

THE IMPACT OF COVID-19 PANDEMIC ON THE DEMAND AND SUPPLY OF APARTMENT PROJECTS IN SRI LANKA

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ABSTRACT

Apartment market can be recognized as one of the marketplaces severely affected due to the unprecedented global pandemic of COVID-19, which is currently driving towards a disequilibrium state. Hence, this paper aimed to investigate the impact of COVID-19 pandemic on the demand and supply of apartment projects in Sri Lanka. The qualitative research approach was followed in order to accomplish the research aim. A comprehensive literature review followed by fifteen semi-structured interviews were conducted with apartment industry experts during the empirical investigation. Collected data was analyzed using manual content analysis. The findings revealed, how each market determinant affected the demand and supply of apartments respectively during the COVID-19 pandemic resulting numerous challenges on the market participants, directing the apartment market towards a disequilibrium state. Urban living fears, demographic shifts, unemployment shocks, consumers' financial concerns, tourism crisis along with several other factors caused demand to be dropped while approval delays, lesser investments, lack of funding, developers' failures, market imperfection and construction delays majorly affect the supply of apartments. Although demand for apartments in some market segments showed recovery with the new normal adaptation followed by several positive market aspects, demand dropped within the rental market and upper tier remains constantly. However, supply side is worsening overtime since financial losses are lessening developers' supplying capabilities, while the crisis within the construction sector getting more affected due to the country's economic downturn.

Keywords: *Apartment Market Equilibrium; Apartment Rental Market; COVID-19 Pandemic; Demand and Supply.*

1. INTRODUCTION

In 1776, Adam Smith defined a principle known as “law of supply and demand”, which is effective in predicting the market behaviour, while it stands among the peak of several factors that influencing the market behaviour (Torab, 2018). Moreover, Akinbogun et al. (2014) identified the property market as an imperfect market, where the interaction of demand and supply is affected by constraining factors such as product heterogeneities, information scarcity, government interference, localized market and both demand and supply determinants. Koçi, et al. (2021) stated that COVID-19 pandemic has hit both

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demand and supply of almost every economic market resulting shocks within the demand and supply sides respectively. Therefore, with respect to the apartment market, implications of the COVID-19 pandemic have caused changes in the consumer behaviour and aggregate consumption patterns, ultimately affecting the factors that determine the overall housing demand, while overall supply is affected due to the market closures and economic downturn (Duca, et al. 2021). Since demand and supply of the housing units act as the key elements, which stabilize the fundamentals of the housing market, impact by the COVID-19 pandemic on both demand and supply has resulted market instability (Pomeroy, 2020). Gurran, et al. (2015) stated that continuous fluctuation can be observed in the housing markets with the imbalance between demand and supply that remains until the marketplace returns to a balanced situation where, both demand and supply are comparatively equal and acceptable. Although there are some researches on the COVID-19 pandemic impact on global real estate, there is a lack of a study on its impact on the demand and supply of apartment development projects. Hence, this paper aims to investigate the impact of COVID-19 pandemic on the demand and supply of apartment projects in Sri Lanka. This paper starts with a literature review on demand and supply of apartment projects with a special reference to COVID-19 pandemic period. Section 3 presents the research methodology followed in this study to achieve objectives. Section 4 presents the research findings and discussion followed by conclusions and recommendations in Section 5.

2. LITERATURE REVIEW

This section reviews the demand and supply determinants and the impact of COVID-19 pandemic on demand and supply of apartment projects.

2.1 DEMAND AND SUPPLY DETERMINANTS OF APARTMENT PROJECTS

Torab (2018) identified two parties who involves in any purchase procedure at residential real estate market as (a) supplier who offers residential unit for sale, and (b) consumer who desires to purchase that unit. Total product amount, which is desired by the consumer is defined as the “demand” and the total product amount offered by the supplier is identified as the “supply” (Tem and Yilmaz, 2018). Senaratne, et al. (2006) stated that factors affecting the demand for apartment projects can be mainly categorized into customer related factors and natural factors. A further review on the factors affecting the demand for apartment projects are tabulated in Table 1.

