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Marketing Strategies and Benefits in the Real Estate Industry in Technologically Advancing Urban Areas

Teknolojik olarak Gelişen Kentsel Alanlarda Emlak Sektöründeki Pazarlama Stratejileri ve Avantajları

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Öz

Throughout history, the significance of land and buildings as valuable assets, sources of authority, and drivers of economic prosperity has been widely recognized, spanning from ancient civilizations to contemporary societies. Cities have inherent value due to their ability to facilitate good interactions among individuals. The significance of the real estate sector as an investment vehicle has been growing. Companies, particularly those seeking to make new investments in the commercial real estate sector, are particularly interested in achieving a high degree of potential for their ventures. Turkey is a nation that has a significant position in this industry. In this study, the real estate sector in Turkey, housing sales according to type and situation, city management, the real estate market, the impact of COVID-19 on real estate markets, real estate marketing and technologies, and the advantages and disadvantages of technologies in real estate are examined. Furthermore, an analysis was conducted on the data pertaining to housing transactions in Turkey, categorizing them based on the kind of sale and the condition of the properties. When the data is examined, housing sales in Turkey are the highest in 2020. Housing sales decreased after 2020, and there was a large decrease in housing sales in 2023. As a result, to develop real estate marketing and revitalize this sector, it is necessary to invest in technologies such as artificial intelligence, the metaverse, augmented reality, virtual reality and increase the number of studies in the literature where these digital technologies are applied.

Anahtar Kelimeler: Artificial Intelligence, Augmented Reality, Digital Marketing, City Management, Real Estate Marketing

ABSTRACT

Tarih boyunca arazi ve binaların değerli varlıklar, otorite kaynakları ve ekonomik refahın itici güçleri olarak önemi, eski uygarlıklardan çağdaş toplumlara kadar geniş çapta kabul görmüştür. Şehirler, bireyler arasında iyi etkileşimi kolaylaştırma yeteneklerinden dolayı doğal bir öneme sahiptir. Gayrimenkul sektörünün bir yatırım aracı olarak önemi artıyor. Özellikle ticari gayrimenkul sektöründe yeni yatırım yapmak isteyen şirketler, girişimleri için yüksek derecede potansiyel elde etmekle özellikle ilgileniyorlar. Türkiye bu sektörde önemli konuma sahip bir millettir. Bu çalışmada Türkiye'deki gayrimenkul sektörü, türüne ve durumuna göre konut satışları, şehir yönetimi, emlak piyasası, COVİD-19'un emlak piyasalarına etkisi, emlak pazarlaması ve teknolojileri, gayrimenkulde teknolojilerin avantajları ve dezavantajları incelenmiştir. Ayrıca Türkiye'deki konut işlemlerine ilişkin veriler, satış türüne ve mülklerin durumuna göre sınıflandırılarak analiz edilmiştir. Veriler incelendiğinde Türkiye'deki konut satışları 2020 yılında en yüksektir. 2020 yılından sonra konut satışları azalış göstermiş olup, 2023 yılında konut satışlarında büyük bir düşüş olmuştur. Sonuç olarak, gayrimenkul pazarlamanın gelişmesi ve bu sektörü canlandırmak için yapay zekâ, metaverse, artırılmış gerçeklik, sanal gerçeklik gibi teknolojilere yatırım yapılması ve bu dijital teknolojilerin uygulamalı kullanıldığı literatürdeki çalışmaların artırılması gerekmektedir.

Keywords: Yapay Zekâ, Artırılmış Gerçeklik, Dijital Pazarlama, Şehir Yönetimi, Gayrimenkul Pazarlama

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INTRODUCTION

There are several potential benefits that might accrue to stakeholders in the real estate sector when sustainability indicators and ratings are utilized. Because of this, there has been a huge growth over the course of the last decade in both the number of sustainability grading systems that have been developed and the number of times that they have been used. Both the academic and professional communities have been quite vocal about their disagreement with the contents of these ratings. On the other hand, there has been a severe lack of in-depth analyses relevant to the procedures that are utilized by the various grading systems that are now in use (Rogmans & Ghunaim, 2016). Conventional investment theory views real estate as a triangle framework with location, financial resources, and temporal concerns. This use is assigned to a defined location that generates predicted monetary inflows during a set term. Immobility and inflexibility define the real estate sector in this deterministic view. Lack of movement and flexibility creates a sense of real estate certainty. In this case, standard net present value methods may be suitable for investment analysis. Standard valuation methods become less effective when investors consider more uncertainty. When examining the numerous characteristics of entrepreneurial flexibility, standard approaches underestimate investment opportunities. These strategies fail to consider or value other options, resulting in myopic decision-making (Lucius, 2001).

The act of acquiring residential property is frequently seen as an important transaction in individuals' lives, with an innate emotional connection that develops when dwellings transition into personal homes. This is because of the inherent emotional connection that forms as dwellings turn into personal homes. Nevertheless, it would appear that this specific discovery is not fully reflected in the corpus of scholarly research that is currently available. In the realm of real estate, the relevance of the consumption function, in addition to the social and emotional components of the industry, is sometimes ignored (Salzman, & Zwinkels, 2017). Most homebuilders target upscale markets. These sectors' high prices increase earnings, causing this trend. There are several luxury flats for sale. These products target investors who value profit over homes. This industry faces significant hurdles. Commercial banks, which support real estate, need sustainable financial options. Low-end and middle-segment property development projects sometimes become luxury enterprises, creating regulatory worries. Thus, this adjustment reduces low-end and middle-market real estate. Many real estate developers are condemned for their environmental implications, typically owing to unlawful urban planning and architectural initiatives. Recent civil engineering technologies have reduced lead times. Famous real estate companies may now provide more items to their affluent clientele, a minority of society. Thus, the real estate market has surplus, with expensive properties, and undersupply, with few affordable housing options for the general population (Hiep et al., 2021).

After conducting an extensive literature analysis, it was clear that there is a lack of research on marketing in the real estate sector in technologically advanced urban areas. The objective of our research is to address this deficiency. Furthermore, the scarcity of research pertaining to real estate marketing and digital technology in Turkey is evident. Bond et al. (2000) investigated the endeavors of residential real estate brokers to adapt to the ever-changing market by collecting listing data from established real estate brokerage websites. Ford et al. (2005) conducted an investigation on the impact of dual property listings on both online platforms and the multiple listing service (MLS) on the marketing duration and pricing of those properties. Aytekin & Demirli, (2017) utilized the rankings provided by the Alexa website to establish the sample for their study. By employing this method, they were able to calculate the visitor traffic of the top five real estate websites in Turkey through tracking techniques. Liu & Xiong, (2018) conducted an analysis of the historical progression of China's real estate market, providing an overview of the real estate boom and examining its interconnectedness with households, local governments, enterprises, and the financial system. Cagli (2019) examined the

possible occurrence of explosive dynamics within the Turkish real estate market. Alhodiry et al. (2021) sought to offer fresh empirical evidence by examining the effects of exogenous shocks, specifically oil prices and the U.S. interest rate, on Turkey's real estate market via three co-integration testing methods. Balemi et al. (2021) conducted an extensive literature analysis on the most recent scholarly findings about the impact of the pandemic on the housing, commercial real estate, and mortgage sectors. Their conclusions are associated with detailed information on the performance of each real estate industry during the crisis. De Toro et al. (2021) sought to analyze the trends in the residential market in Italy, specifically focusing on the metropolitan region of Naples. Dell'Anna & Bottero (2021) gave a long-term review of the sustainability plan, highlighting consumer behavior in various stages of Singapore's real estate market. Their findings demonstrated how spatial models filter out the autocorrelation effect. Grybauskas et al. (2021) posed the topic of which characteristics of an apartment are most likely to impact a price adjustment during the epidemic. During the COVID-19 epidemic, they used big data to do predictive analytics on the real estate market. Azmi at al. (2022) aimed to examine the possible applications of virtual reality (VR) in the context of residential real estate marketing, specifically its impact on individuals' desire to acquire a property. Chong & Phillips (2022) conducted an estimation of the financial implications of the COVID-19 pandemic on the overall worth of commercial real estate in the United States. They found that the real estate markets would have seen far larger reductions if not for the implementation of aggressive monetary and fiscal policies during the initial stages of the epidemic. Qashou et al. (2022) predicted that the use of renewable energy considerably contributes to CO2 emissions, whereas real income promotes environmental deterioration in both the short and long term. Furthermore, their research found that the real estate sector had a negative impact on carbon emissions reduction in Turkey. Barkham et al. (2022) deliberated on the influence of recent developments in urban big data implementation on real estate markets. Also, they anticipated that these technologies would ultimately increase urban productivity and quality of life.

