

**DETERMINANTS OF MARKET VALUE FOR HIGH-
RISE CONDOMINIUM UNITS IN SRI LANKA:
DEVELOPERS' PERSPECTIVE**

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Degree of Master of Science in Project Management

Department of Building Economics

University of Moratuwa

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Thesis/Dissertation submitted in partial fulfillment of the requirements for the
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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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ABSTRACT

Determinants of market value for high-rise condominium units in Sri Lanka: developers' perspective

Real estate industry has shown significant boost in Sri Lanka since last few decades. Among that, residential real estate has emerged as most sensitive segment. Urbanization and land shortage increase with the time and then condominiums have become a good solution for that. Comparatively condominiums are the highest valued residential real estate solution. Later on, high-rise condominiums emerged as a solution for quality living style of high-income segment of the country as a high-quality residential solution, convenient living style and as an investment option. This concept has become a long-term business model along with the investment solution which incorporated with it. Therefore, couples of local and foreign developers started high-rise condominium projects mostly in central Colombo area in last few years because of steady demand. Apart from the demand, developers have to concentrate on other factors which influence customers to purchase high-rise condominium units in order to sustain in the business. Also, utilize those factors to convince customers to purchase and justify the value of condominium unit on sales and marketing point of view.

This study was carried out to find those market value determinants from the developers' perspective. Initially comprehensive literature was carried out. Then the factors identified from literature were discussed, verified and upgraded via expert interviews before finalizing the survey questionnaire to capture information. The expert interview was conducted with five experts in the industry who has hands on experience and knowledge in the multiple on-going high-rise condominium developments took place over the last three years, in Cololombo Sri Lanka. The questionnaire survey was conducted under six main factors and numerous sub factors with 5-point Likert scale; respondents were mainly sales team members of developers, valuers and agents who are involved in high-rise condominium sales and the survey was distributed among 50 respondents then the completed responses were obtained from 40 of them in the expected time line. Subsequently, after the completion of the data gathering process; collected information was recorded into the SPSS statistical software in a structured analyzable manner to conduct data analysis.

Factors influencing the market value of high-rise condominiums were identified as location factor, physical factor, investment factor, subjective factor and market factor. All of those factors and sub factors show significantly high mean value. Then the correlation test was conducted to identify the key determinants for market value of high-rise condominiums in Sri Lanka. Therefore, it can be concluded that the investment factor is the highest correlated factor among all factors, then other factors which are highly correlated are in order can be stated as physical, subjective, market and location factors.

Finally, it is recommended to identify customer's real requirement and build the sales conversation based on the sequence of highest to lowest influencing factor. Developers to pay much more attention on design, service quality, risks, government long term policies, compliance and invest on training front line business development teams on customer service, recent laws and regulations.

Keywords: *Real estate, Residential real estate, Condominiums, High-rise condominiums, Market value, Value determinant factors, Sales*

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LIST OF ABBREVIATIONS

ROI	- Return on Investment
CMA	- Condominium Management Authority
UDA	- Urban Development Authority
SPSS	- Statistical Package for the Social Sciences
AOL	- Apartment Ownership Law
BOI	- Board of Investment
NHDA	- National Housing Development Authority
CMA	- Colombo Municipal Area
CMR	- Colombo Metropolitan Region
CAB	- Common Amenities Board
CEB	- Ceylon Electricity Board
CCD	- Coastal Conservation Development
CTBUH	- Council on Tall Building & Urban Habitat
NWS&DB	- National Water Supply and Drainage Board
ML	- Money Laundering
TF	- Terrorism Financing

CHAPTER 01**INTRODUCTION**

1.1 Background

The demand for housing solutions increases rapidly due to the high increase in the population along with the economical rise. Additionally, Sri Lanka has an annual demand of 80,000-100,000 houses (Hewamanne, 2007). The importance of high-rise condominiums against the land scarcity in urban areas highlighted in the last few years and it illuminate as the best solution (Samaratunga, 2013). Similarly, Nonis (2005) confirmed that condominiums are the best and most practical solution since limited space available in the city.

In Sri Lankan context, there is a high demand to buy condominiums due to a lack of land availability and convenience itself. Further, Ariyawansa (2007) stated that some condominium developments like Havelock city, On three Twenty, Emperor, Empire encourages analysis activities on condominiums to publish their standards as a marketing tool. Western province population density indicates the highest density which is more than thrice of the second-highest provincial population density (Central Bank of Sri Lanka, 2017). To supply a residential solution for such demand, private and the public sector have completed and obtained condominium certificates for more than 35 condominium developments within 2015-2018 which has minimum of 50 parcels in each project. According to the Condominium Management Authority (2019), 4500 parcels of high-rise condominium projects which have more than 50 parcels, have been released to market from 2015 to 2018. Once condominiums became the solution for an existing requirement, it has become a new business opportunity which depends on supply, demand, buying, selling, purchase decision as well as proper legal establishments.

Existing condominium ownership law contained in Act No. 12 of 1970 as amended by Act No.11 of 1973, Act No.45 of 1982 and Act No. 39 of 2003. Amendment of 2003 has the properly adjusted apartment law (Soza, 2004). According to the legislation of 1973 owner or developer could sell units only after the total completion of the development. This requires a high capital investment. To overcome such a situation, apartment ownership Act No.39 of 2003 provides for registration to

condominium plan, semi condominium plans and provisional plan for building which are completed, partially erected or on proposing stage. The legal definition stated condominium ownership is the individual ownership of a single unit in a multi-unit structure with common ownership of walls, stairways, elevators, parking, playground, swimming pool, tennis, squash, diner etc which are normally referred as the common areas. A condominium unit is considered as an investment or an asset depending on the requirement (Hassanain, Froese , & Vanier , 2001).

According to Senaratne , Zainudeen and Wedikkara (2006), there are three primary categories in condominiums in Sri Lanka as super luxury, luxury and semi luxury based on available facilities and features. Further they have mentioned that unless the project balances its cost, quality and time, it could cause losses to developers and reduces the demand in the segment.

Samaratunga (2013) recommended using his previous experiences and globally available technology to build high rise housings to gain a competitive advantage. Due to the less risk and high-profit beneficiaries, many property development companies refer to invest in condominium development projects (Senaratne, Zainudeen, Jayasena & Rameezdeen, 2006). Condominiums are comparatively less expensive than any individual house unit which includes the same level of benefits, facilities (Hewamanne, 2007). As a proof for above, all the facilities considered as the common elements in the condominium act.

A study carried out by Gunawardena and Samarajeewa (2005) recognized that there is a huge competition among developers to construct residential apartments and sell those prior to any market downturn. According to Mithulakaran (2001), it is important to evaluate the satisfaction of occupants and identify trends of user requirements on condominiums built by developers. Also, they have assessed demand and supply as well as factors affecting condominiums in Sri Lanka.

Many researchers believe a better understanding of customer requirements leads to a successful business (Ozaki, 2003). Although condominium come up with less risk, high profit margin and demand, the importance of condominium maintenance and operational cost is unquestionable as the running cost of the condominium is arising annually (El-Haram & Horner, 2002). Therefore, developers can't keep adding on all customer requirements but most effective facilities considering the life cycle of the development and develop it with the most effective factors to sustain in the business.

Capital requirement is extremely high for developers to purchase the right land and continue with construction. Usually developers raise funds through equity, mortgage loans and pre-selling. Identifying the appropriate source of finance is very important in order to achieve maximum utilization out of a condominium development. Similar to that developers should know the right time to start the development. Along with the right mix of selecting financial options and launch the project at right time make the project financially viable. As a result, that it is an important factor to motivate the customers to purchase the condominium developments. Conducting a proper feasibility study and select a proper funding mix contribute to avoid the project from being abandoned as a result of poor sales (Karunaratne & Ariyawansa, 2015).

All of the above factors reveal that even though high level of technology and facilities are used to enhance the grandness of the condominium development, there should be a proper justification in order to convince customers to invest in condominiums because developer has to sell all the condominium units in the development within a defined time line. Justification can be done along with proper study on market value determinant factors of high-rise condominiums.

1.2 Research Problem

Sri Lanka is a country going through a massive infrastructure development in order to achieve country's economic stability. At present there are multiple infrastructure development projects taking place such as port city, transport hub, expanded highway networks which make the country a well-connected one. With the modern urbanization projects which are currently in progress, providing housing solutions to its population has become one of the major concerns at the moment. This is where condominium concept comes to play as a solution for modern world life-styles. Even though the shelter is a basic requirement for human beings, according to Maslow's Hierarchy of needs, nowadays it has become more of a lifestyle to a portion of the population in Sri Lanka who falls under high-income level.

With the inception stage of the condominium concept there was a customer base who invested in it. However, after the year 2005 target customer base was more exposed to this concept and they have been gaining the knowledge and experiences on this industry. Thus, eventually customer expectations started to increase, and they tend to

look for options such as long-term convenience, real estate market cycles, investment opportunities and country's economic stability.

With the existing competitive market of high level of supply and educated customers, nowadays developers find it very challenging to sell high-rise condominiums for the same niche market. Developers require strong justification over the value they placed on the high-rise condominium units to develop the business.

Factors which affect to the market value of high-rise condominium developments have not been thoroughly defined so far to convince a customer to invest in a condominium from a sales point of view.

Therefore, this research attempts to identify market value determinants of high-rise condominium units and utilize those findings as a convincing tool to get the customers to invest in high-rise condominiums.

1.3 Research Questions

- How does the condominium concept establish in the market?
- What are the factors make condominium development as semi luxury, luxury or super luxury?
- What are the market value determinant factors of high-rise condominium units?
- What are the most influencing factors to use as a convincing tool for customers to invest on high-rise condominium units?

1.4 Aim & Objectives

Aim of this research is to examine market value determinants of high-rise condominiums from the developers' perspective in order to develop business of the industry in Sri Lanka.

Accordingly, objectives are as follows.

- Identify the development of high-rise condominium concept.
- Identify background of Sri Lankan condominium market, market trends and existing condominium categories.
- Explore the determinants of market value of high-rise condominium units.

- Assess the extent of contribution of each factor towards the market value of high-rise condominium units.

1.5 Methodology

In order to achieve stated aims and objectives, a comprehensive literature synthesis was carried out by referring books, journal articles, magazines, conference proceedings, related dissertations, government publications and World Wide Web to find the literature on the concept of condominiums, legal and regulatory background, trends and condominium market details related to the research area.

Based on the literature findings, preliminary interviews will be conducted with the related experts in the industry to verify literature findings and to obtain input towards the questionnaire designing.

Then, a detailed questionnaire survey will be carried out to determine the significant items with related to identifying market value determinant factors of high-rise condominium projects. When it comes to conducting the survey, a sample of professionals who involve in high-rise condominium business will be selected to collect responses. After collating data into an analyzable format, descriptive and inferential statistical techniques could be used to identify the contribution of each factors towards the market value of high-rise condominium units with the use of inferential statistic techniques

1.6 Scope and Limitations

The study is limited only to the high-rise condominium development projects which is only a portion of residential real estate industry in Sri Lanka. Starting from real estate definition it has been narrowed down to market value determinant factors of condominiums.

There are only few high-rise condominium developers in the market and most of them are located in central Colombo. Therefore, research was limited to Colombo district.

1.7 Chapter Breakdown

Chapter 01 - Introduction

In chapter 01 it gives an introduction about the background of the research topic, identified research problem, aim and the objectives, scope and limitations and the methodology in a concise manner.

Chapter 02 – Literature Review

Chapter 02 focuses on a comprehensive literature synthesis to have a deep identification on the concept of condominium facilities, categories of condominiums and their legal and regulatory background, general market behaviors and price determinant factors for condominiums.

Chapter 03 – Research Methodology

Research methodology chapter mainly focuses on the areas including research approach, data collection and data analysis techniques in a comprehensive manner.

Chapter 04 – Data Analysis and Results

Data analysis and findings chapter mainly focuses on the analysis of collected data and their findings in a comprehensive manner.

Chapter 05 – Conclusion and Recommendations

Conclusion and recommendation chapter refer to achieve the aim and objectives of the research. Additionally, this chapter aims to provide the recommendations to have a fruitful research outcome. Moreover, limitation occur while carrying out the research and further research areas were discussed.

CHAPTER 02

LITERATURE REVIEW

2.1 Introduction

Continuous upgrades and combine with business conditions will stabilize any company in a highly competitive market environment. Identifying and continuous analysis of a product's price determinant factors is therefore a most critical feature of every form of business. Although these factors are recognized and checked, making appropriate improvements to the findings-based product would allow any business to achieve competitive advantage. In the last few years, popularity of condominiums has increase in Sri Lanka. Presently many local and international developers involved in condominium development, since it has shown good return to developers as income and good return to customers as ROI. Also, with the development of Colombo city, condominiums have become the only solution for land scarcity. Convenience, safety and facilities have become the most attractive functions of condominiums with freehold title.

