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Real estate investors' behaviour

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

*Published Version:*

Real estate investors' behaviour / Abdallah, MHI; Al-Tamimi, HAH; Duqi, A. - In: QUALITATIVE RESEARCH IN FINANCIAL MARKETS. - ISSN 1755-4179. - ELETTRONICO. - 13:1(2021), pp. 82-98. [10.1108/QRFM-06-2019-0071]

*Availability:*

This version is available at: <https://hdl.handle.net/11585/926859> since: 2023-05-25

*Published:*

DOI: <http://doi.org/10.1108/QRFM-06-2019-0071>

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This is the final peer-reviewed accepted manuscript of:

**[Abdallah, M.H.I., Al-Tamimi, H.A.H. and Duqi, A. \(2021\), "Real estate investors' behaviour", \*Qualitative Research in Financial Markets\*, Vol. 13 No. 1, pp. 82-98.](#)**

The final published version is available online at:

<https://doi.org/10.1108/QRFM-06-2019-0071>

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## **Real Estate Investors' Behaviour**

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### 1. Introduction

This research examines the behaviour of investors in the United Arab Emirates (UAE) real estate sector. This type of research is classified under the field of behavioural finance, which “incorporates parts of standard finance, replaces others, and includes bridges between theory, evidence, and practice” (Statman, 2014; see also DeBondt and Thaler, 1985; Barberis and Thaler, 2003; Ritter, 2003; Kim and Nofsinger, 2008; Ramiah *et al.*, 2015; Kariofyllas *et al.*, 2017). Behavioural finance also relates to private and institutional clients and professionals, corporate decision makers, and traders. It should be noted that the global financial crisis of 2007–2008 was related to the behaviour of investors in real estate markets (Filbeck *et al.*, 2017). It is common for normal investors to invest in the instrument or the sector with the least risk and highest return. In this regard, a study by Fajardo and Dantas (2018) indicates that under a situation of severe hyperinflation investors show a lower willingness to invest in stocks than in other areas (e.g., real estate). Further, a study by Ben-Shahar and Golan (2014) found a positive relationship between demographic factors and real estate investment decisions. . In addition, Agarwal *et al.* (2018) found gender differences in the decision-making process of real estate investment. Al-Malkawi and Pillai (2013) analysed the performance of real estate and construction companies in the UAE both before and after the global financial crisis; however, the focus of their study differs from this one.

This research attempts to examine the perceptions of UAE investors regarding their investment decisions in the real estate sector. This study would be the first of its kind carried out in the UAE, as far as the researchers know, and it is expected to make a valuable contribution to the field of real estate finance. A comparison between the findings of this study and a number of previous studies has also been made. The findings of this study are expected to help policymakers identify investors' preferences and also the factors that most influence their investment decisions.

The UAE real estate sector has witnessed dramatic changes since the foundation of the United Arab Emirates on December 2, 1971. which consists of seven emirates, namely, Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah and Umm Al Quwain, on 2 December 1971. The UAE's real estate sector has made significant contributions to the country's GDP, having increased from 2.2% of GDP in 1975 to 12.47% in 2015 (National Bureau of Statistics, 2016). Table I shows the growth of the real estate sector in the UAE for the period 2007 to 2015. It can be seen that the global financial crisis of 2007 to 2008 negatively affected this sector, since its contribution to the UAE's GDP decreased from 11.32% in 2007 to 8.51% in 2011.

Sector	2006 (%)	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2014 (%)	2015 (%)
Agriculture, livestock, and fishing	1.06	0.94	0.80	0.96	0.91	0.81	0.66	0.65	0.65	0.73
Mining and quarrying	36.44	32.78	35.76	25.45	29.79	37.06	37.86	35.64	32.81	22.31
Manufacturing	9.38	8.71	8.30	8.57	8.46	7.68	8.51	7.84	8.06	9.27
Electricity, gas and water	1.80	1.77	1.71	2.39	2.06	1.87	2.35	2.48	2.61	3.09
Construction	8.62	9.65	10.19	11.78	11.05	10.13	8.41	8.37	8.91	10.19
Wholesale and retail trade and repair services	12.77	13.46	12.30	13.43	12.69	11.31	10.03	10.57	10.52	12.05
Restaurants and hotels	1.89	1.83	1.78	2.12	1.89	1.73	1.91	2.10	2.20	2.46
Transport, storage and communications	7.38	7.75	7.40	9.27	8.34	7.64	7.48	7.44	7.78	9.10
Real estate and business services	9.70	11.32	10.47	10.92	10.18	8.51	9.27	9.99	10.57	12.47
Social and personal service	1.64	1.70	1.74	2.27	2.16	2.09	2.29	2.13	2.22	2.61
Financial corporations	6.08	6.91	6.10	7.39	7.29	6.60	6.10	7.23	7.86	9.18

