

St. Petersburg State University
Graduate School of Management
Master in Management Program

**ANALYZING THE IMPLEMENTATION OF INCENTIVE FARE PROGRAMS IN
JAKARTA'S INTEGRATED TRANSPORT SYSTEM**

Master's Thesis

by the 2nd year student of
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St Petersburg
2024

ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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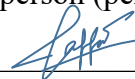
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Abstract

Master Student Name	Muhamad Daffa Pratama
Master Thesis Title	Analyzing the implementation of incentive fare programs in Jakarta's integrated transport system
Faculty	Graduate School of Management
Major Subject	Management
Year	2024
Academic Advisor's Name	Joan Freixanet
Description of the goal tasks and main results	<ul style="list-style-type: none"> • Jakarta as the center of government of the Indonesian capital is also the center of Indonesia's economic activities, almost 60% of the flow of economic activity is in Jakarta. Efforts to increase the availability of public transportation services are one of the important needs in providing access services to the community in access to fast, efficient and integrated public transportation. Jaklingko is a public transportation integration system in Jakarta that integrates multimodal public transportation in Jakarta. • This research goal is to develop an incentive payment service mechanism for Jaklingko public transportation system. • The research method was carried out using a quantitative method by obtaining data through a questionnaire with a sampling method carried out by purposive sampling to determine the condition of the tendency towards the condition of the payment incentive service of the Jaklingko public transportation system, then qualitative analysis was carried out to develop and prepare a payment incentive scheme on the Jaklingko public transportation system. • There is two main task that are considered important in this part of the research, namely: <ol style="list-style-type: none"> 1. How and what incentive scheme strategies need to be developed on Jaklingko to provide efficiency for users and provide support and increase the number of public transportation users in Jakarta? 2. The process and stages of developing an incentive scheme that must be carried out on the Jaklingko system in order to provide support for the improvement of public transportation in Jakarta? • The results of the study show that the development of payment incentives is renewed by emphasizing thematic aspects consisting of variables of age, time, profession, distance, and public aspects according to the characteristics and needs of the people in Jakarta. • The research provides recommendations in an effort to reform and develop payment incentive services on the Jaklingko public transportation system that are fast, efficient, and integrated.
Keywords	Jaklingko, incentives payment, integration, fare programs, public transportation

Аннотация

Автор	Муамад Даффа Пратама
Название магистерской диссертации	Анализ реализации программ стимулирования тарифов в интегрированной транспортной системе Джакарты
Факультет	Высшая Школа менеджмента
Специальность	Менеджмент
Year	2024
Научный руководитель	Джоан Фрейксанет
Описание цели, задач и основных результатов	<p>- Джакарта как центр правительства индонезийской столицы также является центром экономической деятельности Индонезии, почти 60% потока экономической деятельности приходится на Джакарту. Усилия по увеличению доступности услуг общественного транспорта являются одной из важных потребностей в предоставлении услуг по доступу к быстрому, эффективному и интегрированному общественному транспорту. Jaklingko - это система интеграции общественного транспорта в Джакарте, которая объединяет мультимодальный общественный транспорт в Джакарте.</p> <p>- Целью данного исследования является разработка механизма стимулирующей оплаты услуг для системы общественного транспорта Jaklingko.</p> <p>- Метод исследования был проведен с использованием количественного метода путем получения данных с помощью анкеты с методом выборочной совокупности, проведенной методом пурпурной выборки, для определения состояния тенденции к состоянию сервиса стимулирования оплаты системы общественного транспорта Jaklingko, затем был проведен качественный анализ для разработки и подготовки схемы стимулирования оплаты системы общественного транспорта Jaklingko.</p> <ul style="list-style-type: none">• Есть два основных исследовательских вопроса, которые считаются важными в этой части исследования, а именно:<ol style="list-style-type: none">1. Как и какие стратегии схем стимулирования необходимо разработать на Яклинко, чтобы обеспечить эффективность пользователей, оказать поддержку и увеличить количество пользователей общественного транспорта в Джакарте?2. Процесс и этапы разработки схемы стимулирования, которую необходимо реализовать в системе Яклинко, чтобы обеспечить поддержку улучшения общественного транспорта в Джакарте? <p>- Результаты исследования показывают, что разработка системы стимулирования оплаты обновляется путем акцентирования тематических аспектов, состоящих из переменных возраста, времени, профессии, расстояния и общественных аспектов в</p>

	<p>соответствии с характеристиками и потребностями людей в Джакарте.</p> <p>- Исследование содержит рекомендации по реформированию и развитию услуг по стимулированию оплаты в системе общественного транспорта Джаллингко, которые являются быстрыми, эффективными и интегрированными.</p>
Ключевых слова	Яклингко, стимулирующая оплата, интеграция, тарифные программы, общественный транспорт

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Chapter 1 Introduction

1.1. Background

The topic of analyzing the implementation of incentive fare programs in the case of integrated public transport systems is highly relevant to the broader context of integrated ticketing and fare policies for public transport. The integration of public transport systems, including ticketing and fare policies, is crucial for overcoming perceived and objective barriers to public transport use. This integration can lead to better value and convenience for passengers, which in turn can increase the attractiveness of public transport and reduce the use of private cars (Grzelec, K., & Wyszomirski, O., 2019).

Incentive fare programs are a key component of integrated fare policies, as they can offer discounts, promotions, or other benefits to passengers who use public transport. These programs can be designed to encourage specific behaviors, such as using multiple modes of transport or traveling during off-peak hours. By analyzing the implementation of such programs, researchers can identify best practices and evaluate their effectiveness in increasing public transport usage and improving the overall efficiency of the system.

The relevance of this topic is further emphasized by the numerous case studies and research findings that highlight the benefits of integrated ticketing and fare policies. For instance, the introduction of the Travelcard in London led to significant reductions in fare evasion and operating costs, while integrated fare products in other cities have resulted in substantial increases in patronage and revenue (Fleishman, D., 2003).

Meanwhile, in the case city like Jakarta with a population of approximately 11 million people, with surrounding cities satellite, Jakarta witnesses a staggering 53 million daily trips, dominated by private vehicles, which contribute significantly to the city's traffic problems. The capital's roads have grown at a rate that cannot keep up with the increasing number of private vehicles. It is natural for the roads in the capital to experience overcapacity, which can lead to congestion (Primasetya, D. A., & Maksum, A., 2015).

The imbalance between the number of vehicles and road capacity eventually leads to congestion in urban areas. Jakarta faces complex transportation issues, particularly

with regards to traffic density. The length of roads in Jakarta only accounts for about 7% of the city's total area, which falls short of the ideal road length of 12-15% in developed cities. It is important to note that this trend is influenced by various factors. The high demand for mobility in Jakarta has led to private vehicles becoming a lifestyle for its residents (Mu'allimah & Raina N. M., 2021). According to the Badan Pusat Statistik (BPS), the total number of motorized vehicles in Jakarta in 2022 was 21.856.081 units, including motorcycles, passenger cars, buses, and trucks. Motorcycles, which make up the majority with 17.304.447 units, are the most common type of vehicle in Jakarta (BPS, 2022).

The various studies and surveys have proved the reason why people are more interested to take their own private vehicles rather than use public transportation in Jakarta, in terms of accessibility, time travel, cost, comfortability and safety (Rohana S. & Euis S., 2018). This leads to discussions and solutions about providing reliable and sustainable public transportation services that meet the needs of the people, as well as encouraging them to use public transportation instead of their own vehicles in the capital city of Indonesia.

In the last decade, Jakarta has received significant attention for the development of its integrated public transportation infrastructure. As a result of Recognizing the urgent need for a paradigm shift towards sustainable urban mobility, Jakarta has embarked on significant initiatives to enhance its public transportation infrastructure over the past decade. Both national and regional governments are working to enhance public transportation, including building rail-based systems such as the Commuter Line, Light Rail Transit (LRT), and Mass Rapid Transit (MRT). Additionally, they are also improving the quality of motor vehicle-based mass transportation options, including small, medium, and large vehicles. By that time, the needs of smart systems and technology are needed in order to support the integration of operational systems that cover infrastructure, services/routes, data and information, as well as tariffs and payment systems for public transport in Jakarta (Fianda S. R., 2021).

In 2020, Jakarta introduced JakLingko, a smart system for integrating mass public transportation in the capital city under the leadership of Governor Anies Baswedan (2017-2022). The development of JakLingko is in line with the implementation of various transformations and innovations in infrastructure renewal. These includes converting Angkot (small) to MikroTrans and Metro Mini & Kopaja (medium & large) to Trans Jakarta, as well as connecting them to new sustainable public transportation

modes such as the Commuter Line, Light Rail Transit (LRT), and Mass Rapid Transit (MRT). The aim is to create an integrated public transportation system in the capital city that is able to encourage more people to use public transportation more often in their daily lives.

In general, this smart technology helps both the regulators and users to get more benefits by its development for public transport, in terms of accessibility and effectiveness (Pratama M. W., Aditya T., Nurlukman A. D., Fadli Y., 2023). A well-integrated transportation system is believed to be a solution to the main problem of traffic congestion in Jakarta (Arifin & Widyaningsih, 2021). The JakLingko program provides access to public transportation for people of all backgrounds and is made even more convenient with the JakLingko mobile application for payment methods (Darmaningtyas, 2019). As of September 2022, public transportation service coverage in Jakarta has reached 86% (Maharani, 2022). The integration of public force service coverage is expected to increase public interest in using available public transportation. This is further facilitated by the easy access provided through the JakLingko application, which helps to decrease congestion level in Jakarta (Aditya *et al.*, 2023).

