

FEASIBILITY STUDY OF INTEGRATED REST AREA PROJECT OF TAMAN MINI INDONESIA INDAH

Hendra Gunawan, Eka Pria Anas

Faculty of Economics and Business, Master of Management, Universitas Indonesia,
Indonesia

Email: hendra.gunawan13@ui.ac.id, ekapanas@yahoo.com

Abstract

The Integrated Rest Area Project of Taman Mini Indonesia Indah is one of transit oriented development in a strategic location because it's the starting point for commuters from around the east and south of Jakarta (Pondok Gede, Bekasi, Cibubur, and surrounding areas). Another strategic aspect is the existence of Inner City tol roads, Jagorawi toll roads, JORR toll roads, Halim Perdanakusuma Airport, LRT, Tamini Square Shopping Center, and Taman Mini Indonesia Indah, which are aimed for the upper and middle class with the target of young professionals and public. This research aims to determine the feasibility of the Integrated Rest Area Project of Taman Mini Indonesia Indah when viewed from the aspects of feasibility study by making an analysis of the sensitivity of the Integrated Rest Area of Taman Mini Indonesia Indah to the impact of variable changes on NPV with optimistic, most likely, and pessimistic scenarios, and analyze the impact of changes in capital structure on project financing that affect the project's NPV. Based on the assumptions, the integrated Rest Area Project of Taman Mini Indonesia Indah is feasible to do because it produces a positive Net Present Value, $IRR > \text{discount factor}$, $PI > 1$ and Payback Period before the operating period. The use of 40% of loans turns out to produce the most optimal NPV. This project is feasible.

Keywords: feasibility study, sensitivity analysis, capital structure.

Introduction

This study aimed to determine the feasibility of the Integrated Rest Area Project of Taman Mini Indonesia Indah when viewed from the aspects of feasibility study by making an analysis of the sensitivity of the Integrated Rest Area of Taman Mini Indonesia Indah to the impact of variable changes on NPV with optimistic, most likely, and pessimistic scenarios, and analyze the impact of changes in capital structure on project financing that affect the project's NPV.

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PT Jasa Marga Related Business (JMRB) is one of the subsidiaries of PT Jasa Marga (Persero) Tbk (JSMR) which is engaged in other business fields (non-toll road business). JMRB was established on January 15, 2013, under the name PT Jasamarga Properti (JMP). JMRB's most important milestone was in 2019, where JMRB received a management contract for the management of other businesses in all toll road rest areas owned by Jasa Marga.

JMRB is here to maximize the business potential of other businesses around Jasa Marga Group toll roads. Based on the results of the 2019 Annual Meeting, PT Jasa Marga (Persero) Tbk has decided that JMRB will become one of the core businesses of PT Jasa Marga (Persero) Tbk. JMRB's business includes the development of industrial estates, offices, residences, service areas (TIPs) or commonly referred to as service areas; Including management (Resshye, 2015).

Taman Mini Integrated Rest Area (IT) Project is the first concept in Indonesia where developing Type C Rest Area Jagorawi KM 5 Toll Road (Fauza, 2022). which focuses on Transit Oriented Development. Taman Mini Integrated IT is projected to become an interconnection area for public transportation and public spaces incorporated in one area (Hendrawan & Pangihutan, 2016). As JMRB's innovation project in developing toll road corridors, Taman Mini Integrated IT has main principles, both in terms of business, economy, social, and environment (Ersa, 2022).

According to Azhar (2022), the business feasibility study aims to determine the best possible allocation of company resources into each business activity to get maximum output. In other words, a business feasibility study aims to measure the profitability of the resources used in a business. A business feasibility study is a preparatory activity before running a real business. Business feasibility studies can be divided into two stages, namely business identification and making feasibility studies which include cost-benefit analysis of the business

Identification of investment opportunities is obtained from formal studies that try to see opportunities for investment needs in certain sectors. For example, we examine investment opportunities that can be developed in the agriculture, health or property sectors. This business identification is not yet the basis for allocating investment funds. The analysis of investment opportunities in this regard is still very rough. In this stage, various factors that will affect the business and benefits that will be obtained by the company must be studied.