Table 1: Factors affecting demand for apartment buildings

Factor	References (<i>Details given below</i>)					
	[1]	[2]	[3]	[4]	[5]	[6]
Facilities and amenities	X	X	X	X	X	X
Population growth	X	X	X		X	X
Migration to cities and urbanization	X	X	X		X	X
Housing unit prices	X	X		X	X	
Investment trends			X	X	X	X
Location and infrastructure	X	X	X			X
Unemployment rate	X	X	X			

Factor	References (<i>Details given below</i>)					
	[1]	[2]	[3]	[4]	[5]	[6]
Household income	X			X		X
Tax level		X		X	X	
Level of rents	X	X				
Consumer preferences	X	X				
Economic data	X			X		
Loan policy	X				X	
Interest rates	X			X		
Household affordability	X		X			
Developers' marketing	X		X			

Sources: [1] Zarin and Bujang, 1999; [2] Ariyawansa and Udayanthika, 2012; [3] Shoory, 2016; [4] Sing, 2001; [5] Van Doorn, Arnold and Rapoport, 2019); [6] Senaratne, Zainudeen and Weddikkara, 2006

Property developers are always concerned about the factors behind the demand for apartments since, once the project initiated there is no turning back due to lack of demand and developers have to ensure the effectiveness of the project, where it involves a large amount of money (Zarin and Bujang, 1999).

Generally, inelastic behaviour can be noticed in supply side where it explained as slow adjustment process to meet demand due to the inefficiencies in the market such as less transparency, insufficient regulations and time-consuming development processes (De Wit and Van Dijk, 2003; Van Doorn, et al., 2019). As the key regulatory authority and policy maker of the apartment market, government influence the supply of apartments through zone management, incentives, and fiscal and monetary policies (Senaratne, et al., 2006). The factors affecting the supply of apartment projects are tabulated in Table 2.

Table 2: Factors Affecting Supply of Apartment Projects

Factor	References (<i>Details given below</i>)				
	[1]	[2]	[3]	[4]	[5]
Land cost and availability	X	X	X	X	X
Financial availability	X	X	X		
Policies and regulations	X	X		X	
Profitability	X		X	X	
Timely approval	X	X			
Resource availability	X				
Market competition	X				
Existing housing stock			X		

Sources: [1] Senaratne, Zainudeen and Weddikkara, 2006; [2] Shoory, 2016; [3] Sing, 2001; [3] Van Doorn, Arnold and Rapoport, 2019; [5] Ariyawansa and Udayanthika, 2012

Factors affecting the supply of apartment can be recognized under developer related factors and external factors (Senaratne, et al., 2006). Most importantly, factors affecting

supply in the housing markets are slightly different from the factors affecting demand since supply is more subjective to the internal elements in the society (André, 2010).

2.2 IMPACTS OF COVID-19 PANDEMIC ON DEMAND AND SUPPLY OF APARTMENT PROJECTS

The current situation in housing market with the COVID-19 pandemic can be recognized with related to several factors including, economic downturn of both developers and homeowners, unfavourable trends in the labour market and increase in the cost limits of housing units (Tretyachenko, et al., 2021). According to the same report, crisis within the housing market, which resulted by the shocks in both demand and supply have led to the economic collapse of stakeholders in the sector.

Therefore, Balemi, et al. (2021) indicated that significant reduction in demand for housing units can be noticed due to financial difficulties faced by households resulting property sales drops. Liu and Su (2021) expressed that tenants become more concerned about living in high density locations, identifying potential exposure to the virus due to several reasons including dense neighbourhoods and shared amenities like elevators. Moreover, Alexander and Karger (2021) recognized that this community is more prone to lockdowns because of higher case rate of dense areas, which turns their lifestyle more complicated. Increasing unemployment rate and pay cuts across all economic sectors due to preventive measures and restrictions, have posed a significant impact on the tenants' inability to pay rents and mortgages, since it directly affects household income (Biddle, et al., 2020; Marona and Tomal, 2020; Nicola, et al., 2020). Balemi, et al. (2021) identified that even though the Return on Investment (ROI) initiated, investors' income streams are already being affected by the uncertainty of rental incomes due to tenants' financial instability with the financial crisis imposed by the pandemic. Pomeroy (2020) stated that this situation has resulted more difficulties on the investors' mortgage payments, since majority of them are relying on revenues from short-term rentals to cover the mortgage costs. Therefore, PricewaterhouseCoopers (PwC, 2020) stated that considering the pandemic situation, the demand for the apartment projects is likely to shift with the expectation of recovery over medium-long term as the economy recovers. Furthermore, same report stated that this recovery will be developed through urbanization, income levels, increasing land prices, high net worth individuals and multiple investment assets.

