

Research of the Impacts on the Hong Kong Office Property Market from Covid19

Tong Sabrina

Master of Real Estate and Construction
The Hong Kong Polytechnic University, Hong Kong
Ssabrina.tong@connect.polyu.hk

Abstract

The widespread impacts of Covid19 to the market and the minds of the practitioners can be deduced. The current study provides a timely investigation of the impacts of the global pandemic on the office property market so that the proper recommendations on construction management can be given to policymakers and market practitioners. Essentially, as the property price has a lagged effect after a significant event, the expectation of the practitioners in the property industry would be consulted. The current study provides a timely investigation of the impacts of the global pandemic on the office property market so that the proper recommendations on construction management can be given to policymakers and market practitioners. The composition of the office property price, the price model of housing property was adopted in the current study. Along with the customisation of the factors with respect to the pricing application of the office property, the theoretical model for the office property price was developed.

Keywords

Covid19, Property, Market, Pandemic.

1. Introduction

The current study provides a timely investigation of the impacts of the global pandemic on the office property market so that the proper recommendations on construction management can be given to policymakers and market practitioners. Essentially, as the property price has a lagged effect after a significant event, the expectation of the practitioners in the property industry would be consulted.

1.1 Aim and Objectives

Regarding the motivation of the current work in assessing the expectation of the stakeholders for the office property price under the pandemic, the aim of the current work was defined as to priorities the major influencers of the property price resulting from the Covid19 event in the mind of the practitioners so that proper advice can be generated to the policymakers and the market practitioners. Hence, with the intention of accomplishing the aim, the five objectives were defined so as to guide the implementation of the research study.

1. To review the unique characteristics of the office property market and the primary impacts of the Covid19 on the property price.
2. To identify the factors that affect the property price in general and the influence of the related factors under the pandemic event.
3. To correlate the influencers and the expectation of the office property price in order to reveal the relative strength of the influencers.
4. To conduct a segmented analysis of the practitioners with respect to their demographic information.
5. To propose recommendations for the policymakers and the market practitioners based on the analytic findings.

2. Literature Review

Therefore, along with the development of the research objectives for the current study, the literature review would be accomplished to gain support from the pioneering research related to property price expectations. Practically, the review targeted settling the first two objectives with respect to the defined objectives. On the one hand, the review would isolate the unique characteristics of the local office property market and the general influences of Covid19 (Squazzoni et al., 2020) on society and the property market. Essentially, as mentioned in the introduction, both vacancy and rental indices of the office property revealed the downtrend of the estate value. On the other hand, the review would identify the factors that contribute movement of the property price along with the influence of the factors under the pandemic event. Therefore, the chapter consists of threefold titles: The Unique Characteristics of the Local Office Property Market, The Impacts of Covid19, and The Factors Associated to the Property Price, respectively.

2.1 The Impacts of Covid19

The widespread impacts of Covid19 to the market and the minds of the practitioners can be deduced, while they can be resumed into the following three points.

1. With the enforced adoption of the remote office practice due to the lockdowns, most of the local companies adopted the home office arrangement, while the re-evaluation of the practical value of the physical office was conducted. Therefore, the high price of the grade A office was challenged (Arden & Chilcot, 2020).
2. Along with the zero-Covid policy (Boston-Fleischhauer, 2021), it was expected that the prolonged lockdowns and the blocking of the connections with other countries would continue while the status of the commercial centre of Hong Kong would fade gradually. Hence, the premium given to the property would be suppressed.
3. In the same sense, due to the failure of the pandemic policy and the compulsory viral tests, the negative image of the local governance was culminated among the local elites, while their leaving would directly impact the price of the office property (Mangiò et al., 2021).

Therefore, with respect to the analysis, it can be seen that the Covid19 has a negative impact on the price of the office buildings due to the re-evaluation of the necessity of the physical office, the prolonged disconnection with other countries, and the failure of the pandemic policy of the local regime. Despite the fact that the analytic results highlighted the suppression effect of the pandemic events, drawing conclusions at this point may be nasty as Covid19 has a positive influence on the property as well. In the following section, the factors will be exhausted in order to yield a systematic evaluation of the price projection.

2.2 The Factors Associated with the Property Price

Finally, with reference to the model from Pettinger (2012), the price of a property is determined by the seven factors, while the association between the factors and the event of Covid19 would be analysed in the following Table 1).

Table 1. Summary of the Factors Affecting the Price of Properties

Influencer	Rationale	Possible Effects from Covid19
Affordability of Housing	The escalation of the income of the population would directly boost the property price as the citizen found it affordable to buy the new property (Atzrodt et al., 2020). Nonetheless, along with the hampering of the economy by the Covid19 along with the malfunction of the governance (Propheter, 2022), the income of the citizen and the companies would be diminished along with the pessimistic viewpoint to the economic outlook.	Suppression
Interest Rates	The low-interest rate would directly escalate the property price based on the escalated liquidity of the available capital (Tan et al., 2017). As the happening of the pandemic, quantitative easing was conducted by different governments, while the assets price soared along with the available money (Printz, 2020).	Escalation

Economic Growth	Similar to the factors related to affordability, the countries economic growth would be suppressed by the lockdowns and the restriction policy (Hui et al., 2017). Thus, the price of the office property would be suppressed as well.	Suppression
Number of Households	Along with the zero-Covid policy (Jones et al., 2020) and the compulsory checks, the multinational companies opted to move out, while the price of offices would go down due to the reduction of the demands from the users. Additionally, the reconsideration of the value of a physical office also reduces the property's price from the demand side (Kee & Chau, 2020).	Suppression
Availability of Mortgages	Due to the economic risk, the banks took cautious approval of mortgages, while the limited availability of the mortgage would pull the property price down (Lee, 2017). Nonetheless, due to the competition among the banks for the limited orders during the pandemic period, they may aggressively provide the mortgages to the buyers, while the price may be pushed (Abidoye et al., 2019).	Uncertain
Speculative Demand	Because of the gloomy perspective on the economy and the desire for deleveraging, the reduced numbers of speculators would participate in the market, while the price up by the speculation would be suppressed (Fabozzi et al., 2020).	Suppression
Supply of Housing	Due to the lockdown and the ceasing of the building and construction during Covid19, the supply of the office may be reduced (Li et al., 2021), while it may escalate the office price along with the diminishing of the supply.	Escalation

Therefore, for factors that connect to the price trend of property, it can be seen that Covid19 may not be a solely negative factor to the property price, while the complicated interaction can be seen between them. Therefore, a research study with reference to the opinion of the practitioners about the influential power of the factors would be required in order to reveal the expectation of the office property market.

2.3 The Research Framework

First of all, along with the reviewed factors in the literature review, the framework for the current study was constructed, while the framework can be seen in the following Figure 1.