1.2. Problem Formulation

JakLingko was launched with the goal of providing an integrated transportation system, including both routes and payment methods. Several case studies in Jakarta have highlighted the importance of financial incentive programs in motivating commuters to use public transportation services. The studies suggested implementing strategies, such as discounted fares and rewards for regular and on-time payment of tariffs (Wulansari et al., 2017) (Anggraini et al., 2019).

Moreover, a critical aspect that deserves attention is the marketing strategy employed by the government to promote public transportation. Effective marketing campaigns can not only increase awareness of available public transport options but also highlight the benefits of utilizing these services. By showcasing the convenience, affordability, and environmental advantages of public transportation, the government can attract more commuters and diversify revenue streams beyond fares. A well-designed marketing strategy can not only enhance public transport adoption but also contribute to revenue maximization and the overall sustainability of urban mobility in Jakarta.

Therefore, this research will explore more depth into the effectiveness of such incentive programs in motivating commuters to use public transportation services, leading to increased ridership and revenue. Additionally, studying the impact of financial incentives on commuter behavior can help optimize fare structures and tariff programs to enhance the overall efficiency and sustainability of public transport systems. This research can also shed light on best practices for implementing incentive programs in public transport to encourage sustainable mobility choices and improve urban transportation systems.

As a form of developing support for Jakarta's transportation integration efforts. Several fare and incentive development schemes are needed to increase the use of public transportation in Jakarta. Based on this description, there are several questions that are considered important in this part of the research, namely:

1. How and what incentive scheme strategies need to be developed on Jaklingko to provide efficiency for users and provide support and increase the number of public transportation users in Jakarta?
2. The process and stages of developing an incentive scheme that must be carried out on the Jaklingko system in order to provide support for the improvement of public transportation in Jakarta?

Based on the background and formulation of the problems described, the appropriate research selection in this study is “Analyzing the implementation of incentive fare programs in Jakarta’s integrated transport system” which is the focus and topic of research to be carried out.

1.3. Research Goal

The goal of this research is explained as follows:

1. Developing of incentives fare programs in the case of Jaklingko public Transportation system.

1.4. Research Benefits

The benefits of this research are explained as follows:

1. Impact on the efficiency of developing a fast and integrated payment system.

2. Provides a systematic increase in profits within the enforced payment parameters.
3. Efficiency for users in making payments in using the Jaklingko transportation mode.

Chapter 2 Literature Review

2.1 Public Mass Transportation

Public mass transportation, also known as public transport or public transit, refers to shared passenger transportation services that are available for use by the general public (Tang & Lo, 2008). These include various modes of transport such as buses, trains, subways, trams, and ferries. Public mass transportation is designed to move large numbers of people efficiently within urban and interurban areas, often following fixed routes and schedules at subsidized fares which make it an affordable option for daily commuting. The main goals of public mass transportation are to reduce traffic congestion, improve air quality by lowering emissions, and provide a reliable and accessible mode of travel for all segments of society, including those without access to private vehicles. Public mass transportation plays a vital role in the mobility of people in highly populated areas. It helps alleviate traffic congestion and reduce environmental pollution caused by private vehicles (Litman, 2015). It designed to serve a wide population and operated by government or private entities. Public Mass Transportation includes various modes such as buses, trains, trams, and ferries, providing an efficient and cost-effective way for people to commute within urban areas and between cities. This type of transportation plays a crucial role in reducing traffic congestion, lowering air pollution, and promoting sustainability (Qiu et al., 2018).



Figure 2.1 Components of Enhancing Public Mass Transport

Additionally, it enhances accessibility for individuals who do not have access to private vehicles. Public Mass Transportation is essential for creating more inclusive and connected communities, contributing to the overall well-being of society. Several key factors can affect the demand for public mass transportation: 1) income; 2) popularity and perception; 3) population and employment density; 4) service quality; 5) accessibility; 6) land-use; 7) cost alternatives; 8) transit incentive; 9) transportation policies, and; 10) socio-demographic trends. Those factors play the significant effect for developing public transportation.



Figure 2.2 Key Factors of demand for public mass transportation

One significant factor is the accessibility and coverage of the transportation network. It is crucial for public mass transportation to reach as many areas as possible, ensuring that a wide population can benefit from its services. Additionally, the frequency and reliability of mass transit services are vital in encouraging people to choose public transportation over private vehicles. The integration and connectivity of different modes of

public transportation also play a key role in providing a seamless travel experience for commuters. Moreover, the affordability and cost-effectiveness of public transit services make them accessible to a diverse range of individuals, contributing to the overall success of the transportation system (Tang & Lo, 2008).

Public mass transportation is not only about getting people from one place to another; it also has a significant impact on the social and economic well-being of a community. Access to reliable transportation can open up opportunities for individuals to access education, employment, and healthcare, ultimately leading to a more equitable society. When public transit is well-designed and efficiently operated, it can act as a catalyst for economic development in urban and suburban areas (Hörcher & Tirachini, 2021). Overall, the success of the transportation system relies on recognizing and prioritizing the importance of public mass transportation in achieving social, economic, and environmental goals (Litman, 2015). Public mass transportation is a key element in achieving urban sustainability and enhancing the overall well-being of a community.

The successful planning and implementation of public mass transportation systems are integral to the well-being and sustainability of urban communities. By prioritizing accessibility, connectivity, affordability, and sustainability, cities can create efficient and inclusive transportation networks that benefit the entire population (Litman, 2015). Integrating public mass transport into urban infrastructure requires careful planning and coordination (Errampalli *et al.*, 2020).

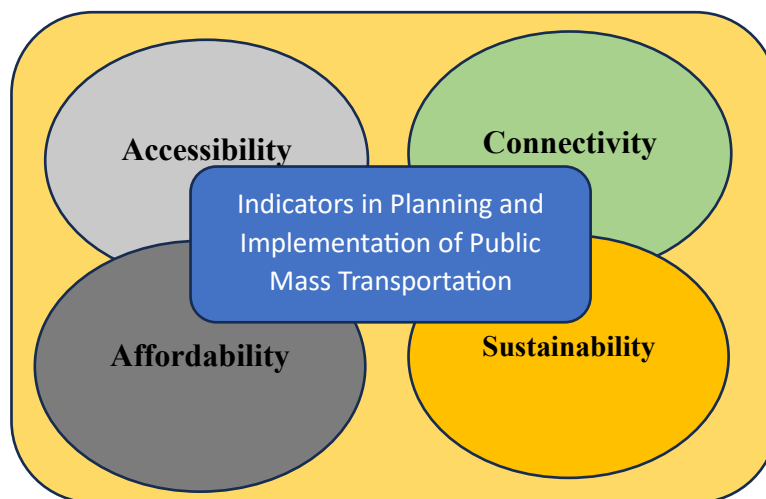


Figure 2.3 Components of Enhancing Public Mass Transport

One of the key steps is to ensure that the various modes of public transportation are interconnected, providing a seamless experience for commuters as they navigate through

the urban landscape. This integration can involve the development of transit hubs where different modes of transportation converge, making transfers between buses, trains, trams, and ferries efficient and convenient for passengers (Nourbakhsh & Ouyang, 2012).

Efficient and well-planned public mass transportation systems are essential for addressing the mobility needs of a growing population. When it comes to planning public mass transport, it is important to consider factors such as population density, existing infrastructure, and future development. Proper planning also involves conducting thorough feasibility studies and assessing the demand for different modes of transportation in specific areas (Lu et al., 2011).

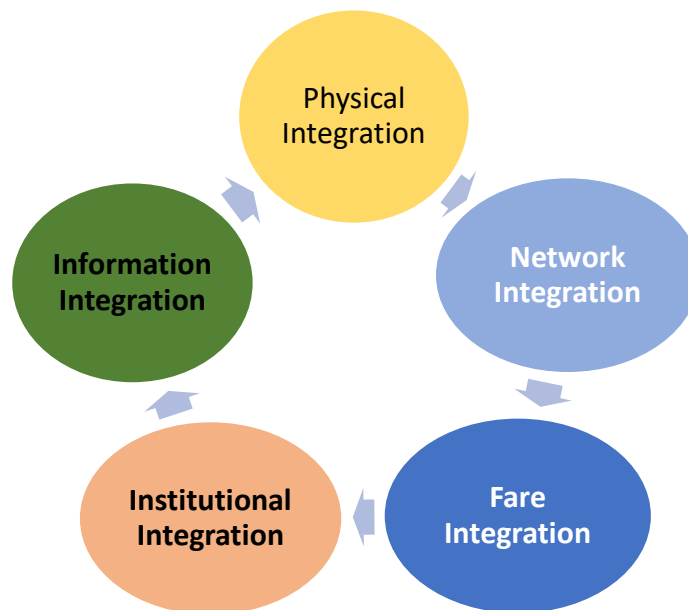


Figure 2.4 Components of Integration in Public Mass Transport

To further enhance the integration of the public mass transport system, it is essential to prioritize the development of dedicated lanes and priority signaling for buses, trams, and other modes of public transportation. By providing dedicated lanes, these vehicles can navigate through traffic more efficiently, reducing travel time and increasing the reliability of the services. Additionally, priority signaling at intersections can further improve the flow of public transport, minimizing delays and ensuring a smoother commute for passengers. In order to attract more people to use public transportation, the implementation of modern technologies is crucial. Real-time arrival information and contactless payment systems can significantly enhance the overall user experience. Passengers can accurately plan their journeys and make seamless payments, making public transport more convenient and appealing.