Chapter started with the definition of real estate and it flow towards real estate market, residential real estate and condominium concept, evolution of condominiums, condominium categorize in Sri Lanka, legal and regulatory background of condominiums in Sri Lanka, general market value determinants, Sri Lankan condominium market and market value determinants of condominiums have been discussed in order to achieve the aim of the study.

2.2 Real Estate

The term, “Real Estate” has derived based on “Land”. It consists everything attached to the land like trees, buildings, minerals, etc. This is an indication of which land can be enhanced and built by incorporating requirements-based values (Shapiro, Mackmin, & Sams, 2013). Land is a place, for households to live and a place of maximum utility; for business it is a place to maximize profits. It's an advantage, a richness or a wealth for individuals. Land is therefore a primary tool for individuals, families and nations in terms of economic prosperity and social stability (Ariyawansa 2009; Sungur & Cagdas, 2003). According to Ariyawansa and Prathapasinghe (2006) real estate considered to be a special product relative to general economic products, and that can be public or private property. Its’ allocation and use have been limited by government taxation and some restrictions on use.

Jayalath (2016) categorized real estate into four groups as residential, commercial, industrial and agricultural. All real estate categories can be developed. Ramachandra (2001) stated that Property development is a mechanism of adding values and enhancing real estate by physically modifying it with developer's entrepreneurial skills. Similarly, Crowe and Cadman (1978) defined Property development as economic development consisting of subdivisions of land, economic development, development of infrastructure, public services and environmental growth. Further to that Ariyawansa (2009) stated that real estate development is a process that starts with the land, followed by commercial or residential construction, and finishes with marketing and sales.

There are five major components in real estate market. They are, government, financial institutions, firms, households and developers. Government influencing on real estate mainly by adjusting macro-economic policies (Foo & Sing, 2001).

Ariyawansa and Prathapasinghe (2006) has listed down Key unique features of real estate as elasticity of supply, each parcel of real estate is unique, high cost of transferring the ownership, various risks involved, lack of liquidity, lack of transparency and published market data, multiplicity of interest, and motivation of ownership.

2.3 Real estate market

Ariyawansa (2016) explained the property market as a place where real estate traded under a price mechanism between buyers and sellers. Author illustrates that property market is informal in its nature, less structured and more diverse. Property market consider as unique with those characteristics. Similarly, Carn , Rabianski , Racster and Seldin (1988) stated that study of the supply and demand of real estate is distinct from the study of supply and demand of other commodities because of the unique characteristics of real state. Developing countries now draw approaches from developed countries and extend their real estate operations to the international market (Ariyawansa, 2009). Sri Lanka is also practicing same by exposing National real estate industry into International real estate market with partnerships in between Chinese construction companies, Singaporean designers and Pakistani developers etc.

Also, Author has clarified few healthy conditions for real estate market as below.

- Comprehensive monetary and fiscal policy
- Steady political background
- Private property right and favorable law
- Free to repatriate earnings
- Flexible and unrestricting over the foreign exchange
- Favorable labor law and cheap labor
- Good infrastructure
- Good location
- Adequate promotions
- State efficient and streamlined services

According to Jayalath (2016), residential real estate is the most critical categorizer among three other forms of real estate. Residential property has been defined as an industrial property that contains a single family or multi-family structure. It can be single family house, town houses, separate homes, duplexes, vacations homes, modular homes, apartments or condominiums. Among those residential real estate solutions, condominium is the most famous category nowadays. This popularity of

condominiums has been confirmed by (Senaratne et al, 2006; Ozsoy & Sadikoglu, 2017) in their studies.

2.4 Condominium Concept

The idea of condominium was an ancient Roman custom that people who live in individual units but share similar facilities (Edirimane, 2010). However, Senaratne et al (2006) have stated this “total living concept” born in USA and spread around the world. Sinti (1990) mentioned condominium as a western life style. Anyway, people have built their homes in cluster formation since ancient time for protection, for economic reasons and for social reasons. This has been led to housing scheme concept (Chandler et al, as cited in Senaratne et al, 2006). Karunasena and Ranatunga (2008) also stated that dwelling is a basic human need for social and economic reasons.

When derive this Latin word “Condominium” it expresses two characteristics; individuality and commonality. Each owners of individual units have freehold title to their unit and owns other facilities as common elements (Edirimane, 2010). Also, Bujang & Zarin, (1999) confirm the meaning of this Latin word “Condominium” as joint ownership or control. Study done by Bujang and Zarin (1999) stated condominium as a form of sharing ownership of common facilities and individual ownership of individual unit in total condominium development project.

Due to scarcity of land resource, multi storey building concept came as a solution for housing problem with the development of construction industry (Karunasena & Ranatunga, 2008). Apartments and condominiums are considered as a solution for housing problem in residential real estate market. Condominium can be defined as strata-titled development with full range of facilities with a land area of minimum 0.4 hectares. But apartments described as buildings with less than 6 stories and smaller land area (Sing & Tien , 2002).

2.5 Evolution of condominium

Colombo has experienced steady growth in the development of vertical housing in the last two decades (Senaratne et al, 2006). Supportively, Disaratna, Udayangani, Ranasinghe and Pilanawithana (2017) stated that condominium sector in Sri Lanka had a rapid development in last few years.

Edirimane (2010) predicted that there will be a boom in constructing multi story properties because of land scarcity in prime residential areas. Proving that, Disaratna, Udayangani, Ranasinghe and Pilanawithana (2017) Sri Lanka's capital has boomed in condominium growth in the past few years.

Wijewardena (2005) stated that Condominium Management Authority (CMA) found a huge demand for condominium properties on Colombo and 60% of it for middle income group. Therefore, CMA invited private sectors to construct condominium projects for middle income group who stay in Colombo for employment and educations.

Mainly condominium suppliers can be divided in to two segments as private sector developers and public sector. The government converted low-lying marshy lands into commercial and industrial uses in the Metropolitan area of Colombo (CMA) and Colombo Metropolitan Region (CMR) coordinating with Urban Development Authority (UDA), Board of Investment (BOI) and National Housing Development Authority (NHDA) (Niriella, 2010).

Initially Government involved into develop apartments for government employees for themselves and their families for accommodation purposes and nowadays government is looking into develop condominiums to lower- and middle-income citizens as a housing solution (Edirimane, 2010). Now, many private sector developers also involved into middle income condominium developments (Disaratna et al, 2017). Senevirathna (as cited in Ariyawansa & Udayanthika, 2011) discussed that, once exclude slums and shanties, balance housing stock owns to middle- and upper-income groups, High rise condominiums sell at higher rates because of strong demand and their amenities. Developers going to target foreigners working in Sri Lanka, professionals from Sri Lanka, businessmen and non-resident professionals in Sri Lanka who can invest as retirement opportunity.

This rapid increase in condominiums has proved to be a very attractive business idea in terms of profitability, reimbursement, financing as well as a significant market for residential purposes (Senarathne et al, 2006). In order to balance the oversupply of high-rise condominiums, it is recommended to attract foreigners to invest in condominiums in Colombo (Edirimane, 2010). Nowadays foreign developers, contractors and designers have involved in condominium development in Sri Lanka.

2.6 Trends of Condominium

Condominiums have become a benchmark of luxury living among certain group of people in the country and the living standards are raising time to time with the development of country as well as income level. Residential developments have become high-rise structures and high-density residential structures as a result of urbanization and land scarcity (Sirmans , Sirmans & Turnbull, 1999). There are few established concepts in the society as condominium should be a high-rise building, should have common facilities etc. These days condominium developers are using words “skyscraper” and “mix development” in their marketing materials. World expecting a 30% increase of mixed-use Skyscrapers by 2024. Wickremasinghe, Wickramanayake and Wickramaarachchi (2018) mentioned that “Skyscraper” is a building of 40 or more stories or higher than 100m. That is the standard threshold used worldwide to define skyscrapers (Council on Tall Buildings and Urban Habitat (CTBUH), 2014).

Condominium units which retained by the developer under their ownership to cater exclusively for rental requirement considered as service apartments (Bujang & Zarin, 1999). Those can be offered to any visitors of existing home owners as hotel facility within residential condominium.

Early studies of (Edirimanne, 2010) concluded that most of upcoming developments will be mixed condominium developments within Colombo. There are luxury mix development condominiums in Colombo with current development of the country (Disaratna et al, 2017). People nowadays want to fulfil their every requirement under one roof. That requirement led to the concept of mix developments (Wickremasinghe et al, 2018). Occupants of mix developments have condominium solution and facilities within the premises as usual. But there are defined separate facilities and common areas available within the development which can be used by residents as well as non-residents. It can be serviced apartments, function hall, shopping mall, cinema, restaurants etc. One Galle Face premises which belongs to Shangril-La and Colombo City Center of Abans Group are existing market examples. Those developments are considered as added value to the development.

2.7 Categories of Condominiums in Sri Lanka

Living in a condominium consider as a glamorous and luxurious lifestyle including facilities, amenities, utilities and convenience (Bujang & Zarin, 1999). Authors stated that most of condominiums have special facilities like swimming pool, kid's pool, 24/7 security service, walking track, launderette service, squash and tennis court, function hall, poolside barbecue pit and landscaped.

Residential condominiums can be divided into three categories as Luxury, Semi luxury and utility condominiums. Utility condominiums developed by government for government officials and low-income earners (Wijeyeweera, as cited in Disaratna et al, 2017). Disaratna et al (2017) further introduced high luxury, luxury, semi luxury and low-income condominium categories. Basis of these classifications were facilities available in the building.

Senaratne et al (2006) expand their study upon these categories based on the facilities offered by developers for the development like finishes and fittings, electrical accessories etc. Very similar to that, Ariyawansa (2007) considered high-rise condominium as high luxury condominiums and other types as luxury and semi-luxury segment. He also specified that these semi-luxury condominiums are low-rise and mostly located in Wellawatte area.

Senaratne et al (2006) and Ariyawansa (2007) defined the existing condominium categories according to the facilities available in the development. Table shown below illustrates the facilities which defined the development as semi luxury, luxury or super luxury from both those studies. However, both the studies show similar facilities under each category.

Table 2.7-1 Condominium categorization

Facility	Super luxury	Luxury	Semi Luxury
24-hour security	√	√	√
CCTV & intercom for emergency	√	√	√
Fire protection and detection system	√	√	√
Garbage disposal system	√	√	√
Elevators	√	√	√
Hot water geysers	√	√	√

MATV connection	√	√	√
Children's play area	√	√	√
Vehicle park	√	√	√
Private balconies	√	√	√
Air-conditioned apartment blocks	√	√	
Swimming pool	√	√	
Restaurant and bar	√	√	
Gymnasium	√	√	
Laundry	√	√	
Central gas supply system	√	√	
Children's pool	√		
Games room	√		
Convenience stores	√		
Video center	√		
Changing and meal room for drivers	√		
Walking track	√		
Squash court	√		
Salon	√		
Sauna	√		
Standby Generator	√		
Service elevator	√		
Three tier security system	√		

(Adopted from Senaratne et al, 2006)

2.8 Legal & Regulatory background for Condominiums in Sri Lanka

Condominium properties in Sri Lanka are governed by the Apartment Ownership Law (AOL). Condominium property act No:12 of 1970 was the initial legislation enacted for condominiums (Senaratne et al, 2006). After that, act No:11 of 1973 introduced as AOL. Edirimane (as cited in Disaratne et al, 2017) there were couples of amendments have been made to AOL time to time but still there are some areas which have not addresses by AOL and there are no regulations controlling those aspects of the Condominiums. Senaratne et al (2006) described that AOL implemented for the registration and transfer of condominium development ownership. AOL have been amended as follows,

- Apartment Ownership (Amended) Act No 45 of 1982

- Apartment Ownership (Special Provisions) Act No. 4 of 1999
- Apartment Ownership (Special Provisions) Act No 27 of 2002
- Apartment Ownership (Amended) Act No 39 of 2003

Latest regulation issued by the government is Condominium Management Authority Law (Amended) Regulation No 1 of 2017 regarding processing fees, Issuance of certificates, space allocation, preliminary planning clearance and administration and management of condominium property and parcel.

Apartment Ownership Act No: 39 of 2003 is used as the last amendment for AOL in Sri Lanka. AOL No.11 of 1973 provided the provision for transfer ownership of condominiums by divided into separate units. Along with the amendments for AOL, Common amenities Board (CAB) Law No.10 of 1973 also established and amended as No.46 of 1982 and No. 24 of 2003 (Jayalath, 2016).

Condominium development project must obtain few more approvals as well while adhere to condominium law. Those are, Urban Development Authority (UDA) approval, Central Environmental Authority (CEA) approval, Electricity board (CEB) approval, National Water Supply and Drainage Board(NWS&DB) approval and Condominium Management Authority (CMA) approval (Senaratne et al.,2006) Nowadays there are much more approvals and permits required for condominium development depend on the area it located like Coastal Conservation Development(CCD), traffic approval, Board of Investment (BOI) clearance, Development permit etc.