Broxterman & Zhou (2023) conducted a literature review concerning the economics of information in real estate. Also, the authors demonstrated how research has enhanced their comprehension of potential market failures and corrections, thereby improving market functioning, through the examination of the nature and magnitude of information frictions in these significant markets. Brzezicka & Wisniewski (2023) introduced the speculative frame method, which identifies market tensions, minor shocks, and price peaks in order to analyze the real estate market. Time and price data series were utilized in their methodology. Miljkovic et al. (2023) detailed the advantages of AI and VR technology for the real estate industry. Furthermore, they conducted an in-depth literature study focusing on the theoretical foundation of artificial intelligence (AI) and virtual reality, specifically highlighting its use in the real estate sector. Sanchaniya et al. (2023) performed a comparative analysis of the real estate markets in India and Canada, providing a fundamental evaluation of the Canadian real estate market using insights from the real estate crisis in India. Besides, they examined recent economic history to identify the factors that led to the real estate disaster. Zhang et al., (2023) sought to examine the impact of internet advertising on new house sales, exploring possible influencing elements and the underlying process. Through the analysis of comprehensive secondary data collection and the application of econometric models, they discovered that internet advertising boosts the sales of new homes. This impact was more pronounced in areas with lower property costs, greater residential incomes, and lower-tier cities. There are several articles in the literature on the metaverse, artificial intelligence, virtual reality, and augmented reality technology (Aydin & Nalbant, 2023; Aydin et al., 2023; Nalbant & Aydin, 2023; Nalbant et al., 2023). Research on the implementation of these technologies in the real estate industry should be expanded. The purpose of this study is to review house sales statistics and investigate the current state of house sales in our nation. The real estate market, city management, housing sales by type and circumstance, the real estate sector in Turkey,

the impact of COVID-19 on real estate markets, real estate marketing, and technologies, and the benefits and drawbacks of technologies in real estate are all investigated in this study. Furthermore, an analysis of the real estate marketing literature indicates a scarcity of research specific to this subject; consequently, the goal of this book is to fill that gap.

1. Real Estate Sector in Turkey

As part of the present study, an examination of the Turkish real estate market was conducted. The present study examined the sales figures of residential properties throughout the time frame spanning from 2013 to 2023. In this part, we will conduct a comprehensive analysis of residential property transactions, categorizing them based on the kind of sale and the current stage of the transaction. State and type of house sales from 2013 to 2022 are detailed in Table 1. Housing sales across Turkey increased by 25.1% in January compared to the same month of the previous year, reaching 88,306 in Table 1 for 2022. Istanbul had the highest share of housing sales, with 15 thousand, 110 house sales, and 17.1% in Table 2. Istanbul was followed by Ankara with 8 thousand 255 house sales and a 9.3% share, and Izmir with 5 thousand 486 house sales and a 6.2% share, according to sales numbers. The provinces with the lowest number of house sales were Ardahan with 18 houses, Hakkari with 31 houses, and Bayburt with 44 houses (TUIK, 2023).

Table 1. House sales by type and state for 2013-2022.

			Sales by type				Sales by state			
			Mortgaged sale		Other sale		First hand sale		Second hand sale	
Year	Month	Total	Unit	Share (%)	Unit	Share (%)	Unit	Share (%)	Unit	Share (%)
2013		1,157,190	460,112	39.8	697,078	60.2	529,129	45.7	628,061	54.3
2014		1,165,381	389,689	33.4	775,692	66.6	541,554	46.5	623,827	53.5
2015		1,289,320	434,388	33.7	854,932	66.3	598,667	46.4	690,653	53.6
2016		1,341,453	449,508	33.5	891,945	66.5	631,686	47.1	709,767	52.9
2017		1,409,314	473,099	33.6	936,215	66.4	659,698	46.8	749,616	53.2
2018		1,375,398	276,820	20.1	1,098,578	79.9	651,572	47.4	723,826	52.6
2019		1,348,729	332,508	24.7	1,016,221	75.3	511,682	37.9	837,047	62.1
2020		1,499,316	573,337	38.2	925,979	61.8	469,740	31.3	1,029,576	68.7
2021		1,491,856	294,530	19.7	1,197,326	80.3	461,523	30.9	1,030,333	69.1
2022		1,485,622	280,320	18.9	1,205,302	81.1	460,079	31.0	1,025,543	69.0
2022	January	88,306	18,183	20.6	70,123	79.4	27,203	30.8	61,103	69.2
	February	97,587	19,888	20.4	77,699	79.6	28,897	29.6	68,690	70.4
	March	134,170	30,271	22.6	103,899	77.4	38,337	28.6	95,833	71.4
	April	133,058	32,030	24.1	101,028	75.9	36,421	27.4	96,637	72.6
	May	122,768	29,335	23.9	93,433	76.1	32,861	26.8	89,907	73.2
	June	150,509	40,610	27.0	109,899	73.0	44,732	29.7	105,777	70.3
	July	93,902	19,146	20.4	74,756	79.6	28,688	30.6	65,214	69.4
	August	123,491	22,168	18.0	101,323	82.0	39,025	31.6	84,466	68.4
	September	113,402	16,970	15.0	96,432	85.0	35,954	31.7	77,448	68.3
	October	102,660	13,268	12.9	89,392	87.1	32,692	31.8	69,968	68.2
	November	117,806	16,655	14.1	101,151	85.9	37,380	31.7	80,426	68.3
	December	207 963	21,796	10.5	186,167	89.5	77,889	37.5	130,074	62.5

Other housing sales across Turkey increased by 17.2% in January compared to the same month of the previous year, reaching 70,123 in 2022 (Table 1). Other sales accounted for 79.4% of total housing sales. Second-hand house sales across Turkey increased by 26.5% in January compared to the same month of the previous year, reaching 61,103. The proportion of used home sales to total home sales was 69.2%. Table 2 and Table 3 list the top 10 provinces with the highest sales in total and the bottom 5 provinces with the lowest sales for 2022-2023 (TUIK, 2023).

