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Original Article

Modeling Pre Development Profitability of Trade Mall Projects on Developer Competitiveness Performance with Supply & Demand Dynamics

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Abstract

The Trade Mall project as part of the property business, is project with the highest market absorption rate among other commercial property projects such as apartments, hotels, housing, offices, and industry. The purpose of this study is to evaluate the pre development strategy of trade mall projects in order to increase the profitability and competitiveness of developers in major cities and to identify the variables that determine the profitability of Trade Mall project pre development, develop a dynamic system model that can illustrate the influence of supply and demand for Trade Mall project development on the competitiveness of developers, and make recommendations for corrective actions to address the causes of the decline in profitability and competitiveness of developers. The research methods used archival analysis and surveys. The data obtained is then analyzed using statistical analysis and system dynamics. The results of the study show that there two main factors that affect the level of project profitability, namely the selling price and sales level, and the Trade Mall growth gap obtained from supply & demand simulations. Recommendations for corrective actions were also made to address the causes of the decline in profitability and competitiveness of developers. The results of study can basis for Trade Mall project developers to make supply and demand projections in developing the Trade Mall project.

Keywords: Developer's Competitiveness, Profitability, Trade Mall Project, Supply and Demand.

1. Introduction

The construction industry is any activity or business related to land preparation and the construction process, changes, repairs to buildings, structures, and other related facilities (Hansen, 2015). In addition to providing physical infrastructure and facilities, the construction industry as a foundation for economic growth also has several roles (Zachorowska-Mazurkiewicz & Sierotowicz, 2017), including: supporting business opportunities and employment opportunities, driving the growth of other sectors, contributing to gross domestic product, supporting increased savings for foreign exchange users and increasing foreign exchange earnings, media transfer of technological knowledge, media for the formation of work ethic, discipline, awareness of responsibility, efficiency, effectiveness, supporting increased national resilience; and media for the formation of a sense of national pride (Zainuddin, 2012).

Property is classified in the construction sector which is one of the potential sectors for national economic development because it is able to bring in government revenue both central and regional. The property sector is able to provide a multiplier effect on welfare improvement, both directly (through job creation) and indirectly (through its contribution to national GDP) (Muka, 2021). According to the Central Bureau of Statistics in February 2020, the construction

sector was able to absorb a workforce of 4,844,690 people or 4.51% of the total workforce in Indonesia. Meanwhile, the contribution of the construction sector to national GDP in the last 3 years, namely 2018, 2019 and 2020, was 8.5%, 9.9% and 10.3% respectively (BPS, 2020).

Before the 1997 monetary crisis, commercial buildings, especially shopping buildings, needed financial parties to fund their construction. However, since the crisis occurred, all financial parties / banks are no longer willing to fund the property sector, especially the commercial shopping building sector. This has caused financing problems that are quite fatal for development projects in all Indonesian developers.

Trade Mall shopping buildings are a factual phenomenon, which occurs from the conditions at that time, where the community needs and the developer provides, so this condition becomes a win-win solution from buyers and sellers of a property product (Abu-Salih, 2021). As one of the funding solutions that benefits both finance and developers, the Trade Mall system can provide a high level of profitability, especially for developers.

However, against the backdrop of positive economic growth in 2001, developers were forced to try to survive, and produced a phenomenon process of a type of shopping building known as strata title shopping known as Trade Mall. Trade Mall shopping buildings are a factual phenomenon, which occurs from the conditions at that time, where the community needs and the developer provides, so this condition becomes a win-win solution from buyers and sellers of a property product.

As one of the funding solutions that benefits both finance and developers, the Trade Mall system can provide a high level of profitability, especially for developers. However, in developing Trade Mall projects, developers in Indonesia often use a trial and error process and are still looking for what factors are the main determinants in getting high profits and when to get profits. This is because from several projects run by developers, the profits obtained vary and can decrease or increase, and the time of profit acquisition also varies. As an illustration, building the first Trade Mall project from the planning process, product sales until construction is completed, the developer gets a profit of 45% within 2 (two) years. Then in developing the second Trade Mall project, the developer earned a profit of 52% with a period of 3 (three) years, to get a profit of 71% after the next 3 (three) years for the third Trade Mall development project.