Government services	2.85	2.81	3.11	5.03	4.77	4.17	4.75	5.13	5.32	5.95
Domestic household services	0.38	0.36	0.35	0.43	0.41	0.39	0.38	0.44	0.49	0.60

**Table 1. The contribution of the real estate sector to the UAE economy from 2007-2015**

**Source: National Bureau of Statistics and Federal Competitiveness and Statistics Authority, different issues, Abu Dhabi**

It can be assumed that, under normal economic conditions, this sector's development would follow an upward trend; however, except for a slight increase in 2009, the trend was downward from 2007 to 2011 due to the impact of the global financial crisis of 2007 to 2008.

Five companies dominate the UAE real estate sector; namely, Emaar Properties; Aldar Properties; Damac Properties; Deyaar Properties; and RAK Properties. These companies' total assets as a percentage of the sector's total assets in 2017 were 60.6%, 19.5%, 13.6%, 3.5%, and 2.8%, respectively. Emaar Properties is the largest company in the sector, by a considerable margin. It is considered the market leader within the UAE, where it has implemented large projects, such as the construction of the highest tower in the world, the Burj Khalifa; shopping malls such as the Dubai Mall; commercial buildings; downtown and live communities. Such diverse real estate developments have offered many options for investors.

This paper examines the behaviour of investors in the UAE real estate sector by considering responses taken from a convenient sample. The findings indicate that UAE investors prefer to invest in sectors other than real estate. This is supported by other findings which note that investors are somehow dissatisfied with the availability of information, the supporting infrastructure, and the credit facilities provided. However, on the positive side, investors' responses note that they are satisfied with the level of profitability, the degree of risk and the quality of the services provided.

The paper is structured as follows; after this introductory section, a review of the literature and hypotheses development. The subsequent section presents the research methodology used and

is followed by an analysis of the results and discussion points. The last section provides concluding remarks and policy implications.

## 2. Literature review and hypotheses development

### 2.1 Non-personal factors

Non-personal factors include religion, family members, relatives, friends, reputation, and ethical issues which may either positively or negatively affect an individual investor's decision to invest in real estate.

Religion was expected to be an influencing factor in the case of the UAE and other Muslim countries. This is because Islamic investors prefer this type of investment compared to other types of investment that come with predetermined earnings, which are forbidden in Shari'ah law due to their interest-bearing nature, such as bonds, preferred stocks, or savings and time deposits. Klein *et al.*, (2017) examined the relationship between religion and investor behaviour and they found that it influenced the behaviour of investors (see also Ben-Shahar and Golan, 2014). Family members, relatives and friends also play important roles in the decision-making process related to investments in the real estate sector, particularly in the UAE, as families have very close relationships. Lien *et al.*, (2018) investigated familial decision-making in an emerging market and concluded that families play a vital role in decision-making processes (see also Cao *et al.*, 2018, Adam and Shauki, 2014; Shanmugham and Ramya, 2012; Al-Tamimi, 2009). However, Jaiyeoba and Haron, (2016) concluded that investors rely more on their own judgment rather than relying on the third-party advice. Furthermore, the reputation of a real estate firm or of the owners or t leaders of such a firm might affect an investor's decision to invest in the real estate sector (see Ong, 1997; Fasaai *et al.*, 2017).

Finally, the component of ethics is also an important part of real estate investment decision making, since it takes into consideration the behaviour of the three parties involved, the investor, real estate agents and real estate firms. The ethical component was examined by Olayinka Agboola et al., (2010) and they found a positive effect of ethics on the real estate investment decision-making process.

**H1:** There is a significant and positive relationship between non-personal factors and investment in the real estate sector.

