



An Analysis on Innovation Adopter Types and Consumer Behaviors of the Residential Buyers in Bangkok

Kongkoon Tochaiwat^{1*}, Vuttapong Larpcharoen¹, Sukulpat Khumpaisal¹,
Chunyarat Nitierapad¹, Warakorn Likitanupak¹

¹ Faculty of Architecture and Planning, Thammasat University, THAILAND.

*Corresponding author (Tel: +66-992893328, Email: kongkoon@gmail.com).

Paper ID: 12A4B

Volume 12 Issue 3

Received 01 October 2020

Received in revised form 14
December 2020

Accepted 23 January 2021

Available online 01

February 2021

Keywords:

Diffusion of innovation;
Consumer behavior;
Residence; Innovation;
Property development;
Real estate consumer;
Property buyer; Real
estate developers;
Bangkokian behavior;
Property development
business.

Abstract

This study identifies different types of innovation adopters and the behaviors of the consumers in Bangkok by studying 150 samples who reside in the projects in which innovative products are applied by the stratified sampling method as well as the questionnaires for data collection. The results are analyzed by descriptive statistics and the Chi-square tests. It finds that most buyers of the projects that utilize innovations belong to the early and late majority groups of innovation adopters at 28.6% and 27.3% respectively. For the aspect of the consumer behaviors, most buyers who are 31-40 of age tend to look for low-rise horizontal residences with prices lower than 5 million baht to live in. Apart from their own decisions, these buyers are usually influenced by their spouses. Most information on the projects is gathered online and the purchases are usually done at the sales office. The study finds a weak relationship between the innovation adoption level and the willingness to pay. The results of this study aid the real estate developers to apply more innovations into their residential projects to match the behaviors of their customers.

Disciplinary: Architectural Science, Real Estate & Property Management.

©2021 INT TRANS J ENG MANAG SCI TECH.

Cite This Article:

Tochaiwat, K., Larpcharoen, V., Khumpaisal, S., Nitierapad, C., Likitanupak, W. (2021). An Analysis on Innovation Adopter Types and Consumer Behaviors of the Residential Buyers in Bangkok. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 12(4), 12A4B, 1-10. <http://TUENGR.COM/V12/12A4B.pdf> DOI: 10.14456/ITJEMAST.2021.65

1 Introduction

Developers are required to distinguish their projects to appear outstanding in the market nowadays and more innovations are used by developers in order to boost sales (Suksri, 2019), since the quality of products is the most important factor for the buyers to decide on the property

purchase, especially in such situation which the market is very high competitive (Alias, Zyed & Ning, 2018).

A thorough comprehension of consumer behavior is a key factor to a successful property development business (Roger et al., 2006; Satasook, 2019; Tochaiwat, 2020). For an innovative product, theories of either consumer behavior and innovation adopter can be applied.

Most marketers often conduct their study on consumer behaviors by using the consumer behavior theory considering 7 aspects which are: (1) Characteristics of buyers (Occupants), (2) Desired products (Object), (3) Objective of the purchase (Objective), (4) Influence of others over the purchase (Organization), (5) Occasion of the purchase (Occasion), (6) Places of the purchase (Outlet), and (7) Process of the purchase (Operation) (Kotler & Keller, 2016).

The aforementioned consumer behaviors are influenced by many factors including the characteristics of the occupants themselves (Kotler & Armstrong, 2008), while according to Rogers' theory (2003), the consumers can be categorized into 5 types by their behaviors to adopt innovations. These five types of consumers are (1) People who must be amongst the first users (Innovator), (2) People who like to try new stuff (Early Adopter), (3) People who follow the trend (Early Majority), (4) People who try after the new thing was accepted by the majority (Late Majority), and (5) People who refuse innovation (Laggard).