Bohingamuwa, et al. (2020) stated that this pandemic caused suspension of construction activities in several projects resulting cash flow constraints for developers. Same report mentioned that cash flow issue has also an impact on the ability to repay loans they acquired to fund these projects. Moreover, COVID-19 pandemic has led many businesses to close down since number of successful transactions has reduced due to lack of interest from investors and customers in properties and scarcity of supply by developers (Ngoc, Tien and Anh, 2020). Additionally, population shifts from urban areas to suburbs and rural areas have resulted less demand for housing units in the rental market causing property developers more financially vulnerable (Byrne, 2021). Enactment of government policies of restrictions on imports has negatively affected the property developer's profitability and caused considerable delays in the constructions since they have to pay higher price for alternatives and procurement takes time (Hamid and Huam, 2020; Hantono, 2020). Furthermore, Uma and Gujar (2020) emphasized the potential threat for developers in decreasing housing sales count, since rising material prices resulted by factory closures and logistic disturbances have led to higher housing prices,

which affects home buyers' affordability negatively. Therefore, with the social distance policies and other restrictions, number of issues have arisen in construction projects, since there was no preparedness for this sort of situations (Laing, 2020). Therefore, on the supply side less investment for apartment projects could be expected since property developers are considering in completion of existing projects and wait for demand to increase within short-medium period (PwC, 2020). There is therefore a need to investigate the impact of COVID-19 pandemic on the demand and supply of apartment projects. However, the scope of this study is limited to the apartment projects in Sri Lanka.

3. RESEARCH METHODOLOGY

The aim of this research which is to investigate the impact of COVID-19 pandemic on the demand and supply of apartment projects in Sri Lanka requires in-depth investigation. Adapting a qualitative approach is suggested if the existing literature is not comprehensive or if identified variables are unknown (Creswell, 2014). Thereby, after analysing the facts namely, insufficient literature on the research area, existence of less number of experts as respondents in the local context, inability to establish research conditions since the research is related to an ongoing pandemic and research focuses on observing the reasons behind the impacts, the qualitative approach was approach was adopted to conduct this research. Factors affecting the demand and supply of apartment projects and impact of COVID-19 pandemic on apartment projects in the global context were reviewed through the literature synthesis. Data collection was performed through interviews with 15 experts selected through purposive sampling using semi-structured interview guideline. The collected data were analysed through manual content analysis. Finally, the impact of COVID-19 pandemic on apartment projects in Sri Lanka was investigated through this research process.

4. RESEARCH FINDINGS

The semi-structured interviews were conducted with 15 experts representing different stakeholders in the apartment sector. Profile of the respondents is shown in Table 3.

Table 3: Respondents profile

Code	Designation	Organization Type	Experience
R1	Manager - Projects and Properties	Property Developer	10
R2	Assistant Manager - Planning and Project Management	Property Developer	6
R3	Residence Manager	Property Developer	7
R4	Manager - Operations	Property Developer	13
R5	Senior Manager - Sales and Marketing	Property Developer	7
R6	Senior Manager - Finance	Property Developer	10
R7	Senior Manager - Sales and Marketing	Property Developer	15
R8	Project Engineer	Property Developer	10
R9	Head of Sales	Property Developer	15
R10	Head of Operations and Services	Property Developer	20
R11	Director - Projects	Contractor	30
R12	Quantity Surveyor	Consultancy Organization	8

Code	Designation	Organization Type	Experience
R13	Managing Director	Real Estate Consultancy	20
R14	Deputy Director General/Senior Lecturer	Government Institution	27
R15	Property Manager	Managing Agent	12

Among 15 respondents of the study, 10 respondents had represented apartment property developers, while remaining 5 respondents were indirect market participants. The respondents have experience and knowledge on the impact of COVID-19 pandemic on the Sri Lankan apartment market. They have both pre and during COVID-19 period experience in the sector. Research findings are discussed below.