## 2.2 Risk and return (profitability)

A large number of previous empirical studies have emphasized the return on investment of real estate. That is, just like in any type of investment, investors aim to achieve the highest returns. Among these studies, the results of Lee, (2017) indicated that there was a strong positive risk-return relationship in all Australian housing markets. Al-Malkawi & Pillai (2013), analysed the performance of the real estate market in the United Arab Emirates. The results indicated a negative impact by the global financial crisis on real estate investments using four of the most important financial performance ratios. These ratios were liquidity ratios, profitability ratios (ROE & ROA), the financial leverage ratio and the asset utilisation ratio. Such results may have discouraged some investors from re-investing in real estate markets. On the other hand, Raza et al., (2018), considered diversification as a motivational factor for investors to reduce the risk and increase the return of their investment portfolios. Other empirical studies have examined the risk and return of the real estate sector such as Robin, (2018); Yagi and Garrod, (2018); Huang and Rong, (2017); Iyer and Kumar, (2016); Amédée-Manesme et al., (2016); Zheng et al., (2015).

H2: There is a significant and positive relationship between profitability and investment in the real estate sector.

H3: There is a significant and positive relationship between risk and investment in the real

estate sector.

### 2.3 Transparency and information

There is no doubt that the availability of timely, accurate information in the required quantity is vital for any decision-making, including the decision to invest in real estate (Hui *et al.*, 2013). The importance of information and transparency was the motivation for a large number of researchers to address this issue. For example, Schulte *et al.* (2005) in an examination of the real estate sector in the German real estate market found that transparency improves remarkably but there is still a lack of transparency in Germany when compared to either the US or UK. Nadler(2018) examined the transparency of information regarding real performance versus that found in the prospectuses of German closed-ended real estate funds. This study concluded that the performance disclosures in prospectuses and the variances between the projections for investment returns and the actual outcomes were causing serious problems in Germany due to the fact many fund managers incorporated excessive bias in their estimations of return on investment. Pfnuer *et al.* (2004) also indicated that real estate decisions are more solid if there is more transparency; they also found that real estate decisions increase firms' value (see also the studies of Tang and Wang (2017); Kauškale and Geipele (2017); Papastamos *et al.* (2015)) These findings lead to this study's next hypothesis:

**H4:** There is a significant and positive relationship between transparency and an individual investor's decision to invest in the real estate sector.

### 2.4 Market conditions

Real estate investment is highly affected by the state of the property market and economic conditions (Öztürk *et al.* 2018; Brzezicka *et al.*, 2018; Kauškale and Geipele, 2017; Huang and Rong, 2017; Amédée-Manesme *et al.*, 2016; Hannum, 2015; Wu, 2015, Zhang *et al.*, 2016).



The market conditions affect the demand and supply of investment in the real estate sector, for example when the market is in a downward trend it will discourage investors from staying in the market or to invest more money in it and vice versa. In this regard, Justyna et al., (2018), analyzed the market demand and market supply of the Polish residential real estate market. Among other things they found a long-term disequilibrium in the Polish real estate market and the influence of the flow of information on the number of real estate transactions. Zhang (2016) also investigated the relationship between China's real estate market and economic conditions. Among the reported results, he evidenced that the real estate market played a vital role in import and export, the real estate market differentiation was more obvious, and many mergers and acquisitions appeared in the real estate market.

**H5:** There is a significant and positive relationship between market conditions and individual investor's decisions to invest in the real estate sector.

## 2.5 Loans availability

The provision of mortgage loans to all investors or buyers with minimal restrictions encourages them to invest more in the real estate sector. According to Marcum and Goddard, (2012), the real estate sector witnessed a significant expansion between the years 2002 to 2007 due to the low cost of borrowing worldwide, which encouraged investment in the real estate sector. A significant number of empirical studies have dealt with the subject of real estate financing. For example, Wu et al., (2015) examined the relationship between real estate collateral value and investment in China and they found that borrowers were committed to repaying their commitments and that there was no impact on investment through the collateral channel. P Another study conducted by Cerutti et al., (2017) examined housing finance and real-estate booms and they found that they were strongly linked. However, this finding varied from one country to another based on the prevailing loan to value ratios (see also Bian et al., 2018; Carmichael and Coën, 2018; Hashmat and Rouillard,

2017; Sakr-Tierney, 2017; Christopoulos and Barratt, 2016; Shen and Yin, 2016; Owusu-Manu et al., 2015, Wu et al., 2015; Onofrei and Anghel, 2012).

