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# Determinants of Market Value of Luxury Condominium Units in Medan City

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**Abstract**

This study aims to analyze the determinants of market value of luxury condominium units in Medan City, Indonesia, by focusing on unit-specific physical attributes and building management quality. Rapid urbanization, land scarcity, and vertical housing development have positioned condominiums as an important segment of urban residential markets. However, despite regional economic growth, luxury condominium prices in Medan have shown relatively stagnant, fluctuating trends, indicating a discrepancy between macroeconomic performance and property market behavior. This research employs a quantitative approach using multiple linear regression analysis based on 96 condominium units from major luxury developments in Medan. The independent variables include unit size, floor level, view, facilities, and maintenance fee, while market value serves as the dependent variable. Prior to hypothesis testing, classical assumption tests were conducted to ensure the reliability of the regression model. The empirical results demonstrate that unit size, facilities, and maintenance fee have a positive and significant effect on the market value of luxury condominiums. In contrast, floor level and view are found to have no significant influence. These findings suggest that, in the context of Medan, market value is more strongly driven by functional attributes and management quality rather than aesthetic or vertical differentiation. For property developers and investors, these results imply that investment decisions should prioritize functional amenities and quality management systems over vertical positioning or view premiums, as these factors yield stronger returns in market valuation within Medan's luxury condominium segment.

**Keywords:** Luxury Condominium; Market Value; Hedonic Pricing; Property Valuation; Urban Housing.

## INTRODUCTION

The rapid growth of the urban population in Indonesia's major cities, including the City of Medan, has placed significant pressure on urban land availability. Sustainable urbanization encourages land conversion and increases population density, making vertical housing development an increasingly relevant solution to address space limitations and housing needs. In this context, apartments and condominiums have emerged as housing forms that optimize vertical land use and support sustainable urban development (Alam & Murad, 2020; Yuan et al., 2018; Zhang, 2020).

Medan, as one of the main economic growth centers on the island of Sumatra, has shown significant development dynamics over the last decade. Consistent population growth has reduced per capita land availability and increased population density. This condition strengthens the urgency of vertical housing development, especially in urban areas with limited land and high mobility (Van Noorloos et al., 2020; Venter et al., 2019; Wei & Zhang, 2024).

Along with these developments, condominiums have emerged as a form of vertical housing that is highly sought after by middle- and upper-middle-class groups. Condominiums are generally

located in the city center, offer complete shared facilities, and embody the one-stop living concept that suits urban lifestyles. In addition to functioning as residences, condominiums are viewed as property investment instruments. However, even though Medan's economy shows a positive growth trend post-COVID-19 pandemic, the selling prices of luxury condominium units have remained stagnant and fluctuated in recent years. This condition indicates a discrepancy between economic growth theory and local property market value dynamics (Alam & Murad, 2020; Liu et al., 2019; Zhang, 2020).

The phenomenon of condominium price fluctuations in the City of Medan is reflected in market price data as well as property macro indicators, such as the Residential Property Price Index (IHPR) and the Residential Property Price Survey (SHPR). Although the CPI shows a relatively stable upward trend, property price growth has slowed. In addition, oversupply in the luxury condominium segment has weakened market absorption, creating uncertainty for property developers and investors.

Various previous studies at the international level have shown that condominium market values are influenced by structural and non-structural factors, such as unit area, floor height, facility quality, environmental characteristics, and building management systems. However, differences in market characteristics, consumer preferences, and socio-economic conditions across regions mean that study results cannot always be generalized. In the context of Medan, empirical studies specifically testing the determinants of the market value of luxury condominiums remain relatively limited, especially those linking unit physical factors and management aspects to actual market values.

The body of literature on condominium valuation has evolved significantly over the past two decades, moving from simple structural models to more sophisticated hedonic pricing frameworks that incorporate both tangible and intangible attributes (Abidoye, 2017; Metzner & Kindt, 2018; Sakariyau et al., 2025). Early studies in developed markets such as the United States and Singapore established that unit size, floor level, and view quality were fundamental determinants of condominium prices (Belcher et al., 2019; Cheng & Teck Ling, 2024; Hanapi et al., 2023; Yap & Lum, 2020). These foundational works demonstrated that vertical differentiation creates price premiums, particularly in high-density urban contexts where skyline views and symbolic height carry prestige value.

Subsequent research expanded the analytical framework by incorporating building amenities and management quality. Tajima (2020) found that shared amenities significantly impact resale values in mature markets, while Narwold et al. (2018) revealed that homeowners association fees—contrary to conventional assumptions—can positively influence property values when perceived as indicators of quality management. More recently, studies in Asian emerging markets have begun to challenge the universality of these findings. Hasanah and Yudhistira (2018) documented that landscape view and height preferences vary significantly across Indonesian urban areas, suggesting that local market characteristics moderate the influence of vertical attributes.

