

Development of the Methodology for Residential Investment Management During the Covid-19 Pandemic

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Abstract: Investing in residential property is a good investment instrument for individuals. The benefit of investing in a residential property is the potential for long-term appreciation in value. Historically, property values have increased over time, providing a solid return on investment for those who hold onto their properties for a significant amount; property provides a source of passive income through rental income. Investing in property is an attractive investment opportunity in emerging markets. Turkey is considered an emerging market. Like many emerging markets, it faces several economic and political challenges, including high inflation, a large current account deficit, and political instability. Investing in property in emerging markets also comes with certain risks, including currency fluctuations, political instability, and uncertain legal and regulatory environments. During the SARS outbreak, the property market in Hong Kong was significantly affected. The Spanish flu pandemic had a significant impact on the property market. During the 19th-century cholera pandemics, there were instances of substantial disruption to property markets. The COVID-19 had significant impacts on the residential market. Developing a methodology for individuals to use for their residential investment can be challenging, as it requires consideration of various factors. There are a variety of resources available for individuals who are interested in learning more about investing in property, and people are able to educate themselves in the field of property investment. In this study, we examined individuals' residential property investments in Turkey during COVID-19, and the factors that influenced their investments. We examined whether individuals' consideration of a single advantage in residential investments provides them with financial benefits. We examined the parameters that residential investors can follow to achieve success with their investments.

Keywords: COVID-19, housing, investment, management, methodology, pandemic.

1. Introduction

As the COVID-19 began to hit the world, it was not as easy to predict what might happen next as in other crises. The most recent pandemics were: Spanish Influenza, Asian Influenza, Hong Kong Influenza, Russian Influenza (H1N1), Avian Influenza (H5N1), SARS and A(H1N1) Influenza (Gensini, Yacoub and Conti, 2004). People were partly used to the signals of impending economic crises and the risks and opportunities of crises, but this time they were faced with a crisis, they could not identify. The COVID-19 brought different opportunities to the residential market. While the property sector is affected by economic crises in the same way as other asset markets, the COVID-19 affected the residential sector economically and in terms of its trends. In 2020, when the COVID-19 was prevalent in Turkey, the sales of residential property on loan (total) peaked at 307 thousand units - the highest in history - between June and August (TUIK, 2023).

When first-time residential buyers or individual investors who consider residential property as an investment instrument (Coşkun, 2016) made their investment decisions during the COVID-19 period: did they systematically make their investment decisions, did they know how to make decisions and follow the analyses they should have followed in the residential market, or did they make their investment decisions without any knowledge of the residential market (Case and Shiller, 1988)? Compared to other asset markets, the residential property market is where everyone has the best information, but personal intuition (Gallimore and Gray, 2002), the media (Katz, 2006) and other individuals effectively shape this information. Our research question was: What are the key factors to consider when developing a methodology for managing property investments during a pandemic? We aimed to develop a comprehensive methodology to manage residential investment in times of pandemic. The reason for our focus on the COVID-19 period was similar to that of the studies by Kartal, Kılıç Depren and Depren (2021): because the pandemic was prevalent in Turkey and affected many economic and financial variables.

When investing in property, individual investors gather information from many sources and use it to decide where to invest. As individual investors are not professionals, they may not follow a methodology when making investment decisions. Having a residential investment methodology that individual residential investors can follow can help improve the accuracy of such investments. In times of global crisis, such as the COVID-19 pandemic, individual residential investors need more than the methodology they use in non-crisis periods. Global crises can bring opportunities as well as risks. This study developed a methodology for residential

investment that individual property investors can follow in times of crisis. This investment methodology identified the indicators to follow at each stage. This research methodology will enable a better understanding of the methodology of residential investment management during a pandemic and provide insights into optimising the investment strategy to achieve success in the residential property market.

In Turkey, a limited number of studies can help develop methodologies that individual residential property investors can use to make investment decisions. This article aims to fill this gap. In other parts of the article, topics such as residential investment management, developing a methodology, the COVID-19 and residential investment management are addressed. The methodology of the study and the results of the analyses are then presented. The discussion and conclusions section discusses the study's outcome, limitations, and suggestions for future studies.