**H6:** There is a significant and positive relationship between credit availability and an individual investor's decision to invest in the real estate sector.

## 2.6 Service quality and infrastructure

The quality of service is particularly important in the real estate industry because of the industry's rapidly changing nature. All parties involved—the investors, agents, sellers, clients and real estate firms—seek high-quality services or the benefits of improved service quality (Seiler and Reisenwitz, 2010). In general, real estate investors are willing to pay more for good quality services (Encinas *et al.*, 2018; Gamel *et al.*, 2017; Grum and Grum, 2014; Tuzovic, 2008; Tuzovic, 2009). This leads to our next hypothesis:

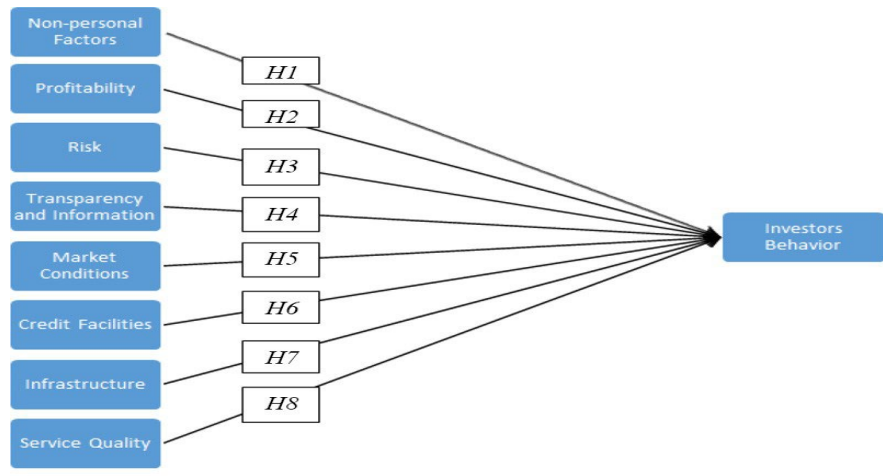
**H7:** There is a significant and positive relationship between the quality of the services provided and an individual investor's decision to invest in the real estate sector.

## 2.7 Infrastructure

The level of required infrastructure is one of the most important criteria investors take into account when making rational investment decisions regarding the real estate sector. Such infrastructure includes facilities like public transportation, electricity, water supply, internet and telecommunications, international airports, roads, flyovers, schools, universities, healthcare services, etc. In this regard, one empirical study (Cordera *et al.*, 2018) emphasised the impact of access to public transport on real estate values and found it to have a positive impact. This leads us to Hypotheses 8.

**H8:** There is a significant and positive relationship between infrastructure and an individual investor’s decision to invest in the real estate sector.

Based on the discussion above, Figure 1 shows the conceptual framework together with the research hypotheses



**Source:** Author’s own diagram

**Figure 1.** The conceptual framework together with the research hypotheses

### 3. Methodology

#### 3.1 Development of the Questionnaire

The authors developed a modified questionnaire based upon two previously used questionnaires developed by, Kibler and Lucius, (2003) and Oladokun and Aluko, (2015). The questionnaire was divided into two parts, the first part covered the demographic and socioeconomic variables namely, age, gender, real estate investment practice, type of investment and education level. The second part identified thirty-six factors affecting the perceptions of the real estate investors from the UAE

related to their investment decisions. The questionnaire used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to gauge the influence of each specified factor. The questions were then categorized into eight items corresponding to the non-personal factors, five items corresponding to the profit factor, one item corresponding to the availability of information, three items corresponding to market/economic conditions, one item corresponding to credit facilities, one item corresponding to infrastructure, one item corresponding to services, nine items corresponding to the preference to invest in the UAE real estate sector and eight items corresponding to real estate risks. Three academicians and three practitioners piloted the draft questionnaire. Accordingly, some changes were made and some questions were reformulated.