Integrating innovative technologies and sustainable practices into public mass transportation can significantly enhance its efficiency and environmental impact. Implementing smart ticketing systems, real-time tracking applications, and eco-friendly vehicle options can improve the overall user experience and reduce the ecological footprint of the transportation system.

2.2 Pricing and Fares in Public Transportation

Pricing and fares in public transportation refer to the fee structure set for using various transit services (Tiglao et al., 2020). These fares are a critical part of public transit economics and serve several functions. Fares can be structured to influence travel behavior, such as using higher prices during peak hours to reduce congestion or offering discounts during off-peak times to spread demand (Bladikas & Crowell, 1984; Hörcher & Tirachini, 2021).



Figure 2.5 Function of Fares System

The fare system is a crucial component of public transportation planning and management, directly affecting its viability, quality of service, and role in achieving wider urban mobility and environmental goals (Bladikas & Crowell, 1984). Setting the right pricing and fares in public transportation involves a multifaceted approach that takes into account various factors. This includes the cost of operations, customer demand, competing transportation options, and the socioeconomic status of the riders (Paulley *et al.*, 2006). By

incorporating these elements into the pricing strategy, public transportation authorities can better tailor their fares to meet the needs of diverse commuters while also ensuring the financial viability of the transit system.

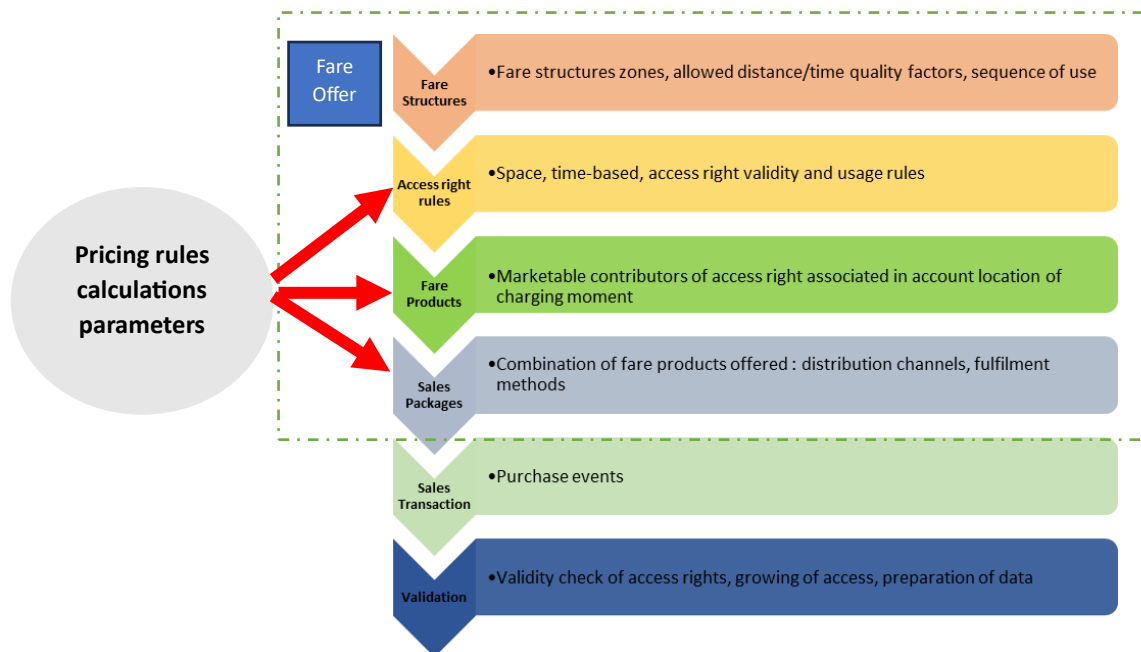


Figure 2.6 Pricing Rules Calculations Parameters

The cost of operations encompasses a wide range of expenses, including fuel, maintenance, labor, and infrastructure upkeep (Xue *et al.*, 2017). Understanding these costs is essential for establishing a fare structure that covers the operational expenses while remaining affordable for the riders. Simultaneously, it's important to consider the customer demand and willingness to pay for the convenience and reliability offered by public transportation. By conducting thorough market furthermore, the design of pricing and fare structures can also have a significant impact on social equity, accessibility, and environmental sustainability (Cervero, 1981). For example, fare structures that include discounted or free fares for low-income individuals can help ensure that public transportation remains accessible for all members of the community. Additionally, dynamic pricing strategies, such as peak and off-peak pricing, can help manage demand and optimize the utilization of transportation resources, leading to greater efficiency and reduced environmental impact (Hörcher & Graham, 2020). Public transportation authorities often conduct thorough market research and analysis to gauge customer demand and willingness to pay for the services provided (Litman, 2015). This helps them better understand the value that passengers place on various aspects of public transportation, such

as comfort, reliability, and convenience. By incorporating these insights into the fare structure, authorities can strike a balance between meeting the financial needs of the transit system and providing affordable options for riders (Sharaby & Shiftan, 2012).

The design of pricing and fare structures also has a profound impact on social equity and accessibility (Silver *et al.*, 2023). Public transportation plays a vital role in providing mobility options for individuals from diverse socioeconomic backgrounds. Therefore, implementing fare structures that consider the needs of low-income individuals can contribute to social equity and inclusive mobility (Bladikas & Crowell, 1984). Public transportation fare policies can also have wider economic implications. By influencing travel behavior and patterns, fare structures can contribute to the development of urban areas, affect land use, and influence the overall quality of life for residents (Osman, 2019). As such, it's essential for transit agencies and policymakers to carefully consider the long-term consequences of their pricing and fare decisions and to seek input from a diverse range of stakeholders to ensure that the system meets the needs of the community as a whole (Hörcher & Tirachini, 2021).

Incentive payments for public mass transportation are financial mechanisms aimed at encouraging the use of transit services and modifying commuter behavior to achieve specific policy goals. These incentive programs can be directed at both riders and operators:

- a. Rider Incentives: Transit authorities, employers, or governments may offer direct financial benefits to passengers to encourage the use of public transportation. Examples include:
 - Subsidized passes or reduced fares for certain groups like students, seniors, or low-income commuters.
 - Employer-provided transit benefits, such as pre-tax savings accounts for transit costs or company-subsidized transit passes.
 - Rewards for frequent use, such as loyalty programs that offer benefits after a certain number of rides.
- b. Operator Incentives: These are often performance-based and designed to improve the quality of service provided by transit operators. Examples include:
 - Subsidies for operational costs to maintain low passenger fares while ensuring service quality.

- Payment schemes based on performance criteria such as punctuality, customer satisfaction, or service frequency.

The effectiveness of these incentives in increasing public transit ridership depends on factors like the cost of public funds, social welfare considerations, and the demand patterns of riders from various socio-demographic groups. Studies demonstrate that well-designed incentive programs can be financially justifiable and can increase transit ridership, contributing to socio-economic and environmental objectives. Customizing incentives to specific rider groups and considering the many-to-many demand pattern of urban mobility can improve the efficiency and effectiveness of public transit incentive programs.

2.3 Marketing and Branding Incentives Fare Programs in Public Transport

Marketing strategy is a comprehensive plan that outlines an organization's overall approach to marketing its products or services to achieve specific business objectives. A well-developed marketing strategy typically includes market research, target market identification, competitive analysis, positioning, pricing, distribution channels, and promotional tactics. Public transportation is an essential part of urban life, providing an efficient and sustainable mode of transportation for commuters. To further encourage the use of public transport, marketing and branding incentives fare programs can be implemented.

These fare programs can include various incentives to attract and retain passengers, such as discounted fares, loyalty programs, and bonus rewards (Litman, 2015). These incentives can be customized based on passenger preferences and travel patterns. By implementing marketing and branding incentives fare programs in public transport, the aim is to provide additional value and benefits for passengers, ultimately increasing ridership and promoting a shift towards sustainable transportation options.

These fare programs not only benefit passengers by making public transportation more affordable and appealing, but they also contribute to reducing traffic congestion, air pollution, and carbon emissions in urban areas. In addition to the traditional fare incentives, public transport authorities can also consider partnering with local businesses to offer joint promotional deals and discounts to further entice passengers to choose public transportation (Sun & Zhang, 2018; Cmar, 2023). **Figure 2.4** below shown the key indicators of marketing strategy branding.