2. Management and Methodology Development for Residential Investment

Investors consider the residential investment a safe investment (Case and Shiller, 1988). Residential investment can involve purchasing a property to rent it out or reselling it at a higher price in the future. Residential investment can be a lucrative way to generate income and build wealth over the long term (Erdoğan and Büyükduman, 2018). However, it also carries risks and requires careful consideration of factors. Effective residential investment management requires financial expertise, knowledge of the residential property market, and strong management and communication skills.

Investment methodology is the set of principles, strategies, and tools used by investors to make investment decisions and manage portfolios. In investment decisions, investors do not always adhere to the investment method, and they have different behavioural biases, namely overconfidence, disposition effect, herding bias and home bias in investment decisions (Kumar and Goyal, 2015). An effective investment methodology typically includes research, analysis and risk management techniques and may require ongoing adjustments and adaptations in response to changing market conditions and investor needs. According to Balanska and Yemelyanov (2021), risk planning in residential investment should be based on a preliminary assessment of the current level of risk. The principles of investment methodology include diversification, risk management, research and analysis, long-term focus, flexibility and adaptation, and active management. Although the residential property market is considered to be less volatile, Ball and Wood (1999) suggest that residential investment is volatile not only in the short term but also in the medium term, with evidence of long construction cycles in most countries. The principles of residential investment methodology include location, property analysis, finance, risk management, diversification, property management and taxation. Among these principles, only the findings of Goetzmann's (1993) study on diversification are noteworthy: A one-year investment in a residential property carries almost twice the risk of a well-diversified portfolio, but a five-year investment is relatively stable.

Residential investment methods rely on various tools to help investors make informed decisions and manage their investments. Tools that can be used in residential investments include: property websites, estate agents, property management software, property investment analysis software and websites, and mortgage calculators. As an investment method, residential investors should formulate their investment decisions by taking the following steps (Table 1): Define your investment objectives, determine your investment strategies, establish your investment criteria, develop a property analysis process, define your exit strategy and implement your risk management strategy.

Table 1: Residential Investment Methodology.

Goals	Definitions
1. Defining investment goals:	Investors should define their investment goals, such as generating passive income, building equity, or long-term appreciation.
2. Determining investment strategy	Investors should determine their investment strategy based on their goals, such as fix and flip, buy and hold, or house hacking.
3. Establishing investment criteria	Investors should establish criteria for the properties they consider, such as location, price range, size, and condition.

4. Developing a process for analysing properties	Investors should develop a process for analysing potential investment properties, which may include assessing the property's potential rental income, estimated expenses, and potential for appreciation.
5. Defining exit strategy	Investors should define their exit strategy, such as selling the property for a profit or holding onto it for long-term rental income.
6. Implementing risk management strategies	Investors should implement risk management strategies to mitigate potential risks, such as conducting a thorough property inspection, securing proper insurance, and maintaining a cash reserve for unexpected expenses.

3. COVID-19, Home Investments and Developing Methodology

The COVID-19 pandemic hit the residential investment market severely. The COVID-19 pandemic, rent, weighted average cost of funds and deposit interest rate play an important role in residential prices, but macroeconomic variables are ineffective in Turkey (Kartal, Kılıç Depren and Depren, 2021). Some of the points where the COVID-19 hit residential investment were: reduced demand for rental properties, delayed construction and renovation projects, remote working, lower interest rates, fluctuating residential prices, and increased focus on property management. The COVID-19 pandemic affected each country differently. In Turkey, it affected the residential sector by reducing foreign investment in residential property, introducing remote working practices for the first time, and increasing government incentives (Table 2).

Table 2: Residential Investments in Turkey During the COVID-19 Pandemic.