### 3.2 Sampling and data collection

The population from which the convenient sample was selected, consisted of UAE citizens investing in the real estate sector. An Arabic version of the questionnaire was distributed because the native language of the respondents from the UAE is Arabic. A covering letter accompanying each questionnaire explained the nature of the study and its purpose. We distributed via email a number of questionnaires directly to investors and they were asked to complete the questionnaire online. The questionnaire was distributed to 300 investors. From the 300 questionnaires distributed we received 126 responses, of which 19 were excluded because of incomplete data or response bias of extreme values. The remaining 107 usable questionnaires represented an effective response rate of around 36% of the total sample which is acceptable for research purposes.

### 3.3 Data analysis

The data analysis commenced with the analysis of the characteristics of the respondents of the study. A reliability test was then conducted using Cronbach's alpha, which measured the consistency with which respondents answered questions within a scale. In addition, descriptive statistics were used. To test the research hypotheses, the following regression model was used in

order to examine the predictive ability of the eight factors namely, non-personal factors (NPER), profitability (PROF), risk factors (RISK), information (INFI), market conditions (MARCO), credit availability (LOAN), infrastructure (INFR) and services (SER)

The regression model is as follows:

$$PREF = f(NPER, RROF, RISK, MARCO, INFR, LOAN, INFI \text{ and } SER)$$

Where:

PREF – the preference of UAE investors to invest in the real estate sector;

NPERF- non-personal factors;

RROF – profitability;

RISK – risk factors;

INFO- information;

MARCON- market conditions;

LOAN – credit(loans) availability;

INFR- infrastructure;

SER- services

The logic behind considering these variables was based on the supporting literature provided in the literature review. However, a multicollinearity test was also conducted in order to avoid the problem of the existence of a strong relationship among the independent variables.

#### **4. Results analysis and discussion**

##### **4.1 Characteristics of the study's respondents**

Chandra *et al.* (2017) investigated the effect of individual characteristics (such as gender, age, educational status, income, and investment levels and education) on investor behaviour and found that these characteristics play a critical role in the investment decision-making process. However, the study also found that marital status and occupation do not play a significant role in this process.

The study's respondents were asked to provide some demographic data that included age, gender, real estate investment practices, types of investment, and education level. Table II presents information on the characteristics of the respondents. It shows that most respondents (approx. 77%) were young investors (between 18 and 35 years of age) and this may support the decision to invest in real estate (Cozmei *et al.*, 2014).

Variable	Frequency	Valid percent (%)
<i>Age</i>		
18–25	34	31.8
26–35	49	45.8
36–45	13	12.1
46–55	7	6.5
56–65	4	3.7
66 or older	0	0
<i>Gender</i>		
Female	54	50.5
Male	53	49.5
<i>Real estate investment practices</i>		
Frequent	23	21.5
Occasional	33	30.8
Infrequent	51	47.7
<i>Type of investment</i>		
Residential homes	75	70.1
Retail (e.g. building)	22	20.6
Offices	4	3.7
Industrial (e.g. warehousing, manufacturing)	6	5.6
<i>Education</i>		
Below high school	5	4.7
High school or equivalent	8	7.5
Diploma/higher diploma	14	13.1
Bachelor or equivalent	61	57.0
Graduate degree	19	17.8

Source: Author's own, based on a survey

**Table 2. Characteristics of the respondents**

With regard to gender, coincidentally the proportion of female and male respondents was almost the same at 50.5% and 49.5 %, respectively. The almost equal gender distribution of the respondents offers a positive indication of cultural changes having taken place in UAE society. With respect to real estate investment practices, 47.7% of respondents infrequently invested in the

real estate sector, compared with 30.8% who invested occasionally and only 21.5% who frequently invested. Thus, the conclusion was that around 80% of the UAE investors were not frequent investors in the real estate sector.

The respondents were also asked to indicate in what type of investment in the real estate sector they had been involved before. Most of them (70.1%) indicated that they had invested in residential homes, whereas the remaining investments were distributed among the other sub-sectors of real estate, namely 20.6% in retail (e.g. buildings), 5.6% in industrial (e.g. warehousing, manufacturing) and 3.7% in offices,

Finally, the respondents' educational backgrounds are as follows: 4.7% hold a high school certificate or lower; 7.5% were high school graduates; 13.1% hold diplomas or higher diplomas; 57% have obtained bachelor's degrees; and the remaining 17.8% have completed graduate programmes. Thus, the majority of respondents (around 75%) are highly educated, which was supported by the accuracy of their responses.

