3,93
Evaluation	**EV1** ***(less than 10 property)***	3,33	3,71
	EV2 ***(legality)***	4,24	4,45
	EV3 ***(less than 2 months)***	3,26	3,45

From Table 15, it can be concluded that in terms of psychology, those who aim to invest have four bias (deviation) which tend to be greater. Such irregularities are over-confidence, herd, mental accounting, and loss aversion. While group live in does not pay attention more to the latest economic news and prefer properties in areas that are closer or familiar. Ratchatakulpat et al (2009) research on prospective buyers in Australia also found that those seeking to invest are more concern about the psychology factor. From the emotional side, the investment group pays more attention to security than live in groups. However, the live in group prefers to live in the properties that reflect their personal characteristics. In addition, this group also prioritize comfort and better appreciate owned property. Focus to intuition of respondents, the group who aims to live in has more intuition and confidence than the group that buys property for investment. Where respondents who aim to invest are more confident in terms of generating large returns. Investment buyers consider all the evaluation factors are more important than buyers who intend to live in. Investment buyers are more concerned with inspecting fewer than 10 properties and the purchasing process taking under 2 months. They also prefer real estate agents who explain the forms and legalities of the process. These findings regarding the evaluation factors are the same as the study by Ratchatakulpat et al (2009).

5. CONCLUSION

This study concluded that there was a significant difference in decision making regarding buying property in Bali between respondents who have not bought property in Bali and those who have. The factor was financial, where those who have not bought property in Bali were more concern about the financial factor. The study also found that there were significant differences in decision making regarding buying property in Bali between respondents intending to live in compared to those seeking to invest. The factors were psychology, emotion, intuitional, and evaluation. Investment buyers considered psychology, intuitional, and evaluation factors more important in their decision making processes.

6. RECOMMENDATIONS

This section will discuss some limitations that this study has. First, the sample of this study is only 100 respondents and since the respondents were picked randomly, the respondents who were interested in purchasing and have not purchased any properties in Bali were assumed that they are the prospective purchasers of property. However, individuals who are interested in purchasing property vary in their intentions regarding the likelihood and timing of actually purchasing a property. Some of them may or may not view numbers of properties with intention to purchase whether in immediate time or a really long period of time. Prospective buyers may also do not have a clear cut decision to live in or invest. And therefore, the outcomes may not represent the buyers' behavior perfectly. Secondly, the one-shot survey only captures a certain point in time. Given the nature of buyer behavior, it will be great if the process of buyers' decision making is discussed and therefore add more quality to the output.

One of the most important implications of this study is the distinctions between live in and investment for the prospective buyers. Most of the prospective buyers may not have a clear intention of purchasing a property for live in or investment. There are several stages found in the process of searching a property. The prospective buyers at earlier stages (those who have not yet started searching) of the process may not have the same level of understanding the importance of each factors with those who are already at further stage of the process (those who have already viewed several options).

To ascertain more degree of generalization for the study, further research could be conducted to include respondents from the real estate offices, in addition to the buyers and prospective buyers of properties. This way, we may get respondents with bigger possibilities of actually searching for properties and considering to purchase.

Moreover, it was strongly recommended for further research to differentiate the factors according to the types of property. The differentiated factors may provide more specific characteristic of each type of property, and therefore the outputs will better explain the buyers' behavior towards each type of property. Another avenue for future research is to add more factors or variables to the study, such as marketing, legal, culture and other factors represent real estate financial behavior.

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THE RATIONAL AND IRRATIONAL FACTORS UNDERLYING PROPERTY BUYING BEHAVIOR

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ABSTRACT

Property buying behavior is part of the development of financial behavior. This research will be focused on the buyers perspectives on residential and commercial properties in Bali Island of Indonesia. Rational and irrational factors are the factors underlying the property buying process. The Physical, Location, Environment, Finance factors were part of the rational; while Psychological (over-confidence, conservatism bias, information and familiarity, herd behavior, mental accounting, and loss aversion), Emotion, Intuitional, Socialization, Evaluation were the irrational part. The purpose of this study was, first, to determine the factors that distinguish buyers behavior toward purchasing a property; second, to determine the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest. The study sample consisted of individuals who are prospective buyers and those who have bought property in Bali. Data were analyzed using Discriminant Analysis. The results showed that only financial factor that had significant impact on buyers decisions. Furthermore, this study also showed that there were significant differences in factors between buyers intending to live in compared to those seeking to invest. The factor were psychology, emotion, intuitional, and evaluation.

