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## **CRITICAL DETERMINANTS OF HERITAGE PROPERTY VALUE: A CONCEPTUAL FRAMEWORK**

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### **Abstract**

Real estate is complex in nature, whereby its value is determined by many characteristics. Heritage property is different as compared with non-heritage property, thus; it is essential to identify the heritage property value determinants due to limited published research about it. This paper closes the gap by reviewing the literature to identify the determinants. To achieve this, academic journals and conference papers in online databases from 1974 to 2017 have been reviewed. The results indicated that there are four groups of heritage property value determinants namely; i) transaction characteristics, ii) structural characteristics, iii) spatial characteristics, and iv) historical characteristics. It can be concluded that heritage property values are differentiated by historical characteristics notably on their architectural styles or design and the status of the heritage property itself. This finding should be a useful guidance for the valuers in valuation practice.

**Keyword:** heritage, property value, determinant factors, characteristics

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## **INTRODUCTION**

Heritage property has valuable contribution for sustainability from social, environmental and economic perspectives, is widely recognized and emphasized by many government agencies, local communities and all stakeholders (Armitage & Irons, 2013). As the real estate is well known for its complexity in nature, there are many characteristics that influence its values regardless of the location (Abidoeye & Chan, 2016; Rahman, 2018). Heritage property market is different as compared with non-heritage as the value for heritage property is created in the mind of stakeholders and specific buyers of specific types of properties, which are not only considered on the physical property. Therefore, it raises question on the factors contributed in determining the heritage property values or prices. Hence, it is necessary to identify the characteristics affecting the heritage property price and this assent motivates this study due to small number of research about it. According to the fundamental idea by Rosen (1974), the hedonic function for housing implies that the demand for each individual property will depend on its characteristics and this is similar with regards to heritage property. Thus, the identification of heritage property value determinants is imperative for the heritage property modelling and valuation. This study critically reviews conceptual and empirical literature from academic journals and conference papers in online databases dated from 1974 to 2017.

## **THEORETICAL FRAMEWORK OF HERITAGE PROPERTY VALUE DETERMINANTS**

Property has complex characters that generate a dynamic market. It is a common knowledge as previous studies (Abidoeye & Chan, 2016; Babawale, Koleoso, & Otegbulu, 2012; Brandt, Maennig, & Richter, 2013; Chin & Chau, 2003; Grum & Govekar, 2016; Hui, Chau, Pun, & Law, 2007; Y. Wang et al., 2017; Zoppi, Argiolas, & Lai, 2015) were conducted around the world in determining the critical determinants affecting the property value and establish three broad groups i.e. locational, neighbourhood and structural characteristics (Abdul Hamid, Tian, & Suriatini, 2014; Abidoeye & Chan, 2016; Babawale et al., 2012; Brandt et al., 2013; Chin & Chau, 2003; Wong, So, & Hung, 2002). Previous studies on property market have also distinguished these factors into two main drivers: macroeconomic and microeconomic. Macroeconomic factors are related more to market factors such as supply and demand, gross domestic product (GDP), unemployment, household income, interest rate and etc. (Grum & Govekar, 2016), whilst microeconomic factors concern more on the physical property-specific factors. However, many academic studies have given extra focus in details on microeconomic factors (frequently related on structural and spatial) in modelling property prices. Overall, non-heritage property studies i.e. residential and housing market segments are given more attention to investigate the attributes that influence its property values while little attention has been paid to heritage

property studies. The results indicated that there are four groups of heritage property value determinants included: i) transaction characteristics, ii) structural characteristics, iii) spatial characteristics, and iv) historical characteristics as discussed in the following subsection. Table 1 summarizes the heritage property value characteristics which commonly used as independent variables in statistical analysis by numerous studies.