#### 4.2 Reliability

We used Cronbach's alpha to measure the reliability of the different factors that affected UAE real estate investors' perceptions regarding their investment and financing decisions. According to Selltiz *et al.* (1976), a reliability test consists of estimates of the variation in the scores of the different variables in terms of whether these scores can be attributable to chance or to random errors. As a general rule, a coefficient greater than or equal to 0.7 is considered acceptable and a good indication of a reliable measure (Hair *et al.*, 2006). Table III shows that Cronbach's alpha found that these measures were reliable, since each of the eight factors had a coefficient greater than 0.80.

Category	Alpha
NPERF	0.854
PROF	0.847
ECON	0.839
RISK	0.850
INFO	0.849
Access to loans (LOAN)	0.887
INFR	0.847
SER	0.855

**Table 3. Reliability of the categories that influence investor preference regarding investment in the real estate sector.**

#### 4.3 Descriptive Statistics

Table IV provides descriptive statistics on UAE investors' preferences in terms of investing in the real estate sector and the factors that affect their investment. Table IV shows that the mean (average) value was **2.555**, which generally indicates that UAE investors do not prefer to invest in the real estate sector. The main reason for this might be attributed to the attractiveness and availability of other profitable investment opportunities. Regarding the factors that affect the perceptions of UAE real estate investors, the table indicates that the mean values of each of the eight factors were almost the same, since the difference between the maximums and the minimums was marginal. However, the regression results (below) more fully explain each factor's effect on investment behaviour.

Variables	N	Minimum	Maximum	Mean	Std. deviation
PREF	106	1.00	5.00	2.5535	0.70506
PER	107	1.50	4.17	2.6698	0.59786
PROF	107	1.00	4.40	2.5421	0.77703
ECON	107	0.67	5.00	2.4673	0.92469
RISK	107	1.00	4.63	2.4498	0.74840
INFR	107	1.00	5.00	2.5607	1.10041



LOAN	107	1.00	5.00	2.6636	1.19704
INFI	107	1.00	5.00	2.6355	1.04061
SER	107	1.00	5.00	2.4860	1.24661

**Table 4. Descriptive statistics**

In order to identify the factors that have the most influence on the decisions of UAE investors to invest in the real estate sector, Table V shows the classification of factors within each category and their means. It can be seen that rumours is the most influencing non- personal factor followed by the religiosity. The latter is expected because the UAE is a conservative Muslim society and Islam forbids interest, which results in a negative perception of trading on bonds and shares of conventional banks and insurance firms. However, this negative perception is expected to have a positive impact on investment in the real estate sector. For the profitability factors, the mean is greater than 2.5, but the most important factor is “get rich quick”, which may not actually be the case for investments in real estate. The third factor is the availability of the required information. Here, the results show that the mean is greater than 2.5, but not high enough to indicate that investors are very satisfied with the availability of information required for investment decision-making.

<i>I. Non-personal factors</i>		
1.	Religious reasons	2.8972
2.	Reputation of the real estate firm’s owners	2.4673
3.	Perceived ethics of the real estate firm	2.5514
4.	Family member opinions	2.5701
5.	Friends’ recommendations	2.6262
6.	Rumors	2.9065
	<i>Mean</i>	2.6698
	<i>Standard deviation</i>	0.59786
<i>II. Profitability</i>		
7.	Expected profit	2.3271
8.	Diversification purpose	2.5981
9.	“Get rich quick”	2.8879
	<i>Mean</i>	2.5421
	<i>Standard deviation</i>	0.77703
<i>III. Information</i>		