From the literature review, there has not been a study about the relationship of the theories that explain the consumer behaviors of residential projects in Thailand especially in Bangkok, which is the main market of the property development business in Thailand. These 2 theories are the consumer behaviors according to the type of innovation adopters and the consumer behaviors according to marketing theories. Therefore, the researcher is interested to study this subject which is going to greatly contribute to the property development market in Thailand, since the developers and project designers can apply the knowledge for a better understanding of the projects' target customers, thus the more precise and quality products to match with the consumers' requirements.

This research aimed to study the characteristics and behaviors of the consumers who purchase residential projects in Bangkok, as well as the relationship between the innovation adopters and the consumer behaviors according to Kotler and Armstrong (2008). The research scope was set to study the characteristics of the consumers through the concept of different types of innovation adopters according to Rogers (2003) and the consumer behavior according to Kotler and Keller (2016), as shown in the variable framework of Figure 1.

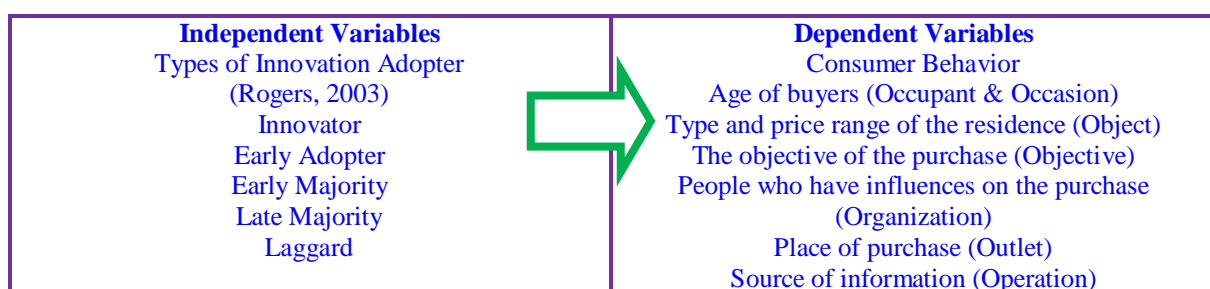


Figure 1: Research's variable framework.

This research studies the behaviors of the consumers who reside in Bangkok according to the type of innovation adopter theory by Rogers (2003) and the consumer behavior theory of Kotler and Keller (2016) by scrutinizing 150 buyers of different residential types in Bangkok, Thailand.

2 Review of Literatures

Residential real estate or residence is a place where a person or a family can live together. Real estate developers categorize residences according to their heights into (1) Horizontal residences such as single-detached houses, duplex houses, or townhouses, and (2) Vertical residences such as condominiums.

Innovations are concepts, practices, processes, products or operations to be applied in the organizations (Zaltman et al., 1973). Innovations are results of the process of integration of concepts, sub-processes, newly invented products as well as new market development (Trott, 2005). Innovations can be classified into various categories such as product innovation, service innovation, operation innovation, and organization innovation (Trott, 2005; Goffin & Mitchell, 2017; Robert, 1995). Real estate developers nowadays usually apply these innovations to be parts of their residential projects to offer more convenience to the customers, as well as to distinguish their product positioning. These innovations may include lighting controls, interior temperature controls, automatic closing and opening of doors and windows, security systems, automatic plant watering systems, pet feeding systems that can be controlled via smartphones.

Rogers (2003) studied the diffusion of innovations and found that not all people are prompt to adopt innovations. Each individual takes a different time to apply innovations into their everyday life. Innovation adopters can be classified into five categories as follow:

- 1. The Innovators** - This group of people stands out due to their distinguishable trait to be risk-lovers. They always seek new stuff. They are well-off and able to afford any new technologies at the earliest and at the peak of their prices. Only 2.5% are innovators.
- 2. The Early Adopters** - These people possess rather high social status and they often are opinion leaders in society. Other groups of people usually observe the early adopters' behaviors to approve or refuse an innovation. If innovation is approved by this group of people, there is a high possibility that it is going to be widely accepted in society afterward. There are about 13.5% of the early adopters amongst all people.
- 3. The Early Majority** - These are the majority of the people who approve of innovations. They may not be as financially competitive as the first 2 groups and may fall a bit behind in experiencing any innovations. They often follow a trend led by the second group. The early majority are as many as 34% of all people.
- 4. The Late Majority** - These are also the majority of the people who are way behind other groups when it comes to innovations. The late majority is often forced to accept new innovations after such innovations have been spread throughout the society and if they refuse to apply such innovations in their lives; they are likely to fall into the last category of all people: the Laggard. 34% of all people can be categorized as the late majority.
- 5. The Laggards** - These people are the last to accept any innovations. They are often conservative and cling to traditional way of society. They are sometimes forced to apply certain innovations into their lives since they have become a new norm or new tradition of most people in the society. There are about 16% of the laggards amongst all the people as shown in Figure 2.

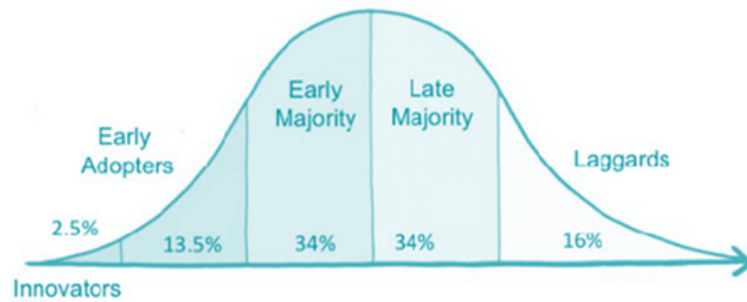


Figure 2: The diffusion of Innovation amongst the people (Rogers, 2003)

Consumer behaviors refer to all of the consumers' activities that involve purchasing, consuming, discarding of the products, as well as the emotional and behavioral responses before, while, and after such activities (Kardes et al., 2011). Consumer behaviors can be influenced by many different factors such as the consumers' own characteristics and the psychological processes including motivations, perceptions, and learning (Kotler & Armstrong, 2008).

Hoyer & Macinnis (2010) distinguished 5 factors that have influences over consumer behavior which are the result of decisions, the consumption, the product presentation, the unit of decisions, and the period. Afterward, Kotler and Keller proposed a concept of 7 O's Model or the method of 6W 1H to analyze a group of samples to understand consumer behaviors. While the 6W 1H is a pattern of questions and the 7 O's are the answers.

1. Who is the target market? Who are our customers (occupants)? To be able to tell which group of people are the buyers and what are their demographic characteristics.
2. What does the consumer buy? What is the product of the purchase (object)? Does the consumer look for vertical or horizontal projects? And what are those projects' price ranges?
3. Why does the consumer buy? What is the purpose of the purchase (Objective)? It may be for themselves or their families, occasional stays, or may as well be for investment.
4. Who participates in the buying? Who is involved and has influences on the purchase (Organization)? For example, the consumer's own decision, the spouses' opinions.
5. When does the consumer buy? What are the (Occasions) that the consumer decides to buy?
6. Where does the consumer buy? What is the venue of the purchase (Outlet)? The consumer usually buys a residence at the sales office of the project. But nowadays, many real estate developers begin to apply certain innovations to accommodate the sales such as online unit booking by using the augmented reality or virtual reality technologies.
7. How does the consumer buy? What is the process of the purchase (Operation)? These are the steps the consumer goes through before deciding to make a purchase, which includes: (1) the realization of the problems, (2) the information gathering, (3) the evaluation of options, (4) the decision making to buy, and (5) the after-sale evaluation.

3 Research Methodology

This is quantitative research. It studies and observes different types of innovation adopters and consumer behaviors through 150 buyers of various types of residences in Bangkok (calculated with the methodology suggested by Ngarmyarn (2011)). The study uses a 95% confidence level value and 1.5 variance value, which result in not more than 6.53% of the acceptable error. The

stratified sampling methodology is used amongst 66 residents of horizontal projects (44%) and 84 residents of vertical projects (condominiums) (56%) (Real Estate Information Center, 2017).