Business feasibility studies are very important and become the basis for decision making for someone who wants to build a company. A feasibility study is conducted to see whether the product to be made is needed by the community in large enough quantities and sustainably. Furthermore, whether the resources needed, such as human resources, equipment, materials, and management systems can be provided so that the business runs well and provides positive returns. If the present value of the cash flow generated by the business is greater than the value of the investment, then the project is worth running.

Theoretically, with this research, it is hoped that the results can be used as a basis for information for future studies. In addition, from a managerial aspect, it is hoped that, with this research, it will be able to provide an overview to JMRB management of the

feasibility of this project, this can also be useful for prospective creditors who will fund this project.

Literature Review

The business feasibility study aims to determine the allocation of the company's resources as best as possible into each business activity to get maximum output. The preparation of a feasibility study is the most crucial stage in the decision-making process because it will affect the economy in general. The technicians will assess the physical condition of the project and design it so that operating costs are minimum.

According to Narindra (2016), a project has five stages:

1. Evaluation and planning stage.

The main focus at this stage is estimating costs globally, for the purposes of project decision analysis.

2. Conceptual engineering stage.

At this stage, the estimated project cost can be calculated in more detail based on the estimated quantity of work and information on the unit price of work.

3. Detailed engineering stage.

At this stage there are already construction drawings, so that cost estimates can be calculated in more detail by considering things such as construction methods, preliminary work carried out, project site conditions and determination of project implementation time.

4. Construction stage.

At this stage the work has been carried out based on the planning that has been made in the previous stages.

5. Project evaluation stage.

At this stage the evaluation of the results or realization of the project is carried out by comparing what happened in the field with the initial plan made.

Some parties or institutions that require feasibility studies, namely Investors, Creditors / Banks, Government. To run the project well, an objective assessment is needed. According to Damodaran (2012), in general there are three project assessment methods, namely:

1. Discounted Cash Flow Valuation, which determines the value of assets by calculating the present value of projected future cash flows.
2. Relative Valuation, which determines the value of assets based on comparable asset prices relative to common variables of earnings, cash flow, book value, or sales.
3. Contingent Claim Valuation, which uses option pricing models to measure the value of assets that provide option characteristics

To conduct a business feasibility test, several calculations are carried out, such as calculating the NPV and IRR of the project. According to Arjunan (2022), the technique used to calculate NPV (Net Present Value) is to discount project cash flow instead of earning or income. When assessing a stand-alone project, what is done is to discount the cash flow received from the project. The basic investment rules generally state accepting a project if the NPV is greater than

zero and rejecting a project if the NPV is less than zero. This NPV regulation provides good decision guidance because with a larger NPV will increase the overall value of the company.

According to Arjunan (2022), the rationale of the IRR method is to provide a number that concludes the benefits of a project. The resulting figure does not depend on interest rates that refer to the capital market. In general, investment regulations mention accepting a project if the IRR is greater than the discount rate and rejecting the project if the IRR is less than the discount rate. Because with an IRR greater than the discount rate means the project will give a positive NPV. By calculating IRR, it can be ranked several project choices that can provide the largest IRR value.

To answer the given research question is carried out through 3 stages. Each stage is connected and confirmed with each other, resulting in a comprehensive study. The stages of preparing this research are as follows:

1. Primary and secondary data collection

Primary and secondary data are obtained from various relevant agencies, the Central Bureau of Statistics, Bank Indonesia, and also from the management of PT. JMRB in the form of information, statistical figures, and various other supporting data. Surveys are also conducted to find out market data. The collected data is then processed and analyzed systematically, resulting in information relevant to the purpose of this study.

2. Literature study

Literature study aims to obtain an appropriate theoretical basis in analyzing the subject matter. The literature study was conducted by reviewing the supporting literature in the preparation of this research, namely Corporate Finance books covering topics of discussion on Capital Budgeting, Sensitivity Analysis, and Real Estate Finance and Investment.