Table 2. House sales by provinces in 2022.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Istanbul	15,110	18,752	23,974	26,330	22,148	27,998	14,350	18,485	19,089	16,987	19,687	36,744	259,654
Ankara	8,255	8,464	12,609	12,195	11,497	13,303	7,417	9,736	8,812	8,146	9,367	16,365	126,166
Izmir	5,486	5,575	8,051	8,459	7,159	8,243	4,868	6,395	6,338	5,686	6,366	10,876	83,502
Antalya	4,295	4,727	6,364	8,076	6,732	8,045	4,643	6,106	6,078	6,323	7,902	11,168	80,459
Bursa	3,734	3,354	4,918	4,851	4,323	5,283	3,538	4,361	4,130	3,787	4,304	7,694	54,277
Mersin	2,346	2,662	3,686	3,529	3,302	3,919	2,412	3,386	2,866	2,846	3,468	5,822	40,244
Gaziantep	1,662	2,092	3,205	3,067	3,085	3,648	2,726	3,585	2,957	2,735	3,243	6,676	38,681
Kocaeli	2,801	2,877	3,618	3,676	3,252	4,117	2,347	3,047	2,648	2,171	2,697	4,803	38,054
Tekirdag	2,215	2,405	3,336	3,308	3,120	3,873	2,135	2,802	2,616	2,185	2,506	4,206	34,707
Konya	1,794	1,908	3,020	2,682	2,736	3,312	2,357	3,150	2,681	2,378	2,764	5,772	34,554
Gümüshane	64	136	124	86	84	113	110	146	98	114	106	231	1,412
Tunceli	96	67	103	75	104	105	99	174	153	135	85	155	1,351
Bayburt	44	47	82	47	75	90	98	101	108	69	58	137	956
Hakkari	31	40	505	25	21	40	31	41	40	30	34	72	910
Ardahan	18	23	25	25	43	44	31	63	49	42	47	58	468

Table 3. House sales by provinces in 2023.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Istanbul	17,415	14,980	18,166	13,944	18,435	13,578	15,724	17,408	15,247	14,941	15,187	23,714	198,739
Ankara	8,808	8,235	12,023	10,000	11,196	7,325	9,688	11,007	9,048	7,394	8,250	11,458	114,432
Izmir	4,894	5,031	5,858	4,960	6,015	4,061	5,203	6,504	5,476	5,192	5,105	7,166	65,465
Antalya	5,572	4,927	6,120	4,908	6,158	4,503	5,059	5,707	5,196	4,764	5,064	6,743	64,721
Bursa	3,559	3,055	3,701	3,015	4,216	2,990	4,001	4,771	4,054	3,675	3,449	4,930	45,416
Mersin	2,553	2,139	3,067	2,277	2,906	2,345	3,152	3,617	2,847	2,870	3,035	4,182	34,990
Gaziantep	2,513	825	1,584	1,848	3,183	2,505	3,158	3,806	3,402	2,661	2,660	4,115	32,260
Konya	2,264	2,072	2,916	2,030	2,983	2,134	3,120	3,489	2,691	2,299	2,374	3,493	31,865
Kocaeli	2,435	2,319	2,912	2,435	3,218	2,274	2,572	2,762	2,398	2,174	2,071	3,571	31,141
Balıkesir	2,025	1,858	2,346	1,966	2,568	1,930	2,647	3,133	2,521	2,330	2,211	2,802	28,337
Gümüshane	99	74	89	68	91	104	160	172	98	156	73	136	1,320
Bayburt	57	58	69	53	55	79	104	148	77	80	74	135	989
Tunceli	42	47	70	57	55	44	91	164	122	98	91	89	970
Hakkari	23	16	54	22	38	29	40	67	55	40	52	65	501
Ardahan	24	30	23	22	18	17	27	39	47	43	57	79	426

Figures 1 and 2 provide house sales data by month in 2022 for different types and states.

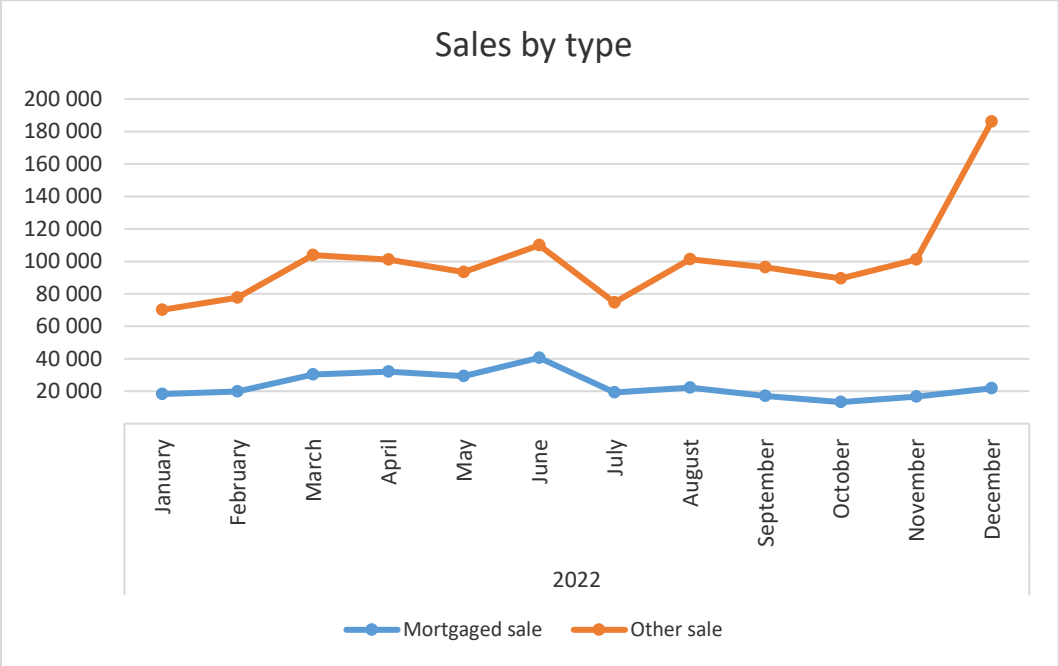

Figure 1. House sales by sales type in 2022.

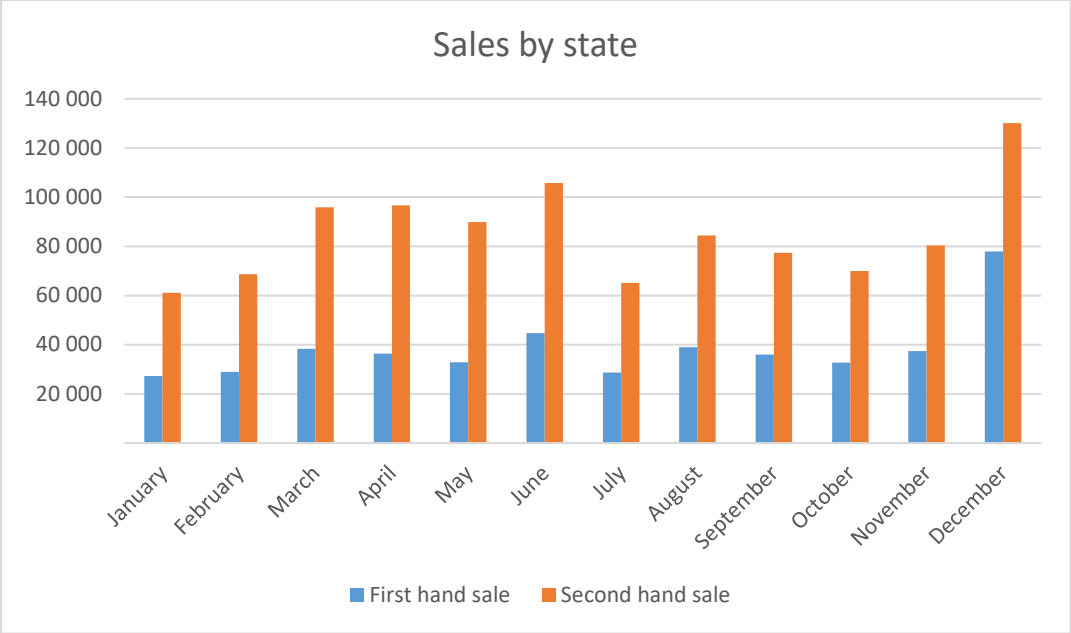

Figure 2. House sales by sales state in 2022.