The research tools that the researcher chose for this study include questionnaires which are consisted of two parts: (1) the questionnaires about the type of innovation adopters. The researchers described each type of innovation adopter, as shown in Table 1, and asked the respondents to choose the type that suits them most and, (2) the questionnaires about consumer behaviors of the respondents. The researchers posed 7 questions that lead to an explanation of consumer behaviors including the age of buyers, type and price range of residences, the objective of the purchase, people who are influencing the purchase, the venue, and the source of information. The multiple-choice questions were used for the respondents to choose only 1 choice that best describes their behaviors.

Table 1: Behaviors of the innovation adopter as shown in the questionnaires

| Type of Innovation Adopter | Behavior |
|----------------------------|---|
| Innovators | You buy because you like to try new stuffs and new experiences. You must be the first to own new innovations. You are quick to respond to the latest trend. Price is not the main factor affecting the purchase but innovation is. You value innovations and eager to own them before everybody else. |
| Early Adopters | You are willing to pay as much as it takes to own new and latest experiences of new products or innovations. You love the attention the people give you for owning new stuff. |
| Early Majority | You buy new products only when it has been widely used in the society, despite not being amongst the first persons to own it. You prefer a safer experience of a product after going through some reviews by other users. Positive comments and the worthiness of the product matter to you. |
| Late Majority | You buy a product only after society approves and owns it. You buy only when it is necessary. You prefer cheaper goods and you are concerned about the worthiness. |
| Laggards | You buy a product only when it is really necessary. |

Then the researchers took all of the data to analyze by using the descriptive statistics and to analyze the relationship between 2 variables with the Chi-square Test and consider the level of the relationship by using the Spearman Rank Difference Method in case that both of the variables are related.

4 The Research Results

4.1 Types of Buyers

From the research on different types of 150 buyers who are also innovation adopters residing in Bangkok, the researcher can summarize the amount of each category of the innovation adopters as shown in Figure 3.

The coefficient ranges between -1 to +1. If the value closes to -1, it indicates that there is a strong negative relationship between two linear variables and vice versa; Finally, (3) Multiple Regression Analysis - A data analysis technique that has an assumption that the dependent variable (Y) is a function of independent variables ($X_1, X_2 \dots X_p$) and an error term or a random variable (ϵ). $\beta_0, \beta_1, \beta_2, \dots, \beta_p$ are the parameters. The multiple regression model is (Anderson et al., 2001)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p + \epsilon \quad (1).$$

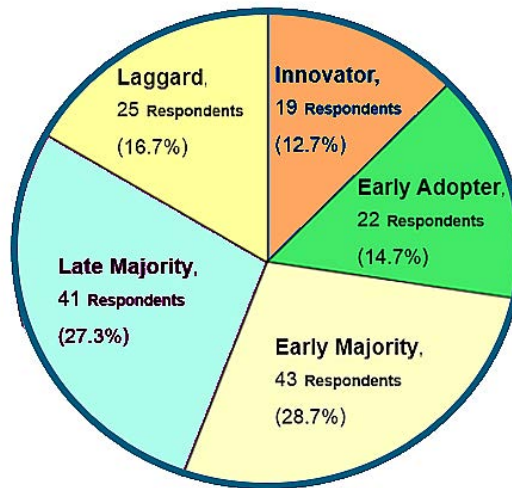


Figure 3: Different Types of Innovation Adopters

From Figure 3, buyers who live in the projects which utilize innovations can be categorized as follows: the early majority and the late majority groups ranked the most in term of amount (28.6% and 27.3% respectively), the rest of the categories which are the laggard, the early adopter and the innovator are also close in amount (16.7%, 14.7%, and 12.7% respectively).