Figure 2.7 Pricing Rules Calculations Parameters

- a. **Market Research:** Understanding the market, including customer needs, preferences, and behavior, as well as competitor analysis.
- b. **Target Market Identification:** Defining the specific segments of the market that the organization wants to target based on demographics, psychographics, and other factors.
- c. **Positioning:** Establishing a unique position in the minds of consumers relative to competitors, often based on product attributes, benefits, or values.
- d. **Product Development:** Creating or enhancing products or services to meet the needs and preferences of the target market.
- e. **Pricing Strategy:** Determining the pricing strategy based on costs, competition, and customer perceptions of value.
- f. **Distribution Channels:** Selecting the most effective channels to reach customers, such as direct sales, retail, e-commerce, or wholesalers.
- g. **Promotional Tactics:** Developing a mix of promotional activities, such as advertising, sales promotions, public relations, and personal selling, to communicate with the target market.
- h. **Marketing Budget:** Allocating resources and budget to various marketing activities based on their expected effectiveness in reaching marketing objectives.
- i. **Measurement and Evaluation:** Establishing metrics to track the performance of the marketing strategy and making adjustments as needed to achieve desired results.

Marketing strategy research faces challenges, but there are opportunities for developing new knowledge and impacting practice (Morgan *et al*, 2018) (Haslindah *et al* (2021). The branding aspect of these fare programs can play a significant role in shaping the image of public transportation (Hörcher & Tirachini, 2021). Through strategic branding efforts, public transport can position itself as a reliable, modern, and environmentally conscious mode of commute. This can be achieved through consistent branding across various touchpoints, including digital platforms, station facilities, and on-board displays, creating a cohesive and recognizable identity (Dawood, 2023). The marketing and branding incentives fare programs can leverage data and analytics to personalize offerings for different passenger segments. By understanding the preferences and behaviours of commuters, public transport providers can tailor incentives that resonate with their target audience, ultimately fostering a stronger connection with passengers.

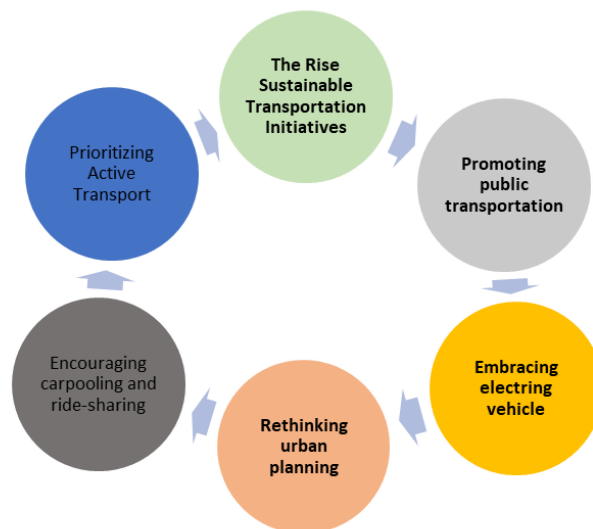


Figure 2.8 Enhancing Sustainable Public Transport for Branding Priorities

The implementation of effective marketing and branding incentives fare programs in public transport not only elevates the appeal of public transportation but also serves as a catalyst for sustainable urban mobility and environmental conservation.

2.4 Previous Research

Previous researches are needed to provide a solid foundation for the development and implementation of marketing and branding incentives fare programs in public transport. By analyzing and synthesizing existing studies and data, transportation authorities can gain insights into successful strategies, best practices, and potential pitfalls

in similar initiatives. Additionally, prior research can help in understanding passenger preferences, behavior patterns, and the effectiveness of various incentive structures. This knowledge serves as a valuable resource for crafting targeted and impactful fare programs that resonate with the public and drive increased ridership. Overall, leveraging previous researches can inform the design, implementation, and evaluation of marketing and branding incentives fare programs in public transport, ensuring that these initiatives are well-informed, effective, and in line with the needs and preferences of the commuting public.

Previous research shows the continuity and sustainability of research themes that are still comprehensive to review as well as develop research methods and results developed in analyzing the object of study that has a strong correlation with previous studies. This reflects the opportunities and innovations of previous researches that have shown developments in the research themes studied from time to time.

References to previous research can be a reference and reference in the preparation and development of analytical methods that refer to the findings of the latest results in reviewing research related to the development and preparation of incentives carried out on public transportation services.

Previous research needs to be one of the references in building the value of the originality of the research conducted so as to provide a clear boundary of differences between previously conducted research and research conducted by the author so as to provide clear boundaries for research objectives, methods, results obtained from each study. **Table 2.1** below shows a list of previous studies that have the same theme, location as the research conducted by the author.

Table 2.1 Comparison of Previous Research Related to Incentives Payment of Public Transportation

No	Researcher	Title	Objective	Method	Result
1	Tang, S., & Lo, H K. (2008)	The impact of public transport policy on the viability and sustainability of mass railway transit: The Hong Kong experience	Impacts on MRT use and sustainability policies in Hong Kong City	<ol style="list-style-type: none"> 1. Reference to previous studies 2. Qualitative Assessment 3. Quantitative Assessment 	The impact that arises is a significant reduction in the use of private vehicles, due to the provision of incentives and promos for the use of public transportation.
2	Qiu, G Y., Xu, W., & Li, L. (2018)	Key factors to annual investment in public transportation sector: The case of China	Analysis of influential factors in the development of the public transportation sector	<ol style="list-style-type: none"> 1. Reference to previous studies 2. Qualitative Assessment 3. Quantitative Assessment 	Factors that are considered influential for the development of public transport investment in China depend on the components of access to the city center, integrated transportation system, and affordable prices.
3	Errampalli, M., Patil, K S., & Prasad, C S R K. (2020)	Evaluation of integration between public transportation modes by developing sustainability index for Indian cities	Efficiency analysis of transportation system integration in several Indian cities	<ol style="list-style-type: none"> 1. Quantitative Data Assessment 2. Geospatial Data 	<ol style="list-style-type: none"> 1. The results of the study show the efficient state of India's transportation system and infrastructure. 2. Transportation integration in several Indian cities has an impact on increasing the efficient use of public transportation which is increasing

4	Štraub. (2020)	The Effects of Fare-Free Public Transport: A Lesson from Frýdek-Místek (Czechia)	Analysis of free payment on public transportation on the Frydek-Mistek trajectory	<ol style="list-style-type: none"> 1. Reference to previous studies 2. Quantitative Assessment 	Interested users of public transportation have experienced a significant increase in the policy of exempting public transportation fees which has an impact on increasing the use of public services in the community.
5	Silver, K., Lopes, A S., Vale, D., & Costa, N M D. (2023)	The inequality effects of public transport fare: The case of Lisbon's fare reform	<ol style="list-style-type: none"> 1. Analysis of unequal pricing conditions in transportation system payments 2. Impacts of inequality and price differentiation on public transportation 	<ol style="list-style-type: none"> 1. Reference to previous studies 2. Qualitative Assessment 3. Quantitative Assessment 	Inequality in the price paid for public transportation in the City of Lisbon leads to inefficient governance of payments related to public transportation.
6	Pratama (2024)	Analyzing The Implementation of Incentive Fare Programs In Jakarta's Integrated Transport System	<ol style="list-style-type: none"> 1. Analyzing the implementation of public transport payment incentive policies that have been used in Jakarta. 2. Analyzing an incentive payment model for Jaklingko as a transportation system in Jakarta. 3. Developing recommendations for the service system and the development of payment incentives carried out in the Jakarta Integrated Transport System. 	<ol style="list-style-type: none"> 1. Reference to previous studies 2. Qualitative Assessment 3. Quantitative Assessment 	<ol style="list-style-type: none"> 1. Model and development strategy of incentive fare programs in public transportation in Jakarta. 2. Development of integrated public transportation incentive services system payment in Jakarta