3. Data processing

At this stage, after all the data needed to conduct the analysis is obtained, the author will analyze all data relevant to the predetermined subject matter. The steps that will be carried out in this stage are:

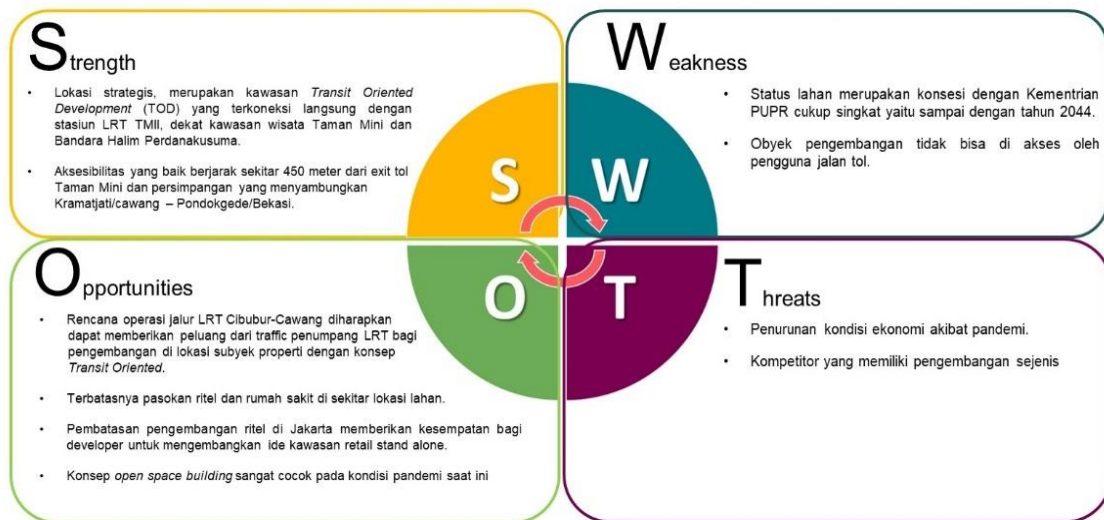
- a. First, this study will use assumptions in calculating investment costs, revenues, operational costs and projections based on data obtained from the internal management of PT. JMRB.
- b. Second, projecting the company's cash flow during the preparation, construction, and marketing periods to then obtain the results of Net Present Value, Internal Rate of Return, Profitability Index and Payback Period from the project or investment based on the financing scheme or structure proposed by the company (60% loans and 40% own capital).
- c. Third, conduct a sensitivity analysis to changes in the rate of increase in property prices that may occur in the future to then recalculate the Net Present Value, Internal Rate of Return, Profitability Index and Payback Period of the project or investment as consideration in assessing the feasibility of the project or investment.

This research will discuss several aspect;

1. General Aspects.

This aspect discusses issues related to site review, supporting facilities, and development rules, SWOT Analysis, TOWS Matrix and Business Model Canvas. In feasibility study document, a description of the general aspects usually occupies the initial part of the document.

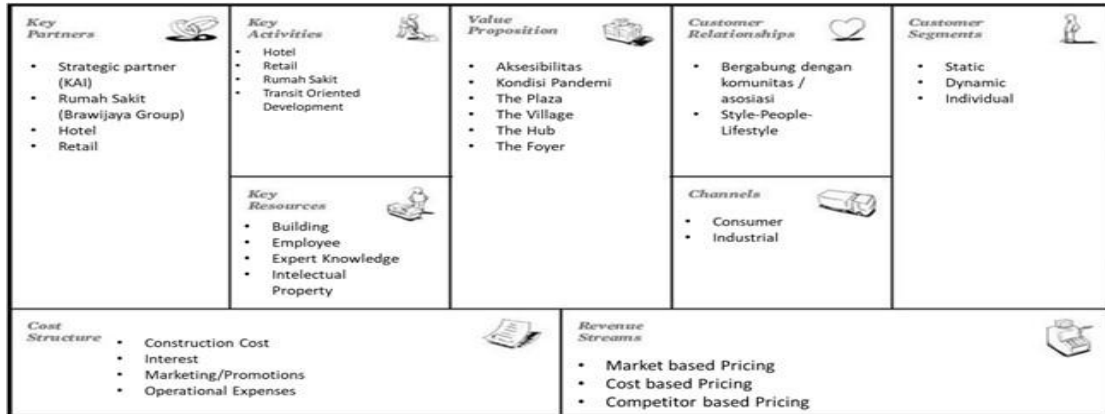
SWOT analysis is a strategic planning analysis method used to monitor and evaluate the company's environment both external and internal environment for a specific business goal. SWOT is an acronym for the words: strengths, weaknesses, opportunities, and threats in a project or business speculation. Those four factors make up the acronym SWOT. In the Integrated Rest Area business planning, a SWOT analysis is obtained as follows:



TOWS and SWOT have different focuses. TOWS analysis first studies and identifies the choice of strategy options to be made externally.

