
Editorial: Introduction from the Editor – IJHMA Vol. 17 No. 2

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Welcome to the second issue in the seventeenth volume of the *International Journal of Housing Markets and Analysis*. This issue typifies journal's objective of diverse housing research since there are 13 insightful research papers relating to 11 different countries, with the additional paper analysing historical global housing literature. At the same time, there is also a broad range of research objectives, methodologies and findings. The countries and regions are not limited to a select few, therefore including both developed and developing countries to provide a cross-section of the ongoing challenges and opportunities facing dedicated housing researchers.

The first paper from *India* examines factors that influence the housing and real estate buying behaviour of young adults. These include factors such as website quality, materialism, psychological factors, hedonic value and social media. The study also measures the mediating effects of social media influences between psychological factors and hedonic value and also young adults' impulsive housing and real estate buying behaviour. The methodology was based on a questionnaire approach with a total of 385 responses analysed via structural equation modelling. The findings suggest that materialism, psychological factors and also social media have a considerable impact on the impulsive housing and real estate buying behaviour of young adults. Furthermore, website quality and hedonic value did not have an observed large impact on young adults' impulsive housing and real estate buying behaviour.

The aim of the second paper from *Australia* is to develop a house price forecasting model relating to the impact of neighbourhood effect on property value. The methodology used a multi-level modelling approach to develop the house price forecasting models. In addition the neighbourhood effects, being socio-economic conditions observed in various locations, are included in the study. The data was based on local government areas in Greater Sydney. The outcomes confirmed multi-level models can account for the neighbourhood effects and also provide accurate forecasting results. It should be noted that the impacts on specific households may differ because of price differences in various geographic areas. Furthermore the concept of a "neighbourhood" is an important consideration in housing purchase decisions. When increasing housing supply provisions to match the housing demand, governments may consider improving the quality of neighbourhood conditions such as transportation, surrounding environment and public space security for example.

The third paper is very innovative as relatively few studies have undertaken such a comprehensive bibliometric research relating to housing prices. This study analysed 4,125 housing prices research papers sourced from the core collection database of *Web of Science*. The methodology used varying evaluation indicators including statistical and mathematical methods to study the nature and direction of housing price research. Data relating to variables such as countries, institutions, authors and keywords were classified and visually displayed through *VOSviewer*. The results confirmed that before 1990 there were relatively few studies published relating to housing prices. However, papers published since 2006 accounted for 90% of the total number of articles published. More specifically, *China* published 1395 papers (34%) with the *USA* publishing 1356 (33%) papers. Therefore these two countries published about two-thirds of housing price research globally. The results indicated most housing price research used quantitative models, econometrics keywords



like model, dynamics, regression and quantile regression, hedonic prices, cointegration dominate in bibliometrics results. There was an observed lack of qualitative research. The main categories of housing prices research articles included economics (42%), urban (27%) and environmental (19%). These three types of articles accounted for 88% of all housing price papers.

The fourth paper from *Saudi Arabia* investigates responses to the changes in the real estate market by analysing cause-effect relationships between the mortgage, residential investment and also employment in the real estate market. The methodology used the Dickey-Fuller test to estimate the stationarity of the variables. VAR Regression, Granger causality test and impulse response were also undertaken to identify the interactions between the variables. The data related to the period between 1970 and 2019. The results confirmed a positive relationship between the mortgage level and GDP in the real estate market. The same results for employment and investment, both having positive relationship as well. The government's monitoring of changes in macroeconomic factors is critical to ensuring the continuity of balance in the real estate market by examining factors affecting both the short and long term time frames, as well as the extent to which these effects can be explained.