4.2 The Consumer Behaviors of Buyers

From the research results, according to the 7 questions concerning consumer behaviors Table 2, most buyers of the projects that use innovations in Bangkok can be categorized as (1) Aged between 31 – 40 years old, (2) Buy landed properties (such as single-detached houses, semi-detached houses, townhouses) with the prices ranging from more than 5 million baht, (3) The main purpose of buying the house is to be their permanent residences, (4) The decision to buy is usually affected and influenced by their own's as well as their spouses, respectively, (5) They usually buy the unit at the sales offices, and (6) They prefer online source of information.

Table 2: Consumer Behaviors of the Respondents

| Consumer Behavior | Behavior profile | Amount of Samples (in Percentage) |
|---|--|-----------------------------------|
| Age of buyers (N = 148) | 21-30 years of age | 27 (18.3%) |
| | 31-40 years of age | 77 (52.0%) |
| | Older than 40 years of age | 44 (29.7%) |
| Type of residences (N = 150) | Landed property | 110 (73.3%) |
| | Condominium | 40 (26.7%) |
| Price range of residences (N = 150) | Not more than 5 million baht | 36 (24.0%) |
| | 5.01-10.00 million baht | 63 (42.0%) |
| | Above 10.00 million baht | 51 (34.0%) |
| Purpose of the purchase (N = 149) | For permanent residency | 90 (60.4%) |
| | Other (e.g., temporary residency and investment) | 59 (39.6%) |
| People who influence the decision to purchase (N = 150) | Self | 48 (32.0%) |
| | Spouse | 60 (40.0%) |
| | Others | 42 (28.0%) |
| Venue of purchase (N = 138) | The projects' sales office | 105 (76.1%) |
| | Other | 33 (23.9%) |
| Source of information (N = 150) | Online source | 83 (55.3%) |
| | Other | 67 (44.7%) |

4.3 The Relationship Between Types of Innovation Adopters and the Consumer Behaviors of Buyers

Once we analyzed the relationship between the variables of different types of innovation adopters and the variables of consumer behaviors by using the Chi-square Test with the hypothesis.

H_0 = Both of the group variables are independent of one another

H_1 = Both of the group variables are dependent on one another

From the test, the results can be summarized as shown in Figure 4.

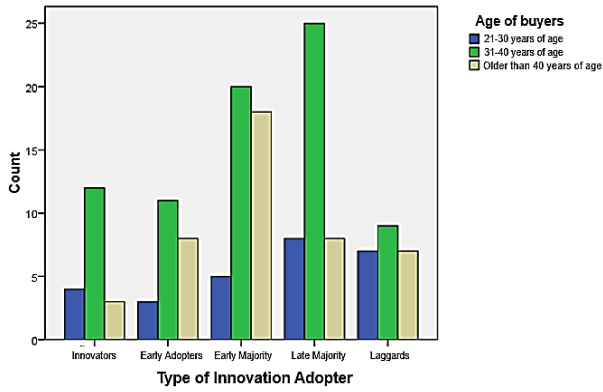
From the Chi-square Test on the relationship between the variables of types of innovation adopters and the variables of consumer behaviors, the researchers found that only the variable on the price range of the residence is related to the variable on types of innovation adopters (Sig. value < 0.05). And when analyzing the level of relationship between both of the variables by using Spearman Correlation, the value of the correlation coefficient is 0.308. This result suggested that the type of innovation adopters are directly related to the price ranges of the residences, although the level of the said relationship is not so high in value.

When we consider the frequency of buyers in each price range, categorized according to the type of innovation adopters from Figure 4, it showed that for residences costing not more than 5 million baht, there is no buyer who belongs to the Innovator and the Early Adopter types. This conclusion corresponds to the results of the Chi-square Test mentioned above.

