The Impact of Mass Rapid Transit on Residential Property Prices in Greater Kuala Lumpur, Malaysia

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ABSTRACT

Urban rail transit systems such as Mass Rapid Transit (MRT) and light rail transit (LRT) can generate both positive and negative externalities, especially for those located extremely close to these facilities. Using the Sungai Buloh- Kajang (SBK) MRT Line in Greater Kuala Lumpur, Malaysia as a case study, this research investigates the impact of MRT on residential property prices by considering the positive and negative externalities that can be generated by such a system. Multivariate regression analysis was used to model the neighbourhood satisfaction of residents living near the SBK MRT Line. To estimate the impact of the SBK MRT Line on residential property prices, a hedonic pricing model and geographically weighted regression were employed. The study utilises a data set of residential sales for a seven-year period (2013–2019), located within a 2-km radius along the stretch of the SBK MRT Line. The results presented in this study indicate that residents' neighbourhood satisfaction living near the MRT line is mixed. First, the perceived effect of improved accessibility due to the presence of the MRT appears to have a significant influence on neighbourhood satisfaction. More specifically, factors such as satisfaction with the short distance to the nearest MRT station and improved accessibility to work using the MRT have a direct effect on neighbourhood satisfaction. The results also show that factors related to interest in the MRT or attitudes towards riding the MRT to work and other places had no statistical effect on neighbourhood satisfaction, apart from a perceived positive relationship between the presence of an MRT line and higher property prices. The evidence also suggests that two factors related to perceived noise pollution play an important role in determining neighbourhood satisfaction. Specifically, the MRT noise that can be heard at home and concern about the health effects of noise were statistically significant and both negatively influence neighbourhood satisfaction.

With respect to the impact of the SBK MRT Line on residential property prices, the results suggest that after controlling for property markets with similar locational characteristics, income groups and housing type: (1) A typical condominium/service residence unit located within 0.4 km (the treatment zone) from the nearest MRT station and transacted after the system was operational on the northwest side of the city (Segment C area) could earn a premium of approximately 9.5%, or RM99,874 of the city's mean home price, while a typical similar property located within the same distance from the nearest MRT station but transacted before (during construction, to be precise) the system was operational could generate a premium of about 6%, or RM63,078 of the city's mean home price, compared to those outside of this distance; (2) A terrace property located within 0.85 km from the nearest MRT station and transacted after the system was operational experienced a statistically significant increase in price of 7.4%, which, at the mean, equates to RM81,325. Although this finding might be

good news for some property owners, properties located within 0.08 km along the MRT track in affluent neighbourhoods on the northwest side of the city (Segment C area) were about 16.6% (RM182,432 of the mean) cheaper than those located outside this distance; and (3) A terrace property located within 0.8 km and 1.4–2 km from the nearest MRT station was valued positively by homebuyers from the middle– and lower–middle income groups xv on the southeast side of the city (Segment F area). Evidently, the results show that property prices increased by about 8.8% (RM45,475 of the mean price) and 6.0% (RM31,005 of the mean price) for those located within 0.8 km and 1.4–2 km from the nearest MRT station, respectively.

Based on the above discussion, it can be concluded that residents have different levels of neighbourhood satisfaction near the MRT line, which seems to be influenced by both positive and negative externalities. Moreover, both perceptions are indeed among the most important factors determining residents' satisfaction. However, when considering the satisfaction of residents near the MRT line more broadly, the negative perceptions of noise pollution from the MRT line could be partly compensated by the positive perceptions of better accessibility to work/city centre and higher property prices, as well as broader neighbourhood/environment characteristics such as satisfaction with crime rates and green areas. Moreover, the introduction of the MRT system does indeed have both positive and negative externalities on nearby residential property prices. However, it is important to note that the positive impact on residential property prices is broader in scope, affecting more housing estates, while the negative impact is confined to a much more limited area.