2.5 Framework Idea

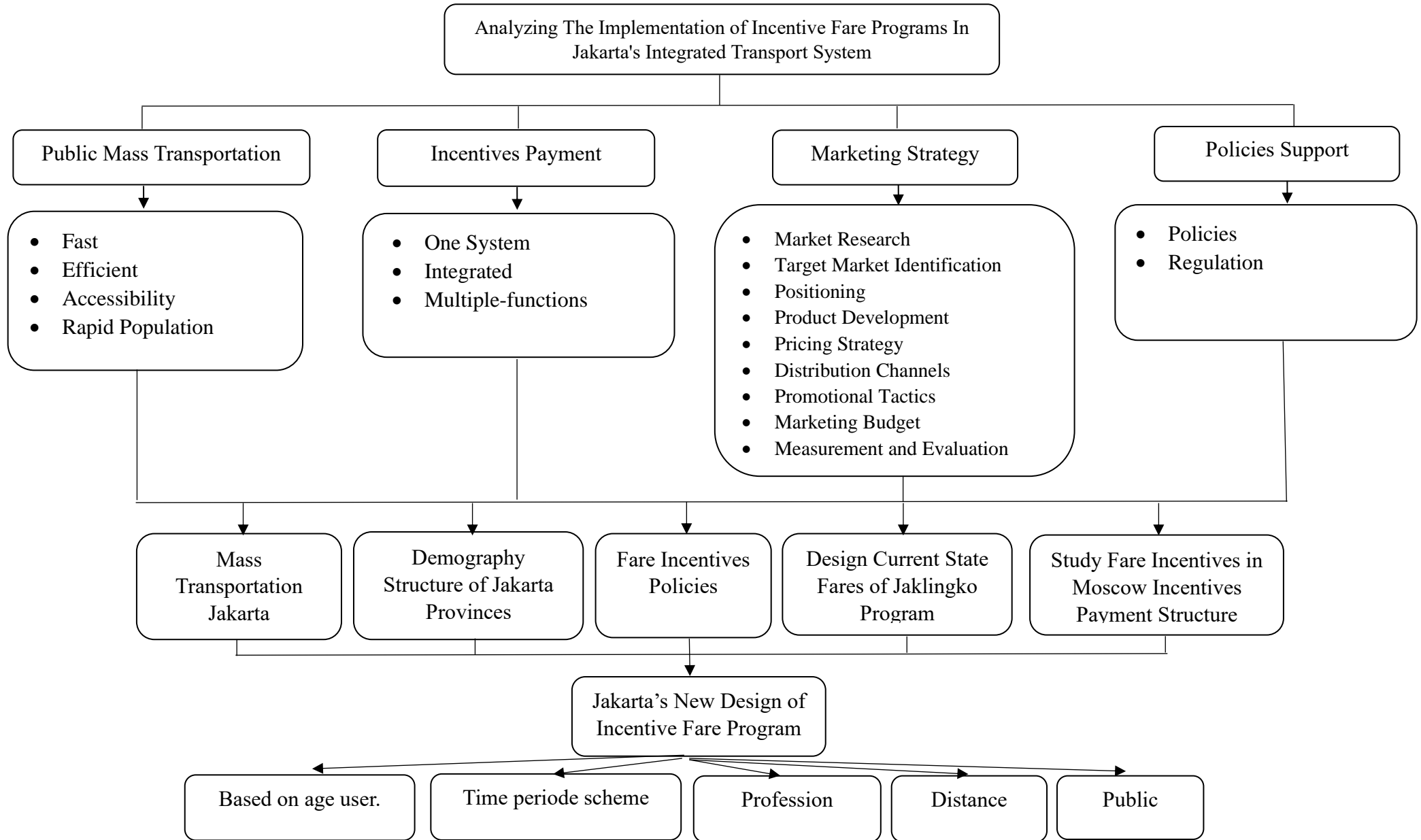
The progress of the public transportation system in Jakarta is growing and has a wider spectrum of coverage. The development of this transportation system not only serves users who live in Jakarta but also provides connectivity to agglomeration areas of other regions that are directly adjacent to Jakarta.

The development of a mass transportation system is one of the essential needs that is a prerequisite in providing accessibility services in urban areas (Litman, 2015). The development of mass transportation systems also needs to be followed by an increase in services in providing a fast and integrated payment process (Bladikas & Crowell, 1984). Significant policy support in the public transport mobilization process is also one of the triggers for the increase in the number of public transport users in Jakarta.

The development of an incentive payment system is one of the efforts in improving public transportation services in Jakarta. The preparation of a pricing mechanism for public transportation requires consideration of various factors that are considered to have an influence on improving public transportation services (Paulley *et al.*, 2006). Public transportation fare policies can also have wider economic implications. By influencing travel behavior and patterns, fare structures can contribute to the development of urban areas, affect land use, and influence the overall quality of life for residents (Osman, 2019).

Incentive payment services need to be developed in the public transportation system to provide convenience in service. The development of an efficient and fast system while still considering the profit aspects for public transportation service providers (Sun & Zhang, 2018; Cmar, 2023). Support in marketing strategies is needed in preparing and promoting the development of payment services in an integrated, fast and efficient public transportation service system as an integration process is needed. The design of pricing and fare structures also has a profound impact on social equity and accessibility (Silver *et al.*, 2023).

Figure 2.9 Flowchart of Framework Idea



2.6 Operational Limitations

Public mass transportation, also known as public transport or public transit, refers to shared passenger transportation services that are available for use by the general public (Tang & Lo, 2008).

Pricing and fares in public transportation refer to the fee structure set for using various transit services (Tiglao et al., 2020).

The fare system is a crucial component of public transportation planning and management, directly affecting its viability, quality of service, and role in achieving wider urban mobility and environmental goals (Bladikas & Crowell, 1984).

Marketing strategy is a comprehensive plan that outlines an organization's overall approach to marketing its products or services to achieve specific business objectives. A well-developed marketing strategy typically includes market research, target market identification, competitive analysis, positioning, pricing, distribution channels, and promotional tactics (Morgan *et al*, 2018).

Incentive payments for public mass transportation are financial mechanisms aimed at encouraging the use of transit services and modifying commuter behavior to achieve specific policy goals (Sun & Zhang, 2018; Cmar, 2023).

Chapter 3 Research Methodology

3.1. Quantitative Approach

A quantitative approach is a research method that focuses on quantifying and analyzing numerical data to understand and explain phenomena. In this approach, researchers collect data that can be quantified and statistically analyzed to test hypotheses, identify patterns, and make generalizations about a population. Quantitative research often involves the use of structured data collection instruments, such as surveys, questionnaires, or experiments, to gather numerical data from a sample of the population. Overall, the quantitative approach is valuable for studying phenomena that can be measured numerically and for testing hypotheses in a systematic and rigorous manner

In this research, a lot of use was made of questionnaires by compiling a list of questions that became the source of hypotheses for the necessary analysis in supporting the necessary analysis of indicators that considered to have influence in developing payment system and incentives fares for Jaklingko integration transportation system. The quantitative data collected is quantitative data using surveys, questionnaires, or secondary sources. In general, the quantitative analysis mechanism in this research is shown in **Figure 3.2** below.

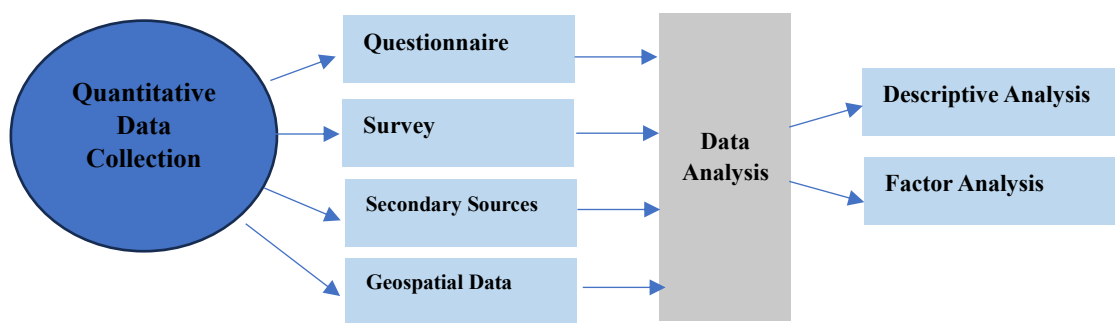


Figure 3.2 Data Collection and Analysis in Quantitative Approach

Data analysis in this study consists of descriptive analysis and factor analysis. Descriptive Analysis is started with descriptive statistics to summarize the characteristics of several samples that has been collected by using questionaries to get the probability variables that can be used in statistical data for building incentives payment system of Jaklingko integration transport system.

3.2. Qualitative Approach

The use of qualitative analysis methods is carried out to determine a comprehensive analysis to find out about the conditions and development of the payment system and the development of payment incentives made. The use of qualitative methods is used to conduct a more in-depth analysis of several user respondents on public transportation in Jakarta related to the payment system mechanism and incentives applied in Jaklingko integration transport system.

Several parameters are used in the structure of the qualitative approach method to conduct a detailed analysis of what factors and parameters are needed in the development of transportation incentives. In general, the qualitative analysis mechanism in this research is shown in **Figure 3.1** below.

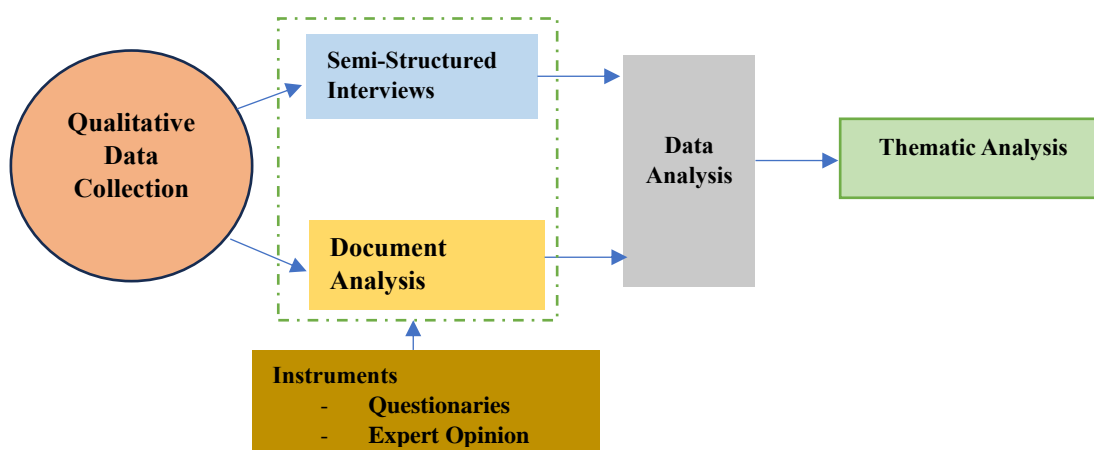


Figure 3.1 Data Collection and Analysis in Qualitative Approach

Semi-structured interviews are conducted semi-structured interviews with key stakeholders within each selected company, such as senior executives, managers, and users of this whole transport public system. This interview to get their experiences personally about using public transportation in Jakarta as well. Document analysis provides data which is relevant and related with public transportation in Jakarta. This document can provide valuable insight what the Jaklingko should do for improving their qualities in payment system.