Based on the illustration, it can be seen that there are variations in the profit that will be obtained by the developer in the construction of the Trade Mall, and to get a 'value number' which becomes a benchmark that the profit that will be generated from the development of the Trade Mall is x%, it is necessary to repeat the process of building the project repeatedly for perhaps 20 years or more. By doing a trial and error process on Trade Mall development projects and with a long period of time, developers can only get certainty of the variables that determine the profitability value of the project.

In addition, just like business behavior, the profitability and competitiveness of business players in the property sector are also influenced by two main factors, namely the level of Supply & Demand of the Trade Mall. Trade Mall business players must know the market trend of this project (Supply & Demand model of Trade Mall project), where from the model can be known Trade Mall growth gap (Comu et al., 2015; Horngren et al., 2012). Apart from the Supply & Demand model, it is also used to determine the price and quantity sold in the market at a macro level.

In addition to supply and demand, developers must also pay attention to the property cycle in Indonesia. Tthe property cycle is determined by the dynamic relationship between commercial property, bank credit, and the macroeconomy. Similarly, there is a positive relationship between real credit and real GDP and real property prices, as well as a dynamic

two-way interaction between real credit and real property prices (Putra & Wasiaturrahma, 2021).

Previous studies have typically only examined direct relationship between project profitability and developer performance to incorporate supply (retail space supply) and demand (rental demand & consumer purchasing power) in order to model the real market response to developer strategies. However, before entering the development stage, a strategic evaluation that considers market dynamics and profitability projections is necessary. Developers often face challenges of market uncertainty, especially in terms of demand and supply of retail space (Chandra et al., 2025) .Thus, this study aims to identify variables that affect the profitability of pre-development shopping mall projects, develop a system dynamics model that can describe the influence of supply and demand for shopping mall project development on the competitiveness of developers, and provide recommendations for corrective actions to address the causes of declining profitability and competitiveness of developers.

2. Literature Review

2.1. Trade Mall Project Development

Profitability is a manager's ability to manage a company so that it makes a profit within a certain period of time. Profitability indicates the level of management efficiency in running a business to achieve the goals expected by customers. The level of a company's profits affects tax burdens, so if a company has high profits, its tax burden will increase. This is most evident in a company's ability to meet the demands and desires of its employees and shareholders (Herlinda & Rahmawati, 2021).

Profitability is a company's ability to generate profits within a certain period. Companies that have the ability to generate good profits can demonstrate good performance because profitability is often used as a measure of a company's performance. The profits of construction companies, especially large companies, are not only derived from control over total assets and equipment production, but also from management capabilities, human resources, technical capabilities, the use of innovative solutions, systems and infrastructure, the ability to accept and manage risks in implementation, and the ability to respond to complex needs (Sudarno et al., 2022).

2.2. Profitability in Trade Mall Project Development

The development of construction projects generally requires a significant amount of funds with a high degree of uncertainty. The development of Trade Mall projects as part of the property sector is a type of business that has a high level of profitability (Lukic, 2011). Although the profits that can be obtained are relatively large, these profits vary and are influenced by several important factors, so they must undergo a thorough analysis in order to measure the optimal level of profitability for the developer.

According to PMBOK (2000), a project is a temporary endeavor undertaken to create a unique product, service, or result. The main characteristics of a project are that it is temporary (it has a clear beginning and end) and produces something unique. The temporary nature of a project means that every project has a start date and an end date. The unique nature of a project means that every project that is built and developed will always be different from one another due to differences in many aspects, including location, contractor, owner, etc.

2.3. Competitiveness Performance of Developer Companies

The company in carrying out its business is always oriented to the goals to be achieved, and one of its main objectives is to obtain profitability in the business. Profitability in question is the company's ability to achieve profits for the sacrifices that have been made, in the form of capital sacrifices, asset purchases, investments and operations and marketing of products that have been created for the community or for industry. Profitability is one of the indicators that ensure long-term stability of the company (going concern) so that the company will always exist (Alamsyahbana, 2024).