**Table 1:** Heritage property characteristics included in previous research

Heritage Property Characteristics		Hough & Kratz (1983)	Vandell & Lane (1989)	Asabere, Hackey, & Grubaugh (1989)	Moorhouse & Smith (1994)	Ruijgrok (2006)	Ijla (2008)	Cebula (2009)	Tatt (2010)	Ahlfeldt & Mastro (2012)	Nijkamp (2012)	Lazrak et al. (2014)	Wright & Eppink (2016)	Warren, Elliott, & Staines (2017)	Junainah et al. (2017)
Transaction	Land tenure										✓	✓			✓
	Transaction date											✓	✓		
	Selling condition										✓	✓	✓		
	Year built						✓				✓	✓			
Structural	Position of building					✓		✓							✓
	Construction period					✓					✓	✓			
	Maintenance/renovation					✓				✓	✓	✓	✓		
	Lot size			✓	✓	✓	✓			✓	✓	✓			
	Floor area	✓	✓		✓	✓	✓			✓	✓	✓			
	Building materials			✓	✓	✓				✓	✓	✓			
	Garage/parking space	✓	✓	✓			✓	✓		✓	✓	✓			
	Number of bedroom/room			✓			✓	✓		✓	✓	✓			
	Number of bathroom			✓			✓	✓		✓	✓	✓			
	Basement/patio									✓	✓	✓			
	Fireplace			✓				✓		✓					
	Age of property	✓	✓	✓											
	Building amenities						✓	✓		✓	✓				
Spatial	Traffic flow/airport noise/noise level							✓	✓		✓	✓			
	Population density									✓	✓	✓	✓		
	Distance from city centre		✓			✓				✓	✓	✓			
	Distance from CBD	✓					✓								

	Proximity to high quality school					√	√	√			
	Proximity to shopping centre						√				
	Proximity to public transport	√									
	Proximity to highway						√	√			
	Distance from main road										√
	Environmental quality			√		√	√	√			
	Percentage ethnic		√							√	
	Income per capita							√			
Historical	Heritage status	√	√	√	√	√	√	√	√	√	√
	Architectural styles	√	√	√	√	√		√	√		√
	Authenticity				√						√
	Ensemble				√						√
	Facade types				√						√

### Transaction Characteristics

Transaction characteristics are basically information in property sales transaction data. Land tenure, year of the property was built, selling conditions and the transaction date of the property are to be included in transaction- characteristics of spatial hedonic model analysis for heritage property (Lazrak, Nijkamp, Rietveld, & Rouwendal, 2011, 2014; Nijkamp, 2012). The land tenure on which the property is built can be either leasehold or freehold. Houses were revealed sold at a discount of 4.7% while the land plot is still in a leasehold conditions while it is confirmed that the transaction date variables in the hedonic regression analysis are significant and contribute to the model (Abdul Hamid et al. 2014; Lazrak et al. 2014; Mohd Lizam, Norshazwani Afiqah & Abdul Jalil, 2013).

### Structural Characteristics

The characteristics under structural category are specific to the physical condition of the property itself. Babawale et al. (2012) found that structural characteristics contribute to the most significant group of factors as compared to neighbourhood and locational characteristics. This finding is tangent with theory by Ball (1973), which stated that there are more desirable characteristics in structural of a property than others did and it is reflected in higher market prices for that property from the valuation of these characteristics. Nijkamp (2012) suggested that floor area, capacity, number of bedrooms, presence of gas heater, dwelling insulation, year of construction, maintenance condition, existence of garden and presence of parking space to be included in structural characteristics of spatial hedonic model analysis for heritage property. Empirical evidences proved that the price increases if the property with the following categories;

- i. Has a renovation or in good of maintenance condition (Abidoye & Chan, 2016; Armitage & Irons, 2013; Lazrak et al., 2014; Wright & Eppink, 2016);