The organization or company also studies the opportunities that exist in the market and recognizes the possibilities that can be done. This action allows the company to control and control threats that are present from outside. SWOT focuses more on the internal conditions of the company. The company looks at what strengths and weaknesses it has. After that, they learn how external factors such as opportunities and threats affect the company.

Other things is Business Model Canvas (BMC) / strategy used by JMRB to map target consumers, finance, and infrastructure by looking at Key Partners to Revenue Streams.







2. Market Aspect

The market aspect discusses the study of potential competitor projects in the scope of the construction and development of project that include Retail and Hospitals. This is the basis for assumptions for the calculation of NPV, IRR, Payback Period, and Profitability Index.

Retail Market Study. This study explores the potential of competing projects in the scope of the construction and development of Taman Mini Integrated IT, namely Retail.

No	Nama Proyek	Pengembang	Lokasi	Tahun Beroperasi	Jumlah Lantai	GFA (m2)	Harga Sewa (Rp/m2/bulan)	Service Charge (Rp/m2/bulan)	Traffic (Hari Kerja)	Traffic (Akhir Pekan)
1	Tamini Square	Lippo Group	Taman Mini	2006	5	67.235	Rp 175.000	Rp 110.000	4.000	7.000
2	Green Terrace	GJP	Taman Mini	2010	1	25.000	Rp 150.000	Rp 80.000	4.000	6.000
3	Mal Cijantung	Kobame Propertindo	Cijantung	1998	5	33.000	Rp 200.000	Rp 120.000	3.000	7.000
4	Cibubur Junction	Lippo Group	Cibubur	2007	5	66.071	Rp 275.000	Rp 155.000	3.500	10.000
5	TSM Cibubur	Trans Property	Cibubur	2019	3	41.000	Rp 400.000	Rp 185.000	15.000	30.000
Total/Rata-Rata							Rp 240.000	Rp 130.000	5.900	12.000

Hospital Market Study. This study discusses the potential of competing projects in the linkup of the construction and development of Taman Mini Integrated IT, namely the Hospital.

NO	SERVICES	HOSPITAL NAME			
		 RS MOH RIDWAN MEURAKSA	 RS RESTU KASIH Rumah Keluarga	 SUKAM BANGS KARANG BONDOL	 RUMAH SAKIT HAJI
1	OWNERSHIP	Government : Army Hospital	Private	Private	Foundation
2	OUTPATIENT SERVICES	Internal Medicine Clinic Heart Clinic Pulmonology Clinic Surgery & Orthopedic Clinic Obsgyn Clinic Pediatric Clinic Ophthalmology Clinic ENT Clinic Dermatology Clinic MCU Clinic Acupuncture Clinic Etc.	Obsgyn Clinic Pediatric Clinic Heart Clinic Pulomonology Clinic Surgery Clinic Dermatology Clinic ENT Clinic Internal Medicine Clinic	MCU Clinic Obsgyn Clinic Pediatrri Clinic Surgery & Orthopedi Clinic Medical Rehabilitation Clinic Dermatology Clinic Heart Clinic Dental Clinic Internal Medicine Clinic Acupuncture Clinic Urology Clinic Etc.	Internal Medicine Clinic Obsgyn Clinic Pediatrri Clinic Geriatric Clinic Surgery & Plastic Surgery Clinic MCU Clinic Endoscopy Clinic Dermatology Clinic Urology Clinic
2	INPATIENT WARD CAPACITY	329 Beds ICU, NICU, PICU	166 Beds ICU	200 Beds ICU, NICU, PICU	170 Beds
3	ANCILLARY SERVICES	Hemodialysis Laboratorium & Pharmacy Radiology X Ray	Laboratorium & Pharmacy Radiology X Ray	Hemodialysis Laboratorium & Pharmacy MSCT 128 Slice	Laboratorium & Pharmacy CT Scan
4	DISTANCES FROM LOCATION	550 M	4.2 KM	3.4 KM	1.2 KM
5	MARKET SEGMENT	Market Segment B, B-, C BPJS	Market Segment B-, C BPJS	Market Segment B, B-, C BPJS	Market Segment B, B-, C BPJS

3. Technical Aspects

In this section, technical matters will be discussed in detail which include technical development criteria, building configuration, selling price, facilities, parking, and development time schedule.