State and type of home sales from 2013 to 2023 are detailed in Table 4. Housing sales across Turkey decreased by 1.1% in August compared to the same month of the previous year, reaching 122,091 in Table 4 for 2023. Istanbul had the highest share of housing sales, with 17 thousand 408 house sales and 14.3%. Istanbul was followed by Ankara with 11 thousand 7 house sales and a 9.0% share, and Izmir with 6 thousand 504 house sales and a 5.3% share, according to sales numbers. The provinces with the lowest number of house sales were Ardahan with 39 houses, Hakkari with 67 houses, and Artvin with 139 houses (TUIK, 2024).

Other housing sales across Turkey increased by 4.3% in August compared to the same month of the previous year, reaching 105,716 in 2023. Other sales accounted for 86.6% of total housing sales. Other

housing sales decreased by 11.9% between January and August compared to the same period last year, reaching 644,980 units (TUIK, 2024).

Second-hand house sales across Turkey increased by 2.7% in August compared to the same month of the previous year, reaching 86,781 in 2023. The share of second-hand house sales in total house sales was 71.1%. Second-hand house sales decreased by 16.2% in the January–August period compared to the same period of the previous year, reaching 559,309 (TUIK, 2024).

Table 4. House sales by type and state for 2013-2023.

			Sales by type				Sales by state			
			Mortgaged sale		Other sale		First hand sale		Second hand sale	
Year	Month	Total	Unit	Share (%)	Unit	Share (%)	Unit	Share (%)	Unit	Share (%)
2013		1,157,190	460,112	39.8	697,078	60.2	529,129	45.7	628,061	54.3
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2016		1,341,453	449,508	33.5	891,945	66.5	631,686	47.1	709,767	52.9
2017		1,409,314	473,099	33.6	936,215	66.4	659,698	46.8	749,616	53.2
2018		1,375,398	276,820	20.1	1,098,578	79.9	651,572	47.4	723,826	52.6
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2021		1,491,856	294,530	19.7	1,197,326	80.3	461,523	30.9	1,030,333	69.1
2022		1,485,622	280,320	18.9	1,205,302	81.1	460,079	31.0	1,025,543	69.0
2023		1,225,926	177,748	14.5	1,048,178	85.5	379,542	31.0	846,384	69.0
2023	January	97,708	16,203	16.6	81,505	83.4	27,532	28.2	70,176	71.8
	February	80,031	17,357	21.7	62,674	78.3	23,476	29.3	56,555	70.7
	March	105,476	25,262	24.0	80,214	76.0	32,899	31.2	72,577	68.8
	April	85,652	21,769	25.4	63,883	74.6	26,952	31.5	58,700	68.5
	May	113,276	27,476	24.3	85,800	75.7	34,413	30.4	78,863	69.6
	June	83,636	13,463	16.1	70,173	83.9	25,886	31.0	57,750	69.0
	July	109,548	14,533	13.3	95,015	86.7	31,641	28.9	77,907	71.1
	August	122,091	16,375	13.4	105,716	86.6	35,310	28.9	86,781	71.1
	September	102,656	8,446	8.2	94,210	91.8	30,488	29.7	72,168	70.3
	October	93,761	5,577	5.9	88,184	94.1	29,230	31.2	64,531	68.8
	November	93,514	5,245	5.6	88,269	94.4	30,472	32.6	63,042	67.4
	December	138,577	6,042	4.4	132,535	95.6	51,243	37.0	87,334	63.0
2024	January	80,308	5,915	7.4	74,393	92.6	25,263	31.5	55,045	68.5

During the January–August period (2023), there was a decline of 15.5% in housing sales as compared to the corresponding period in the previous year, resulting in a total of 797,418 units sold. When Turkey as a whole is taken into consideration, it is possible to make the observation that significant centers with the highest levels of technical development have the highest share of house sales within the real estate business (TUIK, 2024). Figures 3 and 4 provide house sales data by month in 2023 for different types and states.