- ii. Has high quality of basic building materials (Amir Hossein Askari & Kamariah Dola, 2009; Grether & Mieszkowski, 1974; Lazrak et al., 2014; Ruijgrok, 2006);
- iii. Offers for parking space/opportunities (e.g. Babawale et al., 2012; Grether & Mieszkowski, 1974; Hough & Kratz, 1983; Lazrak et al., 2014; Oduwole & Eze, 2013); iv)
- iv. Bigger size of the property as well its floor areas (Abidoeye & Chan, 2016; Babawale et al., 2012; Lazrak et al., 2014; Mohd Lizam, Norshazwani Afiqah, & Abdul Jalil, 2013; Oduwole & Eze, 2013; Ruijgrok, 2006; Sirmans, Macpherson, & Zietz, 2005);
- v. Higher number of rooms or bedrooms and bathrooms (Babawale et al., 2012; Brandt et al., 2013; Ge & Du, 2007; Lazrak et al., 2014; Mohd Lizam et al., 2013; Zhang, Cromley, & Hanink, 2016);
- vi. Higher number of age of the heritage property due to the historical characteristics (Li & Brown, 1980) and vice versa for non-heritage property studies (e.g. Brandt et al., 2013; Mohd Lizam et al., 2013; Zhang et al., 2016); and
- vii. Strategic position of the property (Oduwole & Eze, 2013).

### **Spatial Characteristics**

There is a large and growing body of hedonic house price research in the tradition of Rosen (1974) demonstrating that the price of a property does not only depend on the characteristics of a building itself, but also on the amenities and location it has to offer. Spatial characteristics are related to the locational, neighbourhood and local amenities (Tatt, 2010). Previous studies conducted over the years to examine spatial characteristics on property prices with mixed results and mostly the customers are willing to pay extra money for a site and generally enhance the value of the properties with the following categories:

- i) Closer distance/accessibility to the nearest city centre or from Central Business District (CBD) (Hough & Kratz, 1983; Hui et al., 2007; Lazrak et al., 2014; Mohd Lizam et al., 2013; Oduwole & Eze, 2013; Ruijgrok, 2006; Tatt, 2010; Zhang et al., 2016), main road (Oduwole & Eze, 2013), highway (Heintzelman & Altieri, 2013) and whether the property is situated within lucky feng-shui beliefs (Abdul-Rashid & Ahmed-Usman, 2010; Choy, Mak, & Ho, 2007);
- ii) A good environmental quality in terms of scenic view such as sea, river, mountain, lake; green areas such as forest, hill, golf course, landscape, garden/park, recreational well as its traffic/airport noise (Abdul Hamid et al., 2014; Han, Yang, Wang, & Xu, 2011; Hui et al., 2007; Asmawi, Noor, & Paiman, 2016; Noor, Asmawi, & Abdullah, 2015; Oduwole & Eze, 2013; Zhang et al., 2016);
- iii) Externalities with proximity to shopping centre (Ge & Du, 2007; Tatt, 2010);

- iv) Proximity to local government amenities or municipal services such as airport (Smith, 1978), schools (Ge & Du, 2007; Suriatini, 2005; Tatt, 2010), places of worship (e.g. mosques, churches, temples) (Brandt et al., 2013), hospitals, public transport (e.g. bus/train station) (Brandt et al., 2013; Heintzelman & Altieri, 2013; Hough & Kratz, 1983);
- v) Socio-economic and demographic variables such as higher population density (Lazrak et al., 2014; Zoppi et al., 2015), percentage ethnic (Lazrak et al., 2014), income per capita/household income (Brandt et al., 2013; Ding, Simons, & Baku, 2000), as well as reduction in crime rates (Brandt et al., 2013; Ding et al., 2000; Oduwole & Eze, 2013).