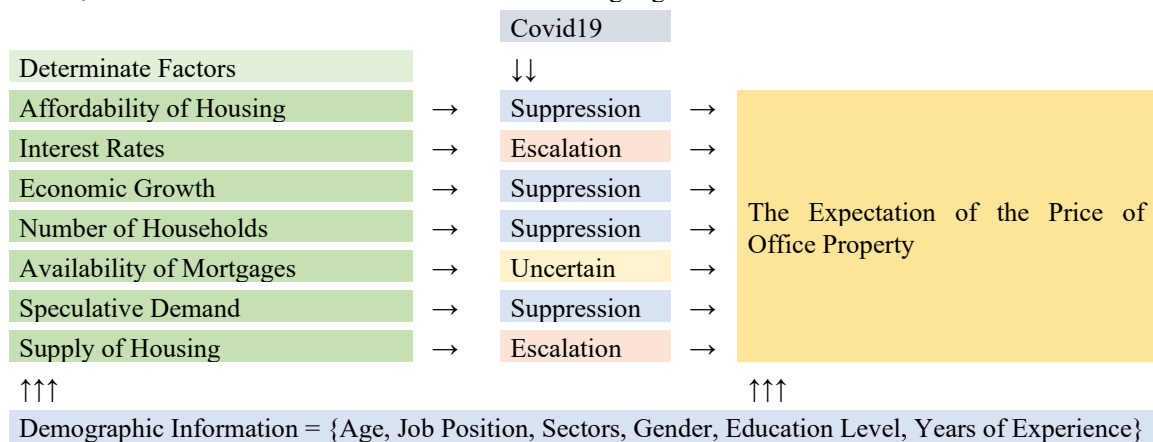


Figure 1. Research Framework Used in Evaluating the Influencers to the Expectation of the Price of Office Property

From the visualisation, it can be seen that the research study concentrated on the investigation of the dynamic between the Covid19 affected factors, including affordability of housing, interest rates, economic growth, number of households, availability of mortgages, speculative demand, and supply of housing, and the expectation of the price of

the office property so as to prioritise the relative contribution. On top of it, the segmented analysis with respect to the demographic information of the respondents, including age, job position, sectors, gender, education level, and years of experience, would be performed in order to comprehend the difference in their opinion. Finally, all of the information would be utilised in the generation of the recommendations for the policymakers and the practitioners in order to accommodate the changes.

2.4 The Steps of Research Study

Then, with reference to the defined research framework for the investigation of the interaction between the factors and the price of the office property, the procedures for the research work would be designed, while the implementation of the research would be divided into five steps.

1. The study would start with the development of the research instrument and the approaches for data analysis.
2. The verbal consent would be gained from the potential respondents in the field of the office property market (De Vet et al., 2017).
3. The questionnaires would be distributed to the respondents via email channels.
4. After the collection of the data, a statistical analysis was conducted to reveal the findings from the collected information.
5. The recommendations would be drawn based on the finding consolidated from the respondents (Goffin et al., 2019).

2.5 Development of Research Instrument

Further to illustrate the method used in selecting the target samples, the research instrument should be developed to collect the respondents demographic information, the determinate factors, and the expectation of the official price, respectively. First, the demographic information was collected with the multiple-choice questions, while the question-and-answer pairs can be seen in the subsequent Table 2. Besides, for the sake of enhancing the self-administrability of the instrument, the guideline “Please indicate your answer with respect to your current situation” was included before the presentation of the first question.

Table 2. The Developed Multiple-choice Questions for the Collection of the Demographic Information of the Respondents

Demographic Information	Question	Options
Age	1. How old are you?	a. Below 24 Years Old b. 25 - 30 Years Old c. 31 - 36 Years Old d. 37 - 42 Years Old e. Over 42 Years Old
Job Position	2. May I know your position in the company?	a. Frontline Staff b. Supportive Staff c. Professional Staff d. Managerial Staff e. Company Owner
Sectors	3. May I know the participation of your serving company in the office property market?	a. Land Developer b. Property Owner c. Speculator d. Office Users e. Property Agent
Gender	4. Gender?	a. Female b. Male
Education Level	5. May I know your highest attained education level?	a. Below Pro-Secondary Education b. Diploma Level / Higher Diploma c. Associate Degree / Degree Level d. Master Level or above

Year of Experience	6. How many years have you been in the industry?	<ul style="list-style-type: none"> a. Below 1 Year b. 2 to 4 Years c. 5 to 7 Years d. Over 7 Years
--------------------	--	--

Second, apart from the demographic information, the research instrument should collect the opinion related to the factors in order to underpin the data analysis, while the statements used to gather the opinion were presented in the following table (Table 3).

Table 3. The Collection of Statements Used for Assessing the Influencers of the Office Property Price

Influencer	Statement	Coding Manner
Affordability of Housing	1. From the personal experience and the interaction with my social network in the office property sector, the event of Covid19 reduced the incomes of the public. Hence, they have less budget for purchasing and renting an office.	Negative
Interest Rates	2. From the personal experience and the interaction with my social network in the office property sector, the pandemic related policy would escalate the availability and liquidity of the capital. At the same time, it would stimulate the office property price in the local market.	Positive
Economic Growth	3. From the personal experience and the interaction with my social network in the office property sector, the event of Covid19 would reduce the growth of the local economy while negatively affecting the office price.	Negative
Number of Households	4. From the personal experience and the interaction with my social network in the office property sector, the move-out from Hong Kong due to the strict pandemic limitation along with the forced home office arrangement would reduce the demand for a physical office, while it would suppress the value of the property.	Negative
Availability of Mortgages	5. From the personal experience and the interaction with my social network in the office property sector, the balanced consideration between the risk and the maintenance of the competitiveness among the banks during the pandemic would direct the availability of mortgages. In contrast, it would direct the direction of the price of the office property.	Neutral
Speculative Demand	6. From my personal experience and the interaction with my social network in the office property sector, I think the speculators will deleverage their positions after the pandemic to manage their risk. Hence, the reduced speculative premium of the office property can be expected.	Negative
Supply of Housing	7. From the personal experience and the interaction with my social network in the office property sector, the reduced working days for the workers during a pandemic reduce the supply of the new office, while the limited supply would squeeze the office property price.	Positive

From the above, it can be seen that negatively coded statements were applied for the collection of the opinion related to affordability of housing, economic growth, number of households, and supply of housing. In contrast, the neutral statement was used for the availability of mortgages. Besides, the positive statements were developed for Interest rates and speculative demand. Hence, the statements can reflect the revealed influence of Covid19 on the office property price. Essentially, the respondents would be asked to express their level of agreeing to the statements via a 7-point

Likert scale (Hamed et al., 2018) to reflect the intensity of the Covid19 affected factors. Furthermore, the option would be assigned with scores from 1 to 7 in order to support the statistical analysis. The outcome expectation of the price would be collected from the respondents with the same approach, while the adopted statement was presented in the following table (Table 4).

Table 4. The Statement Used for Assessing the Expectation of the Office Property Price

Outcome	Statement	Coding Manner
The Expectation of the Price	8. From my professional judgement and the connection with the office property market, I am of my opinion that the office property price would go down due to the prolonged Covid19 event.	Negative

From the statement, it was worthy to note that the negatively coded statement would be used in the assessment to align with society's common expectations.

2.6 Adopted Approaches for Data Analysis

Further to the development of the research instrument for the collection of the responses, the approaches for the data analysis will be defined. With reference to the defined objectives, four statistical tools were adopted in processing the data, while their purposes and usages in the current study were summarised in the following table (Table 5).