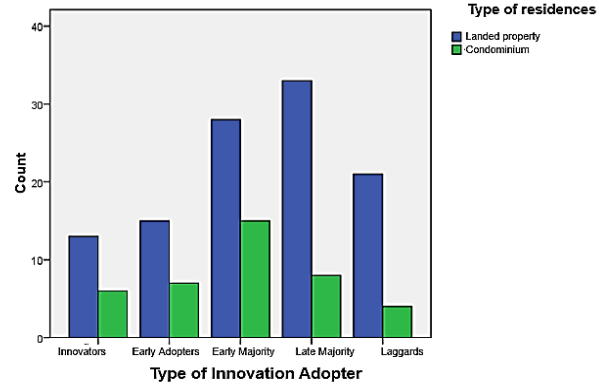
5 Discussion

From the research results, the researchers found that there are various interesting factors which are:

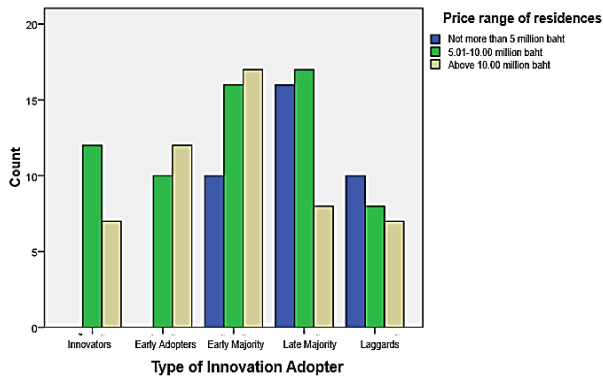
1. Most buyers of the projects that utilize the innovations in Bangkok belong to the Early Majority and the Late Majority type of innovation adopters, as many as 28.6% and 27.3% respectively. This number suggests the correspondence with the theory of Rogers (2003) in the sense that the distribution of 5 groups of consumers can be portrayed as the shape of an inverted bell curve with a similar proportion of the Early and Late Majority types. However, according to the research, the proportion of the Innovator (12.7%) and the Early Adopter (14.7%) when combined is obviously more than the Laggard type (16.7%). This affects the distribution curve to be contorted more into the direction of the innovation enthusiast groups, unlike the theory of Rogers (2003) in which the amount of people from the innovation enthusiast types (Innovator and Early Majority groups) are equal to the indifferent type (Laggard type). This may be because this research is conducted on the information from the projects with innovations, hence the preference of buyers who are more into innovations than not.



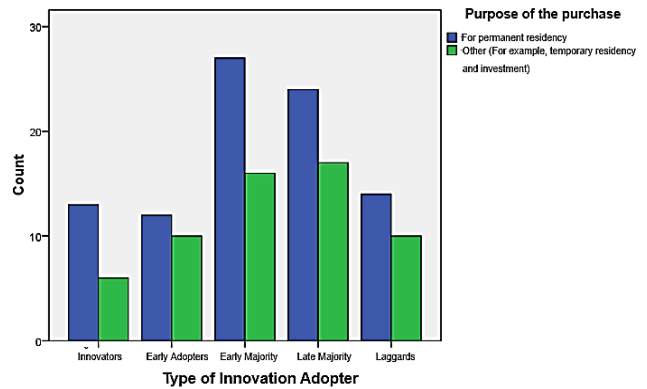
Types of Innovation Adopter and Their Ages
Sig. Value = 0.231 (Accept H_0)



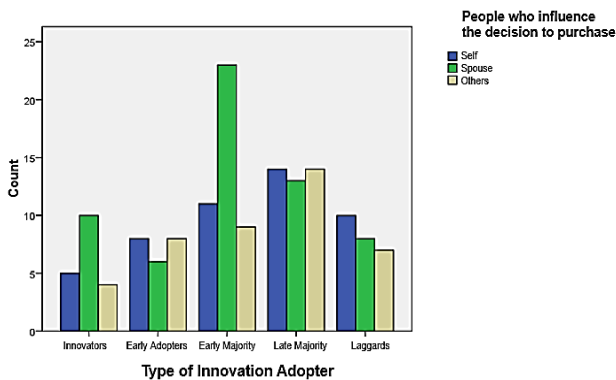
Types of Innovation Adopter and Their Residences
Sig. Value = 0.337 (Accept H_0)