Goals	Definitions
Reduced demand for rental properties	With travel restrictions and lockdown measures in place, there was a decrease in demand for rental properties, especially in popular tourist destinations.
Delayed construction and renovation projects	The pandemic caused delays in construction and renovation projects that affected the availability of new properties on the market.
Reduced foreign investment	Turkey has traditionally been an attractive market for foreign investors, but the pandemic has caused a reduction in foreign investment due to economic uncertainty
Fluctuating residential property prices	The pandemic caused fluctuations in property prices in Turkey, experiencing an increase.
Remote work	The rise of remote work has resulted in a shift in property demand, with more people seeking larger apartments or houses with dedicated office space. Remote working has also increased the demand for residential properties in rural and suburban areas.
Government support	The Turkish government has implemented measures to support the residential market during the pandemic and increased access to financing for homebuyers.

The COVID-19 pandemic was a period of both risks and opportunities in the Turkish residential market, (Table 3). The Risks are economic uncertainty, fluctuations in demand and political instability. Moreover, with many companies shifting to remote working, there may be less demand for property in certain areas, such as city centres. Gönen and Çetinkaya (2021), in his study of Google Trends data, suggests that interest in single-storey detached houses with gardens increased after the pandemic in Turkey. There were also changes in demand on a global scale. After the COVID-19 pandemic, consumers prefer larger areas, balconies and terraces, private greens, and external condominium spaces, according to Tajani et al., (2021).

Table 3: The risks and opportunities in the residential market for individual investors during the COVID-19 pandemic in Turkey.

Risks	Opportunities
Economic uncertainty Fluctuations in demand Political instability	Low-interest rates Appealing exchange rate Bargain prices

Turkey has been experiencing political instability that can impact investor confidence in the residential market recently. Opportunities are low-interest rates, appealing exchange rates and bargain prices. The Turkish government lowered interest rates to make it more affordable for investors to purchase properties and for homeowners to refinance their mortgages. CPI, dollar and house price index variables found to affect house

sales (Yalçın Kayacan and Anavatan, 2022). The Turkish lira has significantly weakened against major currencies over the past few years, making the cost of buying a property in Turkey more affordable for foreign investors and those with savings in foreign currencies. Due to the economic uncertainty, some properties may be priced lower than usual, creating opportunities for investors to find bargains. Although investors can take advantage of opportunities in times of crisis, they may not be able to do so efficiently. According to Immergluck and Law (2014), Although there was a lot of short-term buying and flipping activity at the beginning of the crisis through 2008 and 2009, investors eventually began to focus more on buy-to-let investments in those areas.

The COVID-19 pandemic requires two more steps to be added to the six steps listed in Table 1 in the residential investment method. Due to the factors listed in Table 2, the rapidly changing residential market causes general and local market fluctuations. In the decision-making process of investors, the information obtained through the information channels (Figure 1) may make sense for the market in general but may not be accurate for the market where the investor considers trading. The two objectives set out in Table 4, for investors to assess the current residential property market and adapt to changes in the market during the COVID-19 process, should be included in the residential property investment methodology set out in Table 1. This allows investors to make decisions in volatile market conditions and adapt to current market changes.

Table 4: Residential Investment Methodology During the COVID-19 Pandemic.

Goals	Definitions
7. Assessing the current market conditions	Investors should analyse the impact of the pandemic on the residential market and assess the current market conditions, including demand, supply, and pricing trends.
8. Monitoring and adapting to market changes	Investors should continuously monitor the market conditions and adapt their investment strategy and criteria to stay aligned with their goals.

In Figure 1, we estimate two main sources of information that residential investors can use from the time they start considering a residential investment until they realise or abandon their investment. One of these sources is the research channel, and the other is the information acquisition channel. These two main sources can interact and influence the investment decision.