Table 5. Summary of the Adopted Statistical Tools Used for the Data Analysis of the Research Study

Statistical Tool	Explanation/Purpose in the Current Study
Descriptive Analysis	The descriptive analysis would be applied to consolidate the demographic distribution of the respondents in order to gain a preliminary comprehension of their background information of them (Hill et al., 2018). Additionally, the analysis also provided the visualisation (Melkman et al., 2017) of the level of agreeing for the Covid19 events to the factors from the eyes of the practitioners of the industry.
Correlation Analysis	The correlation analysis was utilised to reveal the relative contribution of the factors to the expectation of the property price (Vlasova & Barasheva, 2018). It was worthy to note that the 95% confidence level would be applied as the threshold of statistical significance (Székely et al., 2007).
Regression Analysis	Further to the relative contribution, the linear model between the factors and the expectation would be formulated with regression analysis (Weaver & Dubois, 2012), while the model can be used to characterise the expectation with the identified factor (Minhas et al., 2020).
Segmented Analysis	At last, a segmented analysis concerning the respondents' demographic information will be conducted to understand the diversity of the opinion. Practically, the segmented analysis was accomplished by analysis of variance (ANOVA) (Gillmann et al., 2020) in order to reveal the difference in the responses for different classifications (Minitab Blog, 2016).

2.7 Ethical Considerations

Last but not least, as the current study adopted the questionnaire-based survey as the core of the approach for collecting the data, the typical policy for a questionnaire study would be adopted to protect the informants' privacy and confidentiality (Cox & Battey, 2017).

3. Findings & Discussion

After the definition of the research method used in the current study, the questionnaire-based study was conducted accordingly. Along with the distribution of 250 blank questionnaires to the practitioners of the industry, the 238 valid responses were collected, and they would be used in the data analysis of the current study. However, before adopting the data, the test with Cronbachs alpha (Trizano-Hermosilla & Alvarado, 2016) was conducted to ensure the reliability of the collected data. With the computation by Statistical Package for the Social Sciences (SPSS) (Praktiknjo et al., 2020), the alpha values for the results coming from the negatively coded and neutral statements and the positively coded statements were shown in Table 6 and Table 7, respectively.

Table 6. Cronbachs Alpha for Results Coming from the Negatively Coded & Neutral Statements

Reliability Statistics	
Cronbachs Alpha	N of Items
.870	6

Table 7. Cronbachs Alpha for Results Coming from the Positively Coded Statements

Reliability Statistics	
Cronbachs Alpha	N of Items
.619	2

Along with the critical threshold of the alpha being 0.6 (Shelby, 2011), it can be seen that the data set was considered reliable, while they would be applied in the current research study. Thus, with reference to the defined analytic tools used in the current work, the chapter consists of five sections, namely: Demographic Information, Descriptive Analysis, Correlation Analysis, Regression Analysis, and Segmented Analysis, respectively in order to correspond to the adopted statistical analysis.

3.1 Demographic Information

First, the demographic distribution of the surveyed respondents was provided in the following table (Table 8), while it can be seen that all the demographic categories were filled with roughly even participants. Thus, the collected data should be with certain representativeness for the local office property market.

Table 8. Summative Illustration of the Demographic Information of the Respondents for the Survey Study

Demographic Information	Options	N	%
Age	a. Below 24 Years Old	48	20.17%
	b. 25 - 30 Years Old	42	17.65%
	c. 31 - 36 Years Old	47	19.75%
	d. 37 - 42 Years Old	45	18.91%
	e. Over 42 Years Old	56	23.53%
	Total	238	100.00%
Job Position	a. Frontline Staff	50	21.01%
	b. Supportive Staff	39	16.39%
	c. Professional Staff	39	16.39%
	d. Managerial Staff	51	21.43%
	e. Company Owner	59	24.79%
	Total	238	100.00%
Sectors	a. Land Developer	47	19.75%
	b. Property Owner	53	22.27%
	c. Speculator	40	16.81%
	d. Office Users	65	27.31%
	e. Property Agent	33	13.87%

	Total	238	100.00%
Gender	a. Female	130	54.62%
	b. Male	108	45.38%
	Total	238	100.00%
Education Level	a. Below Pro-Secondary Education	70	29.41%
	b. Diploma Level / Higher Diploma	69	28.99%
	c. Associate Degree / Degree Level	49	20.59%
	d. Master Level or above	50	21.01%
	Total	238	100.00%
Year of Experience	a. Below 1 Year	63	26.47%
	b. 2 to 4 Years	45	18.91%
	c. 5 to 7 Years	67	28.15%
	d. Over 7 Years	63	26.47%
	Total	238	100.00%

3.2 Descriptive Analysis

Second, further to the presentation of the background information of the respondent, the descriptive analysis was conducted to reveal the trend of the opinion, while the level of agreeing to the impact of Covid19 on the factors and the outcome was presented in the following (Figure 2).

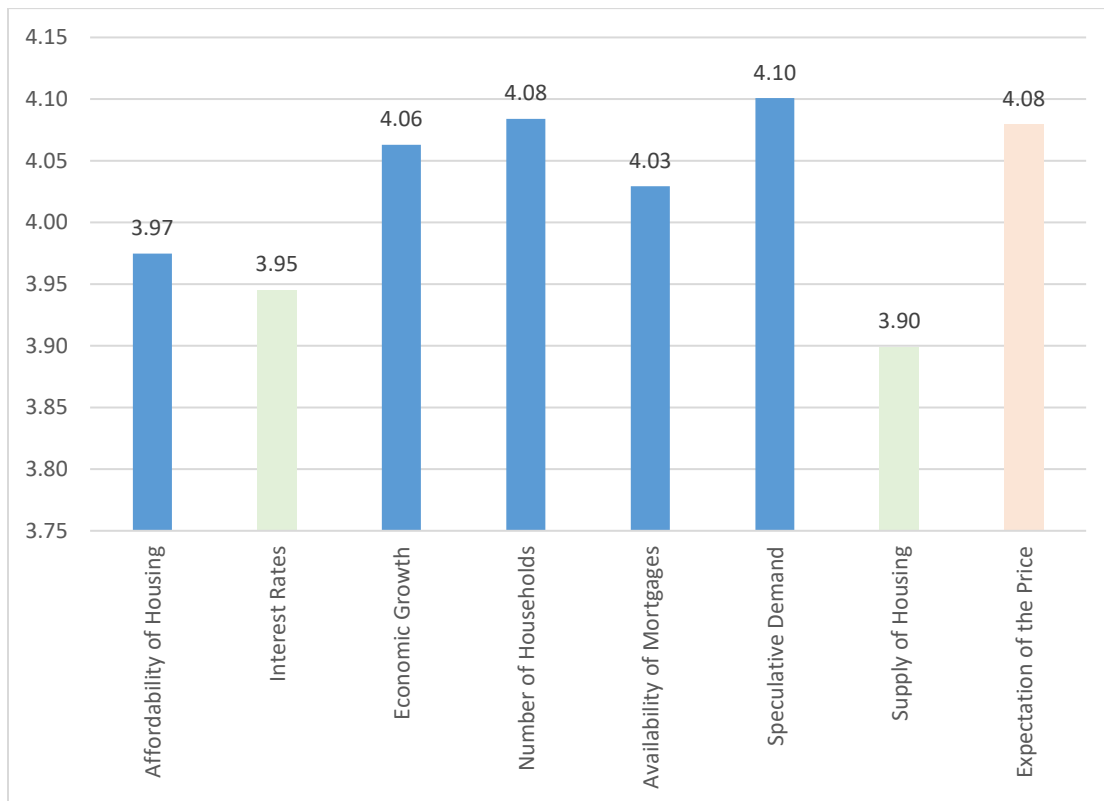


Figure 2. Visualisation of the Research Constructs Related to the Expectation of the Office Property Price