Competitiveness is an effort that must be made by business/economic actors in order to remain viable in carrying out their activities (Sulistiyani et al., 2020). A company's competitiveness is defined as its ability to design, produce, and market products that are superior to those of its competitors, taking into account price and quality. Competitiveness can be measured using comprehensive indicators consisting of (Silviah, 2025): 1) Market competition performance, 2) Financial performance, 3) Human resource performance, 4) Social contribution and others.

3.   Methods

3.1. Type of Research

To complete research effectively and accurately, an appropriate research method is required. According to (Sugiyono, 2019), a research method is a scientific way of obtaining data for a specific purpose and use. Research methods are closely related to procedures, techniques, tools, research design, and specific uses. The purpose of this study is to identify the variables that determine the level of profitability of pre-development Trade Mall projects; develop a system dynamics model that can describe the influence of the supply and demand of Trade Mall project development on the developer's competitiveness performance; make recommendations for corrective actions against the causes of the decline in the level of profitability and developer competitiveness performance. To achieve the objectives, the research method used is archival analysis and survey. Then the data that has been obtained is analyzed using statistical analysis and system dynamics.

3.2. Data Source

Based on the results of the literature review conducted at the initial stage of this research, a hypothesis was generated, namely "The growth gap (supply & demand balance) of Trade Mall projects in Indonesia will affect the competitiveness performance of developers at present and in the future". Then to be able to prove the hypothesis, research questions were formulated (research questions) which must be answered using an archival analysis approach, surveys and case studies carried out in three stages of research including a validation survey of research results.

While the analytical techniques used to answer the research questions that have been formulated include: statistical analysis consisting of non-parametric analysis, rank-spearman correlation analysis, factor analysis and multiple regression analysis. In addition to statistical analysis, other analytical methods used are monte carlo simulation with the help of crystal ball computer software and system dynamics simulation using powersim computer software. Powersim is used to build and simulate a dynamic model. System Dynamics is indispensable to understand the behavior of a system both in open circuit (open loop, natural response) and the behavior of the system in the feedback circuit (closed loop, controlled system response) (Siradjuddin, 2022).

4. Results and Discussion

4.1. Research Results

From the analysis of historical data of Trade Mall projects that have been built in Indonesia during the period 2001-2009, it is known that there are ± 47 Trade Malls in Indonesia and the construction of the most Trade Mall projects occurred in 2004, and of these Trade Malls, 20 Trade Malls are located in Jabodetabek, 19 Trade Malls are located in Java outside Jabodetabek, and the remaining 8 Trade Malls are located outside Java, namely in Sumatra and Sulawesi.

In accordance with the characteristics of Trade Malls, the tenants contained therein consist of three, namely: anchor tenant (supermarket, department store, game center, bookstore, food court and cinema), big tenant (restaurant, bank, etc), and small tenant (shop). Of the 8 Trade Malls located outside Java Island, 5 Trade Malls are in the complete category (meaning they have anchor tenants, big tenants and small tenants), 2 Trade Malls are in the semi-complete category (they have anchor tenants and shops), and the remaining 1 Trade Mall has no anchor tenant or no anchor tenant and big tenant.

In Trade Mall projects, the sellable area is known as the sellable area, where out of 47 Trade Malls in Indonesia, the average sellable area is 53% for Jabodetabek and Java outside Jabodetabek, while in Java the average sellable unit is 58%. While the average area allocated to anchor tenants ranges from 25-65% of the sellable area. For big tenants and small tenants, the average developer allocates 6-20% of the sellable area. The factors that determine the profitability of a Trade Mall development project are the selling price and sales volume. Table 1 below shows the contribution of various determinant variables to the profitability of Trade Mall projects in Indonesia.

Table 1. Contribution of Determinant Variables to the Profitability of Trade Mall Projects in Indonesia

Code	Dependent Variable	Code	Determinant Variable	Contribution
Y1	Selling Price	X1	Location and Accessibility	4.4%
		X2	Building Area	41.2%
		X4	Anchor Tenant Percentage	0.1%
		X5	Year of Sale	54.3%
Y2	Sales Level	X6	Location	19.0%
		X7	Developer Track Record	37.0%
		X8	Facilities & Development Concept	15.0%
		X9	Selling Price Range	28.0%
Y	Profitability Ratio	Y1	Selling Price	55.0%
		Y2	Sales Rate	45.0%

Source: processed data, 2025

Table 1 shows that the year of sale has the greatest influence (49%) in determining the selling price of Trade Mall per square meter. Meanwhile, the sales level is most influenced by 32%, followed by the selling price level at 30%. As for the profitability ratio, it is influenced by the selling price per square meter at 55% and the sales level at 45%.