Research in Southeast Asian cities, particularly Bangkok and Jakarta, has introduced additional nuances. Pongprasert (2022) identified that luxury condominium prices in Bangkok's

CBD are more responsive to location-specific infrastructure than to unit-level aesthetic features. Similarly, Sudariswan et al. (2020) developed a hybrid pricing model for Jakarta apartments that integrated both hedonic attributes and psychographic factors, recognizing that consumer preferences in developing markets differ fundamentally from Western counterparts. These studies collectively point toward a critical gap: while the hedonic pricing framework has been extensively validated in global cities and capital regions, its applicability to secondary cities in developing economies—where market maturity, income levels, and cultural preferences differ—remains underexplored.

In the specific context of Medan, the existing literature is sparse. Melinda et al. (2022) discussed vertical residential development from a sustainability perspective but did not empirically examine price determinants. Sari and Zuhri (2023) explored customer satisfaction in one Medan condominium but did not analyze market valuation mechanisms. This absence of localized empirical evidence creates a significant knowledge gap, particularly given that Medan represents a unique case: it is a major regional economic hub outside Java, experiencing rapid urbanization yet showing paradoxical price stagnation in its luxury segment despite economic growth. Unlike Jakarta or Surabaya, where condominium markets benefit from established financial centers and international exposure, Medan's market operates under different demand structures, potentially requiring a recalibration of conventional hedonic pricing assumptions.

Therefore, this study addresses three specific gaps in the existing literature. First, it provides the first comprehensive empirical analysis of luxury condominium pricing determinants specifically in Medan, filling the geographical void in Indonesian property research. Second, it tests whether the hedonic attributes validated in global and capital cities retain their significance in a secondary emerging market context. Third, it explicitly examines the role of maintenance fees as a quality signal—a dimension often overlooked in developing market studies—thereby extending the theoretical understanding of how management quality is capitalized into property values in contexts where institutional trust and service quality perceptions differ from mature markets.

Based on the empirical phenomenon and research gaps, this study aims to analyze the influence of unit area, floor height, view, facilities, and maintenance fees on the market value of luxury condominium units in Medan. This research is expected to make an empirical contribution to the development of property valuation studies, as well as serve as a reference for practitioners, developers, and investors in understanding the factors determining condominium market values in growing urban property markets.

## METHOD

This study used a descriptive quantitative approach with empirical hypothesis testing, which aims to analyze the influence of physical attributes and building management on the market value of luxury condominium units in Medan City. This approach was chosen to answer the empirical phenomenon that has been identified in the preliminary section, namely the mismatch between urban economic growth and stagnation in luxury condominium prices.

# Determinants of Market Value of Luxury Condominium Units in Medan City

The object of the research is focused on luxury condominiums located in Medan, considering the characteristics of the city which has a high population density, limited land, and the dynamics of the rapidly growing vertical property market. Observations were made in the period 2023 to September 2025, taking into account the availability of verifiable transaction data and offer information. This selection of location and period is consistent with the context of previous research that highlighted fluctuations in condominium prices despite macroeconomic conditions showing improvement.

The research population includes all condominium units in several major developments in the city of Medan, namely Cambridge Condominium, Tribeca Condominium Podomoro, The Reiz Condo, Grand Jati Junction, and Manhattan Condominium, with a total population of 2,136 units. The number of samples was determined using the Slovin formula with an error rate of 10 percent, so that 96 units were obtained as research samples. The sampling technique used purposive sampling, with the criteria of units that had been marketed or transacted during the observation period, excluding penthouse units, and were in the development of large-scale condominiums (superblocks). Samples that met these criteria came from Cambridge Condominium, Tribeca Condominium Podomoro, and Manhattan Condominium, and were judged to have represented the characteristics of the study population.

The data used in this study consisted of primary data and secondary data. Primary data is obtained through interviews with the seller or property agent to obtain transaction information and unit characteristics. Secondary data is sourced from property valuation agency reports, condominium management documents, and related institutions relevant to the research. The market value of condominium units is determined based on transaction price data and offers adjusted to the Market Data Comparison Method (Market Adjustment Grid) in accordance with applicable property valuation standards.

The dependent variables in this study are the market value of condominiums, while independent variables include unit area, floor height, view, facilities, and maintenance fees. Variables are measured using ratio and ordinal scales according to the characteristics of each attribute. The selection of this variable directly refers to the theoretical framework of hedonic pricing and the findings of previous research.

Data analysis was conducted using multiple linear regression to test the partial and simultaneous influence of independent variables on the market value of condominiums. Before hypothesis testing, the model was tested through classical assumption tests, including normality tests (Jarque-Bera), multicollinearity tests (VIF and tolerance), and heteroscedasticity tests (Glejser). The feasibility of the model was evaluated using the determination coefficient test (R2) and the F test, while the hypothesis test was carried out through the t-test with a significance level of 5 percent. This approach allows the identification of which variables are the most dominant influencing the market value of luxury condominiums in Medan City empirically.