In 2005, Condominium Management Authority (CMA) started operation. That is the regulatory body established in order to maintain minimum standards and qualities of certification of condominium, provisional condominium certification or semi-condominium certification along with site inspection and plan as per CMA specifications (Senaratne et al, 2006). This law applies to any building having a minimum of 2 floors on alienated land, held as one parcel of land capable of subdivided into parcels, any one storied building capable of subdivided into parcels (condominium properties), any proposed building or building in the process of being constructed on alienated land, held as one parcel of land and subdivided into parcels (Ariyawansa, Prathapasinghe & Perera, 2006).

Since 2005, Condominium Management Authority has begun issuing certificates for common facilities and common elements to register a condominium plan in compliance with AOL Act No.39 of 2003 (Ariyawansa & Udayanthika, 2011). Authors mention that, under extra ordinary gazette No. 1386/18 on 30/3/2005 (Board of Investment, 2005) non-citizens can bought condominiums above 4th residential floor. Therefore, prices of the units above 4th residential level are higher in Sri Lanka. In other countries prices getting lower when it getting higher due to difficulty in accessibility.

2.9 General market behaviour and market value determining rules

Thomas and Maurice (2014) defined, Market as any arrangement or a setup where buyers and sellers exchange things for a value. Economic environment depend on few characteristics of the way of firm operates. Price of a product will be defined by market itself depend on whether it is a, perfect competition, monopoly or monopolistic competition market.

Demand and supply show a significant interaction on price of an asset. Increased manufacturing and distribution results decrease in existing prices. It also predicts a negative relationship between stock adjustment and demand deviations under competition hypothesis (DiPasquale, 1999). Usually elasticity of supply varies from region to region depend on geographical factors. Strick regulated market with land scarcity, construction starts lag behind price appreciation and it leads to higher price volatility. Therefore, metropolitan areas show more bubble effect (Ooi & Le, 2011). Greater the elasticity, response to price change is high for new supply. It gradually shows price signals due to the long gestation period necessary to start and complete a new development (Kajaraj , 2006).

According to general economic theories, existing equilibrium of market between supply and demand will upset along with new supply to the market. On competition hypothesis it predicts marginal supply will cause a negative impact on unit prices and as per contagion hypothesis it predicts marginal supply will have positive impact on prices on units (Ooi & Le, 2011).

Apart from supply and demand related theories, there are three approaches for determine the value of a product. Those are cost approach, sales comparison approach

and income approach which is independent from each other. Income approach uses to value apartments, hotels, condominiums and office buildings by operating income or rent divided by capitalization rate (Jayalath, 2016). In general, efficiency level of any market can be defined by the formation, price setting, standards, quality of products and efficiency of its functions. Also, it is expected that both seller and buyer are prudent and knowledgeable, act at arm length transaction (Ariyawansa, 2016). Buyer's purchase decision is based on utility maximization rule. Any purchaser selects a product with the highest utility or as the best alternative product available in the market to match their requirement. Purchaser can be considered as wealth maximizers as per same rule (Kalafatis , Pollard , East & Tsogas, 1999).

Iman, Pieng and Gan (2012) defined the sequence of the steps involved on buying decision of a product on customer point of view. Any marketers, developers who involved on product selling business must have the idea on this evaluation criteria and evaluation method where they can hit the product and influence on buying decision. In another words, customer's requirements are the value determinant factors.

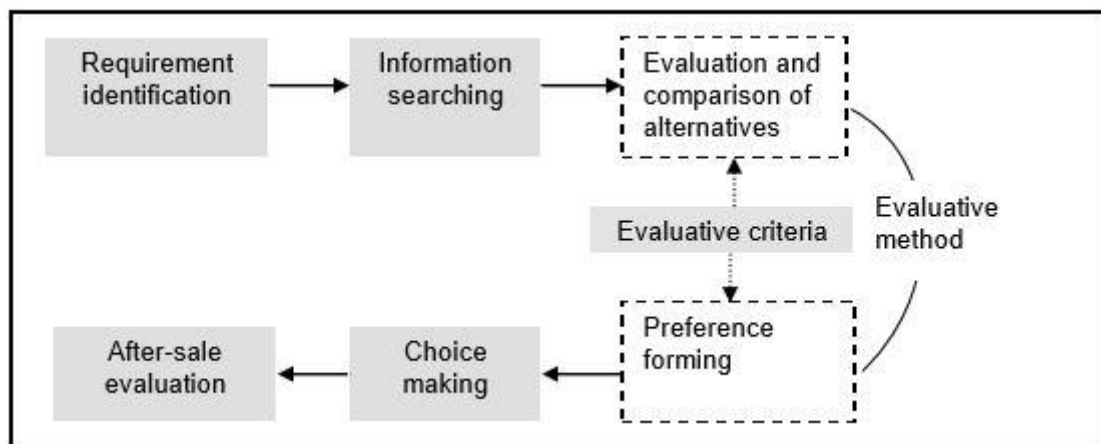


Figure 2.9-1 Role of evaluative criteria at buying decision

(Adopted from Iman , Pieng and Gan , 2012)

2.10 Residential real estate and Condominium market

Condominium is a part of residential real estate. A house may be defined as a home, shelter, building or structure which is a dwelling place or a place of residence (Samaratunga, 2013). House is more than just a commodity that offers lifetime consumption and utilities (Silva & Fernando, 2016). Also, (Aiyawansa & Perera,

2018; Zebardast, 2008) stated house as a powerful socio-economical background of individual and families and it provided basic need for self-actualization. It has raised to modern housing facility from the state of shelter.

Housing market can be divided into two main categories as primary market and secondary market. Primary market consists of recently completed or ongoing units which will add to existing stock. Secondary market consists of individual home owners and investors who did not complete the transaction process. Generally, primary market is well-informed and as they have large quantity of units, it become an indicator of price movements for secondary market as well. In macro picture, market sees new supply as good news and secondary market prices will be increase with new supply because of the neighborhood factor (Ooi and Le, 2011). Along with economic reforms, land market in suburban areas also getting increase. Government has left developers to set prices. However, there is a fee to be paid to authorities. These fee also will be added to price of sellable units (Ariyawana, 2009).

Population distribution become more central along with urbanization due to education, employment, convenient living and it increases the demand for housing (Ariyawansa & Udayanthika, 2011). Foo and Sing (2001), Bujang and Zarin (1999) revealed that demographic patterns of urban areas have big impact on housing requirement. Not only that, Wickremasinghe et al (2018) stated transportation, energy system, infrastructure, employment, education and health care are challenges facing by many countries due to increase of urban population. Kajaraj (2006) stated that understanding of housing market should start from housing production, not on consumption.

With the challenges and busy time schedules, buying a condominium has become more convenient to people rather than constructing a house in metropolitan area (Senaratne et al, 2006). As per market theory of Thomas and Murice (2014) we can identify high rise condominium market as a monopolistic competition market where only few developers are involved in the business but with high competition. Generally, condominium market is slightly less than perfectly elastic (DiPasquale & Wheaton, 1994). Condominiums have become popular among investors around the world nowadays and their expectation is buy to-let (Dias, Munasinghe, Perera & Priyantha, 2011). Demand as well as popularity of condominiums have increased along with the growth of economy. Both, investors and developers keep their eye on condominium

market and economic cycle to respond any variance at the planning stage of the development in order to maximize profit (Foo and Sing, 2001).

According to Ooi and Le (2011) property developers are price setters in property market. The supply of previous quarter has inverse relationship with price in primary market. But prices react positively with new supply in secondary market.

Condominium demand can mainly be classified as natural factors and customer specific factors. Condominium supply can mainly be classified as developer related factors and external factors (Senaratne et al, 2006).

Gunawardena and Samarajewa (2005) mentioned that Sri Lankan property developers are competing tremendously. With that competition, Colombo district has shown a high growth and contribution to the national economy over the years. Continuous incensement of demand for the residential real estate and is poised Sri Lanka to be the Centre of Asian property market in the near future (Dias et al, 2018). However, demand for condominiums are increasing faster than its supply which created short term shortage and high or over prices. However, it is expected that market equilibrium will bring the price and quantity to an equilibrium point (Sriviboon & Wongleedee, 2019).

Sri Lankan condominium market shows similar conditions to condominium market in Jakarta, Bangkok, Phnom Phen and Metro Manila where the condominium market yet to be matured. Tokyo, Shanghai, Taipei, Hong Kong and Singapore show more established condominium market (Dias et al., 2018).

2.11 Condominium market value determinant factors

House reflects user profile, personality, living condition, aspirations, socio-cultural identity and life-style of users, especially in condominiums (Sanoff, 2000; Ozsoy & Sadikoglu, 2017). Therefore, finalizing the purchase decision of a residential real estate (house, apartment or condominium) is a complex decision and buyers go through number of steps, analyze many factors prior to the decision (Levy , Murphy, & Lee, 2008; Ratchatakulpat, Miller & Merchant, 2009).

As per buying process introduced by Iman, Pieng and Gan (2012) there are evaluative criteria identified by many authors in their studies even for condominiums. Also, as

most customers concern on few common factors, it is understood that what are the most critical factors in value determining (Sriviboon & Wongleedee, 2019).

Smith (1969) derived residential property prices as a result of construction costs, land costs, vacancy rates, mortgage costs, availability of private and public mortgage credits, seasonality, the price of alternative goods, the cost and availability of loans per family stock of residential units. Later, according to Neo classical theory of equilibrium demand and supply, Hendry & Wallis (1984) concluded that price of residential real estate as a function of personal disposable income, rental rate, interest rate, stock of mortgage, tax rate and number of families.

Bujang and Zarin (1999) listed down location, building characteristics, size, recreational facilities, view, marketing, financing, management, climate, investments and developer reputation determine market value. Also, economic factors like GDP, inflation rate, urbanization, mortgage finance, population growth rate and income level influence on demand of condominiums. Similarly, Gunawardena and Samarajeewa (2005), extended their studies towards condominiums and recognized that stability and durability of structure, use of space, adequacy of ventilation, safety and security, spatial movement-access, basic services and maintenance, external building envelop, social needs and environment and surrounding as essential aspects.

According to Senaratne et al., (2006) location, attractiveness in design, attractiveness in price, flexible payment plan, reputation of the developer, quality of the product and services offered have impact on customers buying decision. Authors further described that prestige value, security and quality of the neighborhood encouraged customers to purchase condominiums.

Wijewardena (2005), emphasis that better development of public transport, security, public utility services and central sewer and waste water system will increase the demand and market value of condominiums. Also, location, price, facilities, demographic characteristics identified as determinants of living in condominium (Ariyawansa and Udayanthika,2011).

Karunasena and Ranatunga (2008) stressed their studies on customer satisfaction and they found that developers have not paid attention on in-door air quality, waste disposal method, parking space, ease maintenance, energy efficient features, location

of staircases, landscaping. Also, they discussed developers have paid attention on location, regulation and approvals, quality of finishes, quality of workmanship, structural integrity, fire protection system, quality of material, appearance, size and location of opening. It shows that the items which developers paying more attention are the important factor on determine the value. Developers can pay attention on those unsatisfied areas and obtain repetitive interest of customers.

In addition, Gebrewold (2015) grouped seven value determining domains as, structure and space domain, affordability domain, accessibility domain, utility and service domain, sanitation domain, neighborhood attraction and noise and security. Under those domains it further described to quality of the construction, housing cost and available finance solutions, location, time and cost to access for services, accessing sharing facilities, safe and secure feeling among good neighborhood as value determining items.

Study of Jayalath (2016) stressed condominium market value determinant factors under six categorize as location factor, physical factor, neighborhood factor, community factor, environment factor and subjective factor. He identified that location, physical, neighborhood and subjective factors indicate high relationship with market value of condominiums. In the study of Sriviboon and Wongleedee (2015) stated that location is the most important factor among other evaluation criteria. Price, discount, bank support, project image, facilities, surrounding area, developer and after sales services have become other factors which highest to lowest importance level respectively. Many authors (Senaratne et al, 2006; Ariyawansa & Udayanthika, 2011; Al-Nahdi & Ghazzawi, 2015; Jayalath, 2016; Sriviboon & Wongleede, 2015) identified Location, work place accessibility and accessibility of public facilities, peaceful environment as most important factor on determine market value with customer requirements.

Market value of any product will be depending on supply and demand factors. Foo and Sing (2001) evaluated macro-economic determinants of condominium prices under demand related factors and supply related factors. Demand related factors are demographic factors, personal disposable income, stock price, commodity price, expected appreciation, mortgage interest rate, tax rate and money supply. Supply related factors, land cost, construction cost, prime lending rate, cost of capital,

inflation, expectation of price changes, completions and housing stock. Investors consider condominium purchase as an investment option only if the rental yields and property value appreciation is attractive.