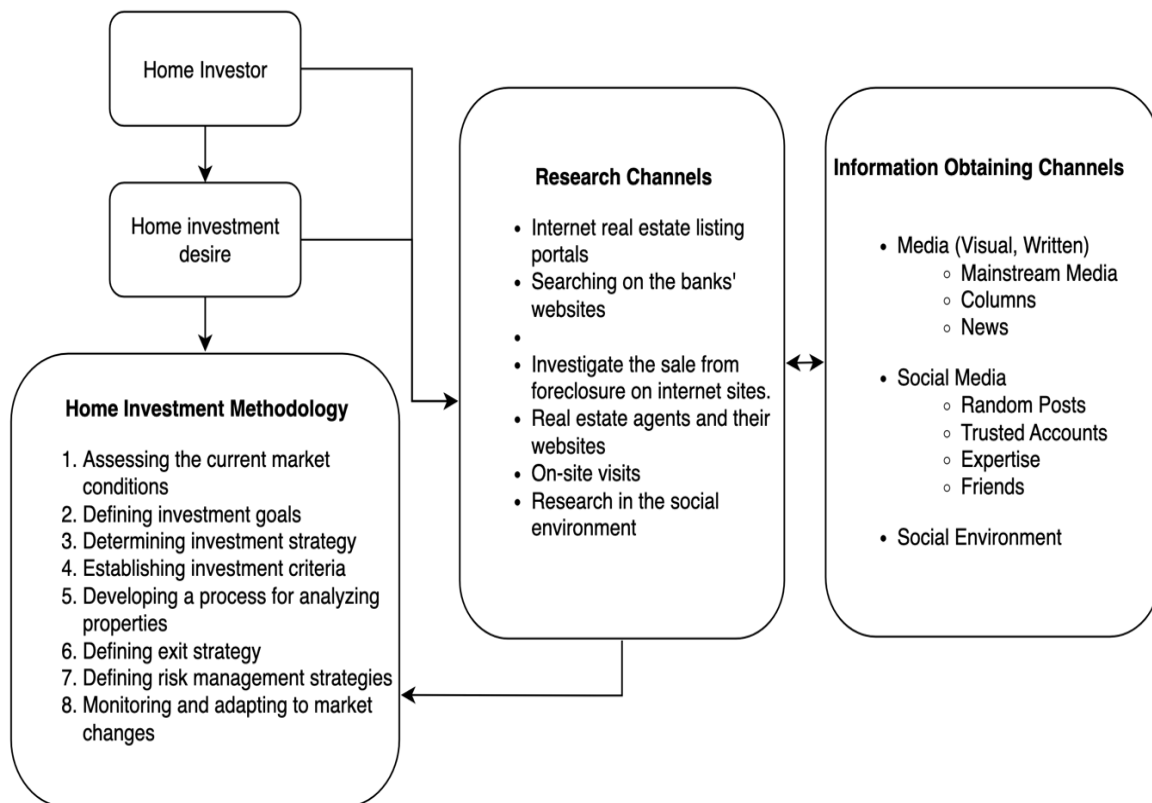


Figure 1: Residential Investment Methodology, Research and Information Acquisition Channels.

Assessing current market conditions is crucial to making informed decisions in the residential market. This process involves gathering market data, analysing market trends, evaluating local economic factors, and assessing regulatory and legal issues to provide valuable insights into the current state of the market. Property prices, sales volume, days on the market, property stock, new residential property supply, mortgage interest rates, employment rates and population growth are crucial to monitoring the residential market and achieving investment objectives. By identifying potential investment opportunities and developing investment strategies, investors can make informed decisions based on the analysis of the data collected.

Defining residential investment goals is the next step in investing in property. By monitoring and evaluating progress through economic indicators such as GDP, employment rates, inflation rates, interest rates, residential property starts and residential property price indices, investors can define their residential investment goals and achieve success in the property market.

Defining a residential investment strategy involves conducting a market analysis and developing a financial plan and a project management plan to achieve investment goals while monitoring and evaluating progress is essential. Population growth, employment rates, income levels, interest rates, residential property starts and property price indexes can provide valuable insights into current market conditions and assist in defining the residential investment strategy.

Establishing criteria for residential investment involves identifying investment objectives, conducting market analysis, developing selection criteria, identifying potential investment opportunities, evaluating and selecting investment opportunities, and monitoring and evaluating investment performance. Population growth, employment rates, income levels, interest rates, residential property supply and demand, and residential property price indices play a crucial role in developing selection criteria and ultimately leading to successful investment opportunities.