The data analysis process is carried out in order to analyze the data sources that have been collected to obtain a comprehensive review in analyzing incentives payment system of Jaklingko integration transport system. Thematic analysis will be derived several key indicators that can be

used as references and contributing factor to building a new model of incentives payment system of Jaklingko integration transport system.

3.3. Sources Data

The data sources used in this research are data that are part of the analysis in the development and implementation of the existing payment incentive mechanism in the Jaklingko Integration Transport System. **Table 3.1** shown several sources data which used for this research.

Table 3.1 Sources Data and its function

No	Data	Function
1	Geospatial data	Analysis of service region of Jaklingko integration transport system
2	Questionaries	Processing qualitative and quantitative data analysis
3	Literature	Analysis based on reference literatures about incentives payment of public transportation

The availability of data sources is used in helping to carry out the process of collecting and analyzing the data needed in identifying and preparing incentive schemes that need to be carried out. The data sources that have been collected are then processed and analyzed in accordance with the characteristics and conditions of the parameters required.

Questionnaire instruments were obtained to collect both qualitative and quantitative data. Sampling was randomized to be carried out with the number of samples according to the needs and trends of the data analysis used. The questionnaire design has several components or parameters of the question structure shown in **Table 3.2** below:

Table 3.2 Analytical of Questionaries Structures

No	Parameter	Type Data
1	Gender	Nominal
2	Age	Nominal
3	Profession	Nominal
4	Address	Nominal
5	Do you actively use public transportation services in Jakarta	Ordinal
6	What mode of public transportation is used most often	Nominal
7	Give your opinion on the service and quality of public transportation modes in Jakarta	Ordinal

8	Provide your assessment of the current integration services between public transportation modes in Jakarta	Ordinal
9	Does the ease of access and development of digitalization at this time make you interested in using public transportation	Ordinal
10	Give your assessment of the current digitalization of the integration system of public transportation services in Jakarta	Ordinal
11	Have you ever used JakLingko	Nominal
12	If yes, how often do you use the JakLingko mobile app nowadays	Ordinal
13	What is the main reason you use the JakLingko mobile application	Nominal
14	How easy is it to integrate the JakLingko mobile application with the top up balance payment service	Ordinal
15	How often do you top up your balance to use JakLingko services?	Ordinal
16	What additional features do you want to add to the JakLingko mobile app	Nominal
17	How often do you experience technical glitches or bugs when using the JakLingko mobile application	Ordinal
18	How do you rate the overall design and user interface of the JAKLINGKO mobile application at this time?	Ordinal
19	Have you used other mobile apps for public transportation in Jakarta	Nominal
20	If yes, what mobile apps have you used and your overall impression of them	Nominal
21	What is the main reason you use other mobile apps besides JakLingko mobile app	Nominal
22	Would you consider switching to the JakLingko mobile app if the following improvements were made	Nominal
23	What type of payment do you often use when using JakLingko Transportation services?	Nominal
24	How satisfied are you with the distance based payment rate system?	Ordinal
25	What improvements do you think need to be made for JAKLINGKO mobile app?	Nominal
26	Do you think the incentive program will encourage you to use the public transportation modes more often	Nominal
27	What type of incentive rewards are most attractive to you	Nominal
28	Do you think JakLingko should offer special discounts or benefits to certain user groups	Nominal
29	Which user group do you think should get the discount	Nominal
30	What types of benefits are most attractive to each of these groups	Nominal
31	Are you willing to top up the monthly or annual subscription fee in your JakLingko account, if it provides additional benefits	Nominal
32	How likely are you to recommend JAKLINGKO transportation services to others	Ordinal
33	What suggestions do you have for improving payment services for using JAKLINGKO public transportation	Nominal

In order to ascertain the level of agreement of respondents on the existing indicators regarding the fare integration policy of PT JakLingko Indonesia, the results of ordinal questions using a

Likert scale will be analyzed using the One Sample T-Test and Ordinal Regression methods. Each question employs a scale of 1 to 5, with number 1 representing "strongly disagree/never/very poor", number 2 representing "disagree/rarely/poor", number 3 representing "undecided/sometimes/fair", number 4 representing "agree/frequently/good", number 5 representing "strongly agree/every time/very good". For methods that employ the one-sample t-test, the mean value of each indicator question is then compared with the test value of 3. This yields a value that determines the significance of a question indicator. Consequently, if the question indicator has an α value less than 0.005, it is deemed a significant indicator.

Meanwhile, for ordinal regression itself, the results of data collection will be analyzed using the regression method with an ordinal data model, with the help of the SPSS application. The analysis of the method will proceed through five stages: case processing, summary analysis; model fitting information; model fit with data; effect size; and statistical t-test. The independent variables are gender (Y1), age (Y2), occupation (Y3), domicile (Y4), and frequency of use (Y5).

Questionnaire instruments were obtained to collect both qualitative and quantitative data. Sampling was randomized to be carried out with the number of samples according to the needs and relevance of the analysis and the representativeness of the data taken on the population studied in this study. The question parameters in the questionnaire were carried out both statistical and descriptive analysis in analyzing the development and implementation of incentive payments in public transportation.

3.4. Analysis Procedures

Analysis procedures refer to the systematic methods and techniques used to analyze data in a research study. These procedures are designed to extract meaningful insights, identify patterns, and draw conclusions from the data collected during the research process. These procedures can be qualitative or quantitative, depending on the nature of the data and the goals of the analysis. The analysis procedure for studying to make item in analyzing the implementation of incentive fares program for Jakarta integrated transport. Based on the research approach are used to analyze and identify indicators as the key in building of modeling and designing incentive fares for public transport integration system. The analysis mechanism is carried out in accordance with the data obtained using questionnaires and relevant data sources in analyzing the implementation of policies and the development of payment incentives in the use of public transportation.

Implementation of the development of payment incentives in public transport has tended to vary in the instruments and analysis used. It can vary depending on the research approach

(qualitative or quantitative) and methodology chosen. In this research, these two approaches are used to analyze and identify indicators that are key in the process of identifying indicators that can be used in business development by Indonesian companies in order to expand into the Russian market. In general, the analysis procedures mechanism in this research is shown in **Figure 3.3** below.