From the depiction, the level of agreeing to the impact of Covid19 on the influencers, in descending order, can be revealed by the order: Speculative Demand (Average Score = 4.10) > Number of Households (Average Score = 4.08) > Economic Growth (Average Score = 4.06) > Availability of Mortgages (Average Score = 4.03) > Affordability of Housing (Average Score = 3.97) > Interest Rates (Average Score = 3.95) > Supply of Housing (Average Score = 3.90), while it reflected that the practitioner thought that the speculation of the property was reduced along with the

happening of the global pandemic. Furthermore, with reference to the expectation, the score was 4.08, which is greater than the mean score of 3 (from 1 to 7), while it reflected the slight agreement of the downturn of the office property.

3.3 Correlation Analysis

Third, apart from the descriptive analysis, the correlation analysis was conducted to reveal the connection between the factors and the expectation of the official price, while the associated results were shown in the subsequent Table (Table 9).

Table 9. Summative Results of the Correlation Between the Factors & the Expectation of the Price of Office Property in the Local Market

Correlations		The Expectation of the Price
Affordability of Housing	Pearson Correlation	.706**
	Sig. (2-tailed)	.000
	N	238
Interest Rates	Pearson Correlation	-.622**
	Sig. (2-tailed)	.000
	N	238
Economic Growth	Pearson Correlation	.699**
	Sig. (2-tailed)	.000
	N	238
Number of Households	Pearson Correlation	.645**
	Sig. (2-tailed)	.000
	N	238
Availability of Mortgages	Pearson Correlation	.679**
	Sig. (2-tailed)	.000
	N	238
Speculative Demand	Pearson Correlation	.695**
	Sig. (2-tailed)	.000
	N	238
Supply of Housing	Pearson Correlation	-.693**
	Sig. (2-tailed)	.000
	N	238
**. Correlation is significant at the 0.01 level (2-tailed).		

With respect to the table, it can be seen that the contribution of the factors to the downturn of the office price can be summarized with the descending order: Affordability of Housing (Rho-Value = 0.706 & Sig. < 0.001 < 0.05) > Economic Growth (Rho-Value = 0.699 & Sig. < 0.001 < 0.05) > Speculative Demand (Rho-Value = 0.695 & Sig. < 0.001 < 0.05) > Supply of Housing (Rho-Value = -0.693 & Sig. < 0.001 < 0.05) > Availability of Mortgages (Rho-Value = 0.679 & Sig. < 0.001 < 0.05) > Number of Households (Rho-Value = 0.645 & Sig. < 0.001 < 0.05) > Interest Rates (Rho-Value = -0.622 & Sig. < 0.001 < 0.05), while it can be observed that the affordability of housing was a key to determent the office price in the mind of the local practitioners.

3.4 Regression Analysis

To reveal the relative contribution of the factors, a linear model would be formulated to attribute the outcome. Hence, regression analysis was performed, and the associated result can be seen in the following figures (Table 10 to Table 11). On the one hand, with reference to the adjusted R square value (Table 15.1), the result indicated that the linear model has 85.3% explanation power between the inputs and outcome, along with the associated significance value (Sig. < 0.001 < 0.05) (Table 15.2), it was justifiable to claim the appropriateness of the model.

Table 10. Summary of the Regression Result Related to the Adjusted R Square Value

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926 ^a	.857	.853	.757
a. Predictors: (Constant), Supply of Housing, Number of Households, Interest Rates, Economic Growth, Affordability of Housing, Speculative Demand, Availability of Mortgages				

Table 11. Summary of ANOVA Results for Significance of the Proposed Linear Model

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	789.711	7	112.816	196.912	.000 ^b
	Residual	131.773	230	.573		
	Total	921.483	237			
a. Dependent Variable: Q8						
b. Predictors: (Constant), Supply of Housing, Number of Households, Interest Rates, Economic Growth, Affordability of Housing, Speculative Demand, Availability of Mortgages						

On the other hand, the coefficients of the formulation would be inspected, while the associated summary can be seen in Table 12.

Table 12. Summary of the Coefficients of the Factors in the Linear Model of the Proposed Formula

Coefficients						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error			
		1	(Constant)	1.523	.311	
	Affordability of Housing	.187	.029	.213	6.486	.000
	Interest Rates	-.136	.029	-.144	-4.723	.000
	Economic Growth	.208	.029	.227	7.148	.000
	Number of Households	.175	.027	.196	6.445	.000
	Availability of Mortgages	.134	.030	.147	4.477	.000
	Speculative Demand	.177	.029	.197	6.021	.000
	Supply of Housing	-.122	.030	-.137	-4.055	.000
a. Dependent Variable: Expectation of the Price						

Form the analytic result, it can be seen that all factors were found to be contributing to the movement of the office property, while the descending order can be summarized as following: Economic Growth (B = 0.208 & Sig. < 0.001 < 0.05) > Affordability of Housing (B = 0.187 & Sig. < 0.001 < 0.05) > Speculative Demand (B = 0.177 & Sig. < 0.001 < 0.05) > Number of Households (B = 0.175 & Sig. < 0.001 < 0.05) > Interest Rates (B = -0.136 & Sig. < 0.001 < 0.05) > Availability of Mortgages (B = 0.134 & Sig. < 0.001 < 0.05) > Supply of Housing (B = -0.122 & Sig. < 0.001 < 0.05), while the economic drawn down resulting from Covid19 was found to be the most significant influencer to the downturn of the price expectancy.

3.5 Segmented Analysis

Finally, further to the investigation of the interaction between the factors and the price expectation, the diversity of the opinion would be inspected. Along with the collected six pieces of demographic information, the corresponding

segmented analysis via ANOVA was accomplished, while they were presented in the following subsections with the corresponding titles of Age, Job Position, Sectors, Gender, Education Level, Year of Experience, respectively.

3.5.1 Age

In the first place, the segmented analysis with respect to the age of the respondents was conducted, while the associate analytic result was resumed in the subsequent table (Table 13). With reference to the inspection of the significant values, it can be seen that no significant difference was found among most of the constructs (Sig. = Range from 0.473 to 0.957 > 0.05) except Interest Rates (Sig. = 0.032 < 0.05). Thus, it was evidenced to claim that the respondents of different ages have a shared opinion for the impacts of Covid19 and the price trend of the office in most of the influencers along with the expectation apart from the impacts on interest rates. Hence, to have an enhanced understanding of the difference of opinion, the mean analysis for the construct would be conducted.