Developing a property analysis process is an essential step in the residential investment process. By defining criteria, gathering data, conducting a market analysis, analysing property condition and potential for appreciation, calculating return on investment and comparing properties, investors can make informed decisions about which properties offer the best return on their investment. Residential market trends, employment and income growth, interest rates, demographics, infrastructure and development, as well as property-specific factors, play a crucial role in the analysis process.

Defining an exit strategy is crucial for residential investors who want to achieve their investment goals. By defining the investment timeframe, assessing market conditions, analysing property performance and considering tax implications, investors can create an effective exit strategy for their residential investment. Residential market conditions, property-specific factors, interest rates, tax implications, market demand and economic conditions should be considered.

Property investment is inherently risky, and risk management strategies are critical to mitigating potential losses. By identifying potential risks, developing a risk management plan, diversifying investments, analysing market trends, conducting due diligence, establishing contingency plans, and monitoring and adjusting strategies, investors can mitigate risks and maximise returns on their residential investments. Economic stability, interest rates, market demand, vacancy rates, property-specific factors and the legal and regulatory environment can inform risk management strategies.

Monitoring and adapting to market changes is essential to the success of investing in the residential property market. Economic indicators; property sales and prices, residential stock, interest rates, employment rates, population growth, consumer confidence and residential affordability can provide valuable insights into potential investment opportunities or risks. By tracking market trends, monitoring economic indicators, keeping abreast of local regulations, keeping an eye on the competition, maintaining flexibility, building relationships with local experts and conducting regular portfolio reviews, investors can adapt to changing market conditions and adjust their strategies accordingly.

In order to make a residential investment decision based on the research and information channels shown in Figure 1, investors should repeat one to eight of the tasks shown in Figure 2. Each task requires different methods, and each method requires various economic indicators.