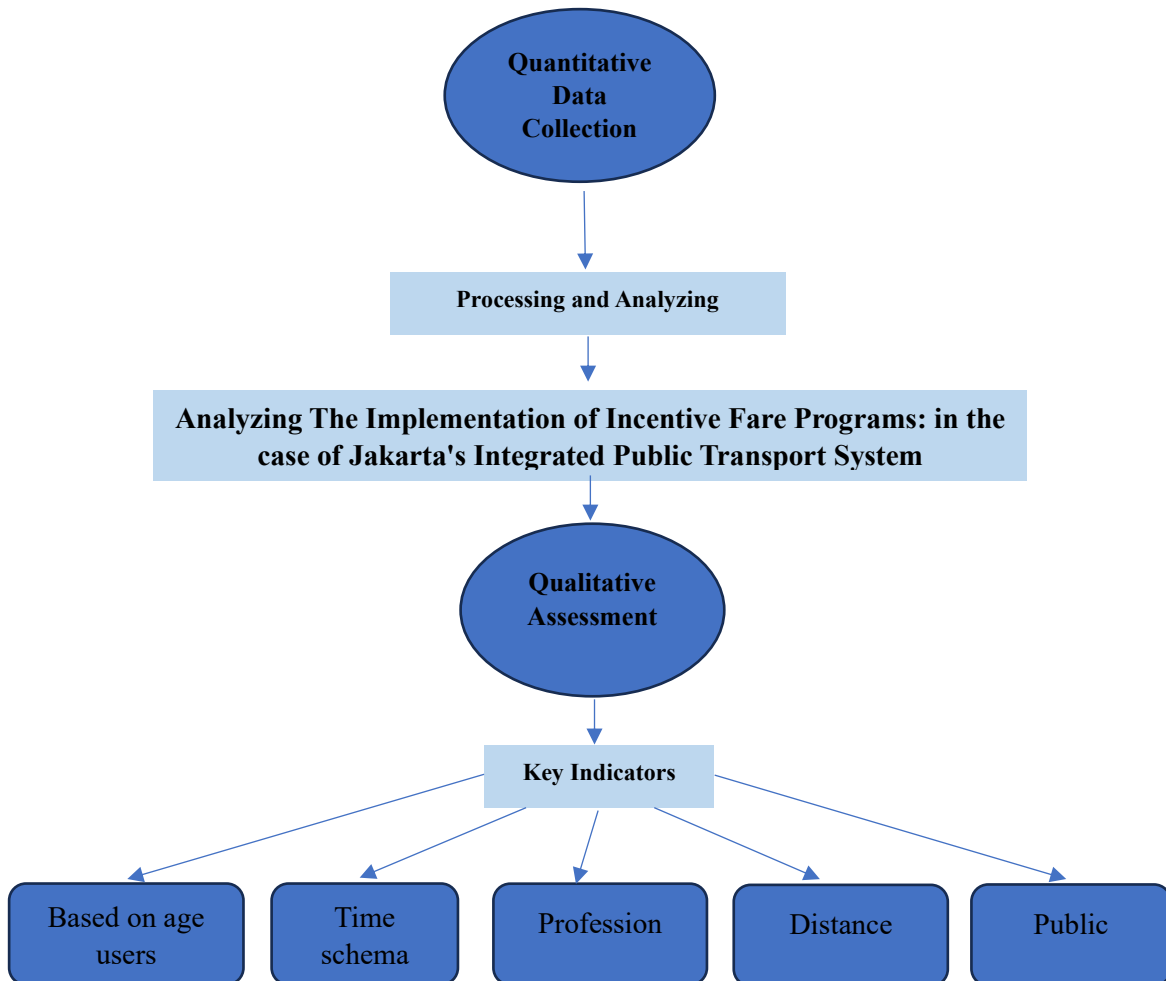


Figure 3.3 Analysis procedures of the research

The analysis procedure is carried out by placing quantitative data from the sampling results. This sampling was conducted using a purposive sampling approach with the object of public vehicle users in Jakarta as many as 180 respondents who were considered to represent the condition of the population object of this study. Then data processing is carried out either graphically or tabulated to obtain trends in the phenomenon of incentive and payment services that exist in public transportation services in Jakarta. Then the results of statistical data processing from the questionnaire results are then analyzed qualitatively to build parameters related to the scheme for preparing public transportation payment incentives by referring to the condition of the transportation network, the demographic structure of Jakarta, and referring to the best practices

carried out on transportation services in Moscow City so as to produce thematic payment incentives that are in accordance with the needs and characteristics of the Jakarta city.

Chapter 4 Result and Discussion

The provided results depict the distribution of various independent variables within a dataset. The dataset contains 180 observations and 33 variables. The independent variables include gender, age, occupation, residency and frequency of use. The gender variable shows a slight majority of females (61.1%) compared to males (38.9%). The age distribution reveals a significant concentration in the 35-59 age group (61.1%), followed by the 25-34 age group (17.2%). The occupation data highlights a diverse workforce with a majority of employees (41.1%), followed by housewives (14.4%). The occupation variable presents a more detailed breakdown of occupation, indicating a significant number of employees, followed by entrepreneurs, housewives, and students. The demographical variable indicates a higher percentage of respondents living in Jakarta (60%) compared to those who do not (40%). The frequency of use is still dominated by the group of 3/Sometimes (32.8%), followed by the group of 5/Every time (23.9%) (**Figure 4.1**).

```
df.Questionnaire
  33 Variables      180 Observations
-----
Gender
  n missing distinct
 180      0         2

Value      Female  Male
Frequency   110    70
Proportion 0.611  0.389
-----
Age
  n missing distinct
 180      0         5

Value      <17 18-24 25-34 35-59 60>
Frequency    5    24    31   110    10
Proportion 0.028 0.133 0.172 0.611 0.056
-----
WhatsYourJob
  n missing distinct
 180      0         9

Value      Army/Police  Doctor  Employee  entrepreneur  Housewife  job seekers  Lawyer
Frequency      1         5       74         34         26         1         1
Proportion      0.006     0.028     0.411     0.189     0.144     0.006     0.006

Value      pensionary  Student
Frequency    13         25
Proportion  0.072     0.139
-----
DoYouLiveInJakarta
  n missing distinct
 180      0         2

Value      No Yes
Frequency   72 108
Proportion 0.4 0.6
-----
frequency of use
  n missing distinct  Info  Mean  Gmd
 180      0         5   0.936 3.406 1.296

Value      1 2 3 4 5
Frequency   7 35 59 36 43
Proportion 0.039 0.194 0.328 0.200 0.239
```

Figure 4.1 Independent Variables from dataset

4.1. Public Mass Transportation in Jakarta

Public mass transportation plays a crucial role in addressing the transportation challenges faced by the rapidly growing city of Jakarta. With a population of over 10 million people and counting, Jakarta is in dire need of an efficient and sustainable public transportation system. To address the transportation challenges in Jakarta, the government has made significant investments in public mass transportation infrastructure. The city has a well-developed bus rapid transit system, which provides a reliable and affordable mode of transportation for millions of Jakarta residents. In addition to the BRT system, Jakarta also has an extensive commuter rail network that connects the city with its satellite towns and suburbs. However, despite these efforts, there are still challenges that need to be addressed in order to fully optimize the public mass transportation system in Jakarta.

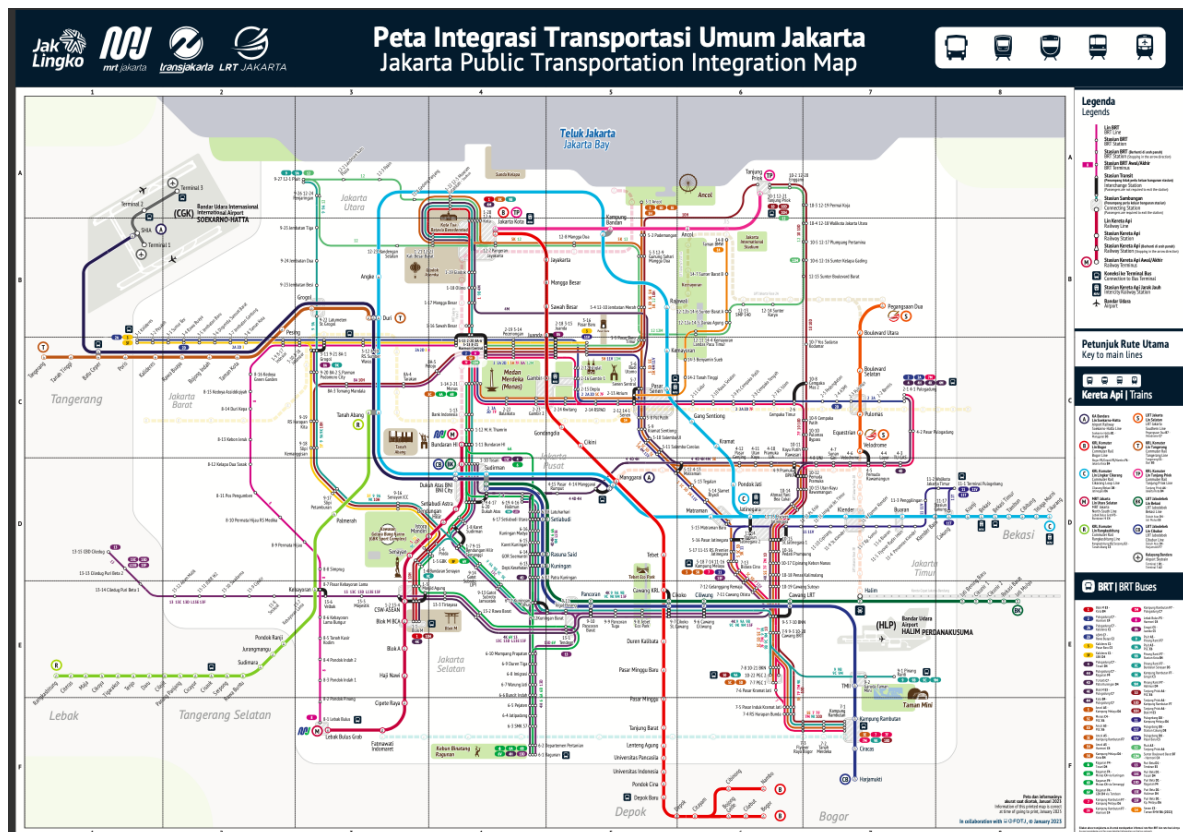


Figure 4.2 Map of Integration of Public Transportation in Jakarta

Furthermore, the city is currently developing the Jakarta MRT and LRT systems to provide additional options for commuters. These new rail systems are expected to significantly alleviate

the traffic congestion and reduce the city's carbon footprint by encouraging more people to use public transportation (Thaveewatanaseth & Limjirakan, 2018). To ensure the success of public mass transportation in Jakarta, it is essential to address several key areas. Some key areas that need to be addressed in order to fully optimize public mass transportation in Jakarta include: By integrating multiple modes of public transportation, such as buses, trains, and the upcoming MRT and LRT systems, Jakarta's public mass transportation system (Hörcher & Tirachini, 2021).

The integration of these mass transportation systems aims to provide Jakarta's residents with efficient and sustainable transportation options, ultimately improving the quality of life for its citizens. mass transportation system will be more seamless and convenient for the residents. The results of the identification of the condition of public transport services in the city of Jakarta menu show that the condition of the public transport network system infrastructure shows the integration process that is built with each other. However, this is not seen from the management of public transport service management. **Table 4.1** below describes in detail the types of public transport managed in Jakarta.