Table 13. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Age

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	6.053	4	1.513	.298	.879
	Within Categories	1183.796	233	5.081		
	Total	1189.849	237			
Interest Rates	Between Categories	45.234	4	11.309	2.686	.032
	Within Categories	981.055	233	4.211		
	Total	1026.290	237			
Economic Growth	Between Categories	13.509	4	3.377	.727	.574
	Within Categories	1082.546	233	4.646		
	Total	1096.055	237			
Number of Households	Between Categories	10.003	4	2.501	.513	.726
	Within Categories	1136.316	233	4.877		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	3.092	4	.773	.162	.957
	Within Categories	1113.702	233	4.780		
	Total	1116.794	237			
Speculative Demand	Between Categories	17.174	4	4.293	.887	.473
	Within Categories	1128.406	233	4.843		
	Total	1145.580	237			
Supply of Housing	Between Categories	13.931	4	3.483	.706	.589
	Within Categories	1149.649	233	4.934		
	Total	1163.580	237			
Expectation of the Price	Between Categories	7.452	4	1.863	.475	.754
	Within Categories	914.031	233	3.923		
	Total	921.483	237			

Then, the mean analysis of the interest rates with respect to the age group was conducted, while the associated findings can be seen in the following table (Table 14), while it can be seen that the respondents with 37 - 42 years old (Mean Score = 4.71) were convinced that the interest rates were escalated along with the Covid19 events, while the price of the office property was raised accordingly.

Table 14. Summary of Mean Analysis Results for the Interest Rates in Corresponding to Age

Report			
Interest Rates			
Age	Mean	N	Std. Deviation

Below 24 Years Old	3.85	48	2.114
25 - 30 Years Old	3.95	42	1.637
31 - 36 Years Old	3.32	47	2.086
37 - 42 Years Old	4.71	45	2.212
Over 42 Years Old	3.93	56	2.114
Total	3.95	238	2.081

3.5.2 Job Position

In the second place, the segmented analysis with respect to the job position of the respondents was conducted, while the associate analytic result was resumed in the following table (Table 15). With reference to the inspection of the significant value (Sig. = Range from 0.198 to 0.947 > 0.05), it can be seen that there was no significant difference found in the opinion among them. Thus, it was evidenced to claim that the respondents with different job positions have a shared opinion on the impacts of Covid19 and the price trend of the office.

Table 15. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Job Position

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	3.747	4	.937	.184	.947
	Within Categories	1186.101	233	5.091		
	Total	1189.849	237			
Interest Rates	Between Categories	22.454	4	5.614	1.303	.270
	Within Categories	1003.836	233	4.308		
	Total	1026.290	237			
Economic Growth	Between Categories	5.539	4	1.385	.296	.880
	Within Categories	1090.516	233	4.680		
	Total	1096.055	237			
Number of Households	Between Categories	15.913	4	3.978	.820	.514
	Within Categories	1130.406	233	4.852		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	9.326	4	2.332	.491	.743
	Within Categories	1107.468	233	4.753		
	Total	1116.794	237			
Speculative Demand	Between Categories	29.058	4	7.264	1.516	.198
	Within Categories	1116.522	233	4.792		
	Total	1145.580	237			
Supply of Housing	Between Categories	12.133	4	3.033	.614	.653
	Within Categories	1151.446	233	4.942		
	Total	1163.580	237			
The Expectation of the Price	Between Categories	3.939	4	.985	.250	.909
	Within Categories	917.545	233	3.938		
	Total	921.483	237			

3.5.3 Sectors

In the third place, the segmented analysis with respect to the sector of the respondents was conducted, while the associate analytic result was resumed in the following table (Table 16). Regarding the inspection of the significant values, it can be seen that no significant difference was found among most of the constructs (Sig. = Range from 0.062 to 0.727 > 0.05) except Speculative Demand (Sig. = 0.040 < 0.05). Thus, it was evidenced to claim that the respondents with different sectors have a shared opinion for the impacts of Covid19.

Table 16. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Sector

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	44.630	4	11.158	2.270	.062
	Within Categories	1145.219	233	4.915		
	Total	1189.849	237			
Interest Rates	Between Categories	18.928	4	4.732	1.094	.360
	Within Categories	1007.362	233	4.323		
	Total	1026.290	237			
Economic Growth	Between Categories	14.178	4	3.545	.763	.550
	Within Categories	1081.876	233	4.643		
	Total	1096.055	237			
Number of Households	Between Categories	9.984	4	2.496	.512	.727
	Within Categories	1136.336	233	4.877		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	18.831	4	4.708	.999	.409
	Within Categories	1097.963	233	4.712		
	Total	1116.794	237			
Speculative Demand	Between Categories	47.976	4	11.994	2.546	.040
	Within Categories	1097.604	233	4.711		
	Total	1145.580	237			
Supply of Housing	Between Categories	33.255	4	8.314	1.714	.148
	Within Categories	1130.325	233	4.851		
	Total	1163.580	237			
Expectation of the Price	Between Categories	15.117	4	3.779	.972	.424
	Within Categories	906.366	233	3.890		
	Total	921.483	237			

Then, the mean analysis of the speculative demand with respect to the sectors was conducted, while the associated findings can be seen in the following table (Table 17). While it can be seen that the property agent (Mean Score = 3.12) disagreed that the speculative demand was suppressed along with the Covid19 events, while the price of the office property was not affected by the factor.

Table 17. Summary of Mean Analysis Results for the Speculative Demand in Corresponding to Sectors

Report			
Speculative Demand			
Sectors	Mean	N	Std. Deviation
Land Developer	4.00	47	1.911
Property Owner	4.42	53	2.307
Speculator	3.97	40	2.270
Office Users	4.49	65	2.202
Property Agent	3.12	33	2.103
Total	4.10	238	2.199

3.5.4 Gender

In the fourth place, the segmented analysis with respect to the gender of the respondents was conducted, while the associate analytic result was resumed in the following table (Table 18). Regarding the inspection of the significance (Sig. = Range from 0.057 to 0.987 > 0.05), it can be seen that there was no significant difference found in the opinion among them. Thus, it was evidenced to claim that the respondents of different genders have a shared opinion on the impacts of Covid19 and the price trend of the office.

Table 18. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Gender

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	.001	1	.001	.000	.987
	Within Categories	1189.847	236	5.042		
	Total	1189.849	237			
Interest Rates	Between Categories	2.400	1	2.400	.553	.458
	Within Categories	1023.890	236	4.339		
	Total	1026.290	237			
Economic Growth	Between Categories	.134	1	.134	.029	.865
	Within Categories	1095.921	236	4.644		
	Total	1096.055	237			
Number of Households	Between Categories	17.441	1	17.441	3.646	.057
	Within Categories	1128.879	236	4.783		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	11.615	1	11.615	2.480	.117
	Within Categories	1105.179	236	4.683		
	Total	1116.794	237			
Speculative Demand	Between Categories	.021	1	.021	.004	.948
	Within Categories	1145.559	236	4.854		
	Total	1145.580	237			
Supply of Housing	Between Categories	1.658	1	1.658	.337	.562
	Within Categories	1161.922	236	4.923		
	Total	1163.580	237			
Expectation of the Price	Between Categories	3.624	1	3.624	.932	.335
	Within Categories	917.859	236	3.889		
	Total	921.483	237			

3.5.5 Education Level

In the fifth place, the segmented analysis with respect to the education level of the respondents was conducted, while the associate analytic result was resumed in the following table (Table 19). With reference to the inspection of the significance (Sig. = Range from 0.076 to 0.861 > 0.05), it can be seen that there was no significant difference found in the opinion among them. Thus, it was evidenced to claim that the respondents with different education levels have a shared opinion on the impacts of Covid19 and the price trend of the office.