4.1 IMPACT OF COVID-19 PANDEMIC ON THE DEMAND FOR APARTMENTS

Sri Lankan apartment market can be broadly categorized into three market segments, i.e., upper tier, middle tier and lower tier, where this classification is based on apartment price ranges and how well the apartments are facilitated. With regard to the respondents' opinion on the demand for apartment projects, it was revealed that demand for apartments is formed majorly for two purposes as living (consumer market) and investment (investor market). Apartment investment can be separated into two aspects as renting out and price appreciation where price appreciation involves purchasing the apartment with the purpose of gaining a profit by reselling it once the property value is increased over time. Respondents were asked to identify the factors affecting the demand for apartment projects. Impact of each factor affecting the demand for apartment projects in Sri Lanka are discussed below. Apart from the generic demand determinants, several other demand determinants were revealed from the interviews, with regard to the impact of the COVID-19 pandemic on Sri Lankan apartment market. Those demand determinants are rupee depreciation and inflation, digital marketing strategies and crisis in the tourism industry.

4.1.1 Increasing Apartment Unit Prices and Decreasing Rentals

Respondents were mainly questioned about price increments took place in the apartment units due to the COVID-19 pandemic. According to the respondents, all organizations had experienced different price increment percentages due to the pandemic and the increments had varied between 10-20% range. Further, it was revealed that the major cause behind the price growth was increasing construction cost, which occurred unexpectedly.

Moreover, they indicated that even though the developer cannot supply the apartment units within the agreed price due to the increased construction costs, price escalations could not be done on the units, where sales agreements are already signed. Highlighting the negative implications on the demand by increasing apartment unit prices, R2, R5, R9 and R11 mentioned that price upsurge has highly affected the rental market since landlords tend to demand less units. It can be observed that stagnant periodical price escalation of rentals has also caused less demand for the rental market by the landlords since less rental incomes discourage rental market investments and this demand drop exists in all the market tiers. On the other hand, according to R3, R7, R10 and R14, investors started to purchase apartments for profit gain through appreciation recognizing the potential appreciations due to foreseen under supply scenario of apartments due to COVID-19 pandemic. When it comes to the upper tier, majority of the investors and landlords cater apartment units to the tourists and expatriates, so less demand has resulted

in upper tier due to the crisis in tourism industry, stated R7 and R9. Hence, it can be recognized that apartment unit prices were subjected to price upsurges due to the COVID-19 pandemic resulting less demand for apartments in the rental market and more upsurges could be expected in the future. However, they stated that significant impact cannot be noticed within the demand for consumer market since consumers left with no option but to purchase an apartment for the easiness of work purposes.

4.1.2 Unemployment Risks, Household Income and Affordability

Respondents were questioned about the relation between the unemployment shocks, household income and affordability against the demand for apartments within Sri Lankan apartment market with the COVID-19 pandemic. Majority of the respondents stated that, generally the apartment purchasing community in Sri Lanka is less exposed to unemployment risks since they mostly have stable occupational careers. However, diverging the above common opinion, R6 and R9 stated that unemployment rate has a substantial impact on the upper tier since unemployment shocks can be recognized within expatriates and foreign expatriate workers where they represent the mainstream of the buying community in the rental market in the upper tier. Accordingly, most of the respondents' opinion reflects the idea that, unemployment risks did not affect the demand for the apartments except in the upper tier rental market since buyers are least vulnerable to the unemployment risks. All the respondents stated that both income and affordability are interrelated and mostly depend on the unemployment rate. Majority of the respondents pointed out that apartment purchasing community belongs to the upper-level income community in Sri Lanka and they are least vulnerable to the income losses. Therefore, they stated that affordability of apartment buyers and tenants remains same even after the COVID-19 pandemic. Hence, apartment purchasing community is least affected with household income losses and affordability problems due to the COVID-19 pandemic which results least impact on the demand for apartments.

4.1.3 Lesser Migrations to Metropolitan Cities

Respondents were allowed to explain about their experience on tenants' migrations to the urban areas during the COVID-19 pandemic and its impact on demand. According to the respondents, a significant drop took place in both migration to metropolitan cities and urbanization due to the pandemic. During the interviews, several dynamic forces were revealed, which affect the urbanization and migration to cities such as work from home, travel restrictions and business and school closures. However, R6, R9 and R14 put forward an argument that, with the removal of travel restrictions, organizations are gradually normalizing their business functions as usual, improving the concerns for the apartment rental market once again. Therefore, lesser migration to cities and stagnant urbanization can be recognized as the major factors, which resulted less demand for the apartments in the metropolitan cities during the pandemic and negative impact is gradually getting recovered with the new normal adaptation.