Key words: Rational, irrational, live in, investment, Bali

1. INTRODUCTION

Real estate is often approached as a financial asset. In reality, real estate is both a financial asset and a physical resource, a resource that is comprised of the site itself and the externalities that surround it and connect it to other parcels or activities. The prices of this resource is a result of individual negotiations rather than some listing price that is offered to the broader market. Thus, the real estate discipline must be approached as a behavioral science because of its inefficient market. (DeLisle, n.d). Buying a property is one of the most significant financial decisions that people make, and it requires collecting a lot of information regarding its features. Behavioral research focuses on concepts that affect the market search and price-setting processes. Greater knowledge of the factors influencing buyers' behavior will lead to better understanding and prediction of decision making in real estate markets (Daly et al. 2003).

Survey of property behavior will be held in Bali because annual economic growth of Bali is very good at 6.6%, above the national Indonesian economic growth by 6.1%. A survey conducted by Knight Frank proved that land price in strategic areas of Bali has increased rapidly up to 43%, the highest increase in the last 10 years. This land prices continue to rise earlier varies between 8% to 16% ("Bali Property Prices record in 2013", 2013). The Wealth Report 2014 issued by Knight Frank showed that the highest property prices in the world occurs in Jakarta that is equal to 33% and Bali was at third stage after Auckland, 22% (Knight, 2014).

Furthermore, this study is micro-oriented which investigates individual behaviors and the reasons behind them. The factors consisted of rational and irrational factors. This kind of studies has not much been investigated in the Indonesian market, particularly in the real estate. From previous studies, researcher classified the important factors affecting the decision to buy a property which are consist of Physical, Location, Environmental, Financial for the rational part; and Psychology, Emotion, Intuitional, Socialization, Evaluation for the irrational part.

Statement of the problem:

1. What are the factors that distinguish buyer buyers behavior toward purchasing a property?
2. What are the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest?

Objective of the study:

1. To determine the factors that distinguish buyers behavior toward purchasing a property.
2. To determine the factors that distinguish buyers behavior between buyers intending to live in compared to those seeking to invest.

2. REVIEW OF LITERATURE

The researches about real estate buying behavior in Indonesia were not yet to be found in public literatures. This research uses a summary of existing variables identified in previous researches. Since the previous researches were conducted in countries that have significantly different conditions and cultures compared to Indonesia, particularly Bali Island, some adjustment were made. The increasing volume of real estate transaction in Bali over the past few years has been a phenomena that increases the most of the investors' awareness of real estate. Therefore, this study will provide a better understanding of decision making context and influences to all real estate participants which are the investors, buyers, and agents.

Traditional financial theory is based on idea or notion that investors act rationally and consider all information properly in decision-making process (Kishore, 2006). Salzman and Zwinkels (2013) agree that this theory deals with utility maximization concept (UM), which ended on Efficient Market Hypothesis (EMH). Consumer behavior theory comes from demand analysis in microeconomics to reducing the marginal utility and indifference curves. This study was able to explain how humans will behave in market if goods are in ideal conditions and able to explain importance of income and determining purchase price level. However, this study was not able to explain reasons behind their behavior and actions. Therefore, researchers add another factor to enhance this theory. Koklic and Vida (2009) focus on psychological factors and social decision. Katona (1953) adds psychology, sociology, and anthropology factors to a better understanding of consumer problem solving (in Black et al., 2003).