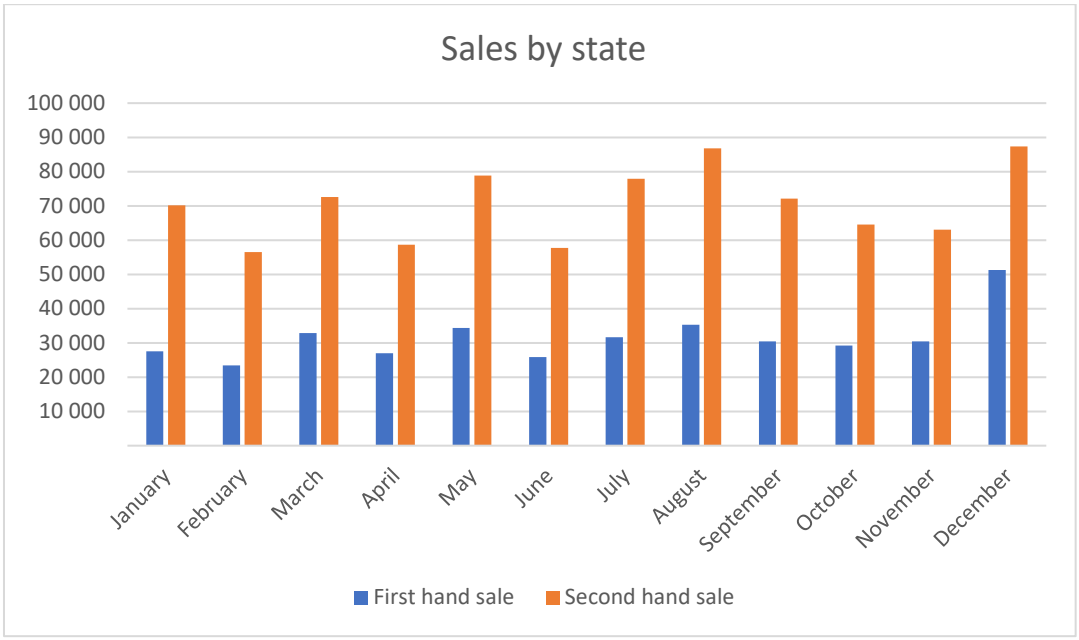

Figure 3. Housing sale by sales state in 2023

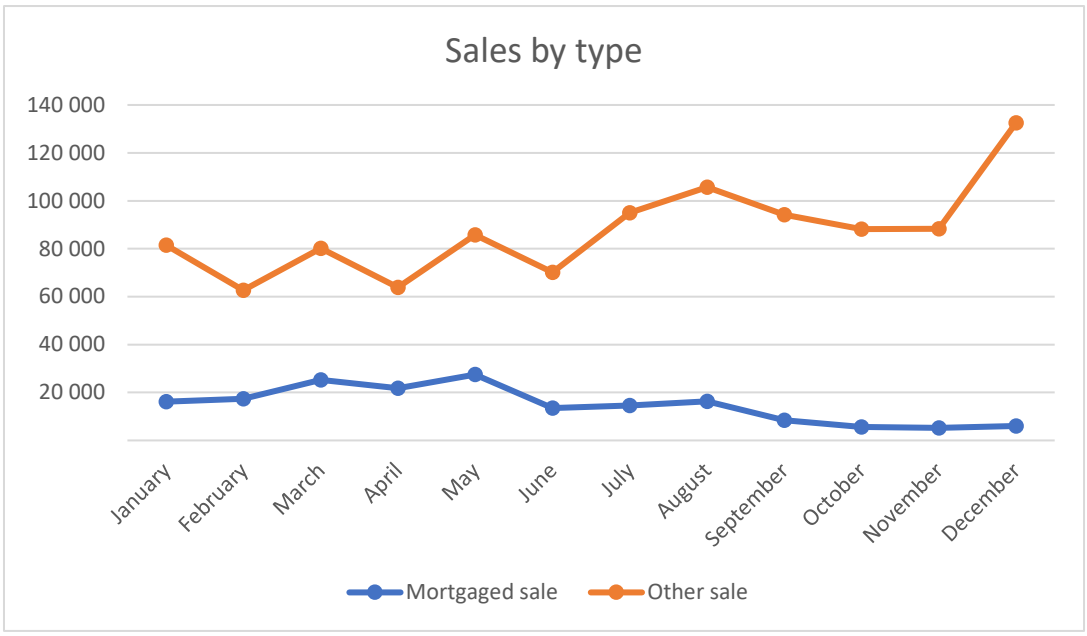

Figure 4. Housing sales by sales type in 2023.

Figures 5 and 6 provide the house sales data for 2013–2023. Although there has been a general upward trend in house sales since 2013, specific divisions by state and type indicate a decline in total sales for 2023.

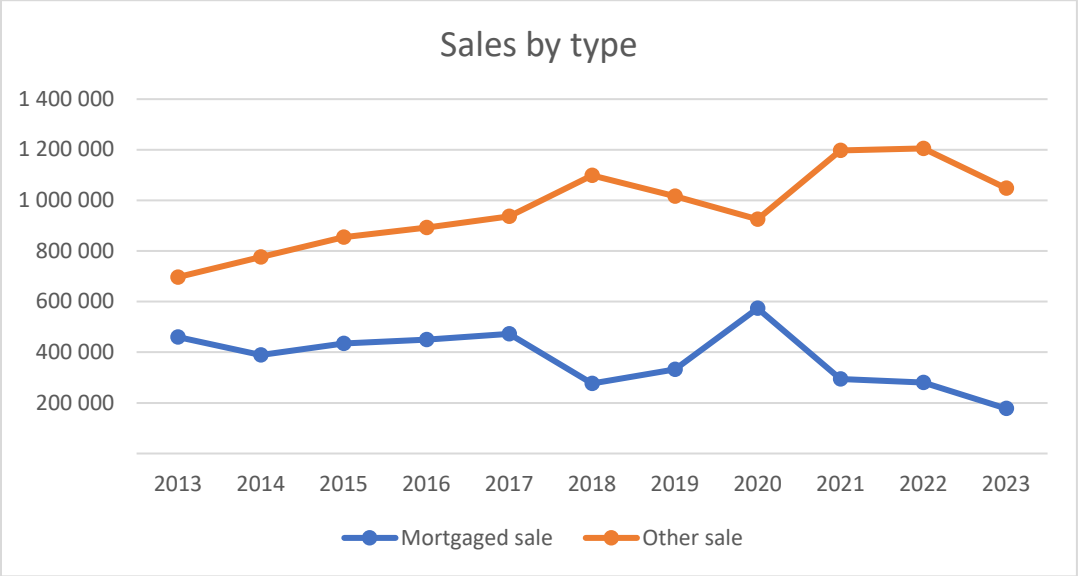

Figure 5. House sales by sales type in 2013–2023.

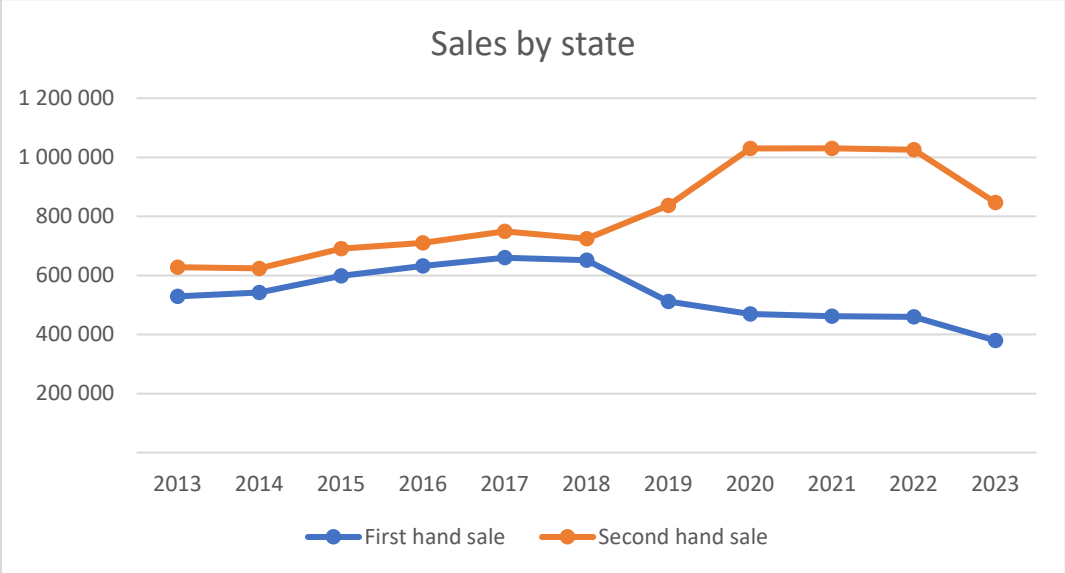

Figure 6. House sales by sales state in 2013–2023.

2. City Management

Cities are intricate and ever-evolving entities. Furthermore, these entities serve as nodes within spatial networks that encompass economic, social, and political geographies. These focal themes serve as major areas of focus for the many challenges that underlie ongoing discussions about sustainable development. The objective of this study is to examine the specific environmental impacts of urbanization at the local level and explore potential strategies for addressing these effects within the context of a single city as well as within the broader framework of urban regions as components of a larger economic system. Special emphasis is placed on various forms of information systems and feedback mechanisms, including those that are automated, which facilitate the integration of economic and environmental factors at the urban level. The central inquiry at hand pertains to the determination of the potential contribution of urban indicators, encompassing economic and environmental aspects, towards enhancing urban governance. From a policy standpoint, the complex interplay of shifting economic, environmental, and social factors presents challenges in monitoring concerns and formulating both immediate responsive measures and long-term strategic frameworks.

In order to effectively address transient challenges, it is crucial to possess timely signals of the issues at hand, with a specific focus on pivotal moments within ongoing patterns. In both the short and long term, it is necessary to have a comprehensive understanding of the underlying interconnections and structures that influence urban development. This understanding allows for the identification of areas where intervention is necessary and where self-correcting mechanisms are present (Button, 2002).