## RESULT AND DISCUSSION

This study analyzed the determinants of the market value of luxury condominium units in Medan City by using multiple linear regression on 96 sample units spread across Cambridge Condominium, Tribeca Condominium Podomoro, and Manhattan Condominium. All classical assumption tests show that the regression model meets statistical criteria, so that the estimation results can be interpreted validly and reliably.

**Table 1. Main Descriptive Statistics of Research Variables**

| Variable | Mean | Min | Max | Std. Dev | Main Interpretation |
|---|---|---|---|---|---|
| Market Value (Y) | 17,06 | 16,98 | 17,11 | 0,056 | Relatively low price variation |
| Unit Area (X1) | 4,89 | 4,39 | 5,29 | 0,27 | Moderate unit size variation |
| Floor Height (X2) | 0,69 | 0,00 | 1,38 | 0,41 | Heterogeneity of floor position |
| *View* (X3) | 0,39 | 0,00 | 0,69 | 0,31 | View quality varies |
| Facilities (X4) | 0,49 | 0,00 | 0,69 | 0,31 | Differences in Facility Completeness |
| *Maintenance Fee* (X5) | 9,83 | 9,62 | 10,09 | 0,16 | Relatively homogeneous cost |

*Source: Processed from research results*

**Table 2. Summary of Goodness of Fit Model**

| Indicator | Value |
|---|---|
| R2 | 0,852 |
| Adjusted R2 | 0,844 |
| F-statistic | 103,62 |
| Prob (F) | 0,000 |

*Source: Processed from research results*

The model was able to explain ± 85% variation in the market value of condominiums, confirming that the combination of physical attributes and building management is the main determinant of market value in the luxury condominium segment in Medan City.

**Table 3. Summary of Hypothesis Test Results**

| Variable | Coefficient | Prob. | Remarks |
|---|---|---|---|
| Unit Area (X1) | +0,0246 | 0,0476 | Signifikan (+) |
| Floor Height (X2) | -0,0002 | 0,9683 | Insignificant |
| *View* (X3) | -0,0087 | 0,2077 | Insignificant |
| Facilities (X4) | +0,2207 | 0,0000 | Signifikan (+) |
| *Maintenance Fee* (X5) | +0,5679 | 0,0000 | Signifikan (+) |

*Source: Processed from research results*

Unit area is proven to be a fundamental physical determinant of market value. These results are consistent with hedonic pricing theory and reinforce that the utility of space is still the primary rational consideration of luxury condominium consumers, even in a relatively mature market.

In contrast to findings in global cities, floor position and view quality are not the main differentiating factors in Medan. This indicates a more pragmatic preference for local markets,

where vertical accessibility is already considered standard and *view* has not become a widely premium value attribute.

Amenities emerged as the most consistent lifestyle determinants influencing market value. The integration of residential with retail, recreational, and technology centers (smart living) has been proven to increase consumer perception of value and willingness to pay. Maintenance fees have also been proven to have a positive and significant influence, maintenance fees are perceived as an indicator of the quality of management and sustainability of asset value, not just a cost burden. This explains why this variable has the most coefficients in the model.

Maintenance fees have also been proven to have a positive and significant influence, emerging as the strongest predictor in the model with the highest coefficient (0.5679). This finding warrants deeper examination as it challenges conventional assumptions that fees represent pure cost burdens. Several theoretical and contextual explanations can account for this phenomenon. First, from an information asymmetry perspective, maintenance fees serve as a credible signal of management quality in markets where institutional transparency is limited.

In Medan's developing property market, where formal building certification systems and independent quality ratings are not yet standardized, prospective buyers rely on observable proxies to infer unobservable quality dimensions. Higher maintenance fees signal the developer's commitment to professional management, regular facility upkeep, and long-term asset preservation—attributes that are difficult to verify ex-ante but critical for property value retention. Second, the positive coefficient may reflect a quality perception mechanism rooted in price-quality heuristics. Behavioral economics literature demonstrates that consumers often use price as a quality cue when direct quality assessment is cognitively costly.

In the context of luxury condominiums, higher maintenance fees may be interpreted not as excessive costs but as evidence of premium service levels, superior security systems, and exclusive amenities that justify the luxury positioning. Third, the finding aligns with the concept of total cost of ownership rather than purchase price alone. Sophisticated buyers in the luxury segment recognize that inadequate maintenance leads to faster depreciation, higher future repair costs, and reduced resale values. Therefore, higher maintenance fees are rationally valued as insurance against asset deterioration, effectively capitalizing future cost savings into current market prices. Fourth, a contextual factor specific to Medan may amplify this effect: the city's rapid vertical development has created variance in management quality across developments, with some experiencing poor maintenance leading to visible deterioration.