Table 19. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Education Level

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	34.354	3	11.451	2.319	.076
	Within Categories	1155.494	234	4.938		
	Total	1189.849	237			
Interest Rates	Between Categories	15.176	3	5.059	1.171	.322
	Within Categories	1011.114	234	4.321		
	Total	1026.290	237			
Economic Growth	Between Categories	9.974	3	3.325	.716	.543
	Within Categories	1086.080	234	4.641		
	Total	1096.055	237			
	Between Categories	5.380	3	1.793	.368	.776

Number of Households	Within Categories	1140.939	234	4.876		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	8.545	3	2.848	.601	.615
	Within Categories	1108.249	234	4.736		
	Total	1116.794	237			
Speculative Demand	Between Categories	11.978	3	3.993	.824	.482
	Within Categories	1133.602	234	4.844		
	Total	1145.580	237			
Supply of Housing	Between Categories	3.728	3	1.243	.251	.861
	Within Categories	1159.852	234	4.957		
	Total	1163.580	237			
Expectation of the Price	Between Categories	19.888	3	6.629	1.721	.163
	Within Categories	901.595	234	3.853		
	Total	921.483	237			

3.5.6 Year of Experience

Finally, the segmented analysis with respect to the year of experience of the respondents was conducted, while the associate analytic result was resumed in the following table (Table 20). With reference to the inspection of the significance (Sig. = Range from 0.058 to 0.959 > 0.05), it can be seen that there was no significant difference found in the opinion among them. Thus, it was evidenced to claim that the respondents with different years of experience have a shared opinion on the impacts of Covid19 and the price trend of the office.

Table 20. Summary of ANOVA Results for the Influencers & the Expectation in Corresponding to Year of Experience

Analysis of Variance						
		Sum of Squares	df	Mean Square	F	Sig.
Affordability of Housing	Between Categories	32.469	3	10.823	2.188	.090
	Within Categories	1157.380	234	4.946		
	Total	1189.849	237			
Interest Rates	Between Categories	10.049	3	3.350	.771	.511
	Within Categories	1016.241	234	4.343		
	Total	1026.290	237			
Economic Growth	Between Categories	7.654	3	2.551	.549	.650
	Within Categories	1088.401	234	4.651		
	Total	1096.055	237			
Number of Households	Between Categories	21.244	3	7.081	1.473	.223
	Within Categories	1125.075	234	4.808		
	Total	1146.319	237			
Availability of Mortgages	Between Categories	5.720	3	1.907	.402	.752
	Within Categories	1111.074	234	4.748		
	Total	1116.794	237			
Speculative Demand	Between Categories	1.479	3	.493	.101	.959
	Within Categories	1144.101	234	4.889		
	Total	1145.580	237			
Supply of Housing	Between Categories	36.455	3	12.152	2.523	.058
	Within Categories	1127.124	234	4.817		
	Total	1163.580	237			
Expectation of the Price	Between Categories	8.201	3	2.734	.700	.553
	Within Categories	913.282	234	3.903		
	Total	921.483	237			

4. Conclusion & Recommendation

Conclusively speaking, after the complete illustration of the findings, conclusive remarks and recommendations will be given along with the illustration of the significant contribution and limitation of the research study so that the research investigation on the identified changes resulting from the global pandemic and the expectancy of the price of the office property can be finalised. Substantially, the current work initiates with the summarisation and consolidation of the analytic results from the previous chapter. At the same time, the suggestions and advice for the policymakers and the practitioners in the field would be delineated with reference to the study's findings. Furthermore, the contribution and innovations of the research study will be emphasised, and the first chapter will evaluate the fulfilment of the defined objectives.

5. Summary of the Results

In the first place, along with the analysis of the responses coming from the practitioners, three significant findings can be summarised, while they will be presented in the following points. First, along with the descriptive analysis, it was found that the speculative demand was suppressed during the pandemic, while the significance of the Covid19 to the factors was summarised in the following table (Table 21).

Table 21. Ranks of the Significance of the Covid19 to the Factors

The Rank of the Significance	Covid19 Affected Factors	Effect on the Price
1	Speculative Demand	Suppression
2	Number of Households	Suppression
3	Economic Growth	Suppression
4	Availability of Mortgages	Suppression
5	Affordability of Housing	Suppression
6	Interest Rates	Escalation
7	Supply of Housing	Escalation

Second, with reference to the correction and regression analysis, it can be seen that the two factors, namely, the affordability of housing and economic growth, were found to be the most contributing factors to the office property price. In contrast, the descending orders of the factors from the analysis can be seen from the following table (Table 22).

Table 22. Ranks of the Contribution of the Factors to the Expectation of the Price of the Office Properties

The Rank of Price Contribution	Suggested by Correction Analysis	Suggested by Regression Analysis
1	Affordability of Housing	Economic Growth
2	Economic Growth	Affordability of Housing
3	Speculative Demand	Speculative Demand
4	Supply of Housing	Number of Households
5	Availability of Mortgages	Interest Rates
6	Number of Households	Availability of Mortgages
7	Interest Rates	Supply of Housing

Furthermore, along with the coefficients generated from the regression analysis, the linear model between the factors and the expectation of the office property price can be formulated as follows.

Expectation of the Price

$$\begin{aligned}
 &= 0.208 \times \text{Economic Growth} + 0.187 \times \text{Affordability of Housing} \\
 &+ 0.177 \times \text{Speculative Demand} + 0.175 \times \text{Number of Households} \\
 &+ -0.136 \times \text{Interest Rates} + 0.134 \times \text{Availability of Mortgages} \\
 &+ -0.122 \times \text{Supply of Housing} + 10.523
 \end{aligned}$$

Finally, with respect to the segmented analysis, it was found that the respondents 37 - 42 years old were convinced that the interest rates were escalated along with the Covid19 events, while the property agent disagreed that the speculative demand was suppressed along with the Covid19 event.

5.1 Recommendations

Along with the revealed findings and the consolidation of the conclusions, two recommendations were generated to stabilise the property price.

1. From the perspectives of the policymaker and the analytic findings of the current study, both affordability of housing and economic growth was found to be essential factors to drive the price of office property. Hence, financial assistance to the companies and the citizen, such as rental compensation, would be essential to stabilise the market during the pandemic while it is essential for the fast resuming of the market order (Lieske et al., 2021).
2. As the industry practitioners expected the diminishing of the speculative capital, the property owners should not compromise with unrealistic pricing in the office market to align with the market situation. Instead of gaining profit from selling and buying, keeping the rental income may be an advisable tactic during the time (Razali et al., 2018).

It was hoped that the two prices of advice could provide particular guidance for the policymakers and practitioners to deal with the downturn of the office property market.

5.2 Contribution & Accomplishment of the Study

In the third place, further to the proposal of the recommendations, the current study's contribution would be highlighted to emphasise the innovation of the current study. Essentially, the insights and contributions of the current study can be explained in five aspects.