To effectively retain and recruit citizens, city administrators must possess a comprehensive understanding of the factors that contribute to the formation, cultivation, and augmentation of place attachment. In addition, it is imperative for them to meticulously analyze the underlying motives and causes that drive the behavior of their inhabitants. Based on this understanding, urban areas may implement appropriate measures to leverage this sense of emotional connection. Developing and strengthening the sense of place attachment, nonetheless, should be incorporated as an integral component of a deliberate and coordinated strategy framework. Short-term treatments may potentially provide counterproductive outcomes since certain individuals may exhibit opportunistic behavior through isolated activities. Therefore, city administrators should not heavily depend on individuals who demonstrate significant patronage with rapid impact. It is important to additionally take into account people whose emotional attachment to a certain location has substantial importance. Similar to organizations, cities often prioritize and provide incentives to those who make regular purchases while disregarding others who do not engage in frequent buying activities. However, it is essential to examine the underlying factors that drive individuals' decision-making processes when it comes to making a purchase at a certain location. Consequently, doing research is the initial undertaking that city or town administrators must engage in to establish the parameters that determine the extent of place attachment and patronage. This includes determining the factors that contribute to such attachment and patronage, such as the quality of local services or familial connections. Based on the severity of the identified aspects, appropriate judgments and actions can be implemented (Florek, 2011).

3. Real Estate Market

From an economic perspective, the real estate market may be seen as the intersection point where the supply of and demand for real estate converge, facilitating the exchange of real estate assets. This abstract concept raises several inquiries. The real estate market is commonly divided into distinct submarkets based on numerous factors. The primary aspects of significance encompass the classification of real estate, spatial considerations, and temporal factors. Upon closer examination of the housing sector, it becomes evident that it can be divided into two main categories: single-unit housing and multi-unit housing. In the case of the latter, the real estate market may be analyzed from two distinct perspectives: that of the individual apartments inside multi-unit buildings or as a collective entity encompassing the entire building. The outcomes may vary depending on whether we analyze transactions involving individual apartments or the buying and selling of entire apartment buildings. At the individual unit level, transactions may vary in terms of their nature. The two most significant agreements are likely to be those pertaining to the transfer of ownership and leasing arrangements. In the context of the rental market, an inquiry arises regarding the extent to which the real estate market encompasses just new rental agreements or also encompasses a significantly greater quantity of pre-existing rental agreements. At a higher level of analysis, market transactions can occur at several levels within a structure. The item in question may consist of a solitary tangible entity that is subject to trade, or alternatively, it may encompass a collection of several items. In the latter scenario, the portfolio may comprise many categories of real estate assets. Real estate portfolio transactions frequently occur in bundled formats rather than through direct means. Often, it is the entity possessing the collection of real estate assets that is subject to trade, therefore allowing other attributes of the entity to potentially impact the transaction. In the event that the corporation is listed on the public

stock exchange, the exchange of its shares, while primarily occurring inside the financial market, may also be seen as a transaction within the real estate market (Maier & Herath, 2009).

The concept of real estate market transparency involves the integration of smart sustainable development and growth objectives into the operational processes of both the industry and government. This factor is of utmost importance in determining the success of a city. The utilization of this mechanism facilitates the efficient operation of governments and public entities, hence yielding enduring advantages for local communities and the environment. Additionally, it facilitates the establishment of a heightened level of competitiveness and adaptability within the realm of investments and enterprises, while concurrently making noteworthy contributions towards enhancing the overall standard of living for individuals. The efficient functioning of real estate markets is contingent upon the presence of substantial degrees of openness. Due to powerful disruptors, the emergence of flexible office space has significantly altered the dynamics of the real estate sector. The current emphasis on beneficial ownership and anti-money laundering is a result of ongoing public discussions about issues like ownership, tax evasion, and corruption, all of which have received a lot of media attention. The increasing development and integration of the "alternatives" sector into the mainstream market is driven by investor expectations for more transparency (Siniak, 2020).

3.1. COVID-19's Impact on Real Estate Markets

In March 2020, the global community encountered its inaugural pandemic due to the failure to effectively control a novel respiratory ailment referred to as coronavirus disease 2019, often known as COVID-19. In instances where other measures have been thoroughly explored and implemented without success, governments worldwide employ the strategy of imposing a curfew and issuing directives for individuals to remain within their residences, with the aim of mitigating the risk of overwhelming the healthcare infrastructure. During the subsequent months, vacant office buildings, residential workspaces, retail centers, and pedestrian walkways, with closed restaurants, hushed pubs, and clubs, serve as emblematic representations of social estrangement and the boundaries that exist within interpersonal relationships. This tendency is similarly evident in the limited level of engagement observed in public areas, including promenades and retail malls. Despite the availability of many economic aid measures, the occurrence of shutdowns becomes unavoidable during a global economic crisis, regardless of the efficacy of these efforts in curbing the further transmission of the disease. The real estate markets, encompassing both residential and commercial properties, together with the mortgage markets, are currently facing unprecedented challenges, similar to several other industries. There has been a decline in the sales volume of both commercial and residential properties. Additionally, individuals are vacating their apartments in metropolitan areas, and households are encountering difficulties in making mortgage repayments. These are some of the consequences observed as a result of this situation. Consequently, economists and other experts in the field possess a strong interest in acquiring a more profound understanding of the impact of the epidemic on the real estate and mortgage sectors. Moreover, their intention is to employ this information in order to predict the economic ramifications of subsequent waves of COVID-19, both in the short term and the long term. These findings are particularly valuable in the context of late 2020, when several countries, mostly in Europe, are poised to reintroduce measures aimed at mitigating the transmission of the second wave of illnesses. The impact of COVID-19 on the housing and real estate markets is challenging to ascertain. Due to the infrequency of pandemics, there is a limited corpus of knowledge on their etiology. This assertion has particular validity in light of the sporadic occurrence of real estate time series. Moreover, the task of isolating the impact on the market becomes challenging due to the substantial effect exerted by broader macroeconomic factors, which are temporally and spatially constrained. The identification of the precise factor contributing to the alteration in price becomes challenging due to this circumstance (Balemi et al., 2021).

4. Real Estate Marketing and Technologies

A customer has discomfort when they are required to go through several agency sites or real estate portals in order to locate a certain product. Therefore, the present need entails consolidating essential information onto a single page. The focal concern pertains to the precise manner in which the transition from dispersion, lack of coordination, and surplus of data to a consolidated database should be executed. In this study of the near-term prospects for the domestic internet industry, we will utilize an examination of the key participants in the Western market, with a special focus on the American market. In recent times, novel company models have emerged that have been causing astonishment, particularly within the steady real estate market in the Western region, through the provision of exceptional innovative services. Their primary focus is on the business-to-consumer (B2C) area. One notable example is the remarkable initiative undertaken by the English firm www.foxtons.co.uk, which, at the turn of the century, introduced a realtor service with fees that were half the usual price. This reduction was made possible by the implementation of advanced technology for promoting properties on their innovative website. One example of a website that offers a handy service for real estate firms and clients is www.Trulia.com. This platform allows users to search for properties using the cartographic service provided by Google Maps. Another illustrative instance is the corporation www.Zillow.com, which incited speculation on the imminent demise of the conventional real estate agent industry. The method was created to effectively harness the existing demand for real estate services. A proprietor of an item has the option to voluntarily share details about their residence, presumably with the purpose of selling it, on the digital mapping platform known as Google Maps. Subsequently, they may receive targeted offers accompanied by precise price quotations. The present mechanism can be classified as a form of auction. In a similar vein, prospective purchasers have the ability to utilize a map to locate and assess the properties they are interested in acquiring. Later, the proprietor of the dwelling may opt to relocate due to the influence of alluring price incentives. The newly introduced service has been designated as "MakeMeMove." The utilization of realtor services for the purpose of selecting or selling a property has become obsolete, as it has significantly dominated the realm of real estate agent services. Franchise networks represent the third category of aggregators, wherein internet technologies enable the replication of the well-established idea of franchising. It is worth noting that the concept of franchising was initially introduced in 1851 by the inventor of the sewing machine empire, Zinger. The market's size is the only factor limiting the possibility of replicating innovations. The inclusion of a new partner into a franchise network is analogous to providing them with a password for accessing the corporate network. This network comprises a comprehensive and regularly updated set of information on the standards and practices of the master office. Franchise networks often own centralized databases, which play a significant role in the growth of realtor informational archives (Gummerus, 2010; Gornostaeva et al., 2017).