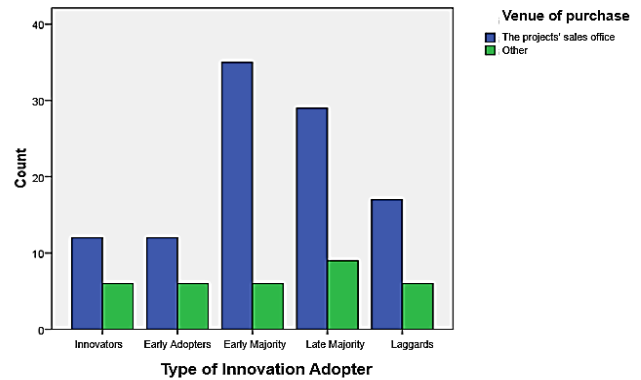
Types of Innovation Adopter and Price Ranges
Sig. Value = 0.001* (Accept H_1)
Spearman Correlation = 0.308



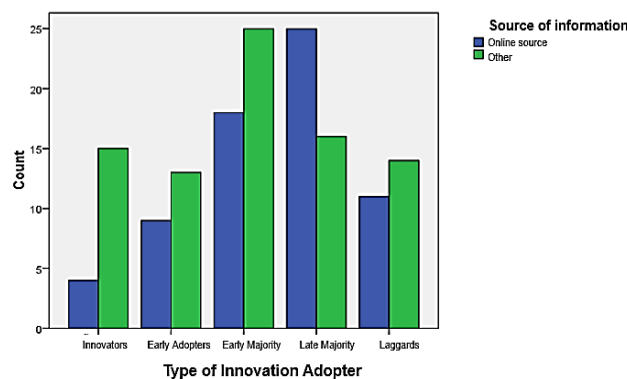
Types of Innovation Adopter and Their Objectives
Sig. Value = 0.905 (Accept H_0)



Types of Innovation Adopter and People Who Influence the Decision to Buy
Sig. Value = 0.401 (Accept H_0)



Types of Innovation Adopter and Venue of Purchase
Sig. Value = 0.440 (Accept H_0)



Types of Innovation Adopter and Source of Information
Sig. Value = 0.062 (Accept H_0)

Figure 4: The Chi-Square Test Results.

Comparing the consumer behaviors of buyers of the projects which utilize innovations to Khemmakarnkosol (2014) and Ariyaviriyanant (2014), it is found certain interesting differences including:

Price ranges of the projects that apply innovations are higher than other normal projects and the spouses of the buyers tend to have more influences when it comes to projects with innovations. This may be caused by the higher prices of the innovative projects, so the buyers need more financial support from their spouses to cope with the payments.

The research result also suggests that the types of innovation adopters affect the price ranges of the project which they decide to buy. This notion corresponds with the concept of Kotler and Armstrong (2008), stating that the characteristics of the consumers have certain effects on consumer behaviors.

6 Conclusion

The research results suggest that the buyers of innovative residential projects belong to the Early and Late Majority types, as many as 28.6% and 27.3% respectively. For the consumer behavior aspect, most buyers are 31-40 years of age. They are likely to buy landed property projects with a price higher than 5 million baht. The purpose of the purchase is to be their own permanent residences. The decision to buy is usually influenced by themselves and their spouses. They acquire most information from online sources. The venue of the purchase is usually at the sales office of the projects. Anyhow, buyers who are more enthusiastic about innovations are slightly willing to pay more. From the research, the researchers did not find any buyer from the innovator and early adopter group who decide to go for any project with a price lower than 5 million baht.

7 Data Availability Statement

The data for this study can be available upon a request made to the corresponding author.