At many occasions, condominium unit owners tend to rent the unit for short or long period (Disaratna et al, 2017). Condominium owners prefer to obtain 3.62% to 6.35% ROI from operation (Dias et al, 2018). Rate of occupancy detail shows how easily the property can be rent out for the purchasers who looking for investment option. Luxury segment occupancy rate shows higher rate than super luxury segment. It shows that there will be a high demand in luxury segment in future (Senarathne et al, 2006).

Study of Foo and Sing (2001) elaborate that finance institution play a vital role in real estate market as an alternative source of capital funding and adds liquidity to development via mortgage loans. These mortgage loans regulated by government monetary policies and it has an impact on the amount of new mortgage loans. Along with expansionary monetary policies, economic growth, mortgage rates, securitization of real estate industry will make real estate as a good alternate investment option in capital market. It will trigger strong demand in condominiums and depreciation of existing stock (Foo & Sing, 2001). According to (Senaratne et al, 2006; Ariyawansa & Perera, 2018) financing for condominiums is mainly via small portion of personal savings and major portion of private sector loan mechanism. So that, any developer who offers interest free or some easy payment scheme with BOI rates will naturally obtain higher demand (Senaratne et al, 2006).

De Alwis (as cited in Disaratna et al, 2017) identified that many developers are delay to setting up the management cooperation and it has an impact on maintenance issues, management fee collection and disputes between developers and owners. Sometimes unauthorized constructions in condominium facilities interrupt to the common areas, open spaces, public circulation places and may affect to aesthetic appearance of the condominium (Mirihaigalle, 2000). Management cooperation has the authority to make decisions relating to management of the property. Therefore, it has to perform efficient and effective specially in complex arrangements like mix developments (Disaratna et al, 2017). Silva and Silva (2015) discussed about condominium management and stated if the committee or developer can run the building on technical, management, legal and social aspects, it is easy to manage the property as a

sustain business. It shows the importance of having proper constitution for management cooperation and condominium rules and regulations in place at the time of entering to contract.

Physical factors like aesthetic values of the development, different designs to match the requirement, floor area, number of bedrooms, bathrooms, possibility of customization, facilities, parking, security measures, high tech and modern equipment, high speed lifts, club, restaurant, quality of the product, waste disposal and central sewer and waste water system, build up area considered as another important factor on determine market value of real property with customer satisfaction (Bujang & Zarin, 1999; Senaratne et al, 2006; Yang, 2008; Ariyawansa & Udayanthika, 2011; Al-Nahdi & Ghazzawi, 2015; Silva & Fernando, 2016; Ozsoy & Sadikoglu, 2017; Disaratne et al, 2017). Further they have mentioned that to maintain a two bedroom and three bedroom stocks and to limit four bedroom and five bedroom apartments.

Studies of (Bujang & Zarin, 1999; Senaratne et al, 2006) emphasized that the reputation and experience of the developer is another significant factor on determine market value. As per Gunawardena and Samarajeewa (2005) there is a big competition in between property developers. Senarathne et al, (2006) further illustrated that if the developer maintains good relationship with their buyers and maintain good and quality customer service with proper after sales services to satisfy the customers, it will be a turning point to buyers to compare price vs value. In the studies of (Ozaki, 2003) author stated that improving and maintain the customer satisfaction is the most important factor and it is the key of sustain in any business. Satisfied customers are the backbone of home building industry.

Same as general market believes, condominium developers also keep an eye and continuously evaluate the customer satisfaction from developers' point of view as well as customers' point of view for long term sustainability of the business (Karunasena & Ranatunga, 2008). They stressed their study for the quality of the product which is a collective outcome of quality of material, workmanship and finishes, maintain consistent quality which is directly linked with the reputation and credibility of the contractor. Quality of locality, construction quality, facilities, ownership have impact on market value of condominiums (Bujang & Zarin, 1999). Senarathne et al (2006) mention that customers are more informed, aware, more knowledgeable on

satisfaction factors and it keep arising customer expectation, competition and setting higher benchmark to quality aspects for both developers and contractors. It is essential in secondary market as well. As per Ariyawansa and Perera (2018) quality evaluate by maintenance, legal approval for variations and landscape quality within the premises.

With references to previous studies, Al-Nahdi and Ghazzawi (2015) mention that person's attitude, intention, friend's influence and reference groups play a critical role on finalizing the purchase decision. Attitude is affecting on behavior of individual and it influences customer's intention to buy durables (Gibler & Nelson, 2003). Purchase of a product affected by perception of consumers which the social pressure put on them by known parties intentionally or unintentionally (Kalafatis et al, 1999; Sangkakoon, 2014). Those factors influence on person's behavior and their purchase decisions of condominium and it has an impact on market value of condominiums. Sali, Khan and Naseema (2013) identified when there are lot of developers, confusing marketing materials, mixed opinions of reference groups, fear of being debt trapped and lack of family support, buyers feel less confident on deciding on their own and seek references.

Therefore, it is essential to identify target group when developers run the marketing campaign of their condominium category. Understand on demographic background of pool of customers will make marketing campaign more effective (Silva & Fernando, 2016). Also, Ariyawansa and Udayanthika (2011) identified demographic characteristics as a determinant of living in a condominium.

Demography is a study on characteristics of human population of particular area such as size, growth, density, distribution, diminution proportion living, being born or dying related to a function of fertility mortality and marriage, sex, occupation, education (Bujan, Jumadi & Zarin, 2010). Silva and Fernando (2016) pointed out to target, well-educated males in the age of 30-50 who are top level managers and professionals have an income of minimum LKR 0.5 million per month, business persons who involved in automobile, textile, construction, gold, gem, diamond, hotel, export and import, tea industry and branded retails items, participate and be a visible party in investment conferences, nonresident Sri Lankans who work in foreign countries like USA, UK, Canada and European countries.

2.12 Summary

The sequence of this chapter developed with the flow starting from real estate definition to condominium market value determinant factors as mention in the introduction in order to achieve aims and objectives of this research.

There are four real estate categorize as residential, commercial, industrial and agricultural. Among those residential real estate is most sensitive category. Residential real estate developed to condominium concept from a Roman concept of living in individual houses but share common facilities. Meaning of the Latin word condominium, individuality and commonality, it is self-support that idea. In Sri Lankan context, this concept started to establish since 2005 from apartments and nowadays to mix development skyscrapers as a trend in the industry. These condominiums categorized as semi luxury, luxury and super luxury based on the facilities available in the development. Act No. 12 of 1970 is the initial AOL of Sri Lanka and now UDA, CMA and CB also became as governing bodies once condominiums developed as a business module.

There is an impact from supply and demand factors on condominium market value like normal goods. But it is not the main factor determine the market value of condominium units because of the unique features of condominium development and individual parcels.

There are multiple factors discussed in previous research articles which were categorized under location factor, physical factor, neighborhood factor, community attribute, time-related attributes, environmental attributes and subjective factors. Factors identified in literature as market value determinant factors of condominiums were listed down in below table. These factors were discussed and enhanced with experts to include latest industrial knowledge and use in questionnaire survey which discussed in next chapters.

Table 2.12-1 Market value determinants of high-rise condominiums

Determinants	
Location	Active behavior of management cooperation
Convenient access	Availability of information about project
Noise level	Developer
Neighborhood	Customer service
Security	After sales service
Facilities	Buyer's attitude
Surrounding (View)	Buyer's first impression
Contractor	Marketing and advertising
Layout	Pressure of reference groups
Size	Flexible payment plan
No. of bed rooms	Government regulations
Project image	TAX policies
Funding partners	Competition
Consulting partners	Supply of previous quarter
Economic conditions	New supply
Rate of Return on investment	

CHAPTER 03**RESEARCH METHODOLOGY**

3.1 Introduction

Procedures used to derive answers for fundamental research question of identifying market value determinants of high-rise condominiums has been discussed in this chapter. Further it expands the research process and consequently describes the research process including research approach, data collection and analyzing techniques.

3.2 Research Process

Kothari (2004) explained that research process consists with series of interrelated steps having a defined sequence in order to resulted an effective research. Research problem mostly a practical problem which face by any professional within their industry or expertise area. Background study provides an idea on the existing situation of such problem and emphasis the aim and objectives through that. The aim of the study can be achieved through several objectives. After the background study, detailed literature survey was carried out relate to subject matter by latest researches and journals as much as possible. Data collection is a process consists of expert interviews, preliminary survey and questionnaire survey. Analysis was done based on the results obtained via expert interviews and questionnaire survey. Findings and conclusions of the study were derived based on the analysis performed on the inputs received from expert interviews and questionnaire survey.

Following flow chart illustrate the research process of this research.

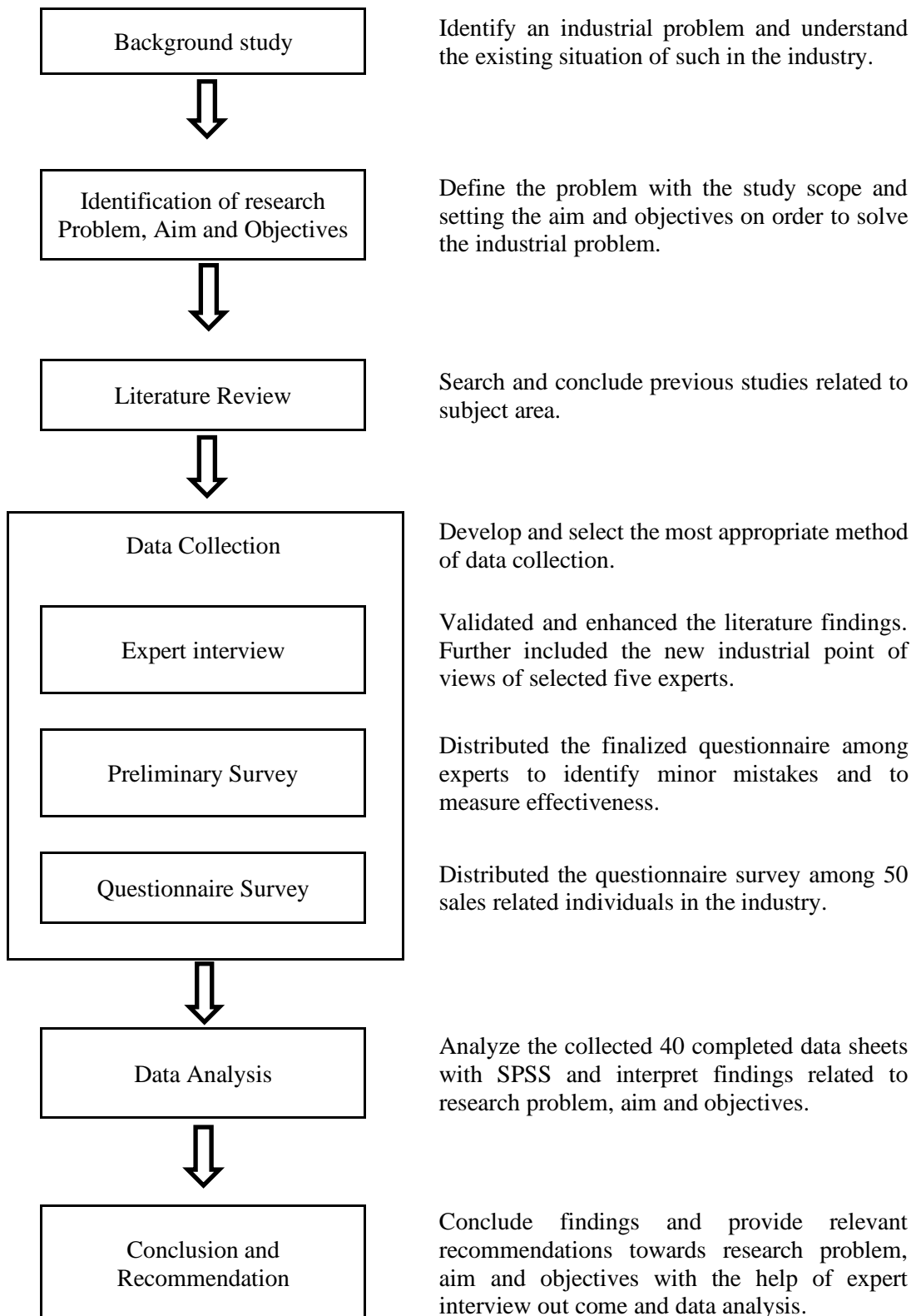


Figure 3.2-1 Research Process

3.3 Research Approach

There are two main categories of research approach as quantitative approach and qualitative approach. Survey researches and experimental researches identified under quantitative approach. Case study, action research, grounded theory and ethnography considered as qualitative approach (Taylor, 2010). Due to possible misinterpretation and imitation, researches use combined approach of qualitative and quantitative techniques at the same time or one after the other to make the research more effective (Cavaye, 1997). This mix methodology which has both qualitative approach and quantitative approach considered as Pragmatism (Taylor, 2010). In addition to that (Dawson, 2002) stresses these approaches and explained that qualitative research explores attitude, behavior, experiences and attempts to get an in-depth opinion of participants. Quantitative technique is about finding facts based on evidence or records. Depending on the nature of the study author has to select the suitable approach. According to the aim of the research to identify the market value determinants of high-rise condominium units in Sri Lanka, developers' perspective, the most appropriate approach for this type of studies can be identified as quantitative research approach compare to previous studies conducted on similar capacity and topics. Survey approach involves collecting data from a fraction of the population and simplifying findings with quantitative description for the population as a whole (Kraemer & Pinsonneault, 2002).