12. Availability of the needed Information	2.5607	2.6355
<i>Mean</i>		2.5607
<i>Standard deviation</i>		1.10041
<i>IV. Market conditions</i>		
13. Marketability		2.5140
14. Current economic indicators		2.4206
15. Real estate firm's status in the market		2.4673
<i>Mean</i>		2.4673
<i>Standard deviation</i>		0.92469
<i>V. Loans</i>		
16. Ease of obtaining borrowed funds from banks		2.6636
<i>Mean</i>		2.6636
<i>Standard deviation</i>		1.19704
<i>VI. Infrastructure</i>		
17. The availability of appropriate infrastructure		2.5607
<i>Mean</i>		2.6355
<i>Standard deviation</i>		1.04061
<i>VII. Services</i>		
18. The availability of appropriate services (Parking space, schools, medical services, transportation, centres, banks)		2.4860
<i>Mean</i>		2.4860
<i>Standard deviation</i>		1.24661
<i>VIII. Preference</i>		
19. Buying another property to rent it out		2.2243
20. Buying another property for speculation		3.0093
21. Accessibility of UAE real estate investments		2.5189
22. Seeking profits		2.2617
23. The consequences of the recent financial crisis		2.7383
24. It is less risky to invest in the UAE real estate sector compared to investing in other investment alternatives (e.g. Sukuk (Islamic bonds), shares, bonds, foreign currencies and international real estate markets		2.6075
		(continued)
10. Minimizing risk		2.4953
11. Attractiveness of real estate investments in UAE		2.4019

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<i>Mean</i>	<i>Standard</i>	2.5535
<i>deviation</i>		0.70506
<i>IX. Risk factor</i>		
25. Rental and vacancy		2.6168
26. Changing market rents and prices		2.4299
27. Maintenance and operation		2.3084
28. Market Ructuations		2.3832
29. Pricing uncertainty		2.3645
30. Regulatory risks		2.5327
31. Changing demand for retail/offices spaces		2.4579
32. Liquidity problems		2.5047
<i>Mean</i>		2.4498
<i>Standard deviation</i>		0.74840

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### **Table 5. Classification of the factors within each category**

The impact of market and economic conditions is unexpectedly modest as the mean is around 2.5 and the impact of the three factors of marketability, current economic indicators, and the real estate firm's status in the market are almost the same. The same can be said regarding the impact of the availability of the appropriate (public) infrastructure and the level of services provided, because the mean is around 2.5. The table also indicates that the mean of the responses to a question about credit facilities (easy access to bank loans) was slightly above 2.5, indicating that, in one way or another, investors are not satisfied enough and that more effort is needed to encourage them to invest more in the real estate sector. The most important category for this research is the preferences of UAE investors. In the questionnaire there are six items for this category. The table shows that the mean is slightly above 2.5; indicating that UAE investors' preference for real estate is not strongly supported. The main reason for this modest value for preference may be due to the availability of other attractive alternatives. However, the results indicate a positive signal in the responses to the second item (buying another property for speculation), which had a mean of 3, which means that more than 70 percent of UAE investors prefer to invest in the real estate sector for speculation purposes.

Finally, the mean of the risk factors was slightly less than 2.5, which also indicates a modest impact of the risk factors on the investment decision of the UAE investors to invest in the real estate sector. The results can also suggest that the risk factors are not considered as a constraint against investment in the real estate sector because the average responses was less than 2.5, these results can be interpreted as finding that risk factors not considered a constraint against investing in the real estate sector.

#### 4.4 Hypotheses testing

As mentioned previously, in order to examine the contribution of the independent variables to the regression model, a multicollinearity test was conducted to avoid the problem of a strong relationship among these variables. Table VI provides the results of the correlations. The rule-of-thumb test, as proposed by Anderson *et al.* (1990), suggests that any correlation coefficient exceeding .7 indicates a potential multicollinearity problem. The table shows that there was a multicollinearity problem; therefore, one independent variable was dropped from the regression model, namely market conditions (MARCON). The remaining seven variables were included in the regression model.

Table VI reveals the results of the regression model. It can be seen from the table that the R squared value was .64. with a significance of 1%. This indicated that the seven independent variables explained 64% of the variations of preferences of the UAE investors.

The estimated coefficients of three independent variables (Profitability, Risk, and Services), were, as expected, positive and statistically significant at the 1 per cent level. These results were expected because the main goal of all investors is to make a profit with a minimum degree of risk and with the best quality of services. This confirmed hypotheses 2,3 and 8 and this finding when related to hypotheses 2 and 3 was consistent with the findings reached by Raza *et al.*, (2018); Robin, (2018); Yagi & Garrod, (2018); Huang and Rong, (2017); Iyer and Kumar, (2016); Amédée-Manesme *et al.*, (2016); Zheng *et al.*, (2015) and McDonald, (2015) The findings related to hypothesis 8 were also consistent with the results of Encinas *et al.*, (2018); Gamel *et al.*, (2017); Grum and Grum, (2014); Tuzovic, (2008) and Tuzovic, (2009).