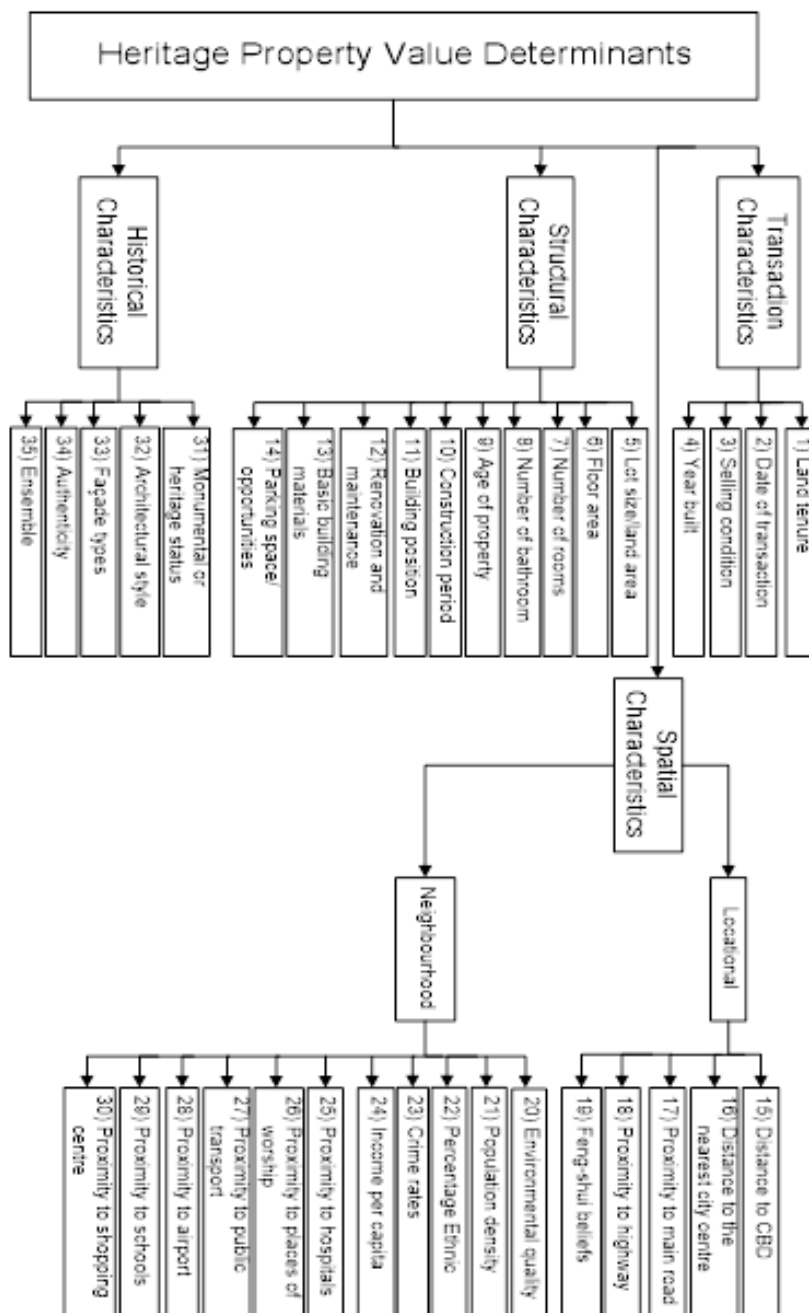
### **Historical Characteristics**

Theoretical framework except for the historical characteristics has been widely generated and extensively used in estimating housing demand and market. Junainah, Suriatini, Abdul Hamid and Thuraiya (2017), with Ruijgrok (2006) explored the influence of historical characteristics on the price of heritage property while Nijkamp (2012) pointed out that heritage characteristics includes its architectural beauty, meaning for science or historical-cultural value need to be included in spatial hedonic model analysis. However, it was justified without a proper empirical evidence. Ruijgrok (2006) explored the historical characteristics that explain heritage property but focused more on house value and measured in quantitatively with five variables; i) monumental status, ii) facade type, iii) architectural styles, iv) authenticity and v) ensemble by using hedonic regression analysis. It has long been debated the historic designation of heritage property status impact on property values by many scholars which appears in mixed results (Ijla, 2008; Warren et al., 2017; Zahirovic-Herbert & Gibler, 2014). Architectural styles are critical in determining the heritage property value whereby the pre-war buildings have unique “old charm architectural heritage” with eastern and western influences (Hendry Butcher Malaysia (Penang), 2016). Several studies attempt to measure empirical influence of architecture styles or design on heritage property value with variety measurements and their findings provide significant results (Ahlfeldt & Mastro, 2012; Asabere et al., 1989; Hough & Kratz, 1983; Ijla, 2008; Millhouse, 2005; Moorhouse & Smith, 1994; Ruijgrok, 2006; Vandell & Lane, 1989).