The fifth paper from *Jordan* examines the satisfaction of residents in the Zabdah housing at both the dwelling and neighbourhood levels. In addition, the determinants of residents' satisfaction are also studied. The methodology used a mixed methodology approach, therefore merging both quantitative and qualitative methods. The Chi-square test of independence was used to determine if demographics and dwelling type were related to residents' satisfaction. The findings confirmed the satisfaction level of residents was relatively moderate on both dwelling and neighbourhood levels. At the dwelling level the small dwelling areas were the main problem. However, at the neighbourhood level, acceptable neighbourhood services were crucial to the success of this project. The lack of green spaces negatively affected the quality of life for residents, however, the number of family members and dwelling types were found to be key determinants of residents' satisfaction.

The sixth paper from *Singapore* examines the effect of visual technology on the price discovery process in listings of residential properties. This paper extends the housing and price discovery literature by examining how technologically-enabled new information affects property transactions. The methodology models the effects of 360 virtual tours and drone video on four dimensions in price discovery, namely, buyers' arrival rate, sale probability, transaction prices and the time-on-market. The analysis shows the availability of virtual tours or drone video in a listing increases the arrival rate from potential buyers, the probability of a successful sale and also the selling price. These findings are consistent with the hypothesis that technologically enhanced tools improve the quality of information and the marketability of property. However, listings with virtual tours tend to be associated with longer marketing time which is consistent with the prediction of the information overload hypothesis.

The seventh paper from *Germany* examines whether additional information relating to the permanent news flow, especially reporting intensity, can assist to increase transparency levels in housing markets. This study analyses the relationship between news coverage or sentiment and residential real estate prices at a regional level.

Using methods in the field of natural language processing, in particular word embeddings and dictionary-based sentiment analysis, the methodology derives five different sentiment measures from almost 320,000 news articles from two professional real estate news providers. These sentiment indicators are used as covariates in a panel fixed

effects regression to investigate the relationship between news coverage or sentiment and residential real estate prices. The findings suggest that ascertained news-based indicators have a significant positive relationship with residential real estate prices. It appears the combination of news coverage and sentiment can be a reliable indicator. Furthermore, the extracted sentiment measures led residential real estate prices up to two quarters. Finally, the explanatory power increases when regressing on prices for condominiums compared with houses, in turn implying the indicators may reflect investor sentiment.

The eighth paper from *Pakistan* analyses the relationship between oil prices and housing prices for the period from 1973 to 2021. The methodology used augmented Dickey–Fuller and Phillips–Perron tests to undertake unit-root testing, however, the JJ test was used for co-integration analysis. For the short-run, the error correction model is used and the robustness of the model is checked using the dynamic OLS and fully modified OLS. The CUSUM and CUSUM of Squares tests are employed to check the stability of the model. However, parameter instability is confirmed by the Chow breakpoint test. Finally, the impulse response function is used for causality. The findings indicate that housing prices are affected by rising oil prices in addition to other factors. Inflation is the sole factor that affects the broader economy and also the housing market. Note that lending and exchange rates also have a significant impact on housing prices. The variance decomposition model suggests that housing prices and oil prices have bidirectional causality. It is recommended the government adopt a housing policy on a regular basis to develop the urban housing supply and meet housing demand.

The ninth paper from *Iran* covers the non-linear relationship between the real estate market and the stock market. The methodology used the quantile-on-quantile estimation method, being a combination of the non-parametric estimation methods and the quantile regression. The data set consisted of monthly level data between 2010 and 2022. The results confirmed that in the low quantiles, the effect of stock market return on the housing market return is negative or zero. In this scenario, the increasing returns in the stock market will shift a portion of the financial resources of the economy to the market and create stagnation or even negative returns in the housing market. This situation is observed even stronger in certain other quantiles, including the 0.25 and 0.75 quantiles. In contrast, the effect of high quantiles of stock market returns was positive on the housing market.

The tenth paper from *Kenya* investigates the dynamic effects of specific macroeconomic factors on the performance of the housing market. The aim was to explain the dynamic effects of the macroeconomic factors on the three indicators in the housing market performance, namely, housing prices growth, sales index and the rent index. The methodology used Autoregressive Distributed Lag models to analyse time series data from 1975 to 2020 based on the selected macroeconomic factors.