Independent variable	Beta	<i>t</i>	Sig.
(Constant)		2.110	0.037
<i>PER</i>	0.109	1.204	0.232
<i>PROF</i>	0.240	2.423	0.017
<i>RISK</i>	0.317	3.531	0.001
<i>LOAN</i>	0.041	0.587	0.558
<i>INFR</i>	0.089	0.988	0.326
<i>SER</i>	0.209	2.360	0.020
<i>INFI</i>	-0.021	-0.259	0.796
<i>R</i> <sup>2</sup> : 0.640			
Adjusted <i>R</i> <sup>2</sup> : 0.614			
Std. error of the estimate: 0.43803			

**Table 6. Summary of regression results**

However, the values of the coefficients were, as expected, positive for the remaining four variables (Non-personal factors, Infrastructure, Loan, Information) but statistically insignificant. It can be concluded that the low impact of some variables included in the model, such as the non-personal factors (NPERF) requires more investigation or to be interpreted with some degree of caution, since the result was not expected and was inconsistent with the findings of some other empirical studies such as Klein et al., (2017); Ben-Shahar and Golan, (2014); Lien et al., (2018); Ong, (1997); Fasaei et al., (2017); and Olayinka Agboola et al., (2010) and Al-Tamimi et al., (2009). The results of the other three variables (Information, Loan, Infrastructure) were also inconsistent with similar studies which dealt with the importance of transparency and information such as Pfnuer et al., (2004); Tang and Wang, (2017); Kauškale and Geipele, (2017); Papastamos et al., (2015); Schulte et al., (2005) and Nadler, (2018). The same could be said regarding credit availability (loans) and infrastructure. For the first one, the finding was consistent with the outcomes of Ling et al., (2016) and inconsistent with Cerutti et al., (2017); Bian et al., (2018); Carmichael and Coën, (2018); Hashmat and Rouillard, (2017); Sakr-Tierney, (2017); Christopoulos and Barratt, (2016); Shen and Yin, (2016); Owusu-Manu et al., (2015); Wu et al., (2015); Onofrei and Anghel, (2012). Finally, the results indicated that the value of the coefficient of infrastructure (INFR) was, as

expected, positive but statistically insignificant and this was inconsistent with the finding reached by Cordera et al., (2018).

## **5. Concluding remarks and policy implications**

This study represents an attempt to examine the perceptions of UAE real estate investors and the effects some factors have on their investment decisions in the UAE real estate sector.

The study sample consisted of highly educated respondents and an almost equal gender mix. The UAE investors were found to not have a strong preference for investing in the real estate sector because of the availability of other attractive investment alternatives. The respondents' answers indicate that non-personal factors have an effect on their decisions to invest in the UAE real estate sector but this finding was not as expected. Earning profits is an important incentive for UAE investors to invest in the real estate sector. However, investors' responses to questions about the risk factor do not indicate they have a fear of investing in the real estate sector. The availability of information and access to credit facilities do not affect their decisions to invest in the UAE sector. Finally, the respondents' answers to the survey questions show that they are satisfied with the level of services and infrastructure provided in areas where they noted there are opportunities for real estate investment.

Based on the above-mentioned findings the following recommendations can be made to policymakers:

1. To ensure that the required information is available to investors, it might be helpful to create separate units under the name "Real Estate Information Unit" in every municipality of each of the seven emirates. The main task of these units would be to ensure that all of the information related to the real estate sector is available to investors for decision-making purposes. This recommendation aims to bridge the gap between theory and practice. In this regard, the theory

suggests that the availability of timely, accurate information in the required quantity is vital for any decision-making, including the decision to invest in real estate; whereas in practice, the results indicate that investors are not satisfied with the level of transparency and the availability of the required information.

2. Restrictions on financing facilities should be minimised in order to encourage investors to invest more heavily in the real estate sector. This recommendation is also intended to bridge the gap between theory and practice, since the theory indicates a positive impact of credit facilities and investment in real estate sector, whereas in practice there are some restrictions to accessing credit facilities .
3. Although the UAE is considered one of the best nations in the region regarding infrastructure, some investors demand improvements. Thus, for new real estate projects, it is recommended that policymakers consider implementing modern high-quality infrastructure in order to attract more investors.

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