8 References

- Alias, A., Zyed, Z.A.S., Ning, C.S. (2018). Strategies for High End High Rise Residential Property Using Marketing Mix During a Soft Market in Kuala Lumpur. *International Journal of Property Science*, 8(1), 27-39.
- Anderson, D.R., Sweeney, D.J. & Williams, T.A. (2001). *Statistics for Business and Economics* (8th ed.). USA. South-Western Pub.
- Ariyaviriyanant, C. (2014). *The Influences of Advertising Media on Residence Purchasing Decisions*. (Master's IS). Thammasat University, Faculty of Architecture and Planning, Department of Innovation in Real Estate Development (in Thai).
- Goffin, K. & Mitchell, R. (2017). *Innovation Management Effective Strategy and Implementation* (3rd ed.). USA: Palgrave.
- Hoyer, W.D. & Macinnis, D.J. (2010). *Consumer Behavior* (5th ed.). Ohio: South-Western Cengage Learning.
- Kardes, F.R., Cronley, M.L. & Cline, T.W. (2011). *Consumer Behavior* (5th ed.). Ohio: South-Western Cengage Learning.
- Khemmakarnkosol, T. (2014). *The Physical Attributes Affecting the Residence Buying Decisions of the Customers in Bangkok Metropolitan*. (Master's IS). Thammasat University, Faculty of Architecture and Planning, Department of Innovation in Real Estate Development (in Thai).

- Kotler, P. & Armstrong, G. (2008). *Principles of Marketing* (12th ed.). Upper Saddle River, N.J.: Pearson / Prentice Hall.
- Kotler, P. & Keller, K.L. (2016). *Marketing Management* (15th ed.). Edinburgh Gate: Pearson Education Limited.
- Ngarmyarn, A. (2011). According to Yamane's Formula. *Thammasat Business Journal*, 34(131), 46 – 60 (in Thai).
- Real Estate Information Center. (2017). Residential Market Situation in Quarter 3 and Year 2017. *Real Estate Information Center Journal by Government Housing Bank*, 1(2), 20 – 28 (in Thai).
- Robert, M. (1995). *Product Innovation Strategy Pure and Simple: How Winning Companies Outpace Their Competitors*. New York: McGraw-Hill.
- Rogers, E.M. (2003). *Diffusion of Innovations* (5th ed.). New York: Simon and Schuster.
- Roger, D.B., Paul, W.M., & James, F.E. (2006). *Consumer Behavior* (10th ed.). Australia Thomson South-Western.
- Satasook, K. (2019). Real Estate Design by Value. in Tochaiwat, K. et al. (Ed.). *Real Estate Development*. Bangkok: Thammasat Press (in Thai).
- Suksri, N. (2019). Innovation Management: The Process to Sustainable Real Estate Development. in Tochaiwat, K. et al. (Ed.). *Real Estate Development*. Bangkok: Thammasat Press (in Thai).
- Tochaiwat, K. (2020). *Subdivision Project Development*. Bangkok: Thammasat Press (in Thai).
- Trott, P. (2005). *Innovation Management and New Product Development* (3rd ed.). UK: Prentice Hall.
- Zaltman, G., Duncan, R. & Holbek, J. (1973). *Innovations and Organizations*. New York: Wiley.



Dr. Kongkoon Tochaiwat is an Assistant Professor at the Faculty of Architecture and Planning, Thammasat University, Thailand. He received Ph.D. in Civil Engineering (Construction, Engineering and Management) from Chulalongkorn University, Thailand. His research focuses on Real Estate Business and Development.



Dr. Vuttapong Larpcharoen is an Assistant Professor at the Faculty of Architecture and Planning, Thammasat University, Thailand. He got a Doctor of Management degree. His research is Marketing Management.



Dr. Sukulpat Khumpaisal is an Assistant Professor at the Faculty of Architecture and Planning, Thammasat University, Thailand. He earned a PhD in Built Environment/Real Estate Development. His research is Risk Management.



Dr. Chunyarat Nitierapad is a Lecturer at the Faculty of Architecture and Planning, Thammasat University, Thailand. She earned a PhD in Technopreneurship and Innovation Management. Her research encompasses Technopreneurship and Innovation Management.



Dr. Warakorn Likitanupak is an Assistant Professor at the Faculty of Architecture and Planning, Thammasat University, Thailand. He got a PhD in Built Environment. His research is Feasibility Study