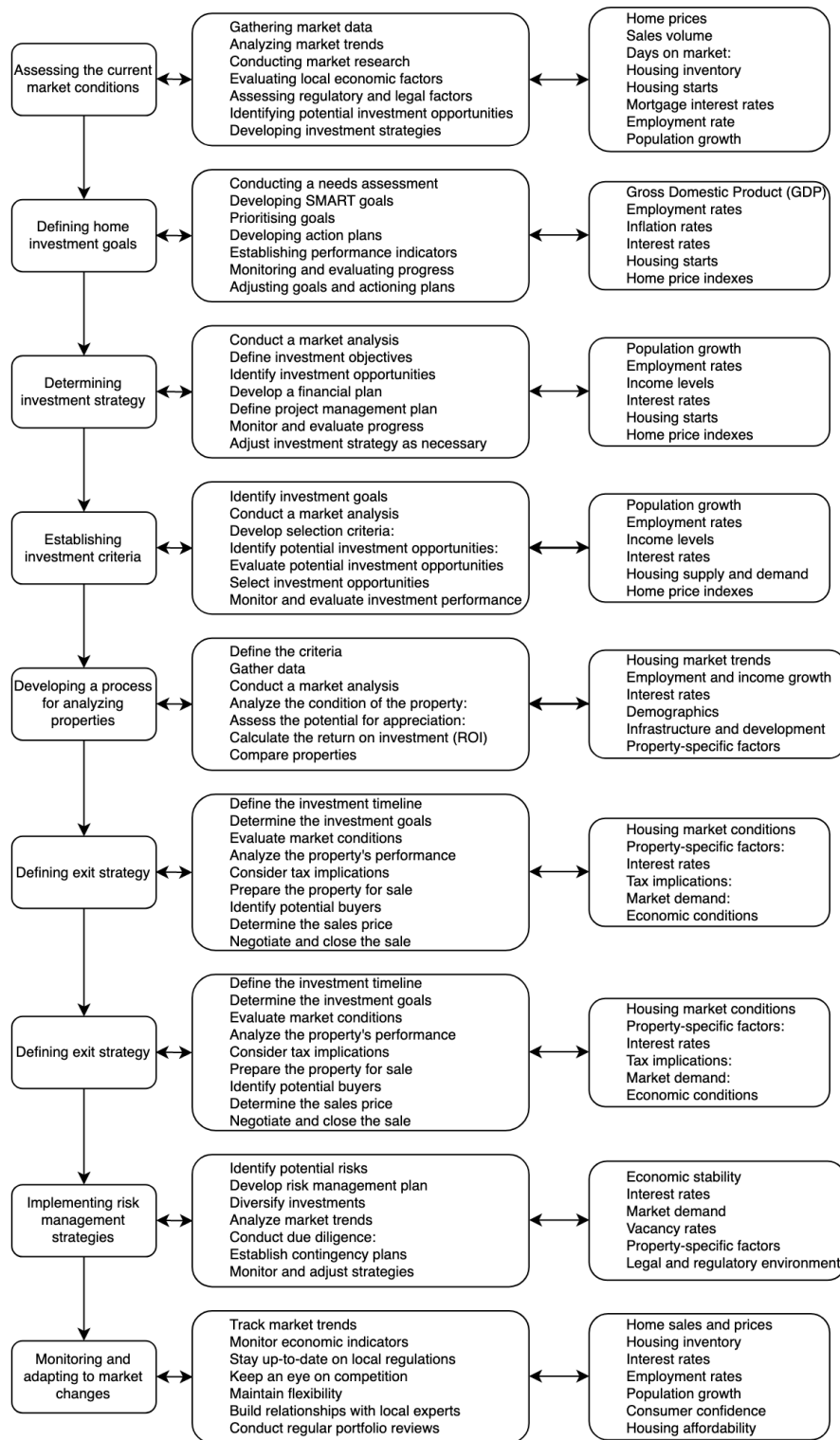


Figure 2: Tasks and Economic Indicators of Residential Property Investment Methodology.

Conducting a thorough market analysis is the first step in this process, including assessing local economic factors, regulatory and legal considerations, and potential investment opportunities. Once investment goals set, monitoring and measuring progress and adjusting goals and action plans to stay on track is essential.

Market trend analysis is a critical component of successful property investment. It involves tracking and identifying potential risks or opportunities. Regularly reviewing and adjusting investment strategies through due diligence ensures a strong and profitable portfolio. Flexibility and periodic portfolio reviews are essential. Economic indicators play a crucial role in assessing the investment potential of the property market. Monitoring

employment rates, residential property starts, house price indices, population growth, interest rates, and property-specific factors is important. Employment rates, in particular, significantly impact residential property demand. Supply and demand dynamics are also crucial. Residential property price indices provide insights into property valuation. Population growth influences housing demand, while interest rates affect affordability. By monitoring these indicators, investors make informed decisions when buying or selling property, adjusting strategies to stay ahead in the evolving market. Regular monitoring offers a comprehensive understanding of the property market's current and future state, facilitating well-informed investment choices.

Turkey faced the COVID-19 pandemic with different restrictions between 15/03/2020 and 31/11/2021. We analysed residential sales between these dates (TUIK, 2023) under three groups: total residential sales, mortgaged (loan) residential sales, and residential cash sales. Erdogdu (2023), in his research, defined the opportunity periods according to the minimum wage-average property scale as HoMiWaSOpp, the periods of opportunity when mortgage rates remain affordable compared to inflation as LIAI, and the periods of opportunity in real property price changes as CHO. Over a period of 22 months, referred to as the COVID-19 period:

- Based on the minimum wage to residential property price (MWMHPⁱ) scale, the opportunity periods were defined as HoMiWaSOpp.
- Based on the mortgage rate vs inflation rate relation (MRIRRⁱⁱ) scale, the periods of opportunity were defined as LIAI.
- Based on the real home price changes (RHPCⁱⁱⁱ) scale, the opportunity periods were defined as CHO.

As shown in Table 6, a total of 6 periods of HoMiWaSOpp, 11 periods of LIAI and 0 periods of CHO were measured in the 22 periods. In this respect, out of 22 periods, house prices were affordable in 6 periods on the 'minimum wage median home price' scale, and mortgage rates were affordable in 11 periods on the 'Mortgage rate vs inflation rate relation' scale. However, no period was cheap/affordable regarding real home price change. In the analysis of total dwellings sales, no positive change was observed in the six HoMiWaSOpp periods, and sales increased in nine of the 11 LIAI periods. In the analysis of residential property sales on loans, residential property sales on loans increased in one of the six HoMiWaSOpp periods and increased in six of the 11 LIAI periods. In the analysis of cash sales of residential property, cash sales of residential property increased in three of the six HoMiWaSOpp periods, and cash sales of residential property increased in nine of the 11 LIAI periods.