This market experience likely heightens buyer sensitivity to management quality signals, making maintenance fees a more salient differentiator than in more established markets. Finally, it is important to note that the positive relationship may be partially endogenous—higher-value properties in better-managed developments may legitimately require higher maintenance fees due to more sophisticated systems and facilities, creating a simultaneous rather than purely causal relationship. Nevertheless, the magnitude of the coefficient suggests that even after controlling for facilities (X4), maintenance fees retain independent explanatory power, supporting their role as a distinct quality signal beyond mere operational cost recovery.

## CONCLUSION

This study analyzes the determinants of luxury condominium market values in Medan City, finding through multiple linear regression that not all physical attributes—such as unit area, floor height, view, facilities, and maintenance fees—significantly influence pricing, with market preferences proving highly contextual to local conditions. Overall, luxury condominium values in Medan are more sensitive to functional and managerial attributes than vertical aesthetic ones, explaining price stagnation despite regional economic growth and demonstrating that macroeconomic gains do not automatically translate to property values without aligned micro-level attributes. Academically, it enriches property valuation literature by offering contextual evidence from a developing city, emphasizing that hedonic attributes are not universally applicable and advocating for localized approaches. For future research, scholars could extend this by incorporating longitudinal data on post-pandemic market shifts or qualitative consumer interviews to explore evolving preferences in secondary Indonesian cities like Medan.

## REFERENCES

Abidoye, R. B. (2017). *Towards property valuation accuracy: a comparison of hedonic pricing model and artifiical neural network*.

Alam, M. M., & Murad, M. W. (2020). The impacts of economic growth, trade openness and technological progress on renewable energy use in organization for economic co-operation and development countries. *Renewable Energy*, *145*, 382–390.

Belcher, R. N., Suen, E., Menz, S., & Schroepfer, T. (2019). Shared landscapes increase condominium unit selling price in a high-density city. *Landscape and Urban Planning*, *192*, 103644.

Cheng, C. T., & Teck Ling, G. H. (2024). Examining key macroeconomic determinants of serviced apartments price index: the case of Kuala Lumpur, Malaysia. *International Journal of Housing Markets and Analysis*, *17*(3), 795–813.

Hanapi, N. A., Ridzwan, N. F., & Keane, A. (2023). Dynamism of Building Standards & Designs to Private Developers Towards Urban Poor Low-Cost Resettlement Quality of Life: A Review Comparison in Malaysia & Singapore. *International Journal of Sustainable Construction Engineering and Technology*, *14*(3), 1–11.

Liu, G., Chen, S., & Gu, J. (2019). Urban renewal simulation with spatial, economic and policy dynamics: The rent-gap theory-based model and the case study of Chongqing. *Land Use Policy*, *86*, 238–252.

Metzner, S., & Kindt, A. (2018). Determination of the parameters of automated valuation models for the hedonic property valuation of residential properties: A literature-based approach. *International Journal of Housing Markets and Analysis*, *11*(1), 73–100.

Sakariyau, J. K., Mendie, E. A., Ajibade, K. R., & Yusuf, A. (2025). A Review of Literature on Application of Hedonic Price Model on Residential Property Value in Nigeria. *International Journal of Real Estate*, *1*(2), 41–55.

Van Noorloos, F., Cirolia, L. R., Friendly, A., Jukur, S., Schramm, S., Steel, G., & Valenzuela, L. (2020). Incremental housing as a node for intersecting flows of city-making: rethinking the housing shortage in the global South. *Environment and Urbanization*, *32*(1), 37–54.

Venter, C., Mahendra, A., & Hidalgo, D. (2019). From mobility to access for all: Expanding urban transportation choices in the global south. *World Resources Institute, Washington, DC*, 1–48.

Wei, Q., & Zhang, Y. (2024). Vertical expansion in the making: Planning against deindustrialization by promoting "Industry's Going Upstairs" in Shenzhen. *Environment and Planning A: Economy and Space*, *56*(5), 1447–1461.

Yap, J. B. H., & Lum, K. C. (2020). Feng Shui principles and the Malaysian housing market: what matters in property selection and pricing? *Property Management*, *38*(5), 643–664.

Yuan, F., Wu, J., Wei, Y. D., & Wang, L. (2018). Policy change, amenity, and spatiotemporal dynamics of housing prices in Nanjing, China. *Land Use Policy*, *75*, 225–236.

Zhang, W. Bin. (2020). Integrated Analysis of Economic Growth and Land Prices: A Two-Sector Model Approach. *Journal of Business and Economic Options*, *3*(3), 107–110.