The preparation of the Trade Mall project profitability model is carried out to find out how much range of profits the developer will get from the regression equation that has been generated. This model has the benefit of helping developers make decisions in developing Trade Mall projects so as to improve their competitive performance.

From the results of statistical analysis, it is obtained that: The level of project profitability or variable Y, which in this study is measured by the profit ratio, is influenced by

two main factors, namely variable Y1 in the form of selling price per square meter and variable Y2 in the form of sales level.

By using the analysis of historical data of Trade Mall projects that have been developed in Indonesia and combined with the descriptive statistical analysis method, the average selling price of Trade Mall per square meter and the level of sales and profit ratio can be seen in table 2.

Table 2. Y Variable Values from Regression Equation Simulations

Variabel Value	Minimum	Average	Maximum
Y. (Profit Ratio)	69	87	113
Y1. (Selling Price/m2)	13.570.009	18.392.259	34.081.686
Y2 (Sales Rate)	3,48	4,46	5,38

Source: processed data, 2025

Description:

Y = profit ratio or percentage of profit earned by the developer of the Trade mall project

Y1 = selling price per square meter

Y2 = unit sales rate, which uses a measurement scale of 1 (very low) to 5 (very high)

Based on table 2, it can be seen that with an average selling price per square meter of Rp. 18 million and a sales rate above 70%, the profit that will be obtained by the developer is 87%. Furthermore, figure 1 below illustrates the cause-and-effect relationship structure within Trade Mall business dynamics.
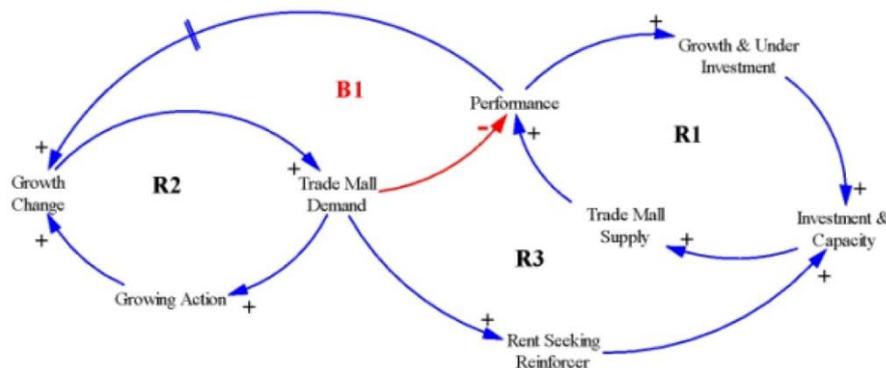

Figure 1. Cause-and-Effect Relationship Structure in Trade Mall Business Dynamics
Source: processed data, 2025

Based on Figure 1, it can be seen that the Trade Mall business trend pattern has both drivers and constraints caused by the feedback structure of four subsystems. Three of the subsystems show a 'growth engine' or Reinforcing Loop (called R loop) structure. This R structure is characterized by mutually reinforcing feedback relationships between the causal elements in its constituent structure. The three R loops are: R1 (Trade Mall Supply subsystem); R2 (Purchase Investment subsystem); and R3 (Rent Seeking subsystem). The growth of these three Reinforcing Loop subsystems is limited by demand itself (B1: Demand Growth Limit subsystem), which also drives an increase in supply.

An accurate scenario simulation is needed to control this collapse trend, namely through the implementation of government policies, such as a temporary moratorium on the construction of Trade Mall projects in parts of or throughout Indonesia. Through simulation,

it is possible to identify and select the appropriate simulation that shows a supply and demand graph that does not indicate this collapse pattern.