1. Due to the lack of a specified model for the composition of the office property price, the price model of housing property was adopted in the current study. Along with the customisation of the factors with respect to the pricing application of the office property, the theoretical model for the office property price was developed, while the model can be reused in the latter study.
2. Further to the customisation of the housing price model with respect to the office configuration, the localisation of the model was constructed, while the localised model can be applied in the dynamics between the factors and the price expectation of the local properties.
3. Additionally, the associated research instrument for the exploration of the influencers and the property price was developed as well. Hence, research in the future can adopt the related instrument to speed the investigation.
4. Furthermore, instead of considering Covid19 as a factor that takes place in deciding the property price, Covid19 was considered an event or the backdrop of the office property environment. Hence, the impacts of the factors under the influences would be explored to align with the determination process of the price. In essence, it would be hard to associate the pandemic with price but the influences of Covid19 on the price determinants. Hence, it can be considered an alternative viewpoint to the associated study. Besides, the related philosophy can be applied to different incidents instead of the redevelopment of the framework each time.
5. Instead of considering the direct price of the property, the expectation of the price was adopted to prevent the lagging effects of the price index. Hence, the estimation of the causal effects of the factors and the price can be investigated.

Further to the delineation of the contribution and innovation of the current study, the accomplishment of the objectives is to evidence the claim of the project completion. With respect to the objectives, the locations and the underpinning can be seen in the following Table 23.

Table 23. Evaluation of the Achievement of the Defined Objectives

Objectives	Locations & Evidence of Completion
------------	------------------------------------

<p>1. To review the unique characteristics of the office property market and the primary impacts of the Covid19 on the property price.</p>	<p>The review of the unique characteristics of the office property market can be observed in the first section Literature Review with the title The Unique Characteristics of the Local Office Property Market, while the characteristics of the office property market were summarised. On the other hand, the review of the primary impacts of Covid19 on property price can be observed in the second section of the Literature Review with the title of The Impacts of Covid19, while the impacts of the pandemic on property price was consolidated.</p>
<p>2. To identify the factors that affect the property price in general and the influence of the related factors under the pandemic event.</p>	<p>The identification of the factors that affect the property price in general and the influence of the related factors under the pandemic event can be observed from the final section of the Literature Review with the title of The Factors Associated to the Property Price, while the customised and localised factors for the office property price referencing from the price model of the property price can be seen in the section.</p>
<p>3. To correlate the influencers and the expectation of the office property price in order to reveal the relative strength of the influencers.</p>	<p>Along with the research design mentioned in Methodological Approach, the result for the correlation between the influencers and the expectation of the office property price can be observed in the third section of Findings & Discussion with the title of Correlation Analysis, while the relative strength of the influencers can be seen in the associated contents. Additionally, the formulation for the linear model to characterise the influencers and the outcome can be seen in the fourth section of Findings & Discussion with the title of Regression Analysis.</p>
<p>4. To conduct a segmented analysis of the practitioners with respect to their demographic information.</p>	<p>In the same sense, the segmented analysis of the practitioners for their demographic information can be seen in the final section of Findings & Discussion with the title Segmented Analysis. At the same time, the respondents diversity of opinion was depicted.</p>
<p>5. To propose recommendations for the policymakers and the market practitioners based on the analytic findings.</p>	<p>Finally, along with the summary of the analytic findings of the first section of the final chapter with the title of Summary of the Result, three recommendations to the policymakers and the market practitioners under the pandemic were proposed. In contrast, the related contents can be seen in the second section of Conclusion & Recommendation with the title of 29. Recommendations.</p>

Therefore, with respect to the evaluation of the accomplishment of the objectives, it can be seen that all five of them were responded, while the aim of “prioritising the major influencers of the property price resulting from the Covid19 event in the mind of the practitioners so that proper advice can be generated to the policymakers and the market practitioners” was accomplished, so it was justifiable to claim the completion of the research project.

References

- Abidoeye, R. B., Chan, A. P. C., Abidoeye, F. A. & Oshodi, O. S., Predicting Property Price Index Using Artificial Intelligence Techniques: Evidence from Hong Kong. *International Journal of Housing Markets and Analysis*, 12(6), pp. 1072-1092, 2019.
- Arden, M. A. & Chilcot, J., Health Psychology and the Coronavirus (COVID-19) Global Pandemic: A Call for Research. *British Journal of Health Psychology*, 25(2), pp. 231-232, 2020.
- Atzrodt, C. L., A Guide to COVID-19: A Global Pandemic Caused By the Novel Coronavirus SARS-CoV-2. *The FEBS Journal*, 287(17), pp. 3633-3650. 2020.
- Boston-Fleischhauer, C., The Global Pandemic Should Covid-inspired Care Innovations Continue?. *The Journal of Nursing Administration*, 51(6), pp. 304-306. 2021.