4.1.4 Urban Living Concerns

The interviews further focused on the changes in buyers' attitude on urban living concerns towards apartment purchasing. A psychological mind-set change was recognized in buyers' attitude towards the purchasing of apartments after the pandemic due to the uncertainties embedded with the pandemic (R1, R2, R7 and R10). Hesitation was seemed to be in the buyers' decisions with the uncertainty arose during the period of first wave. According to R1, R2, R7 and R10, buyers were deciding either to live in an

apartment surrounded by a dense community or to buy a land and build a house in a commuter city during that period. However, majority of the respondents further revealed that, the hesitation was gradually wiped out with the new normal adaptation of the country as the buyers realized the higher worth of the apartment investments in the future, once the situation is normalized. Therefore, buyers' negative attitude towards the apartment living can be recognized as the factor, which resulted lesser demand for the apartments during the pandemic and negative impact is gradually getting recovered with the new normal adaptation.

4.1.5 Location and Infrastructure

Interrelation between location and infrastructure factors with the demand for apartments were also observed in the discussions. R1, R4, R5, R8, R9 and R14 mentioned that increasing demand can be recognized in the apartments located by the highway transits and suburbs due to the appreciation of less dense areas among the community. Moreover, according to R5 and R11, less demand can be noticed for the apartments in the tourist attracted areas since investors are afraid to invest in those units with the crisis within the tourism industry. Hence, it can be recognized that due to the COVID-19 pandemic, people started to shift to the suburbs resulting more demand for the apartments in the suburbs and lesser demand for the apartments in metropolitan cities, while tourism crisis caused less demand for the apartments in the tourist attracted areas.

4.1.6 Rupee Depreciation and Inflation

Respondents recognized several aspects regarding the current economic downturn of the country which influence the demand for apartments. Although there are several economic factors act as apartment market dynamics, respondents recognized two major aspects whereas, Rupee value depreciation and inflation as the economic factors affecting the demand for apartments in Sri Lanka with the COVID-19 pandemic. R11 expressed his views stating, *“At a glance we can expect a negative impact on the apartment demand due to the economic downturn. However, the actual scenario is totally different since people are shifting away from liquid assets which ultimately resulting the growing demand for real estate. Among the lands and apartments, currently they prefer invest in apartments over lands due to the considerable ROP”*. Consequently, R6, R10 and R13 highlighted how the impact of currency depreciation due to inflation driving the buyers' mind-set towards a growing demand for apartments where R6 explained *“With the increments in the apartment prices due to the rising inflation, people tend more towards to purchase apartments in surge before it gets more expensive, even it is not their essential need”*. Therefore, according to the opinion of the majority of the respondents Rupee depreciation and inflation has a positive impact on the demand side of the apartment market by the local buyers. Contrastingly, worsening economic conditions have resulted less demand for the apartments by the foreigners according to the R3 and R14, since foreigners are worried about their returns due to the economic downturn in Sri Lanka, where return get lessened once they exchanged. Therefore, as a key demand determinant worsening economic data in Sri Lanka has both positive and negative impacts on the apartment market whereas, increasing demand for apartments by locals and decreasing demand for apartments by foreigners, respectively.

4.1.7 Loan Policies and Interest Rates

Respondents were asked about the changes in monetary policies which affected the demand for apartments. Central Bank of Sri Lanka declared several relief measures on

the loan policies in terms of longer repayment tenors and release of penalty interests with the COVID-19 pandemic. Respondents' opinion was that with more flexible loan policies, people tend to obtain more loans which ultimately results the demand for apartments since majority of the apartment sales are relies upon the mortgage market. Moreover, they emphasized how the demand for apartments was quickly picked up once the Central Bank of Sri Lanka took measures to reduce the interest rates to the lowest levels in history with the intention of boost the economy which was severely affected by pandemic. On the other hand, it was found that low interest rates discouraged people to do savings in fixed deposits since they realized investing in other sectors such as real estate, gold and stock market is more profitable. However, according to most of the respondents, demand was increasing for the apartments once interest rates are reduced since people go for investing in real estate over gold and stock market. Therefore, reduced interest rates have acted as one of the key factors which boosted the demand for apartments in both consumer market and investor market in the COVID-19 scenario.