Simulations were conducted to identify possible patterns that may occur in the development of the Trade Mall project, displaying simulation results in graphs using system dynamics. This simulation scenario is the baseline scenario before changes are made to other parameters. In this simulation, the ratios and parameters given are as follows:

a. Investment & Capacity Growth Ratio: 0.4
b. Growth Ratio: 0.5
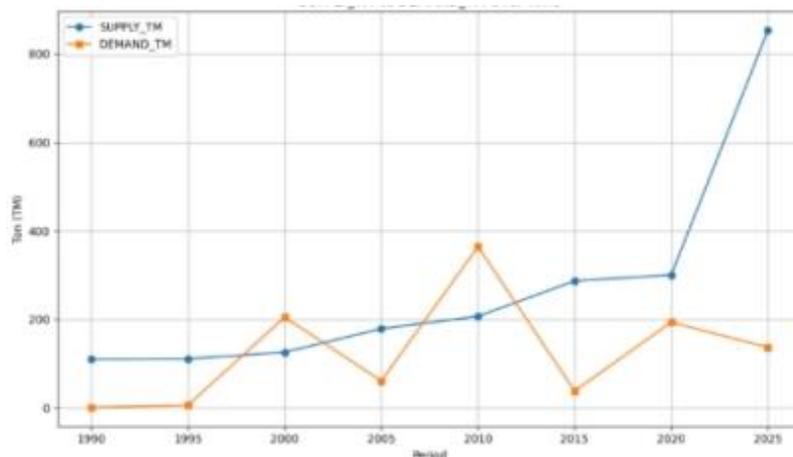c. Growth Lag Period: 3
d. Demand Coefficient: 0.05

Figure 2. Supply & Demand Pattern Chart for Trade Mall
Source: processed data, 2025

Figure 2 presents the baseline simulation, depicting the fundamental supply and demand pattern for Trade Malls over time, it can be seen that the supply pattern increases over time and the demand pattern increases until an overshoot occurs at a certain point.
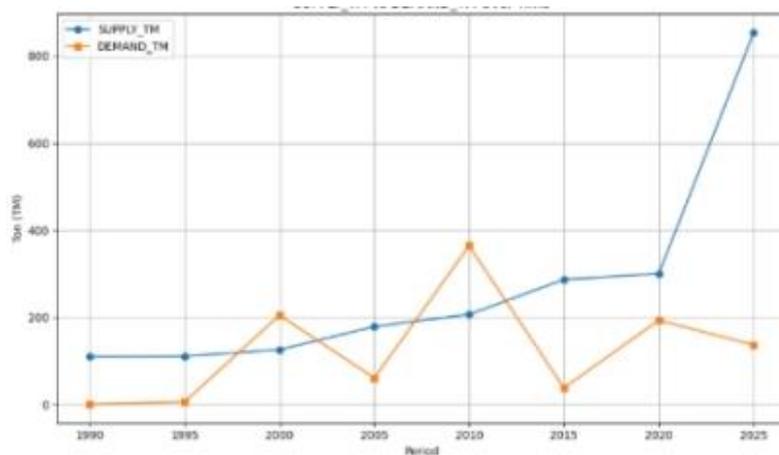

Figure 3. Supply & Demand Pattern Chart for Trade Mall
Source: processed data, 2025

Figure 3 illustrates the supply and demand dynamics under a scenario where a moratorium on Trade Mall development is implemented.
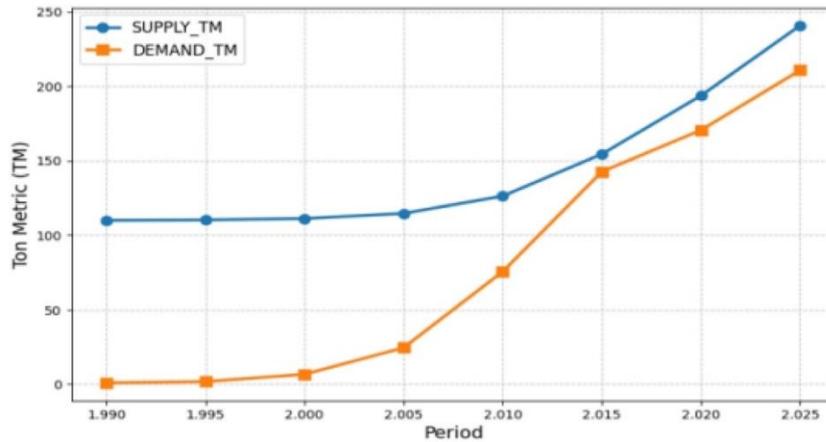
Figure 4. Supply & Demand Pattern Chart for Trade Mall
Source: processed data, 2025