The findings showed that inflation rate, interest rates, diaspora remittance and private capital inflows all have a significant effect on the housing price growth in the short run. In contrast, none of the selected variables showed a significant long-run relationship with housing price growth. Furthermore, GDP, inflation rate, interest rate, construction output, private capital inflows and exchange rates have significant short-run and long-run effects on the housing sales index. Household income, inflation rates, interest rates, diaspora remittance, private capital inflows and exchange rates have a significant effect on the housing rent index in the short run while only interest rates, private capital inflows and exchange rates have a significant long-run relationship with the housing rent index.

The eleventh paper from *Iran* examines spatial inequality in housing prices and examines changes over time between 1991 and 2021. The methodology is based on a descriptive-analytical method with the statistical population of this research being

residential units. This was supported by using Moran's spatial autocorrelation method, map cluster analysis (hot and cold spots) and Kriging interpolation for the spatial analysis of points. Variations in spatial inequality was based on the price per square metre of a residential unit using statistical clustering based on distance. The findings identified a cluster distribution of housing prices throughout the city. The results highlighted hot spots showing that the highest concentration of hot spots (i.e. highest prices) were in the northern part of the city with the highest concentration of cold spots in the southern part of Tehran city. The results also confirmed that changes in housing prices in southern Tehran only increased slightly compared to the overall average, however housing in the western part of Tehran recorded a higher than average price growth.

The twelfth paper from the *USA* applies a framework for conducting techno-economic analyses (TEA) of early-stage designs for net-zero water and energy based on single-family homes that meet affordable housing criteria in diverse locations. The methodology uses a case example approach of a TEA using four designs to achieve net zero water and energy in an affordable home. The findings showed that houses constructed and sold at current market prices, using combinations of well versus rainwater harvesting (RWH) systems and grid-tied versus hybrid solar photovoltaic (PV) systems, can meet affordable housing criteria for moderate income families. However, when mortgage rates increase there are additional complications. In this scenario, unless battery costs drop by 40% and 60% respectively, housing using hybrid solar PV systems combined with a well versus RWH systems cease to meet affordable housing criteria. Other scenarios were also discussed in the findings. The framework includes a new technique for sizing storage tanks for residential RWH systems and provides a foundation for future research at the intersection of affordable housing development and residential net-zero water and energy systems design.

The thirteenth paper from the *USA* analyses the increasing trend of multigenerational co-living and investigates the socioeconomic and cultural determinants of such decisions. The methodology use data sourced from American Housing Survey data to undertake descriptive and regression analysis. The results found that household income consistently appears to be the most significant factor when analysing multigenerational co-residence decisions across all household compositions. For example, Latino households are most likely to co-reside with multiple generations, followed by Asian and African American households. Immigrants tend to live in multigenerational co-residential housing units with smaller sizes and more impoverished neighbourhoods but showed greater flexibility in making residential arrangements once they gain better education. In addition, older householders or female householders are significantly more likely to co-reside with multiple generations. Living in metropolitan areas has no impact on co-residence choice, although some evidence suggests that multigenerational co-residential families tend to live in inferior neighbourhoods. The findings provide important insights into how households make residential choices in response to financial hardships and contribute to the theoretical understanding of the variations of these decisions among immigrants as well as different ethnic and aging groups.

The final paper from *Malaysia* investigates factors that influence the millennials' intention to choose tawarruq home financing, For the analysis the primary data was collected via a survey of Islamic banking customers, which was then analysed using multiple regression analysis. The findings showed that attitude, subjective norm, perceived behavioural control, religiosity and knowledge of muamalat had a positive significant relationship on home financing decisions. The results will assist muamalat practitioners to provide best practice decisions relating to tawarruq home financing. This study will also

help to guide managers of Islamic banks to assist the housing market stakeholders by ensuring the timing and type of home loans are optimal.

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Richard Reed
Melbourne, Australia