- Braakmann, N., The Link Between Crime Risk and Property Prices in England and Wales: Evidence from Street-level Data. *Urban Studies (Edinburgh, Scotland)*, 54(8), pp. 1990-2007. 2017.
- Chang, D. C., The Other Global Pandemic Scientific Racism and the Normality Bias. *Annals of Surgery*, 274(6), p. 646. 2021.
- Cox, D. R. & Battey, H. S., Large Numbers of Explanatory Variables, A Semi-descriptive Analysis. *Proceedings of the National Academy of Sciences of the United States of America*, 114(32). 2017.
- De Vet, H. C. W., Mokkink, L. B., Mosmuller, D. G. & Terwee, C. B., Spearman-brown Prophecy Formula and Cronbachs Alpha: Different Faces of Reliability and Opportunities for New Applications. *Journal of Clinical Epidemiology*. 2017.
- DiscoverPhDs, *Aims and Objectives – A Guide for Academic Writing*. [Online], 2018.
Available at: <https://www.discoverphds.com/advice/doing/research-aims-and-objectives>
[Accessed 24 Feb 2022].
- Dong, T., Wang, A., Zhu, H. & Liao, X., Event-triggered Synchronisation for Reaction–Diffusion Complex Networks Via Random Sampling. *Physica A*, Volume 495, pp. 454-462. 2018.
- Dumm, R. E., Sirmans, G. S. & Smersh, G. T., Sinkholes and Residential Property Prices: Presence, Proximity, and Density. *The Journal of Real Estate Research*, 40(1), pp. 41-68. 2018
- Fabozzi, F. J., Shiller, R. J. & Tunaru, R. S., A 30-year Perspective on Property Derivatives: What Can be Done to Tame Property Price Risk?. *The Journal of Economic Perspectives*, 34(4), pp. 121-145. 2020.
- Gillmann, K., Rao, H. L. & Mansouri, K., The Choice of Analysis of Variance Models in Repeated Measurements Analysis-on the Effect of Glaucoma Surgery on Retinal Structures. *Eye (London)*, 34(9), pp. 1711-1711. 2020.
- Goffin, K., Åhlström, P., Bianchi, M. & Richtnér, A., Perspective: State-Of-The-Art: The Quality of Case Study Research in Innovation Management. *The Journal of Product Innovation Management*, 36(5), pp. 586-615. 2019.
- Goodman, C. B., House Prices and Property Tax Revenues During the Boom and Bust: Evidence from Small-Area Estimates. *Growth and Change*, 49(4), pp. 636-656. 2018.
- Hamed, A. M., Mozghan, D., Reyhaneh, S. & Reyhaneh, S., Designing, constructing, and Analysing Likert Scale Data. *Journal of Education and Community Health*, 5(3). 2018.
- Hill, H., Litke, E. & Lynch, K., Learning Lessons from Instruction: Descriptive Results from an Observational Study of Urban Elementary Classrooms. *Teachers College Record*, 120(12). 2018.
- Hirsch, J. & Hahn, J., How Flood Risk Impacts Residential Rents and Property Prices: Empirical Analysis of a German Property Market. *Journal of Property Investment & Finance*, 36(1), pp. 50-67. 2018.
- Hui, E. C. M., Tse, C.-k. & Yu, K.-h., The Effect of BEAM Plus Certification on Property Price in Hong Kong. *International Journal of Strategic Property Management*, 21(4), pp. 384-400. 2017.
- Jones Lang LaSalle IP, Inc., *Open Collaboration is the Key to Accelerate the Development of China's PropTech Ecosystem*. [Online] 2020.
Available at: <https://www.joneslanglasalle.com.cn/en/newsroom/open-collaboration-is-the-key-to-accelerate-the-development-of-china-s-proptech>
[Accessed 1 Apr 2022].
- Jones, I. F. et al., Quality Assurance During a Global Pandemic: An Evaluation of Improvised Filter Materials for Healthcare Workers. *Journal of Occupational and Environmental Medicine*, 62(10), pp. 781-782. 2020.
- Kee, T. & Chau, K. W., Economic Sustainability of Heritage Conservation in Hong Kong: The Impact of Heritage Buildings on Adjacent Property Prices. *Sustainable Development (Bradford, West Yorkshire, England)*, 28(1), pp. 308-319. 2020.
- Lee, K. N. H., 2017. Residential Property Price-stock Price Nexus in Hong Kong: New Evidence from ARDL Bounds Test. *International Journal of Housing Markets and Analysis*, 10(2), pp. 204-220.
- Lieske, S. N., van den Nouweland, R., Han, J. H. & Pettit, C., A Novel Hedonic Price Modelling Approach for Estimating the Impact of Transportation Infrastructure on Property Prices. *Urban Studies (Edinburgh, Scotland)*, 58(1), pp. 182-202. 2021.
- Li, N., Li, R. Y. M. & Pu, R., What is in A Name? A Modern Interpretation from Housing Price in Hong Kong. *Pacific Rim Property Research Journal*, pp. 1-20. 2021
- Mangiò, F., Pedeliento, G. & Andreini, D., Branding Rhetoric in Times of A Global Pandemic: A Text-mining Analysis. *Journal of Advertising*, 50(3), pp. 240-252. 2021.
- Mei, Y., Gao, L. & Zhang, P., Residential Property Price Differentials of Waste Plants: Evidence from Beijing, China. *Applied Economics*, 51(55), pp. 5952-5960. 2019.
- Melkman, E., Hershkowitz, I. & Zur, R., Credibility Assessment in Child Sexual Abuse Investigations: A Descriptive Analysis. *Child Abuse & Neglect*, p. 67. 2017.

- Minhas, N. M., Petersen, K., Börstler, J. & Wnuk, K., 2020. Regression testing for large-scale embedded software development – Exploring the state of practice. *Information and Software Technology*, Volume 120, p. 106254. Minitab Blog, *Understanding Analysis of Variance (ANOVA) and the F-test*. [Online] 2016. Available at: <https://blog.minitab.com/en/adventures-in-statistics-2/understanding-analysis-of-variance-anova-and-the-f-test> [Accessed 24 Feb 2022].
- Nepogodiev, D. et al., Elective Surgery Cancellations Due to the COVID-19 Pandemic: Global Predictive Modelling to Inform Surgical Recovery Plans. *British Journal of Surgery*, 107(11), pp. 1440-1449. 2020.
- Peng, T.-C., Does the School Input Quality Matter to Nearby Property Prices in Taipei Metropolis?: An Application of Spatial Analyses. *International Journal of Housing Markets and Analysis*, 12(5), pp. 865-883. 2019.
- Pérez-Guaita, D. et al., Assessment of Discriminant Models in Infrared Imaging Using Constrained Repeated Random Sampling – Cross Validation. *Analytica Chimica Acta*, Volume 1033, pp. 156-164. 2018.
- Pettinger, T., *Factors That Affect the Housing Market - Economics Help*. [Online] 2012. Available at: <https://www.economicshelp.org/blog/377/housing/factors-that-affect-the-housing-market/> [Accessed 24 Feb 2022].
- Praktiknjo, M., Reply To: “Definition of SPSS: We Need to Speak the Same Language”: Computer-assisted Image Processing for Better Quantification. *Journal of Hepatology*, 73(2), pp. 464-465. 2020.
- Printz, C., When a Global Pandemic Complicates Cancer Care: Although Oncologists and Their Patients are Accustomed to Fighting Tough Battles Against a Lethal Disease, Coronavirus Disease 2019 (COVID-19) Has Posed an Unprecedented Challenge. *Cancer*, 126(14), pp. 3171-3173. 2020.
- Propheter, G., Golf Courses and Property Prices: Is It the Golf Or the Open Space?. *Applied Economics Letters*, 29(3), pp. 245-248. 2022.
- Razali, M. N., Property Market Price Response to Flood-hazard. *Natural Hazards (Dordrecht)*, pp. 09-27. 2018.
- Sanders, P. et al., Efficient Parallel Random Sampling-vectorized, Cache-efficient, and Online. *Acm Transactions on Mathematical Software*, 44(3), pp. 1-14. 2018.
- Savills Research, *Office Leasing*. Hong Kong: Savills. 2021.
- Shelby, L. B., Beyond Cronbach's Alpha: Considering Confirmatory Factor Analysis and Segmentation. *Human Dimensions of Wildlife*, 16(2), pp. 142 - 148. 2011.
- Squazzoni, F. et al., Computational Models That Matter During A Global Pandemic Outbreak: A Call to Action. *Journal of Artificial Societies and Social Simulation*, 23(2), pp. 03-31. 2020.
- Stefan, N., Birkenfeld, A. L. & Schulze, M. B., Global Pandemics Interconnected - Obesity, Impaired Metabolic Health and COVID-19. *Nature Reviews Endocrinology*, 17(3), pp. 135-149, 2021.
- Székely, G. J., Rizzo, M. L. & Bakirov, N. K., Measuring and testing independence by correlation of distances. *Annals of Statistics*, 35(6), p. 2769–2794, 2007.
- Tan, Y., Xu, H. & Hui, E. C. M., Forecasting Property Price Indices in Hong Kong Based on Grey Models. *International Journal of Strategic Property Management*, 21(3), pp. 256-272, 2017.
- Trizano-Hermosilla, I. & Alvarado, J. M., Best Alternatives to Cronbach's Alpha Reliability in Realistic Conditions: Congeneric and Asymmetrical Measurements. *Frontiers in Psychology*, Volume 7, pp. 769-769, 2016.
- Vlasova, E. L. & Barasheva, E. V., Financial Control and Financial Monitoring Within the System of Government Financial Administration: Correlations and Interrelationships. *Journal of Advanced Research in Law and Economics*, 9(4), pp. 1494-1502, 2018.
- Weaver, B. & Dubois, S., SPSS macros to compare any two fitted values from a regression model. *Behavior Research Methods*, 44(4), pp. 1175 - 1190, 2012.