4.1.8 Digital Marketing Strategies

Emerge of the online marketing tactics were also revealed by the respondents as another key factor which influencing the demand for apartment market. As highlighted by all of the respondents, developers shift to digital marketing from conventional marketing after the COVID-19 pandemic once they realized the potential of the digital marketing tactics in an era where people spent most of their time on online platforms with agile work environments. Moreover, they underlined that most of the inquiries they received for apartment purchasing are coming through online platforms. Hence, most of them believed that adapting competitive marketing strategies helped them to boost the demand. Therefore, the digital marketing strategies and better customer services that were adopted during the COVID-19 pandemic have driven the customers' mindset towards the apartment purchasing resulting more demand for apartments.

4.1.9 Crisis in the Tourism Industry

Respondents revealed tourism downturn as a crucial factor which affecting the demand for Sri Lankan apartment market. As per respondents' opinion, Sri Lankan apartment market is highly relying on the tourism industry, since most of the foreigners purchase apartments as both investment assets and consumption commodities. Upper tier is the mostly affected market segment due to the pandemic, since most of the foreigners prefer luxury apartments with their intentions on quality of life. Moreover, R4, R7, R8, R11 and R15 highlighted that market gap is rapidly increasing due to the demand drop and situation is much worse due to the oversupply within the upper tier. Hence, crisis in the tourism industry can be recognized as a key negative factor which resulted a demand drop within the apartment market.

4.2 IMPACT BY COVID-19 PANDEMIC ON THE SUPPLY OF APARTMENTS

Respondents were asked to identify the list of factors affecting the supply of apartment projects and whether any shift took place in the supply of apartments with regard to any change in supply determinants due to the COVID-19 pandemic. The research findings are discussed below. Apart from the generic supply determinants, several other supply determinants were revealed from the interviews, with regard to the impact of the COVID-19 pandemic on Sri Lankan apartment market. Those supply determinants are inflation, apartment constructions and project delays.

4.2.1 Market Competition

Relationship between the market competition and supply of apartments were questioned during the interviews. Due to the hit of the pandemic on the property developers, new players will not enter the market and minor players will halt their operations allowing key players to control a significant percentage of market share in future. Therefore, R5 stated that “*Market will become more imperfect competitive, if the minor players could not survive due to the COVID-19 pandemic which ultimately resulting under supply of apartments*”. Therefore, R5’s and R15’s explanation on this regard was, even though leading market players dominate the market in an imperfect market, they will not be able to fulfil the heterogeneous demand with their supply since product differentiation cannot be found in monopolistic markets. Hence, market imperfection has a negative impact on the supply of the apartments since overall market supply is decreased due to the elimination of new and minor market players.

4.2.2 Interest Rates

Impact by the changes in monetary policies towards the supply of apartments were also asked from the respondents. Majority of them mentioned that developers got the benefit in borrowing loans as interest rates are decreased after the COVID-19 pandemic. R3, R7, R8, R10 and R14 emphasized the importance of low interest rates in an environment where developers’ financial availability is adversely affected mentioning business loans are the best option for the developers to overcome the financial challenges. Moreover, R5, R7, R10, R11 and R14 mentioned that not only the developers, but also contractors, resource suppliers, service providers and other indirect market participants who participate in the project delivery procedure receive the benefit out of the lower interest rates, since most of their businesses are count on the loan facilities. Therefore, most of the respondents’ opinion was that reduced interest rates fortified the survival of majority of the market participants who contribute to the supply of apartments which ultimately avoiding a negative supply shock.

4.2.3 Inflation

Respondents came up with inflation as a new supply determinant which influence the apartment market due to the COVID-19 pandemic. Most of the respondents recognized different implications of the inflation as upsurge of material prices, machinery prices, transportation charges, and fuel cost which ultimately increase the construction cost. According to majority of the respondents, apartment unit prices are already subjected to the price increases within the middle and lower tier. Moreover, majority of the respondents stated that all the new project commencements will be subjected to the price increases and they believed that less supply will be resulted in the apartment market according to the law of supply. Hence, increasing inflation can be recognized as a factor, which has a negative impact on the supply of the apartment projects in Sri Lanka.