Retail supporting facilities are intended to meet the needs of various needs of the surrounding community, in addition to surrounding residents can also be the target market of this retail support facility. Given the attractive market opportunities from LRT, toll road users, and Taman Mini Indonesia Indah users, and the surrounding communities, the proposed retail support area is quite large, with a net area of 2,200 m² with an efficiency of 15%. Each retail unit with a standard size of 20-40 m² so that it can be used as specialty shops. This unit can also be combined so that it becomes a café or the like. Thus, the market mix of tenants can vary. The division of the retail area is divided into two floors. This is to facilitate the division of zoning, in addition to maximizing the use of floors that are adjusted to the height of the building and proportional buildings.

Parking Needs. The parking area is placed on the western part of the building so that it is not visible from the front of the Project. The author recommends parking in the form of buildings because it will be cheaper than basement parking. In addition, the height of the building will also benefit visibility so that the project can look more monumental.

4. Financial Aspect

In this section, we will discuss in detail the assumptions on which the calculation is based, the calculation of Net Present Value, Internal Rate of Return, Profitability Index, and Payback Period, Sensitivity Analysis, and Capital Structure.

Earnings Projections. The rental rate for each tenant is made based on a sales level survey for the same type of project around the project site. Here is the assumption for the revenue.

Feasibility Study of Integrated Rest Area Project of Taman Mini Indonesia Indah

Asumsi Pendapatan Retail			Asumsi Pendapatan Rumah Sakit	
Uraian	Fase 1 The Plaza	Fase 2 & 3 The Village & The Hub	Rumah Sakit Brawijaya	
- Konsep Pengembangan	<i>Transit Oriented Development</i>		- Konsep Kerjasama	<i>Revenue Sharing</i>
- Luas Bangunan (GFA)	5,620 m2	24,803 m2	- Luas Bangunan (GFA)	10,879 m2
- Luas Efektif Tenant (NLA)	2,178 m2	17,301 m2	- Pasien Rawat Jalan/Thn	32,928 m2
- Tarif Rerata Sewa Tenant	Rp 372.000/m2/bln	Rp 404.000/m2/bln	- Pasien Rawat Jalan/Hari	90
- Tarif Service Charge	Rp 100,000 /m2/bln	Rp 105,942 /m2/bln	- Pasien Rawat Inap/Thn	2,130
- Asumsi Okupansi	51% - 85%		- Pasien Rawat Inap/Hari	18
			- Asumsi Bed Occupancy Ratio	29% - 71%
			- Besaran Net Revenue Sharing	7%

Asumsi Pendapatan Lain	Parkir Motor	Parkir Mobil	
	Elevated	Tahap 1	Tahap 2 & 3
- Jam Operasi Parkir	8 jam sehari	8 jam sehari	8 jam sehari
- Turn Over rate	2 x dalam sehari	2 x dalam sehari	3 x dalam sehari
- Alokasi Parkir Harian	85%	70%	70%
- Alokasi Parkir Bulanan	15%	30%	30%
- Rata2 Okupansi	87%	70%	70%
- Tarif Parkir Harian	Rp. 3.000,- / jam	Rp. 5.000,- / jam	Rp. 5.000,- / jam
- Tarif Parkir Bulanan	Rp. 75.000,- / Bln	Rp. 245.000,- / Bln	Rp. 600.000,- / Bln

Discount Rate. The discount rate is calculated based on WACC calculations. Each capital category is weighted proportionally. The agreed funding scheme is 60% own capital and 40% bank loans.

Loan interest rates. The interest rate on bank loans is calculated using the average investment interest rate of the Persero bank group in 2023. The loan interest rate uses data from the Persero bank because the developer is a subsidiary of one of the State-Owned Enterprises that always uses loans from the company's bank. The loan interest rate is 8.5% obtained from the average investment interest rate of the Persero bank in 2023.

Cost of equity. Cost of equity is calculated using the CAPM (Capital Asset Pricing Model) formula, where the risk free rate (Rf) uses Indonesia Government Bond yield data with a tenor of 5 years, the Rf value is based on the projected period of cash flow, beta (β) using the project industry beta and real estate which is 1.32 taken from Reuters, country risk premium ($R_m - R_f$) of 8.8% obtained from the Damodaran website which states the country risk premium for Indonesia is 8.8%.