Real estate technology refers to the amalgamation of internet platforms and software technologies utilized by many parties within the real estate business. The individuals encompassed under this group consist of investors, brokers, lenders with a focus on real estate, property owners, mortgage providers, managers, and customers. Real estate technology is commonly denoted as "property management technology" in scholarly discourse. This category encompasses internet platforms that provide guidance and knowledge pertaining to the procedures involved in the rental and purchase of real estate properties. According to available reports, these businesses exhibit a substantial dependence on a diverse range of technological innovations, such as AI, cloud computing, software applications, big data analytics, the Internet of Things (IoT), unmanned aerial vehicles (drones), three-dimensional scanning, wearable technology and gadgets, virtual reality (VR) and augmented reality (AR), and robots. By accessing the information that Big9 technology provides, customers can effectively reduce feelings of regret. This will provide customers with information, empowering them to make more

educated decisions. In a more expansive context, these technologies may be classified into three distinct categories: networking tools, data-mining technologies, and data-collection technologies (Ullah et al., 2018).

The concept of "augmented reality" pertains to the integration of additional information, acquired from various sources such as external knowledgebases, social media networks, or real estate search engines, into the camera-captured reality. Examples of such sources include GPS and compass information. Hence, it is possible to create a value proposition that offers users tangible and intangible benefits by establishing a multidimensional relational framework for both physical and digital objects (Lang & Sittler, 2013).

Land offices have the potential to employ augmented reality (AR) technology in order to create interactive inventory and advertisements, as well as introduce novel methods for clients to see a property. This assertion is likely to hold true as AR is a contemporary technological advancement that is often perceived as very stimulating. Customers are more likely to establish a connection with a property when it is enhanced with an augmented reality (AR) component, since AR is favored above images, recordings, and textual descriptions for representation purposes. The degree to which an AR experience may improve a property or structure directly correlates with its level of complexity. Moreover, it is worth noting that augmented reality innovations have the potential to enhance client interest and engagement with the products or services offered by a business. Through the utilization of augmented reality technology, individuals now have the ability to virtually explore a property of interest. This practice effectively optimizes the schedule of a specialist, resulting in time and resource savings for the entire office (Ganapathy, 2016).

AI plays a key role in assisting real estate brokers in the process of screening potential consumers by utilizing data-mining search algorithms to collect relevant information. Additionally, this practice aids in refining marketing tactics and effectively engaging potential clients by utilizing social media platforms and email communication, hence optimizing work processes. These immersive systems and procedures have the objective of providing customers with information right from the initial stages of their property search. AI-powered systems have the capability to connect individuals with their ideal residential properties by employing filters that enable users to specify the essential criteria. The implementation of intelligent matching algorithms has the potential to prevent the occurrence of regrets that stem from human mistakes. AI bots have the capability to aid customers in enhancing their search process and identifying pertinent properties by using large datasets employed by AI for predictive analysis. AI-powered speech recognition technology is an additional application that has the potential to offer valuable information to customers, thereby mitigating the occurrence of regrets associated with information among end users. The absence of effective communication might contribute to the emergence of feelings of remorse, as individuals may see it as a deliberate act of concealing vital information. Cloud-based software, such as PropertyMe, facilitates access for brokers, customers, and owners, enabling the sharing of essential information pertaining to maintenance and renovation requirements across various parties. Furthermore, it enhances the accessibility of financial information pertaining to the properties for stakeholders, thereby mitigating any regrets through the provision of additional data. Software-as-a-Service (SaaS) platforms like RealSpace and PropertyBase provide the exchange of information pertaining to maintenance, security, lease and tenancy, contracts, and work orders among many parties, including customers. These features have the capability to provide consumers with the necessary knowledge to mitigate post-purchase regrets. The utilization of drone imagery enables the visualization of solar trajectories, surrounding vegetation, geographical locations, and proximities to recreational areas, educational institutions, and essential facilities. Using high-quality, magnifiable visuals inside a home makes it possible to see intricate details from vantage points that would be out of reach for most people. The outcome is an increased provision of

information to consumers, which has the potential to facilitate constructive decision-making and mitigate post-purchase remorse. Through the use of such technological gadgets, individuals have the ability to maintain a constant connection with a structure and acquire immediate updates regarding various matters such as maintenance requirements, potential fire threats, gas leaks, and other related concerns. The use of immersive connectivity enhances the user's connection with the building, facilitating more engagement in everyday decision-making processes and perhaps fostering a deeper emotional attachment to the property. The development of a connection and a sense of attachment helps to reduce potential regrets that could arise from ignorance, especially after making a purchase. Valuable data might be passively captured to provide later renters or owners with information on the property (Ullah et al., 2018).

The advent of mobile technology has significantly transformed the operations of real estate organizations and their methodologies across several areas within the industry. This encompasses a wide range of activities, ranging from property showings and lease signings to inspections, as well as ad hoc maintenance, regulatory compliance, and enhanced retail experiences. The existing conditions suggest that several factors have likely played a role in the rising use of mobile technology in the real estate industry. The following key issues are worth noting in this regard:

(1) The consumerization of technology and the widespread use of mobile technology.

(2) A social norm in which customers expect companies to interact with them through their mobile devices, including social media platforms.

(3) Increased customer demands for quick responses and better value and experiences.

(4) The constant pursuit of automating routine and unplanned tasks, along with efforts to streamline and improve operational efficacy (Warburton, 2016).

The emergence of blockchain technology is poised to bring about a transformative impact on the real estate sector, with tangible manifestations of its potential already evident. The real estate business is a prominent worldwide industry that significantly contributes to the economic prosperity of nations. The expansion of the business sector, the need for office space, industrial sites, urban housing facilities, agricultural areas, and so forth effectively support the expansion of this sector. Nevertheless, the current realm of real estate is characterized by its intricate nature, mostly due to the absence of transparency in various transactions, including leasing, acquiring, and sales. Consequently, it falls short of achieving the desired standards of secrecy and authenticity in operating data. The requirement for transparency, data integrity, and security in various parts of its operations, including property sale prices, sale history, lease rental rates, market valuation, and other related factors, is expected to increase. This necessitates the establishment of a trusted environment. Consequently, the availability of property-related information may be enhanced by digitizing and hosting it on decentralized databases inside distributed systems, thereby reducing the occurrence of fraudulent activities and errors. The potential for shared misperception and covert actions in the context of sales, rentals, and leases may be effectively mitigated, leading to the successful implementation of digital platforms for real estate ownership. Incorporating its wide-ranging benefits, blockchain has the potential to become a prevalent practice in several aspects of real estate investing, encompassing decision-making processes and property selection (Krupa, & Akhil, 2019).