Table 6: Total, Credit and Cash Residential Sales and Opportunity Periods (Source: TUIK)

Period (Month/Year)	Total Home Sales			Mortgaged Home Sales			Cash Home Sales			Affordability/Opportunity			
	Total Home Sales (Adj.)	Monthly Homes Sales (Avg.)	YoY Changes	Mortgage Home Sales (Adj.)	Monthly Mortgage Homes Sales (Avg.)	YoY Changes	Cash Home Sales (Adj.)	Monthly Cash Homes Sales (Avg.)	YoY Changes	HomiWaSOpp	LIAI	CHO	
March 2020	103,70	106,00	-1,3%	41,4	33,4	%81,71	62,4	72,6	-%24,2		1	1	0
April 2020	42,80	100,10	-55,5%	17,1	30,8	-%23,92	25,7	69,3	-%65,1		1	0	0
May 2020	62,90	102,30	-28,3%	22,8	31,5	%60,36	40,1	70,8	-%45,5		0	1	0
June 2020	181,40	117,20	111,2%	96,9	41,3	%845,55	84,5	75,9	%11,7		0	1	0
July 2020	235,00	122,50	140,8%	133,9	40,3	%973,85	101,0	82,2	%18,7		0	1	0
Augusts 2020	178,90	125,60	38,7%	79,8	37,0	%100,36	99,1	88,6	%11,2		0	1	0
September 2020	130,50	127,60	-11,1%	34,0	36,0	-%41,26	96,6	91,7	%8,4		0	0	0
October 2020	122,50	121,80	-12,2%	26,2	31,4	-%46,81	96,3	90,4	%6,7		0	0	0
November 2020	112,50	118,10	-18,7%	24,5	31,3	-%44,32	88,0	86,8	-%6,8		0	0	0
December 2020	96,80	146,50	-49,8%	13,4	32,2	-%72,16	83,4	114,2	-%42,4		0	0	0
January 2021	70,60	86,30	-34,9%	10,7	26,4	-%73,38	59,9	59,9	-%12,2		1	0	0
February 2021	85,30	98,30	-31,6%	15,4	29,5	-%66,46	69,9	68,8	-%11,3		1	0	0
March 2021	101,60	106,00	-2,1%	19,9	33,4	-%51,84	81,7	72,6	%30,9		1	0	0
April 2021	95,90	100,10	124,1%	17,5	30,8	%2,49	78,3	69,3	%204,9		1	0	0
May 2021	71,00	102,30	12,8%	12,7	31,5	-%44,5	58,3	70,8	%45,5		0	0	0
June 2021	128,60	117,20	-29,1%	27,6	41,3	-%71,55	101,0	75,9	%19,6		0	0	0
July 2021	141,50	122,50	-39,8%	27,0	40,3	-%79,85	114,5	82,2	%13,3		0	1	0
Augusts 2021	141,40	125,60	-21,0%	27,4	37,0	-%65,7	114,0	88,6	%15,1		0	1	0
September 2021	140,50	127,60	7,6%	28,4	36,0	-%16,35	112,0	91,7	%16,0		0	1	0
October 2021	148,00	121,80	20,8%	30,2	31,4	%15,34	117,8	90,4	%22,3		0	1	0
November 2021	170,70	118,10	51,7%	37,6	31,3	%53,69	133,1	86,8	%51,2		0	1	0
December 2021	206,80	146,50	113,7%	41,3	32,2	%209,33	165,5	114,2	%98,4		0	1	0

4. Discussions

The literature review suggests that the key factors in the increased success rate of non-professional residential investors are knowledge of the area and more research. D'Lima and Schultz (2021) suggest that investors earn higher returns from investments in the same neighbourhood as where they live. The same study also indicates that investors earn less from investing in their own property. Residential investors can achieve higher returns if they see residential investment as an investment. One of the general opinions is that residential investments are always profitable. However, Shiller (2015) attributes this belief to the fact that people are surprised by the change in the price of the property they bought to live in over the years. Nevertheless, when they analyse the property price change in relation to inflation, they can see that the result will not be as promising as it seems. Another accepted opinion that leads buyers to the purchase process is that residential property prices will increase constantly, and it will not be possible to buy a property in the future (Simon, 1955).