This study of buyers behaviour in the real estate purchase decision have provided the foundation of the factors affecting property buying decision, both rational and irrational. Ratchatakulpat et al. (2012) have provided an overall view of variables. The influences selected by Ratchatakulpat et al. (2012) were physical, distance, locational, environmental, financial, legal, psychological, and evaluation. One problem with Ratchatakulpat et al. (2012) study is that the irrational factors were not thoroughly discussed. A minority studies behavioural phenomena, with an eye for consumption function that pays attention to social and emotional side of homeownership (Salzman & Zwinkels, 2013). Beracha & Skiba (2014) have explained some of most common micro-level bias, such as overconfidence, mental accounting, loss aversion, familiarity bias, slow reaction to information. Salzman & Zwinkels (2013) also provided a broader explanation of psychology and social determination of real estate decision making. The limitations bias the households' view on property are over-optimism, over-confidence, confirmation bias, momentum effect, herd behaviour, irrational exuberance, regret theory, money illusion, mental accounting, loss aversion, and home bias. Moreover, the study explained relationships of emotions and buyers decision making.

Physical influences or property features is an important determinant of a household choice of residence (Quigley, as cited in Haddad, 2011). Physical influences include design, property quality and property size have positive impacts on buyers' decision

to purchase a property (Adair et al., 1996; Daly et al., 2003; Ratchatakulpat et al., 2009). Another important influences is property location. It was included in the most of previous researches (in Lindberg, Gärling, & Montgomery, 1989; Louviere and Timmerman 1990; Adair et al., 1996; Si, 2012; Haddad, 2011). Furthermore, Wang & Li (2004) found that environmental influences were more important than property itself. Households individual characteristics neighborhood quality was concluded as one of the determinants of a household's residential choice (Gabriel & Rosenthal, 1989).

3. METHODOLOGY

A survey was both hand-delivered and sent online amongst prospective real estate buyers and those who already bought at least one property such as house, villa and condotel in Bali, Indonesia, spesifically property in Badung and Denpasar Region. The questionnaires were given to 100 respondents. They consisted of three main sections: background information of respondents, the rational factors and the irrational factors from the literature that are created for this research (see Appendix 1). Questions used a five-point Likert scale from 1 = 'highly unimportant' or 'strongly disagree' to 5 = 'highly important' or 'strongly agree'.

The research population consisted of both potential real estate buyers and those who already bought a property in Bali from anywhere in the world. Recruiting respondents was purely on the basis of convenience and gathered from Bali community including expats. The purpose was to obtain a large number of completed questionnaires quickly and efficiently. The survey was completed in 2 weeks.

Discriminant Analysis using SPSS program was used in analyzing the data to test the hypotheses. Discriminant analysis is used to analyze relationships between a non-metric dependent variable and metric or dichotomous independent variables. Discriminant analysis attempts to use the independent variables to distinguish among the groups or categories of the dependent variable.

4. RESULTS AND DISCUSSION

The first stage of survey analysis describes respondent demographic. The property purchasers are shown in table 1. There are 57 respondents who have not bought property in Bali and 43 respondents who have bought at least one property in Bali. 31 respondents in the group that have not bought property in Bali are intending to live in, while 26 respondents intending to invest. As many as 27 respondents have bought a property in Bali for live in, while 16 have bought one for investment. The largest group of age is 25-35 years and the largest group that have bought property in Bali is 46-55 years. Most of the respondents are married with children (60%). The majority are from Bali (40 respondents), and among 33 non-Indonesians, 15 of them are from Australia.

Table 1 Respondent Demographic Characteristics

Respondent Characteristics	Have not bought		Have bought	
	Live In	Investment	Live In	Investment
Gender :				
Male	17	17	20	11
Female	14	9	7	5
	31	**26**	**27**	**16**
Age group :				
Under 25 years	4	5	0	0
25-35 years	11	11	4	4
36-45 years	8	6	8	3
46-55 years	6	3	8	5
Over 56 years	2	1	7	4
Marital Status :				
Single	10	11	2	2
Married without children	5	2	6	2
Married with children	16	13	19	12
Nationalities :				
Indonesian	22	21	12	12
Not Indonesian	9	5	15	4
Origin Continent :				
United States	2	1	4	0
Europe	3	2	7	0
Australia	4	2	5	4
Asia (Indonesia)	22	21	11	12
Origin City/ Province :				
Bali	18	7	11	4
Surabaya	1	8	1	7
Jakarta	0	2	2	1
Others	12	9	13	4

Table 2 provides the details of respondent purchase characteristics. More than half of respondents already have their own house (52 respondents). The largest group has not bought a property anywhere (38 respondents) and the majority of respondents have considered purchasing a house (51 respondents) rather than a villa (38 respondents) and a condotel/apartment (11 respondents).