The real estate sector, encompassing both its direct and indirect manifestations, plays a significant role in generating a substantial amount of job opportunities and contributes significantly to the overall economy. Without any doubt, it can be asserted that the internet is unequivocally the most crucial marketing instrument available in contemporary society. In recent years, social media has emerged as

the most effective advertising platform. It is recommended to cultivate an online presence on YouTube through the creation of a dedicated channel and to leverage the advertising capabilities provided by Instagram by sharing links to engaging content or promotional materials on one's profile. By doing so, individuals will have the capacity to expand their consumer base. Effectively using social media in the real estate industry necessitates the implementation of many tactics, with active involvement in online interactions with the target audience being particularly crucial. Given that it is a prerequisite, there is a need to undertake efforts in the domain of search engine optimization (SEO). The likelihood of customers making purchases may be attributed to a noticeable impact resulting from enhanced visibility of the website, achieved through search engine optimization. Customer relationship management system (CRM) denotes a software application employed for the purpose of effectively managing interactions and connections with customers. A customer relationship management system (CRM) is widely recognized as a crucial component of digital transformation in many firms and organizations. One might potentially get a significant benefit by initially classifying and subsequently documenting all relevant customer information. The construction of a client portfolio within the real estate industry is well recognized for its sophisticated and time-consuming nature, mostly owing to the various stages required and the inherent problems associated with this undertaking. A discernible association has been observed between the rise in internet users and the corresponding growth in the quantity of real estate-focused websites. These portals facilitate the process of submitting and retrieving advertisements on the Internet. Utilizing real estate websites affords users several advantages, with access to property listings being a prominent feature among them. Nevertheless, it is important to note that this is but one facet of the numerous benefits offered by such platforms. Through the utilization of these online platforms, real estate consultants have the opportunity to gain a full grasp of the sector. These portals facilitate the process for real estate consultants to conduct market and competitive analysis, granting them enhanced access to supplementary information. The advent of the digital age has led to several notable advancements in several sectors, with the electronic newsletter emerging as a particularly renowned innovation within the realm of marketing. The utilization of e-newsletters, distributed to clients via electronic mail, has demonstrated efficacy as a tactic for enhancing consumer awareness of a brand and fostering customer trust. In the realm of the real estate industry, the utilization of e-mail marketing as a means of distribution has significant importance in the transmission of electronic newsletters. Irrespective of the sector, a firm's capacity to sustain profitability is closely linked to the extent to which it prioritizes the needs and preferences of its customers and formulates its marketing strategy accordingly.

An expanding number of platforms provide numerous prospects for landing in the metaverse. Luxury property developments are currently being promoted in the real estate sector through the utilization of metaverse-based digital twins. Consequently, the investment in "real estate of the future" in the metaverse can be likened to the worth of a corporation's website when viewed from the angle of marketing and advertising. A similar process applies to the development, construction, server hosting, and maintenance of a digital replica of a physical store located in the metaverse (Hutson et al., 2023).

5. Advantages and Disadvantages of Technologies in Real Estate

One notable benefit of employing virtual reality technology in the field of real estate is that it enables real estate agents to properly see or grasp a project, even prior to its physical construction. Furthermore, the utilization of augmented reality technology in the realm of land holds the potential to significantly reduce time consumption. When a land expert opts to employ virtual visits and virtual scheduling, the process of searching and evaluating properties may be conducted more efficiently and expeditiously. This eliminates the need for any buyer or renter to undertake a journey to a distant location in order to physically view the property in question, thereby conserving both time and resources. Furthermore, computer-generated reality technology also contributes to the reduction of

costly project marketing efforts. It is customary that during the construction phase, the utilization of augmented reality technology may once again enhance the efficiency of tasks, simulate training for on-site jobs, and enhance the accuracy and precision of construction workers by providing them with a continuous visual representation of the final project design. When these components are integrated, it can be confidently asserted that virtual reality (VR) possesses the potential to provide substantial cost savings for property managers and other real estate investors. Furthermore, it is noteworthy to mention that augmented reality innovation is making significant advancements from the perspective of the consumer. This is true in the architectural blueprints or initial designs for a specific property. It is common for a well-constructed model to be expected to undergo bending or modification in subsequent stages. Subsequently, the development professionals are required to revisit the planning board in order to address the situation and replicate their modifications. This implies that the development organization will be required to handle uncertain cost increases. However, the deliberate utilization of computer-generated simulation responses for Construct land applications has the potential to effectively address these concerns, including the management of time constraints. Finally, this suggests that experts are able to reach the most important clients and efficiently address their inquiries from the convenience of their own homes. Ultimately, several real estate agents find the process of completing documentation for transactions and navigating legal formalities to be exceedingly time-consuming and significantly burdensome. The enhanced experience of real visits and assistance has significantly simplified life for a certain group of professionals, fostering stronger connections and collaboration between customers and employees. A considerable quantity of supplementary intelligence tools facilitates the enhancement of the consumer experience, such as mortgage calculators, the depiction of localities and landmarks, and details pertaining to comparable homes, among others (Ganapathy, 2016).

CONLUSION

The importance of digital marketing in the real estate sector is continuously growing daily, and it is expected that this trend will continue in the foreseeable future. Over the course of the past decade, there has been a discernible increase in the use of the internet, which has led to a concomitant surge in both the demand for and the availability of real estate. The phenomenon that has been seen can be related to the concomitant increase in the availability of real estate. The ongoing pandemic has had a huge influence on the real estate industry, leading to a constant growth in the relevance of digital marketing because of this trend. It is common knowledge that a sizeable percentage of people who are interested in purchasing a home will begin their hunt by utilizing several different web resources. The fact that only a small percentage of customers still choose to conduct their property searches using traditional methods demonstrates how important it is for the real estate business to adapt its marketing techniques to take advantage of digital platforms. The significance of making use of these strategies is brought out by this fact.

After conducting an in-depth analysis of the relevant published material, it was discovered that only a small number of studies have been conducted on the topic of marketing strategies for the real estate industry within the context of technologically developing urban areas. There are not a lot of in-depth studies that are especially centered on this subject area. The effect that newly developed technologies like artificial intelligence, augmented reality, virtual reality, mobile technology, and the internet have had and will continue to have on the real estate industry is a topic that has garnered the interest of academics. Examining the influence that digital technology has on marketing strategies in well-established metropolitan areas is the primary objective of this research project, which intends to fill a current void in the academic literature.

Customers need quick access to their preferred brands and products, and achieving this goal is their aim. Advancements in technology have enabled the real estate market to utilize virtual reality technology for property viewing in a user-friendly way. Therefore, efforts are being made to maximize communication speed. Successful firms must create consumer-centered strategies and deliver solutions that meet customer expectations. It is crucial to invest in digital technologies like artificial intelligence, the metaverse, blockchain, virtual reality, digital twins, and augmented reality apps. Further study of these technologies in the real estate sector is essential to expanding the existing knowledge base.

The real estate sector encompasses a diverse range of enterprises. Examples of such firms include real estate consultants and real estate agents. The identification and engagement of potential real estate buyers and their investment portfolios can be achieved by employing various digital marketing tactics. These include the utilization of websites, listing sites, social media platforms, online advertising, search engine optimization, email marketing, content marketing, and mobile applications, among other strategies. It is expected that the effective implementation of prominent digital marketing technologies within the real estate sector will directly contribute to the growth in sales volume, aligning with the ongoing expansion of the industry. Furthermore, this will aid in the enhancement of the organization's brand value. Organizations that employ digital marketing strategies possess the potential to have a significant impact on their target demographic, thereby augmenting their consumer base. In 2023, there has been a significant decline in housing sales compared to previous years, reflecting the impact of digital technology in our day. Hence, greater emphasis should be placed on digital technology, particularly artificial intelligence. Literature studies in the real estate business need to be expanded. We believe that future studies should be guided by research that incorporates digital technologies like artificial intelligence, the metaverse, virtual reality, and augmented reality.

Compliance with Ethical Standard

Conflict of Interest: The author declares that there is no conflict of interest.

Ethics Committee Permission: In this article, ethics committee approval is not required, and a consent form affirming that a wet-signed ethics committee decision is not necessary has been added to the article process files on the system.

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