4.2.4 Government Approval Delays

Interviews further explored any delays took place in the government approvals related to the apartment sector. All of the respondents stated that government approval procedures are considerably delayed due to the COVID-19 pandemic. Moreover, they indicated that government office closures, inefficient documentation with distance working and inability in field inspections caused delays within the approval procedures.

4.2.5 Developers' Cash Flow Issues

Financial aspects related to the developers were also questioned from the respondents. Considering the opinions conveyed by R2, R9, R10 and R14, it can be argued that cash flow of the projects, which are still at the early construction stages have severely affected due to the COVID-19 pandemic. R9's comment can be taken as one which represent all the other; *"Since people prefer purchasing more constructed projects due to the uncertainties within project completions, less presales have been resulted in projects at initial construction stages. Therefore, cash flow through presales is lessened due to less presales count and cash inflow is not sufficient to proceed with further developments since lesser the level of completion, lesser the instalment payment can be collected where staggered payment is practiced"*. Moreover, most of the respondents stated that within this pandemic period delays, grace periods and rearrangements in instalment payments affected the cash flow, which is always supposed to be ahead of the development cost. Although some developers were able to manage the cash flow through organizational capital and bridging loans, different aspect was highlighted by the R13 as *"All the market players will not be able to manage the cash flow due to several reasons such as shortage of capital and difficulties in obtaining loans in a background where banks monitor track records and restricted issuing loans due to financial vulnerabilities and uncertainties in repayments"*. Accompanying with R14's opinion, R10 disclosed his experience as *"Most of the minor market players are struggling with cash flow issues and already several apartment projects halted due to lack of funding"*. Therefore, cash flow issues can be identified as a factor, which has a negative impact on the supply of apartment projects in Sri Lanka especially among the majority of the market players.

4.2.6 Apartment Constructions and Project Delays

Respondents revealed construction project delays as a crucial factor that influenced the supply of the apartment market. The construction sector is currently severely affected due to the COVID-19 pandemic. Respondents were emphasizing that significance of construction of apartments is not restricted to the delivering apartment projects but also critical in determining the economic development of the country and reliance of several sub sectors on the apartment constructions was highlighted. As stated by all the respondents, COVID-19 pandemic has caused significant project delays distressing the supply of the apartment market in Sri Lanka. Considering all the aspects revealed through the discussions, site shutdowns, labour shortages, material scarcity, supply chain disruptions, import restrictions and procurement conflicts can be recognized as the major causes, which underlies the crisis within the apartment constructions.

5. CONCLUSIONS AND RECOMMENDATIONS

The apartment market is always subjected to momentums in terms of demand shifts and supply shifts, which is a common characteristic of a market that reflects the law of demand and supply. With the unexpected COVID-19 pandemic and its wide-ranging implications on the various aspects related to both demand and supply of the apartment projects in Sri Lanka got affected severely. Although, there was a sudden drop in the demand for the both consumer and investor market due to the COVID-19 pandemic, with the adaptation of new normal culture, demand within the consumer market gradually started to raise since necessity of a habitation remains constant even in a time of a pandemic. Moreover, this demand growth stimulated by several positive aspects related

to the demand determinants. However, this demand recovery cannot be found in the rental market. On the other hand, supply of the apartments is severely affected due to the COVID-19 pandemic since apart from the generic supply related factors, construction related factors also influence the supply. However, noticeable positive recovery cannot be recognized in the supply perspective even after the new normal scenario since economic downturn in the country directly influences the majority of the supply related factors. With the above-mentioned factors, the apartment market of Sri Lanka is currently leading towards a market equilibrium state followed by an under-supply scenario which will ultimately result a supplier's market. Further, this research has contributed for the knowledge on understanding the interaction between demand and supply within the apartment market, identifying the impacts due to COVID-19 pandemic on demand and supply of apartment projects in Sri Lanka while understand the importance of the apartment market equilibrium. Hence, research findings of this study will be benefited to the relevant government authorities, property developers and financial institutions in taking necessary steps to explore the strategies for maintaining the apartment market equilibrium.

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