3.4 Data collection

Data collection process mainly divided into two segments as expert interviews and questionnaire survey. Method of selecting experts and sample described below.

3.4.1 Expert Interviews

Similar to the normal real estate market, high-rise condominium market also can be divided as primary market and secondary market. The primary market is the main concern in this research where developers involved in all transactions. Usually, every developer is really keen on sell-out the maximum number of condominium units during the construction period and handover the fully sold condominium development to homeowners' council. Apart from the completed and construction on-hold properties, there are about ten high-rise condominium developments in Sri Lanka.

(Marina Square, CCC, Capital Heights, Iconic, Prime Grand, Luna Towers, JK Properties, Havelock City, Capital Twin Peaks, One Address) competing in this segment at the moment to sell their condominium units while the construction is in progress. Five of the experts out of the above-mentioned developers have given their consent to participate for the expert interviews. Moreover, when we consider about the experience level of five experts as a whole, it captures the experiences of eight of above-mentioned development projects as they have worked on multiple said projects and completed projects previously.

Initially there are factors obtained based on the findings of the literature review and then with the input of the experts' interviews, those factors identified as market value determinants of the high-rise condominium units were verified and improved. In addition, with the current modernization concept and the trends in the society, the categorization of the existing facilities come under different pillars such as semi luxury, luxury or high luxury need to be updated accordingly. Thus, with the use of experts' knowledge categorization of the facilities were updated as per the modern requirements.

3.4.2 Preliminary Survey

Taylor (2010) stated that general data collection techniques are interviews, questionnaires, document survey, observation and participation. Among them, most useful, cheap and quicker option is questionnaire survey (Rowan & Huston, 1997). Preliminary survey is a trial version of the questionnaire in order to identify ambiguous questions, test the wording, test the data collection, test analyzing techniques and measure the effectiveness. Preliminary survey was conducted in this study as well for the same objective.

3.4.3 Questionnaire Survey

Detailed questionnaire survey was conducted to identify market value determinant factors of high-rise condominium development in Sri Lanka from the developers' perspective. Questionnaire was prepared as per literature findings and the input from structured expert interviews/ discussions.

3.4.4 Target population

Sales and marketing professionals of construction on going high-rise condominium developers, high-rise condominium valuers and real estate agents are the target population. The reason for considering the highrise construction on going properties is because that is the segment where developers have full control over the selling as there are no involvement of secondary market.

3.4.5 Sample selection

The sample was selected randomly from the list of sales and marketing professionals of couple of construction on going high-rise condominium developers, condominium valuers and real estate agents who involved in selling of high-rise condominium developments. Key individuals for the sample are sales and Marketing professionals, condominium valuers and real estate agents who has experience on high-rise condominium selling and valuating.

3.4.6 Sample size

Sampling as a technique of selecting a portion from a population which represent the population. Sample size is significant in reflecting the characteristics of the population (Taylor G. , 2010). According to the Thumb rule, sample size should be minimum 30. Depend on those factors and limitations, sample size of 40 selected among sales and marketing professionals, condominium valuers and real estate agents.

3.4.7 Questionnaire design

The verification of the market value determinants identified by the literature findings was done with the use of the input got via the experts' interviews. The questionnaire was finalized with the feedback of the preliminary survey and the outcome of the experts' interviews.

The questionnaire is consisted of two sections named as "Section I" and "Section II".

Section I- Demographic characteristics

First section designed to gather information about the respondent's profile.

Section II- Market value determinant factors of high-rise condominiums.

Second section designed to obtain and identify the market value determinants of high-rise condominiums from sales and marketing professionals of developers,

condominium valuers and real estate agents. For each factor 5 points have allocated as below;

5 = Strongly Agree

4 = Agree

3 = Moderate

2 = Disagree

1 = Strongly Disagree

3.4.8 Conducting questionnaire survey

The questionnaire was distributed via email and physical copies to professionals who are mainly involved in construction going on high-rise condominium sales. Then the responses were collected via email and hard copies.

3.5 Data analysis

Based on the research requirement there are applicable techniques that could be used as the data extraction mechanism to extract information from the completed questionnaires. In qualitative approach; textual, content analysis, combined textual and mapping techniques can be used (Razak, Ibrahim, Abdullah, Osman & Alias, 2013).

Descriptive statistics is about arranging, summarizing and presenting data in a logical manner to generate insights for decision making purposes. Mainly it consists of visualization of data with the use of graphs, tables which represent statistical measurements such as mode, mean, range, median etc (Taylor, 2010). Inferential analysis is used to reveal the relationship between independent and dependent variables. In this study, both descriptive and inferential statistical analysis techniques are used for analyzing purposes. Moreover, with the use of descriptive analysis techniques data presentation is done in Section I. In addition, techniques such as reliability tests, factor analysis and correlation analysis are used to conduct inferential analysis. All the descriptive and inferential analysis and outputs are generated via SPSS statistical software.

3.6 Summary

This chapter contains about the work process conducted to achieve the aim and objectives of this research study. With the extensive literature review, it was studied from the real estate concept to market value determinants of condominiums. Based on the aim and objective of the research study, qualitative research approach has been selected as research approach with survey approach. Data was collected via unstructured interviews and questionnaire survey. Data analyzing was done via SPSS software.

CHAPTER 04**DATA ANALYSIS AND RESULTS**

4.1 Introduction

This chapter contains the detailed analysis conducted for data collected via expert interviews and survey questionnaire as stated in the methodology chapter.

As the initial step, the experts' interviews were conducted in order to obtain their ideas and view on the literature findings. Those literature findings were presented in a table format to be verified and validated with the use of experts' interviews. For an example, there were factors added to the lists with the help of the expertise knowledge in the industry which was not covered in the literature review. The questionnaire was designed based on inputs and validated factors of experts.

The background information of the sample was presented with the use of visual illustration techniques.

As the first step of the data analyzing, the reliability test was conducted to check the reliability status of the data set. Thereafter, a deep analysis carried out once the collected data was verified with Cronbach's Alpha reliability criteria and KMO verification criteria. Then the elementary descriptive statistics were applied to identify the distribution of the dataset, statistics such as 'mean' value and 'standard deviation'. The descriptive statistics measurements of the main factors are derived based on the data presented under each sub factor category. Statistical measurements such as mean value, 95 percent confidence interval, median, variance, standard deviation, range, minimum value, maximum value, interquartile range, skewness and kurtosis values per main factor generated through the data collected for each respective subfactors. Distribution of the data collected under each main factor and sub factors is interpreted. Pearson correlation is used as the tool to measure the association in between independent and dependent variable. Finally, the relationships between dependent variable to each independent variable were identified with the use of statistical techniques. Thereafter, the most sensitive market value determinants were recognized as the factors determine the market value of high-rise condominium units in Sri Lanka.

4.2 The Expert Interviews

Five industrial experts were selected to conduct expert interviews as described in methodology. These expert interviews were scheduled to fulfil two main objectives as mentioned below.

Objectives for Expert interviews.

1. To verify literature review findings on determinants of the market value of condominiums and to review any new determinants that may have arisen with the evolving market and over the time to develop a conclusive questionnaire survey that incorporates all pertinent factors.
2. To verify and identify the traditional and latest facilities that determine if a condominium development is categorised as a Semi-luxury, Luxury or Super-luxury condominium development.

4.2.1 Profile of interviewees

Details of experts who participated for interviews as below.

Table 4.2-1 Details of experts

Expert Code	Experience	Designation
E01	15 years	Head of Sales
E02	11 years	Senior Business Development Manager
E03	8 years	Senior Business Development Manager
E04	10 years	Director Sales and Marketing
E05	20 years	Senior Sales Manager

The five experts chosen to offer a collective 64 years of experience in the condominium industry, while four of them account for 10 or more years of experience in each. They are currently working in senior management roles at their respective companies and their own sales teams work under them. Every one of them handles sales related operational aspects and also well-connected with real estate agents, condominium valuers and bank mortgage departments as part of their duties. Furthermore, every one of them overlook resale and rental requests of their customers with multiple cross functional teams. It can be considered that this team could add a significant contribution to this study with wide scope and multiple areas they handle for years of experiences.

4.2.2 Interview results of condominium categories

Responses regarding the condominium categorization based on different types of facilities were recorded and went through a step by step evaluation. The current understanding of categorization of facilities under different categories were relooked. It was clear that most of the facilities were under the same luxury categorization as identified via the literature review study. However, few facilities were categorized under one level down in luxury categorization due to current improved lifestyles of people due to modernization concepts. The experts clarified that the reason for such changes were market demand, increase in the quality of consumer's life style and changes to regulations. There were few facilities which incorporated into the condominium projects with the knowledge of experts and could be categorized under different luxury categorizations.

For an example, garbage disposal facility has changed into Waste management system, sewer treatment plant, central gas supply from tap have become compulsory functions with existing regulations of the country for any condominium. Garbage chutes were prohibited and systems for garbage segregation have become a compulsory factor. Further, experts mention that swimming pool should be full-length swimming pool, gymnasiums to be fully equipped gymnasium and convenience store changed as mini mart with the upgraded consumer lifestyles.

The below table depicts the shift in facilities according to expert comments which listed according to literature under each category.

Table 4.2-2 Shift in facilities

Facility	Literature findings		Category in 2020		Responses
	Super luxury	Luxury	Luxury	Semi luxury	
Air conditioning		√		√	E1,E2,E3,E4,E5
Gymnasium		√		√	E1,E2,E4,E5
Central gas supply		√		√	E1,E2,E3,E4,E5
Backup generator	√			√	E1,E2,E3,E5
Service elevator	√			√	E1,E2,E4,E5
Kids' pool	√		√		E1,E3,E4,E5
Games room	√		√		E1,E2,E4,E5
Driver's rest rooms	√		√		E2,E4,E5
Walking tracks	√		√		E1,E2,E4,E5
Salon	√		√		E1,E2,E3,E4,E5

4.2.3 Categories of condominiums in Sri Lanka

Changes in the facilities due to regulations and demand in the market are elaborated under this topic.

As a result of market demand, visitors parking, multi-function hall, fibre optic telecommunication facilities, vehicle charging points or provision, car washing bay, driver's rest room, spa, roof top garden, domestic staff facilities, serviced apartments, storage facilities, Heli pad, business centres, shopping mall, access card control entrance, pet friendly areas or dedicated kennel, sport complex and cinema facilities within the project premises were added on to condominiums as new facilities in keeping with the changing lifestyle of consumers.

Below table define the newly added facilities and the category of those facilities belongs to.

Table 4.2-3 New facilities added to types of condominiums in Sri Lanka

Added facility	Category belongs to		
	Super Luxury	Luxury	Semi Luxury
Waste management system	√	√	√
Central Gas supply	√	√	√
Fire protecting and firefighting system	√	√	√
Fully equipped gymnasium	√	√	√
Visitors parking	√	√	√
Multi-function hall	√	√	√
Fiber Optic Telecommunication	√	√	√
Vehicle charging point	√	√	√
Car washing bay	√	√	√
Full length swimming pool	√	√	
Mini mart	√	√	
Sport complex	√	√	
Roof top garden	√	√	
Domestic staff facilities	√	√	
Access card control entrance	√	√	
Serviced apartments	√	√	
Storage facilities	√		
Helipad	√		
Business center	√		
Shopping mall	√		
Pet friendly area	√		
Cinema	√		

According to the responses collected by experts on changes in segmentations of existing facilities and with the consideration of changes in regulations, proposed additional facilities under each condominium segments, recategorization of condominiums as semi luxury, luxury and super luxury was done for the purposes of this paper as detailed below.

This table also serve the purpose of answering the second research question of the categorization of facilities under different condominium categories.