Table 2 Respondents Purchasing Characteristics

Characteristic	Have not bought		Have bought	
	Live In	Investment	Live In	Investment
Living Status :				
Parents/relatives home	9	11	0	4
Rent	14	5	4	1
Own house	8	10	23	11
Number of Property Bought (anywhere in Bali) :				
None	21	17	0	0
1	1	5	13	5
2	0	1	1	3
3+	9	3	13	8
Type of Property :				
House	20	13	13	5
Villa	10	10	14	4
Condotel/Apartment	1	3	0	7

Before analyzing rational and irrational factor using discriminant analysis, the data were tested for the validity, reliability, and normality.

Validity and reliability analysis: The validity analysis was conducted to see if the questions given were valid. It was conducted by calculating the r-value (corrected item-total correlation). The r-value for 47 items were positive and well exceeded r-table (0.195), hence, the validity was established. The reliability analysis following the validity analysis was conducted by calculating the Cronbach's alpha for each factor. Cronbach's alpha for the eight constructs well exceeded 0.195, hence, established their reliability. The results of Corrected item-total correlation and Cronbach's alpha were reported in Table 3A for rational fa.ctors and table 3B for irational factors.

Table 3A Validity and Reliability Rational Factors

Factors	Variables	Cronbach's Alpha	Corrected Item- Total Correlation
Physical	**P1**	0,856	0,649
	P2		0,630
	P3		0,508
	P4		0,525
	P5		0,700
	P6		0,659
	P7		0,571
	P8		0,575
Location	**L1**	0,806	0,592
	L2		0,459
	L3		0,546
	L4		0,694
	L5		0,690
	L6		0,329
	L7		0,608
	L8		0,517
	L9		0,234
Environmental	**E1**	0,804	0,531
	E2		0,610
	E3		0,549
	E4		0,587
	E5		0,490
	E6		0,658
	E7		0,417
Financial	**F1**	0,920	0,491
	F2		0,893
	F3		0,920
	F4		0,933
	F5		0,927
	F6		0,478

Table 3B Validity and Reliability Irrational Factors

Factors	Variables	Cronbach's Alpha	Corrected Item- Total Correlation
Psychology	PS1	0,646	0,400
	PS2		0,286
	PS3		0,330
	PS4		0,339
	PS5		0,374
	PS6		0,550
Emotion	EM1	0,578	0,244
	EM2		0,530
	EM3		0,277
	EM4		0,436
Intuitional	I1	0,528	0,298
	I2		0,333
	I3		0,404
Socialization	S1	0,713	0,518
	S2		0,609
	S3		0,564
	S4		0,318
Evaluation	EV1	0,527	0,458
	EV2		0,298
	EV3		0,304

The ratio of skewness = 0.008 / 0.241 = 0.0332; and the ratio of kurtosis = 0.197 / 0.478 = 0.412. Because of the ratio of skewness and kurtosis are between -2 to +2, it can be concluded that the data are normally distributed.

Table 4 Normality test

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	0,008	0,241	0,197	0,478

Analysis will be continued by discriminant analysis to determine differences in rational and irrational factors that influence consumers in making decision to buy a property in Bali. Subsequently also to know their purpose which is to buy for live in or investment a property for the future.

Table 5 Box's M

	'Have not bought' and 'Have bought'	'Live In' and 'Investment'
F	14,108	0,792
Sig.	0,000	0,637

Box's M test results for group to buy and have bought yet demonstrated that F-value is 14.108, it is significant at 0.000 and the probability is below 0.05, it can be concluded that covariance matrix between groups is different and in this case violates discriminant assumption. However, a discriminant function analysis remains robust despite the assumption of homogeneity of variance was not met with data requirements and did not have outliers (Ghazali, 2008). Box's M test results for the group to live in and investment shows that F-value is 0.792 and it is significant at 0.637 > 0.05, which means that data between groups live in and investment have a covariance matrix equation.