In the case of residential investment, investors are often interested in mortgage rates. Lorig and Suaysom (2022) suggest that the interest rate is the most critical among many factors that can be taken into account. Erdoğan (2023) states that in 2013-2022 when mortgage rates decreased compared to the previous 12-month period, the number of residential sales with mortgages increased. Moreover, on the scale of minimum wage and residential prices, the demand for residential properties did not increase when residential prices were appealing. The residential property market is heterogeneous compared with other asset classes. Zorn and Sackley (1991) argue that in heterogeneous asset markets, consumers can maximise their profitability through research. On the other hand, residential property is too expensive to invest on a trial-error basis (Bazerman, 2001).

5. Conclusion

In this research, we had the opportunity to examine the minimum wage to median residential property price (MWMHP) and mortgage rate vs inflation rate (MRIRR) indicators in the residential market in Turkey during the COVID-19 pandemic. As the real residential property price change indicator did not provide opportunities for home buyers during that period, we were not able to analyse that. According to the MWMHP indicator using the "minimum wage median home price" scale, our analysis shows that residential property prices were available in six of the 22 periods. Three of the six available periods were considered by cash house buyers and only one period was considered by those who bought a property with a mortgage. According to the MRIRR indicator with the "mortgage rate vs inflation rate" scale, residential loans were available in 11 of the 22 periods. Nine of the 11 available periods were considered by cash residential property buyers, and the remaining six were considered by those who bought a residential property with a mortgage.

Residential investors should follow these steps when making investment decisions: defining investment objectives, setting investment strategies, establishing investment criteria, developing a property analysis process, defining an exit strategy, and implementing a risk management strategy. The COVID-19 pandemic introduced two additional steps for investment decisions in times of crisis: 1. Assessment of current market conditions and 2. Monitoring, and adapting to market changes. These steps face certain challenges in times of crisis. The challenges faced when deciding to invest in Turkey during the COVID-19 pandemic: reduced demand for rental properties, delayed building and renovation projects, reduced foreign investment, fluctuating property prices, remote working, and government support. These challenges created both risks and opportunities for the residential property market. Risks: economic uncertainty, demand volatility, and political instability. Opportunities: low interest rates, favourable exchange rates, and low prices.

At the investment decision stage, residential investors conduct their research through research channels (all platforms hosting for-sale advertisements, visits to residential estate agents, and social circles), and obtain information through information channels (mainstream media, social media, and social circles). The investment decision should be based on a residential investment methodology that brings together all the information gathered. A residential investment methodology should consist of eight steps: assessment of current market conditions, definition of residential investment objectives, definition of a residential investment strategy, establishment of residential investment criteria, development of a property analysis, definition of an exit strategy, definition of risk management strategies, and monitoring, and adapting to market changes.

In the investment method consisting of eight steps, each task requires different methods and each method requires various economic indicators. After investment goals are set, it is essential to monitor and measure progress and adjust goals and action plans to stay on the right track. The analysis of market trends, economic

indicators, and residential property supply and demand is a critical aspect of a winning property investment methodology.

Future studies can analyse the role of the new technologies in residential investment and the effectiveness of different investment strategies under different market conditions. In the case of emerging technologies, such as blockchain and virtual reality, there is a need to explore how they can be used to improve real estate investment processes. These research topics can provide property investors with valuable insights, and help them make more informed investment decisions in the residential property market.

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ⁱMWMHP: Minimum wages-median home price ratio MWMHP

ⁱⁱ MRIRR: Mortgage rate vs inflation rate relation

ⁱⁱⁱ RHPC: Real home price changes