Table 4.2-4 Condominium categorization

Facility	Super Luxury	Luxury	Semi Luxury
24/7 security	√	√	√
CCTV and emergency security system	√	√	√
Fire protection and fighting system	√	√	√
Passenger elevators	√	√	√
Service elevator	√	√	√
Master Antenna Television	√	√	√
Children's play area	√	√	√
Car ports	√	√	√
Balcony	√	√	√
Air conditioning to unit	√	√	√
Fully equipped gymnasium	√	√	√
Central gas supply	√	√	√
Backup generator	√	√	√
Hot water to Bathrooms and Pantry	√	√	√
Visitors parking	√	√	√
Multi-function hall	√	√	√
Fiber optic Telecommunication	√	√	√
Vehicle charging point	√	√	√
Car washing bay	√	√	√
Waste management system	√	√	√
Sewer treatment systems	√	√	√
Restaurant	√	√	
Bar	√	√	
Laundry	√	√	
Full length swimming pool	√	√	
Kids' pool	√	√	
Games room	√	√	
Driver's rest rooms	√	√	
Walking tracks	√	√	
Salon	√	√	

Spa	√	√
Mini mart	√	√
Sport complex	√	√
Roof top garden	√	√
Domestic staff facilities	√	√
Access card control entrance	√	√
Serviced apartments	√	√
Sauna	√	
Three tier security system	√	
Storage facilities	√	
Helipad	√	
Business center	√	
Shopping mall	√	
Pet friendly area	√	
Cinema	√	

4.3 Questionnaire Survey

4.3.1 Questionnaire data collection

The questionnaire was finalized with the use of literature findings and expert inputs. The survey carried out by distributing fifty (50) questionnaires to head of sales, sales senior managers, sales managers, sales assistant managers, valuation professionals and real estate agents. Among the fifty (50) questionnaires, forty-three (43) were returned within the expected time frame, out of them three (3) questionnaires were rejected due to in-completion. Therefore forty (40) completed questionnaires were selected for the analysis. The responses of those selected set of questionnaires were entered to the SPSS (Statistical Package for Social Sciences)-23 software and the analysis has been carried out.

4.3.2 Profile of the sample

Target population of this research study consists with business development teams, valuers and real estate agents involved in construction ongoing high-rise condominium selling in the current market. The sample profiling was done as a background analysis of the sample according to the details gathered in Section 1 of questionnaire survey with demographic characteristics. The demographic factors such as working experience, working capacity and performance level were displayed to get a subject related understanding of the sample which represents the population.

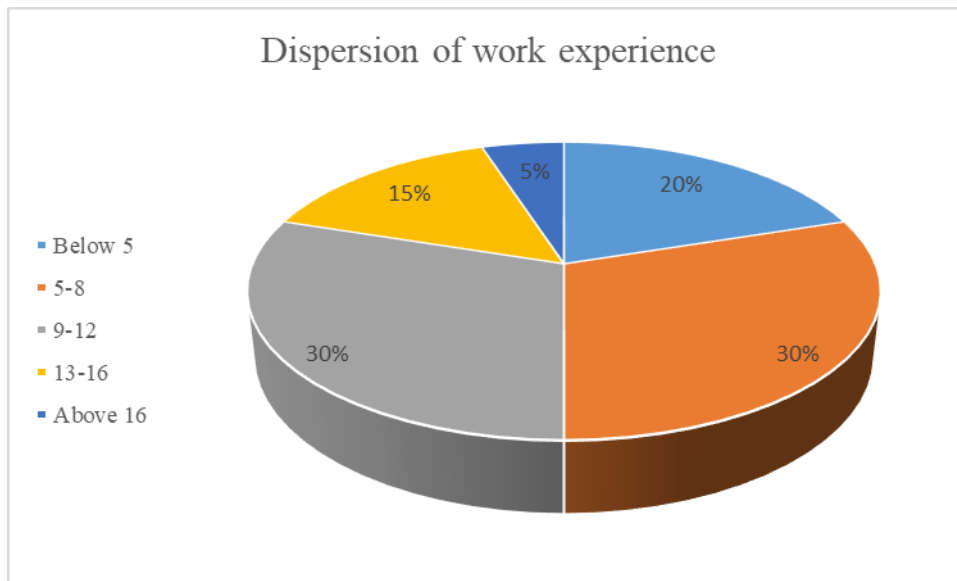


Figure 4.3.2-1 Distribution of experience of respondents

If we categorize the total respondents according to the number of years of experiences, 50 percent of respondents show 9 or more years of experience in the field and 30 percent of respondents have minimum 5 to 8 years of experience in high-rise condominium selling aspect. This shows a positive impact towards the validity of the data provided as they have a significant number of years of industrial knowledge.

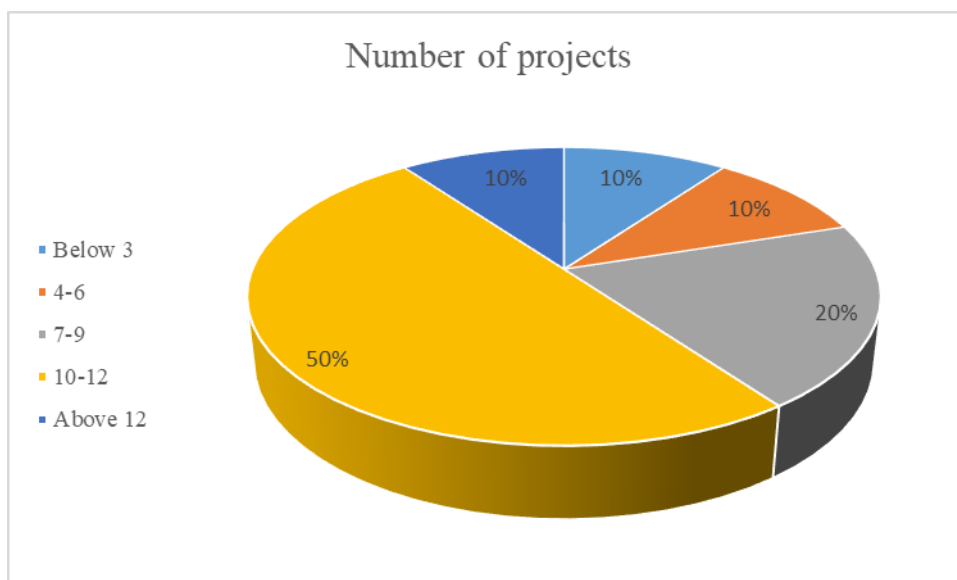


Figure 4.3.2-2 Distribution of experience based on number of projects involved

It was identified that 60 percent of respondents have minimum 10 different high-rise condominium project selling/ valuation related experience and 10 percent has more than 12 numbers of project experience. In general 60 percent from total respondents

have 10 or above number of multiple project experiences. Also, 20 percent has 7 to 9 number of project-wise experiences and 10 percent of total respondents shows 4 to 6 number of project experiences. Same as previous figure it is a good narration because higher percentage of respondents have significant levels of experience in their profession in different high-rise condominium projects throughout their number of years in the industry.

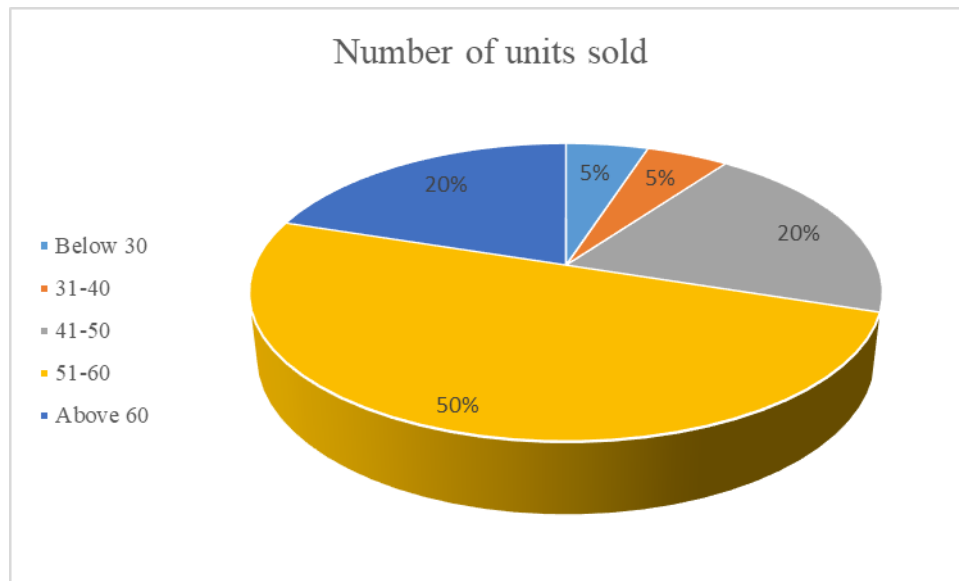


Figure 4.3.2-3 Distribution of performance based on number of units sold

Among the total respondents, 20 percent has sold/valued more than 60 condominium units in their career and 50 percent has sold 50 to 60 condominium units. Balance 30 percent split in between 50 units or less than that. Even from that 30 percent, 20 percent of respondents have sold 40 to 50 number of condominium units. In general, 95 percent of respondents have sales aspect experience of minimum 30 condominium units.

Above illustrations concluded from questionnaire Section 1 indicate significant level of positive impact towards validity and reliability of data because of the expertise level of the selected sample proven with individual performance level.

4.3.3 Reliability and Validity of Data

Reliability of a data set has been explained by Joppe (2000) as the degree to which findings measured within a specific time interval indicate that a proper amount from the population has been taken in to the study. Cronbach's Alpha reliability test is the

most common test used to find out the reliability of questionnaire-based data set. Cronbach's Alpha of reliability is a numerical value vary among 0 and 1 (Heale & Twycross, 2015). If the Cronbach's Alpha value is close to 1.0, it gives an indication that the data set is reliable and recommended to accept the study instrument if the value is above 0.7 (Ratner, 2009). Below table shows the Cronbach's Alpha values obtained for this study.

Table 4.3-1 Cronbach's Alpha Test

Factors	Item	Cronbach Alpha Value
Location factor	6	0.924
Physical factor	10	0.862
Investment factor	8	0.786
Subjective factor	8	0.782
Market factor	8	0.879
Condominium market value factor	8	0.811

As indicated in Table 4.3-1, Cronbach's Alpha value of every independent variable and dependent variable is above 0.7. It is an indication that all the variables of this study have fulfilled and passed the reliability criteria.

Validity of the results needs to be checked once the reliability passes it's threshold. Validity of the study indicates whether the study measures the real criteria and how much real the collected results are. Basically, it is a measure that gives an idea whether the research instrument is on the process of achieving research objective (Joppe, 2000). Simply, it is a measure of appropriateness for factor analysis conducted with Kaiser-Meyer-Olkin (KMO). It is a numerical value that varies between 0 to 1. According to the Theory for KMO test, every value should be above 0.5 to continue the analysis. Further, values between 0.5-0.7 are considered mediocre, values between 0.7-0.8 are considered good, values between 0.8-0.9 are considered great and vales above 0.9 are extremely acceptable (Jayalath, 2016). Values less than 0.5 or close to 0 will indicate significant incomplete correlation and it is not appropriate for factor analysis and corrective actions should be taken. Same as KMO values, significance of Bartlett's values also indicates the validity of variable (Statistics How To, 2016).

Table 4.3-2 KMO and Bartlett's Test

Variable	KMO	Bartlett's Test	
		Chi-Square	Sig.
Location Factor	0.813	188.454	0.000
Physical Factor	0.755	216.092	0.000
Investment Factor	0.671	164.829	0.000
Subjective factor	0.775	134.889	0.000
Market factor	0.834	209.217	0.000
Condominium market value factor	0.720	164.737	0.000

As indicate in Table 4.3-2, KMO results obtained for location factor and market factor are 0.813 and 0.834 respectively and can be considered as great validity according to statistical theories. Values for physical factor and subjective factor are in the range of good validity which is in between 0.7 to 0.8 range. Investment factor shows the lowest value with 0.671 which is in the mediocre range. All KMO values per variable show a value higher than 0.5. It indicates that all the variables of this study have fulfilled and passed the validity criteria for further analysis. Also, Cronbach's Alpha test and KMO table generated as partial achievement of the second objective of exploring the factors that affect the determination of the market value of high-rise condominiums. Bartlett's significant values for all variables are lesser than 0.05. Therefore, all the variables achieved significance level of the parameter, fulfilled and passed the validity criteria.

4.3.4 Descriptive measurements of variables

This analysis focuses on to identifying the market value determinants of high-rise condominiums and determining the correlation of each factor for the market price of high-rise condominiums. In order to achieve the said main objective of the study, this section explains the descriptive measurements of every selected and verified variables.

4.3.4.1 Interpretation of descriptive measurements

The analysis carried out mainly focusing on mean, standard deviation, maximum and range values of every sub factor and main factor. Higher mean value shows that most of respondents were agreed the factor as a market value determinant for high-rise condominium. Maximum value and range provide an indication that whether trend of the responses in agreed range or disagreed range.