Table 6 Test of Equality of Group Means (Have not bought and Have bought)

Faktor	Wilk's Lambda	Sig.
Physical	0,966	0,065
Location	0,966	0,068
Environmental	0,978	0,144
Financial	0,809	0,000
Psychology	0,931	0,008
Emotion	0,970	0,084
Intuitional	0,992	0,369
Socialization	0,943	0,017
Evaluation	0,946	0,020

The above table 6 shows that all variables except financial have Wilk's Lambda values above 0.9. Getting closer to 1, the data tend to be equal for each group. The significant value (F-test), there are four significant variables that have value < 0.05, which shows the

difference between group ' Have not bought' and 'Have bought', ie financial, psychology, socialization, and evaluation. However, these results still need to be processed to ensure validity.

Table 7 Variables entered in discriminant (Have not bought and Have bought)

Step	Entered	Statistic	Sig.
1	**Financial**	23.191	5.341E-006

Inclusion of variables using stepwise process (stages), starting with variable which has F-test (statistics) the highest one. It can be seen, only one variable, financial. Thus, purchase consideration of respondents who have not bought property and have bought property influenced by financial factor only.

Table 8 Wilk's Lambda (Have not bought and Have bought)

Wilk's Lambda	Chi-Square	Sig.
0,809	20,709	0,000

Table 8 indicates a significant difference between two groups on discriminant model. So respondent behavior between the two groups is significantly different (significant 0.000 < 0.05).

Table 9 Classification Results (Have not bought and Have bought)

Original	67%
Cross-validated	67%

The results of classification on original and leave-one-out-cross validation methods, both produce a figure 67%, which is the accuracy rate is high. That is various table interpretation that are valid for use.

Table 10 Mean (Have not bought and Have bought)

Indicators	Have not bought	Have bought
F1 (Price)	4,67	4,23
F2 (Interest rate)	4,35	3,42
F3 (Mortgage)	4,21	3,26
F4 (Monthly payment)	4,28	3,28
F5 (Term of payment)	4,32	3,19
F6 (Length of period property was on the market)	3,91	3,21

From the table 10, it can be seen that all financial factors indicators factors in have not bought group has a mean value higher than have bought group. This means that respondents who have bought property in Bali more attention to property prices, interest rates, mortgage amount, maximum amount of monthly installments, payment terms, and length of the property market

Table 11 Test of Equality of Group Means (Live In dan Investment)

Factors	Wilk's Lambda	Sig.
Physical	1,000	0,833
Location	0,991	0,346
Environmental	0,988	0,278
Financial	0,983	0,200
Psychology	0,956	0,037
Emotion	0,925	0,006
Intuitional	0,928	0,007
Socialization	0,982	0,188
Evaluation	0,950	0,025

Table 11 shows that all variables except psychology, emotion, intuitional, and evaluation have significant value (F-test) < 0.05. The three variables showed the difference between group 'Live in' and 'Investment'. However, these results still need to be processed to ensure validity.

The significant value (F-test) in table 12 showed there are three significant variables value < 0.05, ie psychology, emotion, and intuitional. This means that the difference between purchase consideration properties respondents intended to live in and respondent intended to investment lies in factors psychology, emotion, intuitional, and evaluation.

Table 12 Variables entered in discriminant (Live In and Investment)

Step	Entered	Statistic	Sig.
1	**Emotion**	7,991	0,006
2	**Psychology**	9,461	0,000
3	**Intuitional**	9,664	1.235E-005
4	**Evaluation**	8,932	3.628E-006

Stepwise process were conducted to select the variables that are significantly affect the live in and investment buyers behavior. The variables selected are emotion, psychology, intuitional, and evaluation (Table 12).

Table 13 Wilk's Lambda

Wilk's Lambda	Chi-Square	Sig.
0,727	30,649	0,000

Table 13 indicates that there is a significant difference between two groups (live in and investment) in discriminant model.

Table 14 Classification Results (Live In and Investment)

Original	73%
Cross-validated	68%

The original classification result is 73%. With the leave-one-out cross validation method conducted, the classification result becomes 68%. The results are still high and therefore the discriminant model are valid.