Cost Assumption. Here are the assumptions used to calculate development costs consisting of land costs, construction costs, and pre-operation costs. Construction costs are obtained from the Cost Allocation Plan (RAB) which is calculated based on estimates made by company.

Capital Structure Analysis. The selection of capital structure as a source of funding will affect the Net Present Value generated by the project. Funding sources can come from own capital and from loans where each has disadvantages and advantages. The source of funding does not always have to come from loans because the result of the loan is the amount of interest that must be paid on the loan which of course will affect the company's financial performance or cash flow. In this analysis, all assumptions except the capital structure are considered fixed and unchanged. In this analysis, the discount rate will be adjusted for changes in the portion of own capital in the funding structure. The maximum loan portion

required by the bank is 60% of the total funding so that changes in the capital structure are made to the equity portion. From the simulated capital structures, it can be seen that the larger the portion of loans used, the greater the NPV value, the greater the discount rate, and the greater the IRR. This is in accordance with the concept of leveraging that can maximize returns. So, it can be seen that the capital structure that produces optimal NPV is 40% equity and 60% loans.

Risk of Changes in Loan Interest Rate. In current conditions, there is a tendency for loan interest rates to rise due to the increasingly saturated property market or fall due to improving macroeconomic conditions so analysis needs to be carried out sensitivity to the risk of changes in loan interest rates. Here are the scenarios based on the risk of changes in loan interest rates: Most likely: loan interest rate of 8.5%, Pessimistic: loan interest rate of 9.5% (up 1%), Optimistic: loan interest rate of 7.5% (down 1%). It can see that the three optimistic, most likely, and pessimistic scenarios all produce positive NPV and IRR > discount rate so that this project can be categorized as feasible even in the pessimistic scenario.

Project Feasibility Analysis. Based on pre-determined assumptions, project feasibility can be calculated based on Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Profitability Index indicators.

URAIAN	BISNIS PLAN FEBRUARI 2023
Profile Konsol (Kawasan)	Retail +RS
- Luas Lahan	24,959 m ²
- Luas Bangunan (GFA)	41,342 m ²
- Luas Basement	10,861 m ²
- Total Luas Terbangun (GBA)	52,203 m ²
- Total Luas Efektif Tenant (NLA)	30,398 m ²
- Jangka Waktu Operasional (Masa Konsesi)	2023 s.d 2044 (21 tahun)
- Total Pendapatan	5,166,627,309,548
Pendapatan Retail Rental Space	2,847,385,346,461
Pendapatan Retail Service Charge	778,179,000,295
Pendapatan Retail Energy Cost Recovery	529,902,045,562
Pendapatan Parkir	305,452,635,216
Pendapatan Naming Right	63,957,814,455
Pendapatan Gagasan	36,166,852,129
Pendapatan Rumah Sakit Brawijaya	595,321,451,385
Pendapatan Retail Jembatan ITJ	10,262,164,044
- Total Pengeluaran (Operasional)	(1,835,637,004,664)
- Total Investasi	(750,027,248,773)
Fase 1	(156,059,615,843)
Fase 2 & 3	(444,476,235,766)
Rumah Sakit	(149,491,397,165)
- Total Bunga Pinjaman	(192,559,697,865)
- Net Cash Flow	2,674,465,687,934
- Struktur Pinjaman	40% Equity - 60% Loan
Equity	286,062,329,689
Loan	429,093,494,533

- Kelayakan on Project :	
IRR	15.11%
NPV	205,529,715,148
WACC Nov-22	10.69%
Payback Period (Tahun)	13.0 Tahun

Based on historical data, mall retail feasibility ranges from 15-20%. From the table above, Taman Mini Indonesia Indah Integrated IT project produces a positive NPV, IRR > from Discount Rate, Payback Period of 13 years, and Profitability Index > 1 so that this project can be categorized as FEASIBLE.

Conclusion

The calculations for this research have not been fully completed, but by looking at the 4 existing aspects, and especially the financial aspect, where the IRR reaches 15.11% (Based on historical data, mall retail feasibility ranges from 15-20%), this project can be categorized as FEASIBLE.

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