### **The prospective of heritage property value determinants**

Review of past literatures revealed the uniqueness of this heritage property established for historic characteristics and would be crucially considered in the statistical analysis notable for assessing its value. Malaysian offers a variation of the architectural styles for heritage properties and it makes a strong sense that the historic architectural styles characteristic significantly influenced the heritage property values. Hendry Butcher Malaysia (Penang) (2016) had identified architectural styles as one of the factors that will attract investors to consider heritage properties in George Town, Penang other than its location, historical and social value, historical ambience and business potential factors. The situation being a major contribution and gaps in pertaining to examine this variable on the heritage property values. As the buildings either heritage or non-heritage within urban heritage are similar in the form and interior layout, however; it differs in their location and differs in architectural styles and features. Therefore, the different variation of architectural styles within the buildings makes it ideal to the study of identification for the heritage property market response in these architectural values. Ruijgrok (2006) supported the argument by indicating that in an area with more variation in architectural styles, this variable may explain the variation in heritage property price.

A few explanatory variables were applied from the previous studies and mostly stressed on structural and spatial variables into the model. Thus, this study suggests examining variety of the variables including historical characteristics to avoid omitted variable is bias since previous literatures indicated that the relationship exists between the four groups of characteristics and heritage property value. In this vein, it was concluded and priori expectations that transaction, structural, spatial and historic characteristics significantly influenced on the heritage property value as illustrated in Figure 1. Table 2 summarizes the variables that will be used in spatial hedonic model for heritage property valuation and its expected signs.



**Figure 1:** Conceptual framework of heritage property value determinants

Source: Adapted from Junainah et al., (2017), Lazrak, Nijkamp, Rietveld, and Rouwendal (2014); Nijkamp (2012) and Ruijgrok (2006)



**Table 2:** List of heritage property characteristics and its expected signs

		Variables	Expected effect on heritage property price
1.	Transaction	1. Land tenure (freehold/leasehold)	+/-ve
		2. Date of transaction	+ve
		3. Selling condition	+ve
		4. Year built	+/-ve
2.	Structural	5. Lot size/land area	+ve
		6. Floor area	+ve
		7. Position of building	+ve
		8. Number of rooms	+ve
		9. Number of bathrooms	+ve
		10. Age of property	+/-ve
		11. Construction period	+ve
		12. Renovation and maintenance	+ve
		13. Basic building materials	+ve
		14. Parking space/opportunities	+ve
3.	Spatial	15. Distance/accessibility from CBD	+ve
		16. Distance to the nearest city centre	+ve
		17. Proximity to main road	+ve
		18. Proximity to highway	+/-ve
		19. Feng-shui beliefs	+ve
		20. Environmental quality	+ve
		21. Population density	+ve
		22. Percentage ethnic	+ve
		23. Income per capita	+ve
		24. Crime rates	-ve
		25. Proximity to airport	+/-ve
		26. Proximity to schools	+ve
		27. Proximity to places of worship	+ve
		28. Proximity to shopping centre	+ve
		29. Proximity to hospitals	+/-ve
		30. Proximity to public transport	+ve
4.	Historical	31. Monumental or heritage status	+/-ve
		32. Facade status	+ve
		33. Architectural style	+ve
		34. Authenticity	+ve
		35. Ensemble	+ve

## CONCLUSION

It is apparent from various studies revealed that the heritage property characteristics comprise of transaction, structural, spatial and historical are mostly included in hedonic price models to determine the influences of its property value. It can be concluded that heritage property values are differentiated by historical characteristics notably on their architectural styles or design and the

status of the heritage property itself. Implication of this finding should be a useful guidance for the valuers on the practice of valuation.

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