Table 15 Mean (Live In and Investment)

Faktor	Indikator	*Live In*	*Investment*
Psychology	**PS1** ***(over-confidence)***	3,43	3,93
	PS2 ***(conservatism bias)***	3,12	2,90
	PS3 ***(familiarity bias)***	3,95	3,93
	PS4 ***(herd behavior)***	3,21	3,48
	PS5 ***(mental accounting)***	3,36	3,79
	PS6 ***(loss aversion)***	3,36	3,76
Emotion	**EM1** ***(safety)***	3,67	3,93
	EM2 ***(self-image)***	3,62	3,40
	EM3 ***(comfortable)***	4,60	4,14
	EM4 ***(meaning)***	4,28	3,93
Intuitional	**I1** ***(first impression)***	4,05	3,64
	I2 ***(self opinion)***	3,88	3,62
	I3 ***(assurance)***	3,76	3,93
Evaluation	**EV1** ***(less than 10 property)***	3,33	3,71
	EV2 ***(legality)***	4,24	4,45
	EV3 ***(less than 2 months)***	3,26	3,45

From Table 15, it can be concluded that in terms of psychology, those who aim to invest have four bias (deviation) which tend to be greater. Such irregularities are over-confidence, herd, mental accounting, and loss aversion. While group live in does not pay attention more to the latest economic news and prefer properties in areas that are closer or familiar. Ratchatakulpat et al (2009) research on prospective buyers in Australia also found that those seeking to invest are more concern about the psychology factor. From the emotional side, the investment group pays more attention to security than live in groups. However, the live in group prefers to live in the properties that reflect their personal characteristics. In addition, this group also prioritize comfort and better appreciate owned property. Focus to intuition of respondents, the group who aims to live in has more intuition and confidence than the group that buys property for investment. Where respondents who aim to invest are more confident in terms of generating large returns. Investment buyers consider all the evaluation factors are more important than buyers who intend to live in. Investment buyers are more concerned with inspecting fewer than 10 properties and the purchasing process taking under 2 months. They also prefer real estate agents who explain the forms and legalities of the process. These findings regarding the evaluation factors are the same as the study by Ratchatakulpat et al (2009).

5. CONCLUSION

This study concluded that there was a significant difference in decision making regarding buying property in Bali between respondents who have not bought property in Bali and those who have. The factor was financial, where those who have not bought property in Bali were more concern about the financial factor. The study also found that there were significant differences in decision making regarding buying property in Bali between respondents intending to live in compared to those seeking to invest. The factors were psychology, emotion, intuitional, and evaluation. Investment buyers considered psychology, intuitional, and evaluation factors more important in their decision making processes.

6. RECOMMENDATIONS

This section will discuss some limitations that this study has. First, the sample of this study is only 100 respondents and since the respondents were picked randomly, the respondents who were interested in purchasing and have not purchased any properties in Bali were assumed that they are the prospective purchasers of property. However, individuals who are interested in purchasing property vary in their intentions regarding the likelihood and timing of actually purchasing a property. Some of them may or may not view numbers of properties with intention to purchase whether in immediate time or a really long period of time. Prospective buyers may also do not have a clear cut decision to live in or invest. And therefore, the outcomes may not represent the buyers' behavior perfectly. Secondly, the one-shot survey only captures a certain point in time. Given the nature of buyer behavior, it will be great if the process of buyers' decision making is discussed and therefore add more quality to the output.

One of the most important implications of this study is the distinctions between live in and investment for the prospective buyers. Most of the prospective buyers may not have a clear intention of purchasing a property for live in or investment. There are several stages found in the process of searching a property. The prospective buyers at earlier stages (those who have not yet started searching) of the process may not have the same level of understanding the importance of each factors with those who are already at further stage of the process (those who have already viewed several options).

To ascertain more degree of generalization for the study, further research could be conducted to include respondents from the real estate offices, in addition to the buyers and prospective buyers of properties. This way, we may get respondents with bigger possibilities of actually searching for properties and considering to purchase.

Moreover, it was strongly recommended for further research to differentiate the factors according to the types of property. The differentiated factors may provide more specific characteristic of each type of property, and therefore the outputs will better explain the buyers' behavior towards each type of property. Another avenue for future research is to add more factors or variables to the study, such as marketing, legal, culture and other factors represent real estate financial behavior.

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