In this scenario, it is assumed that there will be a moratorium on Trade Mall projects, resulting in an Investment & Capacity Growth Ratio of 0. However, developers are very active in building Trade Mall projects, as indicated by a Growth Ratio of 1. In figure 4, it is assumed that there will be a moratorium on Trade Mall projects, resulting in an Investment & Capacity Growth Ratio of 0. However, developers are actively constructing Trade Mall projects, as indicated by a Growth Ratio of 0.75.
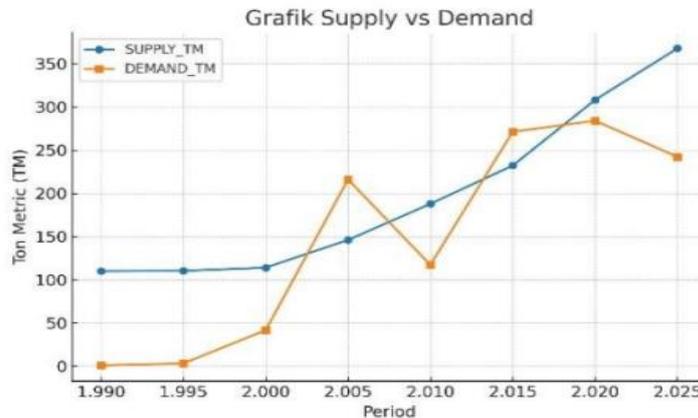

Figure 5. Supply & Demand Pattern Chart for Trade Mall
Source: processed data, 2025

In this scenario, it is assumed that there will be a moratorium on Trade Mall projects, resulting in an Investment & Capacity Growth Ratio of 0. However, developers are quite active in constructing Trade Mall projects, as indicated by a Growth Ratio of 0.5, a trend that can be clearly observed in the supply–demand movement illustrated in Figure 5.

The simulation results for the Investment Growth Ratio and Capacity factors show that graph number 5 is the best graph, because supply no longer shows a collapse. These results appear under the assumption that the investment growth ratio and capacity development are given a value of 0.5. The other graphs explain the simulation results when the demand growth ratio is lowered to 0.5. The simulation takes into account various scenarios that show changes if there is a moratorium on the project and the activity of developers in building Trade Malls. It takes into account the possibility of a moratorium affecting the supply and demand levels for Trade Mall development. Under a moratorium, supply growth shows a relatively standard

pattern and does not increase sharply. However, the demand pattern shows a fairly high increase.

Trade Mall development projects in Indonesia are generally carried out by 3-4 developers who usually develop 2-6 Trade Mall projects. Trade Mall projects undertaken by these developers have varying profitability, as well as varying levels of sustainable growth and productivity. In the absence of a moratorium, the supply and demand patterns increase every period. This is also supported by the willingness and ability of developers to actively build Trade Malls, thereby increasing the supply pattern. However, the supply pattern may not develop if developers are unwilling to build Trade Malls. Meanwhile, based on the analysis of data obtained from interviews with experts, the causes, impacts, and corrective actions that must be taken to improve the profitability and competitiveness of developers can be seen in the table 3.

Table 3. Causes, Impacts, and Corrective Actions to Improve Profit and Competitiveness Performance of Developers

No	Causes	Impact	Corrective Action
1.	Errors in Demand Projections	Supply Trade Mall exceeds Demand	Conduct projections once a year using the latest data
			Creating a supply and demand projection simulation system
2.	Macroeconomic decline in property prices Imbalance between supply and demand	Macroeconomic decline in property prices Imbalance between supply and demand	Macroeconomic improvement through government policy
3.	Rising inflation and interest rates	Macroeconomic decline in property prices, small business margins Declining market demand Lowering loan interest rates, Increasing	Lowering loan interest rates, Increasing
			Increasing profitability by improving efficiency
4.	Declining market demand	Small business margin	Creating new market pairs
			Creating new market pairs
5.	Imbalance between Supply & Demand	Supply trade mall exceeds demand	Controlling supply
6.	Government errors in implementing policies	Fluctuations in business activity in the Trade Mall property sector	Increasing profitability by regulating Trade Mall buildings

Source: processed data, 2025

Therefore, policies that must be implemented to control the collapse of the shopping center (Trade Mall) industry due to systemic dependence between the elements of supply, demand, and rent-seeking can begin with controlling investment and developing the capacity of shopping centers (Trade Malls).