Table 4.3-3 Descriptive statistics measurements of sub factors

Factor	Sub Factor	N	Mean	Std. Deviation
Location Factor Mean – 4.15	Proximity to workplace	40	4.23	0.800
	Proximity to school	40	4.22	0.620
	Convenient access	40	4.17	0.874
	Proximity to road network	40	3.88	0.992
	Proximity to public transport hubs	40	4.10	0.871
	Proximity to shopping center	40	4.30	0.791
Physical factor Mean- 4.11	Layout	40	4.38	0.740
	Usable area	40	3.90	0.900
	Common area space allocation	40	4.40	0.591
	Quality & Standards	40	4.30	0.853
	Features and fixtures	40	4.28	0.784
	Project image	40	4.32	0.859
	Security and safety measures	40	4.45	0.677
	2 Bed room condominium unit	40	4.35	0.770
	3 Bed room condominium unit	40	4.28	0.784
	4 Bed room condominium unit	40	3.40	1.257
Investment factor Mean- 3.69	Rate of Return on investment	40	3.30	1.091
	Price revision cycle	40	3.28	1.176
	Rental market growth	40	3.28	1.198
	Financial transparency	40	3.60	0.982
	Construction bound payment plans	40	4.47	0.751
	Funding partnerships/ Tripartite	40	4.48	0.933
	Interest rates	40	4.32	0.997
	TAX policies	40	2.80	1.400
Subjective factor Mean- 3.9	Customer service	40	4.37	0.740
	Recommendation of reference groups	40	3.18	1.430
	After sales service	40	4.25	0.927
	Buyer's attitude	40	3.63	1.005
	Consulting partners	40	3.58	1.083
	Government regulations on developments	40	4.23	0.800
	Approvals	40	4.22	0.620
	Active behavior of management cooperation	40	4.17	0.874
Market factor Mean- 4.08	Developer's market share	40	3.88	0.992
	Contractor's market share	40	4.10	0.871
	Economic conditions	40	4.30	0.791
	Target market awareness	40	4.38	0.740

High-rise condominium market value factor Mean- 3.83	Competition	40	3.90	0.900
	Supply of previous quarter	40	4.40	0.591
	New supply	40	4.30	0.853
	Existing demand	40	4.30	0.791
	Construction cost	40	4.32	0.859
	Sales cost	40	4.45	0.677
	Mark up percentage	40	4.35	0.770
	Future demand	40	4.28	0.784
	Pre-sold percentage	40	3.40	1.257
	Bargaining power of customer	40	3.30	1.091
	Political situation	40	3.28	1.176
Clear title	40	3.28	1.198	

When consider about the subfactors of location in overall, proximity to workplace, school, shopping center play a significantly higher role compared to the other sub factors. The subfactors such as proximity to road network and public transport hub have a comparatively lesser mean value, may be because the condominium owners mostly use private transportation in a Sri Lankan context and in general, factors such as public transport hub is a less influencing sub-factor under location factor. But they required convenient access to the development and it has high mean value. It shows customers prefer easy access and some peaceful living which slightly away from main roads. With the descriptive statistics we can understand that all factors in location factor has an impact on determine market value of high-rise condominiums.

Under the next main factor which is physical, security and safety measures has the highest mean value which implies the fact that as a sub factor, safety and security plays a significant role when it comes to determining the market value of high-rise condominiums. The next most important sub factor is that having a common area with a space allocation. Moreover, the mean value of responses under the number of bedrooms in a condominium unit indicates a pattern. It shows that having a higher number of rooms does not influence much on the market value of the high-rise condominiums. In addition, layout, quality and standards, features and fixtures and project image also have a significant level of impact over market value as per the main descriptive statistics of the survey results.

The third main factor is the Investment factor and the highest contributing sub factors under this, are construction bound payment plans, financial transparency and the

funding partnerships. Thus, it can be stated the financial security is the main concern of a person who go for a high-rise condominium as an Investment. The next most leading sub factors are rate on return on investment, price revision cycle and rental market growth, which imply the fact that return on capital is a considerable factor when it comes to determining the market value of high-rise condominium. The interest rate also plays a major role under the investment factor. When the interest rate is low, investors tend to go for a bank loan which means an execution of a tripartite which enhances the security of the investment. Therefore, the installment that an investor would pay for the bank on a monthly basis would be comparatively low. This increases the affordability of an investor and this creates a tendency to invest in multiple clusters, which mitigate the risk of an investment with the use of diversification. The sub factor tax policy depicts a lowest mean value, out of all the sub factors which comes under investment factor towards determining market value for high-rise condominium units.

As stated in literature review healthy factors of real estate market are good economic conditions, supply of previous quarter, high new supply and existing demand. Similarly, these factors show a high influence in determining the market value of high-rise condominium under market factor as it has a high mean value. The contractor's market share is also a sensitive factor and it also has a comparatively high mean value as customers are really concerned about the contractor especially when it comes to high-rise condominiums. According to the stats, the developers are more concerned about the target market awareness, as there are a limited number of high-rise condominium developers in the market and they cater a niche market. Since customers look for the best option which suits for their requirements the competition and the developer's market share show low mean values.

There is a set of subfactors comes as subjective factor. The highest mean values come under customer service and after sale service. Further, approvals, government regulations and active behavior of management cooperation indicate high influence on market value determining. It shows that developers have to maintain good relationship with customers of previously completed projects in order to be success on-going property. However, being satisfied with a service provided is subjective from customer to customer and according to stats, overall service is a factor which impacts on the market value of high-rise condominiums in Sri Lanka. In addition, there are

factors such as buyer's attitude, consulting partner for the development and recommendations of reference groups show a comparatively low mean value. The decision of buying a condominium highly depend on those three sub-factors and but there is a less impact that it could make on market value of high-rise condominiums.

Under condominium market value factor, sub factors such as construction cost, sales cost, mark up percentage and future demand show a high mean value as it directly impacts on the market value. The sales cost can be defined as a collection of marketing cost, incentive and commissions. The pre-sold percentage also has a significant mean value, which means there is a high existing demand. Therefore, usually there are several price revisions take place to increase the prices of available apartments. Bargaining power of customer also shows moderately high value which confirms that it has an impact determining of market value of high-rise condominium units. The subfactors such as political situation and clear title have comparatively lower mean values. The political situation has a clear impact on buying decision, but it shows a less impact on incurred cost and determine market value high-rise condominium units. If tripartite agreements and bank project loans are approved, it can be considered that there is a clear title too. Therefore, clear title as a single subfactor has a lesser impact on high-rise condominium market value factor.

Table 4.3-4 Descriptive statistical measurements of main factors

	Mean	Median	Std. Deviation	Minimum	Maximum	Range
Location Factor	4.15	4.25	0.70791	2.33	5	2.67
Physical Factor	4.1197	4.05	0.6199	2.9	5	2.1
Investment Factor	3.6906	3.75	0.68465	1.88	4.63	2.75
Subjective factor	3.9531	4	0.60625	2.25	5	2.75
Market factor	4.0835	4	0.68225	2.75	5	2.25
High-rise Condominium market value factor	3.8313	3.875	0.65569	2.63	5	2.38

Table 4.3-4 depicts the summary of five main independent factors and the dependent factor. The mean value of all the factors are above 3.5 and the skewness of them are negatively skewed. Thus, all the factors are seemed to have a similar distribution. As per the data interpretation, the location factor and physical factor have the highest mean value as key factors contributing to market value of high-rise condominiums. Also, it is a known fact that the location is the highest concerning factor when it comes

to deciding of buying a condominium. The next most concerning factor would be the physical factors of the complex, the layout, space available etc. However, in overall all most all the factors are playing a significant role in deciding on the market value of high-rise condominium in Sri Lanka.

4.3.5 Correlation Analysis

Correlation analysis was carried out for each verified factor to fulfil the third objective of identifying factors that affect the determinants of the market value of high-rise condominiums. These individual correlations indicate the influence on market value only by that particular factor assuming there is no impact on high-rise condominium market value from other independent variables.

4.3.5.1 Summary Interpretation of Correlations

Relationship strength of any statistical analyse model will be shown by correlation coefficient. This is a value vary in between 1- (-1). Closer the value to 1 shows higher and strong positive relationship and value close to (-1) shows higher and strong negative association between the factors analysing. Pearson's correlation test was followed in this study to identify the level of association of selected variable.

Table 4.3-5 Correlation of independent factors to dependent factor

Factor	Correlation for high-rise condominium market value factor
Location Factor	.660**
	0
Physical Factor	.835**
	0
Investment Factor	.908**
	0
Subjective factor	.800**
	0
Market factor	.746**
	0

****.** Correlation is significant at the 0.01 level (2-tailed).
N=40

As per above table, the correlation between all main factors with the dependent variable, market value of high-rise condominium has positive correlations. The strongest positive correlation is shown with the main factor Investment. In real world,

out of all the key factors, first the buyer pay attention on the security of the money they pay to developer for an ongoing high-rise development which is an investment.

Physical factor shows second highest correlation with market value determining. Once the customer confidence with the investment only they are looking at most convenient layout, features and fixtures and status of the project which suit to their life style.

In order to finalize the buying decision customers are then looking at the subjective factors such as customer service, after sales services they get from the developer. Subjective factor shows third highest correlation with dependent factor.

Market factor shows comparatively low correlation because once the requirement arises and if the developer can reach the right customer at right time usually market factors have low influence on purchase decision. But it has a significant influence on market value determining with macro-economic factors.

The location factor shows lowest correlation with the market value of high-rise condominiums compared to other key factors. But location factor is the main factor influence on market value of real estate. Reason for this low correlation can be almost all the on-going high-rise condominiums located in heart of Colombo.

Due to that, the rest of the factors such as physical factors, market factors and subjective factors shows high correlation with market value of high-rise condominium units.

4.4 Summary

All the data collected via expert interviews and questionnaire surveys has been analyzed with the use of graphs and inferential techniques presented in this chapter. Initially, demographic data has been presented in graphs to identify that the respondents have relevant industrial experience. Along with expert interviews it has been identified that condominiums can be categorized into three segments as super luxury, luxury and semi luxury according to the facilities each development offers their customers. Depending on customers' life style change and requirements, new facilities will be added to those respective categories and some facilities become a common facility of development. Also, 5 factors; location, physical, investment, subjective and market factors, have been identified to further analyze via questionnaire survey after expert interviews.

Collected data via questionnaire survey was analyzed with SPSS software. Those analytical outcomes were presented in this chapter as statistical interface. It has been confirmed that location, physical, investment, subjective and market factors have significant impact on condominium market values with the statistical results obtained. Therefore, those independent factors can be considered as market value determinants of high-rise condominiums.

CHAPTER 05**CONCLUSION AND RECOMMENDATIONS**

5.1 Introduction

This is the chapter concludes the outcome of previous chapters discussing against research questions and objectives. Data was collected by questionnaire survey from experienced employees of selected developers and agents after validating the literature review findings via expert interviews. The results obtained via expert interviews and questionnaire surveys were analysed in the previous chapter in order to achieve the aim and objectives of the study. The comparative describe of Aim and Objectives with the analytical results will be discussed in this chapter.

5.2 Conclusion

Condominium developments have become one of the most competitive business models nowadays as a convenient life style solution for busy work schedules of people and also as a solution for limited land resources. This concept developed in the last two decades, has resulted in the vast visible rapid growth of the industry within the last decade along with the contribution of a few local and foreign developers.

The aim of this study is to examine market value determinants of high-rise condominiums on the developers' perspective in order to develop business of the industry in Sri Lanka. Developers can utilize those factors at the feasibility study stage of high-rise condominium development projects as well as a convincing tool at sales discussions. Having such an aim, this study was initiated with a detailed literature survey on every segment related to the topic starting from what is real estate to condominium market value determinant factors through describing real estate market, how did the condominium concept develop, evolution of condominium concept, trends of condominium developments, categories of condominiums in Sri Lanka, legal and regulatory background for condominiums in Sri Lanka, general market and market value determinants and residential real estate and condominium market whilst fulfilling every objective.

In order to understand how does the condominium concept establish in the market, the literature survey was designed with a focus certain subtopic. It consists of what does real estate mean, categories of real estate, key features of real estate, real estate market, healthy conditions for real estate market and how did condominium concept develop. First topic explains the roots of real estate, what it means and defines the word 'real estate' itself. There are four categories of real estate as residential, commercial, industrial and agricultural. Any of the above real estate segments show some unique functions as elasticity, high transfer cost, multiple risks, low liquidity, lack of transparency and no availability of published market data. Further it has been identified that property market is informal, less structured and highly diverse. Among the all real estate, residential real estate is most important as they have increasingly proven to be the solution for prevalent land scarcity and urbanization issues. This has resulted in the condominium concept gaining widespread popularity and recognition globally as convenient life style developed from Ancient Roman concept. The first objective of identify the development of high-rise condominium concept and first research question of how does condominium concept establish in the market were, thus, successfully achieved.