4.2. Discussion

4.2.1. Dominant Factors Determining the Profitability Level of Trade Mall Projects

According to Kusnadi (2012), there are several factors that must be considered in determining a location, 1) Access, for example, a location that is easily accessible or easily reached by public transportation, 2) Visibility, for example, a location that can be clearly seen from the side of the road, 3) Spacious and secure parking, 4) Expansion, meaning there is sufficient space available for future business expansion, 5) Environment, meaning the surrounding area supports the services offered.

From the results of a case study analysis of Trade Mall projects that have been developed in Indonesia, Trade Malls that have complete facilities and a development concept with 3-4 anchor tenants with a mixed-use development concept have high selling prices and sales rates, thereby also increasing the profits earned by developers.

The selling price is one of the most important variables in calculating project profitability, where a selling price that meets buyer expectations and is in line with market prices will be highly attractive to consumers to purchase Trade Mall units. The selling price level must also be adjusted to the supply and demand of the Trade Mall market. If demand increases and supply is insufficient, the selling price level will also increase, and vice versa.

In addition to location factors such as accessibility and visibility that affect sales volume, research shows that the composition of anchor tenants greatly determines the performance of malls and profitability in mixed-use developments. Anchor tenants are strategically formulated to increase visitor traffic and revenue (García-Nieto et al., 2025; Jakom et al., 2024).

4.2.2. Modeling Demand and Supply for the Trade Mall Project

In the early years of development, the growth pattern of Trade Mall projects showed a balance between supply and demand, marked by the increasing growth of Trade Malls. This is in line with the characteristics of property, which include a segmented and localized market that is highly influenced by external factors such as social and economic factors (Saleheen et al., 2014).

An accurate scenario simulation is needed to control this collapse trend, namely through the implementation of government policies, such as a temporary moratorium on the construction of Trade Mall projects in parts of or throughout Indonesia. Through simulation, it is possible to identify and select the appropriate simulation that shows a supply and demand graph that does not indicate this collapse pattern.

The simulation takes into account various scenarios that show changes if there is a moratorium on projects and the behavior of developers in building Trade Malls. It takes into account the possibility of a moratorium affecting the level of supply and demand for Trade Mall construction. Under a moratorium, the growth in supply shows a relatively standard pattern and does not increase sharply. However, the demand pattern shows a fairly high increase.

In the absence of a moratorium, the supply and demand patterns increase every period. This is also supported by the willingness and ability of developers to actively build Trade Malls, thereby increasing the supply pattern. However, the supply pattern may not develop if developers are unwilling to build Trade Malls.

5. Conclusion

Simulation results using a system dynamics model with Powersim computer software show that the balance between supply and demand in trade mall development affects the competitiveness of developers. The most dominant causes of the decline in profitability and competitiveness of developers' performance are related to supply and demand, both in terms of errors in demand projections and imbalances between supply and demand. The recommended corrective action suggested by experts is to make annual projections using the latest data and to create a supply and demand projection simulation system that is updated every year.

The simulation scenario for controlling this collapse trend is through a scenario where the investment & capacity growth ratio becomes zero (meaning that there is a government policy in the form of a moratorium on the construction of Trade Malls throughout Indonesia) and by changing the demand growth ratio to 0.6 (meaning that Trade Mall developers see moderate profitability opportunities and are therefore quite active in developing Trade Mall projects). The graph shows a normal increase in supply and an increase and decrease in demand every five years without leading to collapse. In conducting this research, there were several obstacles encountered, including limited time and input, so the author attempted to provide recommendations that could be implemented for further research on the development of the Trade Mall project and other property sectors.

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