The second objective of the study is to identify the back ground of the Sri Lankan condominium market, market trends and existing condominium categories. In order to achieve said objective, same as previous objective, it has been divided to segments as evolution of condominiums in Sri Lanka, trends of condominiums, categories of condominiums, legal and regulatory background of condominiums and residential real estate and condominium market in Sri Lanka. Sri Lankan residential real estate also developed from individual house, mansions, duplex, apartments, condominiums and nowadays as mixed developments. Along with the establishment of condominium law, CMA, the UDA's involvement in condominiums, made the market more stabilized and regularized. In a Sri Lankan context, condominiums have been categorized into three segments as super luxury, luxury and semi luxury according to the facilities provided. Those facilities were identified and categorized in the analysis stage. Said second objective of the study and second research question of what are the factors that make a condominium development as a semi luxury, luxury or luxury were successfully achieved via detailed literature review and analysis.

Third objective is to explore the determinants of market value of high-rise condominium units. Literature survey was conducted to understand general market behavior and market value determinants prior to identifying the market value determinant factors of condominiums. Even though Supply and Demand factors describe price variation in general goods; that is not a main factor which determines the value of condominiums as the real estate market has some unique qualities in itself. Therefore, to achieve the objective, we have to consider the market value factor rather than just only the price factor. Based on the value factor for condominiums, literature survey carried forward to identify evaluative criteria for condominiums. Expert interviews were conducted to validate such findings. After those expert interviews, condominium market value determinant factors have been identified as construction cost, sales cost, mark up percentage, future demand, pre-sold percentage, bargaining power of customer, political situation and clear property title. Further, five main factors were identified as market value determinants of condominiums. Those factors are Location factors, Physical factors, Investment factors, Subjective factors and Market factors. Third objective of exploring factors that affect the determination of market value of high-rise condominium units has been successfully achieved through literature and expert interviews.

Those selected factors were justified via correlation analysis done for data collected by questionnaire survey. According to the inferential analysis all the above factors have shown significant positive correlation with the market value of condominium units.

Among those factors, Physical factors and Investment related factors have emerged as the most influential factors on determining the market value of high-rise condominium units. Subjective factor and market factor also showing high influence on determining the market value and location factor shows low influence comparatively. Developers have to use factors which are within their control as convincing tools and match customers' behavioral pattern changes and economic and political changes over the construction period. Fourth objective of assess the extent of contribution of each factor towards the market value of high-rise condominium units was answered with the use of inferential statistic techniques. Same way those factors can be identified as most

influencing factors to build the sales conversation and use as convincing tool for customers to invest on high-rise condominium units.

Location factor consists of proximity to work place, schools, road network, public transport hubs, shopping center and convenient access. When we go through literature, location is one of a most important criteria on any immovable asset.

Physical factor consists of layout, usable area, common area space allocation, quality and standards, features and fixtures, project image, security and safety measures and number of bedrooms. This is another critical function when looking at condominiums. Because real estate investment is a life time investment for many customers or deviate from a big house to a compact structure as a convenient option.

Investment factor consist of Rate of return on investment (ROI), price revision cycle, rental market growth, financial transparency, construction bound payment plan, funding partnerships/ tripartite, interest rate and TAX policies. Customers who made condominium purchases as a life time investment have no major impact on ROI, price revision and rental market. But construction bound payment plans, strong fund partnerships, interest rates create a major attraction on both investment option seekers as well occupation seekers.

Customer service, recommendation of reference group, after sales service, buyer's attitude, consulting partners, government and regulations and active behavior of management cooperation discussed under subjective factors. Apart from government regulations all the other factors are under the control of the developer or developer can influence the factor. Treating subjective factors as an important area will create a good brand name for the developer among the community. This will lead a competitive advantage for the developer.

Finally, data about developer's market share, contractor's market share, economic conditions, target market awareness, competition, supply of previous quarter, new supply and existing demand were collated under market factors. Any individual developer has minimal influence on these factors but it is a challenge to all developers as businesses to increase their market share while obtaining competitive advantages through proper risk management and accurate forecasting.

5.3 Recommendations

Condominium living concept has become the only solution to the urbanizing residential problem and land scarcity. There are a couple of well-known high-rise condominium developers in the market but all of them are private sector developers. If we are looking at a residential solution for urbanization and for land scarcity, the solution should be more affordable for every pay grade of the society. But as per the existing situation, all most all high-rise condominiums cater to very niche market and that segment is getting saturated with increasing options. Given such a situation, developers are finding it increasingly difficult to sell their product. After careful evaluation of literature review, expert inputs, data analysis and industrial experience below recommendations can be made to developers in order to successfully promote their business.

- Identify customer's real requirement of the customer and build the sales conversation.
- Provide clear clarification about what makes a project as semi luxury, luxury or super luxury prior to pitch the project as luxury or super luxury.
- Present market value determinant factors (Location, Physical, Investment, Subjective, Market) on the sequence of customer's priority requirements.
- Continue the discussion by emphasising investment point of high-rise condominiums.
- Developers to concern more on practical, high usable area, sufficient common area space and add on sustainable features and fixtures along with proper feasibility study.
- Developers to invest on customer service quality enhancing training programs for their employees and make sure front-line sales teams are well updated on the latest laws, regulations, transferring processes, and value engineering aspects to increase the confidence level of the customer at sale discussions.
- Central bank to be a regulatory body and make necessary steps to protect industry from short term policy changes and ensure healthy environment for high-rise condominium industry.
- Align risks, profit percentages to government long term policies.

- Establish compliance mechanism preventing ML/TF to be a sustainable business and maintain ethical sales and marketing strategy to foster healthy competition throughout the industry.

5.4 Limitations

1. There are about ten construction on-going high-rise condominium developments in the market and most of them are located in Central Colombo.
2. Only 40 condominium sales related professionals were selected via simple random sampling technique for the analysis and assumed that it reflects the total population.
3. Assume the respondents has provided unbiased response.
4. Experience of respondents are not related only for high-rise condominiums.

5.5 Further Research Areas

This research provides a correlation of selected independent factors towards dependent factor of high-rise condominium market value. Results were elaborated to use as a convincing tool at sales discussions to obtain competitive advantage.

Not all the condominiums are high-rise condominiums. Government has involved in to condominium development now. Future research can focus on market value determinants of low-rise condominiums as a revenue generation business model to government and other developers who are in the low-rise condominium developments.

The study can be enhanced to identify customer satisfaction factors of condominiums and utilize those factors on future project planning. Further it can be enhanced to identify buyer's purchase behavior to market the product well at right time to right customer. Study can focus on who will purchase how they purchase, when the purchase, why do they purchase and so on. The integrated feedback from both developers and customers can be used to develop a guideline for condominium development and influence on policy makers for sustainable future of the industry as another revenue generating option to the country.

5.6 Summary

This chapter consists of the conclusion of all the findings related to objectives of the study, recommendations made through the findings in order to achieve the aim of the study, limitation of the study to identify the barrier and assumptions and suggestions

for future study. Location, physical, investment, subjective and market factors have an impact on market value of high-rise condominiums. If developers pay much more attention on factors which can be controlled by themselves and invest on those items, they can obtain the competitive advantage which eventually lead them to market value setters and followers. Study was limited to Colombo area as high-rise condominiums are more centralized in Colombo. Further this study shows the path to future studies for low-rise condominium market value determinant factors and integrated study for customer satisfaction in condominiums as an eye-opener for policy makers and developers to match future customer requirement to sustain in the business.

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APPENDIX**APPENDIX – A****Expert interview****Section A****Preliminary Information**

Name -

Organization -

Designation -

No. of high-rise properties involved in last three years -

Section B

Following factors were identified as market value determinant factors of condominium units through literature review of similar studies done so far. Much appreciate if you could comment on those revealed factors and include any additional factors which is not here but has an impact on determining the market value of high-rise condominiums in Sri Lanka on developers' perspective. Selected areas will be used in Questionnaire survey to find out most sensitive factors.

No	Factor	Expert comment about factors for the questionnaire survey
1.	Location	
2.	Land and title	
3.	Convenient access	
4.	Noise level	
5.	Neighborhood	
6.	Security	
7.	Facilities	
8.	Surrounding	
9.	Contractor	

10.	Layout	
11.	Size	
12.	Construction cost	
13.	Sales cost	
14.	No. of bed rooms	
15.	Project image	
16.	Funding partners	
17.	Consulting partners	
18.	Economic conditions	
19.	Rate of Return on investment	
20.	Active behavior of management cooperation	
21.	Availability of information about project	
22.	Developer	
23.	Customer service	
24.	After sales service	
25.	Buyer's attitude	
26.	Buyer's first impression	
27.	Marketing and advertising	
28.	Influence from reference groups	
29.	Flexible payment plan	
30.	Government regulations	
31.	TAX policies	
32.	Mark up percentage	
33.	Competition	
34.	Supply of previous quarter	
35.	New supply	

Comments/ Areas to include to the questionnaire-

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Section C

Following items were identified as facilities available in semi luxury, luxury and high luxury condominium developments which create those developments as semi luxury, luxury or high luxury condominium. Much appreciate if you could comment on relevancy on those revealed items and include any additional facilities base on existing market demand.

				Comment
24 hours security	High luxury	Luxury	Semi Luxury	
CCTV and emergency security system				
Fire protection system				
Garbage disposal system				
Waste management system				
Sewer treatment systems				
Elevators				
Hot water				
MATV				
Children's play area				
Car parking				
Balconies				
Air conditioning				
Swimming pool				
Central gas supply				
Kids' pool				
Gymnasium				
Restaurant				
Bar				
Laundry				
Games room				
Convenient stores				
Driver's rest rooms				
Walking tracks				
Salon				
Mini mart				
Backup generator				
Service elevator				
Sauna				
Three tier security system				

Comments :

.....

APPENDIX – B

QUESTIONNAIRE

Name (Optional)

Organization (Optional)

Section 1 Demographic Characteristics

1 Gender?

Male Female

2 Age?

Below 30 31-40 41-50 51-60 Above 60

3 Experience in High-rise Condominium sales/ valuation

Below 5 5-8 years 9-12 years 13-16 years > 16 years

4 Your current Sales and Marketing role in organization?

Director
 Head of Sales
 Senior Business Development Manager
 Business Development Manager
 Assist. Business Development Manager
 Business Development Executive

5 How many high-rise condominium projects you involved on selling/valuating?

<3 4-6 7-9 10-12 >12

6 How many high-rise condominium units you sold/ involved on selling/ valuating?

Below 30 30-40 40-50 50-60 >60

Section 2

	DETERMINANTS OF MARKET VALUE FOR HIGH-RISE CONDOMINIUM UNITS IN SRI LANKA; DEVELOPERS' PERSPECTIVE	Score				
		1	2	3	4	5
		Strongly disagree	Disagree	Moderate	Agree	Strongly agree
1	Location Factor					
1.1	Proximity to work place					
1.2	Proximity to school					
1.3	Convenient access					
1.4	Proximity to road network					
1.5	Proximity to public transport hubs					
1.6	Proximity to shopping center					
2	Physical Factor					
2.1	Layout					
2.2	Usable area					
2.3	Common area space allocation					
2.4	Quality & Standards					
2.5	Features and fixtures					
2.6	Project image					
2.7	Security and safety measures					
2.8	2 Bed room condominium unit					
2.9	3 Bed room condominium unit					
2.10	4 Bed room condominium unit					
3	Investment Factor					
3.1	Rate of Return on investment					
3.2	Price revision cycle					
3.3	Rental market growth					
3.4	Financial transparency					
3.5	Construction bound payment plans					
3.6	Funding partnerships/ Tripartite					
3.7	Interest rates					
3.8	TAX policies					

Section 2

	DETERMINANTS OF MARKET VALUE FOR HIGH-RISE CONDOMINIUM UNITS IN SRI LANKA; DEVELOPERS' PERSPECTIVE	Score				
		1 Strongly disagree	2 Disagree	3 Moderate	4 Agree	5 Strongly agree
4	Subjective factor					
4.1	Customer service					
4.2	Recommendation of reference groups					
4.3	After sales service					
4.4	Buyer's attitude					
4.5	Consulting partners					
4.6	Government regulations on developments					
4.7	Approvals					
4.8	Active behavior of management cooperation					
5	Market factor					
5.1	Developer's market share					
5.2	Contractor's market share					
5.3	Economic conditions					
5.4	Target market awareness					
5.5	Competition					
5.6	Supply of previous quarter					
5.7	New supply					
5.8	Existing demand					
6	Condominium market value factor					
6.1	Construction cost					
6.2	Sales cost					
6.3	Mark up percentage					
6.4	Future demand					
6.5	Pre-sold percentage					
6.6	Bargaining power of customer					
6.7	Political situation					
6.8	Clear title					