Table 4.1 Details of Public Transportation in Jakarta

No	Type	Company	Authority Management
1	Transjakarta	PT. Jaklingko	Jakarta Government
2	LRT Jakarta	PT. Jaklingko	Jakarta Government
3	MRT Jakarta	PT. Jaklingko	Jakarta Government
4	Mikrolet	PT. Jaklingko	Jakarta Government
5	KRL	PT. KAI	Central Government
6	Kereta Api Bandara	PT. KAI	Central Government
7	Damri	Damri	Central Government
8	Angkutan Penumpang	Swasta	Private Company

Source: Data processing results (2024)

It should be noted that there are differences in the management of public transportation services in Jakarta. The public transportation system in Jakarta consists of several modes that are built in providing services. Jaklingko services specifically serve public transportation that is only owned by the Jakarta Government such as MRT, LRT, Transjakarta, and mini public transportation services which are the authority of governance by the Jakarta Government, while on infrastructure such as KRL, airport trains are the authority of the Central Government which is directly managed

by PT KAI. This difference in management is a big difference in management and governance that is built to have their respective authorities for asset ownership and transportation services.



Figure 4.3 Multimodal Public Transportation in Jakarta

This condition is a big challenge in the process of efforts to integrate services on public transportation. This is inseparable from the fact that transportation governance in Jakarta has a great importance in efforts to improve public services in Jakarta. Jakarta's role as the center of economic activity has a direct impact on improving public transportation services in Jakarta because most transportation users are workers who carry out shuttle activities working in Jakarta so that the existence of public transportation services in Jakarta is very important because it aims

to provide services not only to people who have domicile data in Jakarta but also provide services to people who are domiciled outside Jakarta but have activities and jobs in Jakarta. **Figure 4.4**

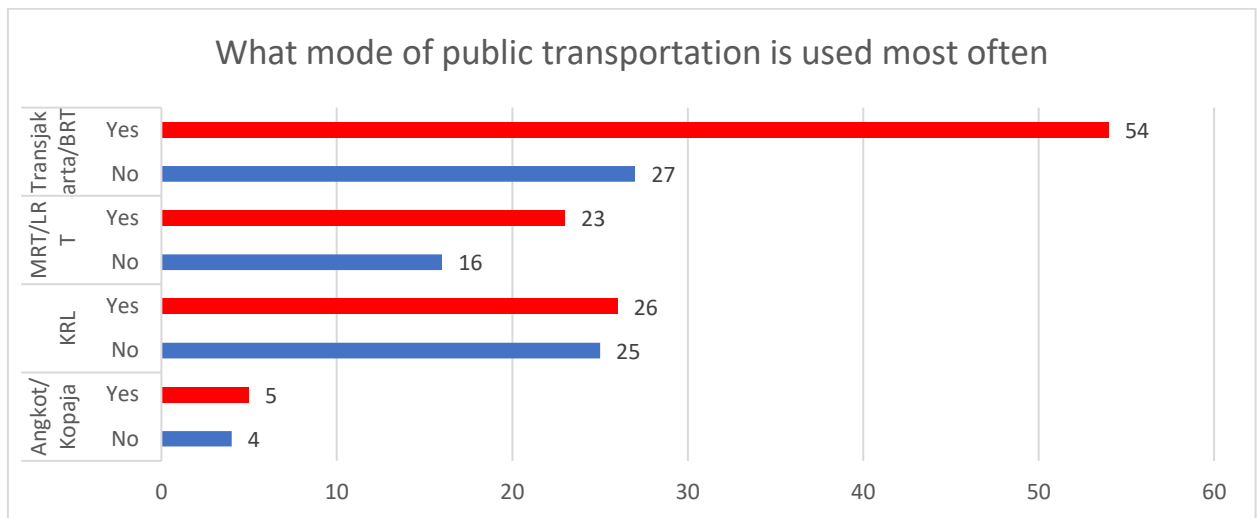


Figure 4.4 The Most frequent public transport modes used by respondents who live in Jakarta and those who do not

The use of public transportation services in Jakarta basically provides a large service and coverage in Jakarta and several agglomeration areas. The coverage of public transportation services in Jakarta has a relatively large area in providing services on a regional basis, the potential for the development of integrated public transportation services in Jakarta can provide great value in the process of implementing integration with each other. So that in the perspective of integrated mechanism infrastructure services both in terms of transportation networks and connectivity between areas located in agglomeration areas in Jakarta are well connected.

The condition of the connectivity of public transportation systems and networks in Jakarta and several agglomeration areas that have been built and well integrated, is one of the supporters in developing a transportation system to spur economic growth by making efficiency in public transportation services in Jakarta. However, in terms of payment system integration, each transportation service has its own payment system. In the case of public transportation managed by the Jakarta Government through PT Jaklingko, they build their own transportation service development system as part of the payment, while on public transportation managed by PT KAI with electric railways, and airport trains. These services have their own payment system development. Vice versa on public transportation services managed by Damri and private companies some payments are still made manually using cash and some are starting to accept electronic payments.

This condition causes public transportation services in Jakarta in terms of payment system governance to be very inefficient because too many payment instruments are issued (Forino &

Putranto, 2023). The integration process of the payment incentive system is inefficient even though the infrastructure conditions are well integrated, improvements need to be made in producing an efficient and fast payment incentive system mechanism in providing services to the use of public transportation in Jakarta. The development of an integrated transportation network system but the payment mechanism and the development of incentives are still not well developed and optimal. This has an impact on inefficient conditions in providing services in the provision of public transportation in Jakarta.

4.2. Demography Structure of Jakarta Province for Scheme Incentive Payment

Identification of the demographic structure of the population in Jakarta is also needed to provide an estimate of the number of residents in Jakarta so that in planning the development of incentive mechanisms can be applied. Information on the condition of the demographic structure is needed to provide a general description of the condition of the population in Jakarta. This is aimed at improving and providing public transportation services in Jakarta. This is because Jaklingko in its governance is under the authority of the company operated by the Regional Government. This is an obligation for the Jakarta Government to provide protection and social services in the use of transportation services. **Figure 4.6** below shows the condition of the demographic structure in Jakarta.

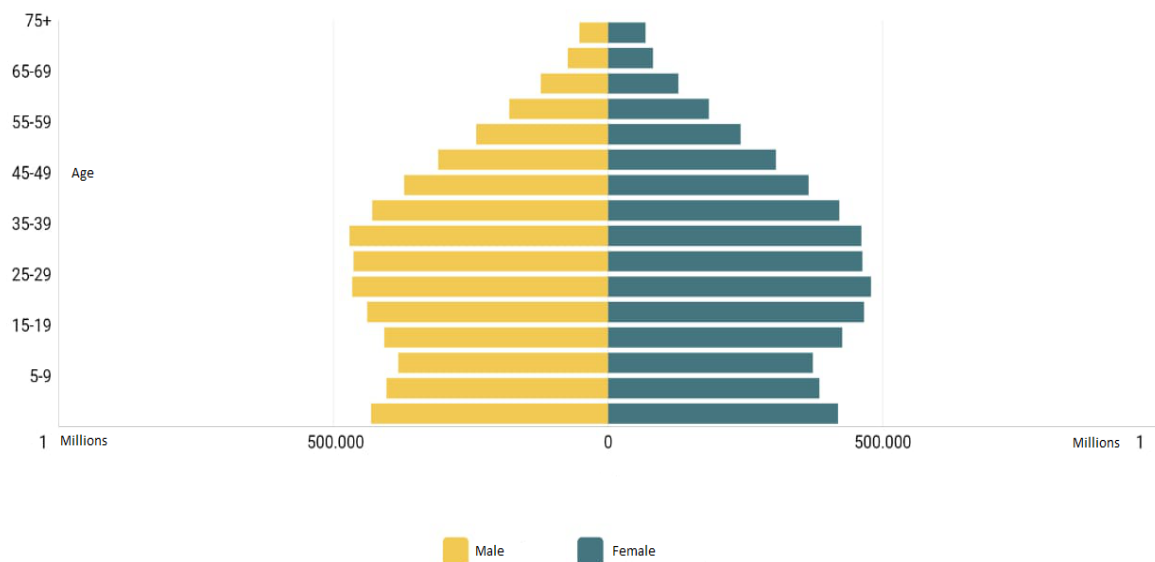


Figure 4.6 Demography Pyramids of Jakarta (Source: BPS, 2020)

Analysis of the demographic conditions in Jakarta is very important in principle. It needs to be understood that PT Jaklingko is a regional company owned by the Jakarta Government and as a representation in providing services for the use of public transportation for people who have domicile data in Jakarta as a service program and social security provided by the Jakarta Government so that the condition of the demographic structure in Jakarta needs to be analyzed because it is related to the budget allocation for social guarantees and services that must be issued by the Jakarta Government to PT Jaklingko.

In general, the Jakarta Government has a full obligation to provide public transportation services for people with domicile in Jakarta in the school-age population and retirement community groups. The results of demographic conditions show that the population of Jakarta is proportionally dominated by people of productive age who drive economic activities in Jakarta. As for the non-productive age group, namely at school age which is in the range of less than 20 years) or retirement age which is more than 60 years old, the results of the study show that the population in both parameters is much lower than the productive age population. This will have an impact on the allocation that will be given or paid by the Jakarta Government to PT Jaklingko as a subsidy for Jakarta residents who are in that age group. In addition, the provision is carried out with groups of people with low income as part of the social protection and services provided by the Jakarta Government. This condition is in line with the survey data shown in **Figure 4.7** below on the age groups that need to be given the implementation of a special payment scheme for Jaklingko transportation system services.

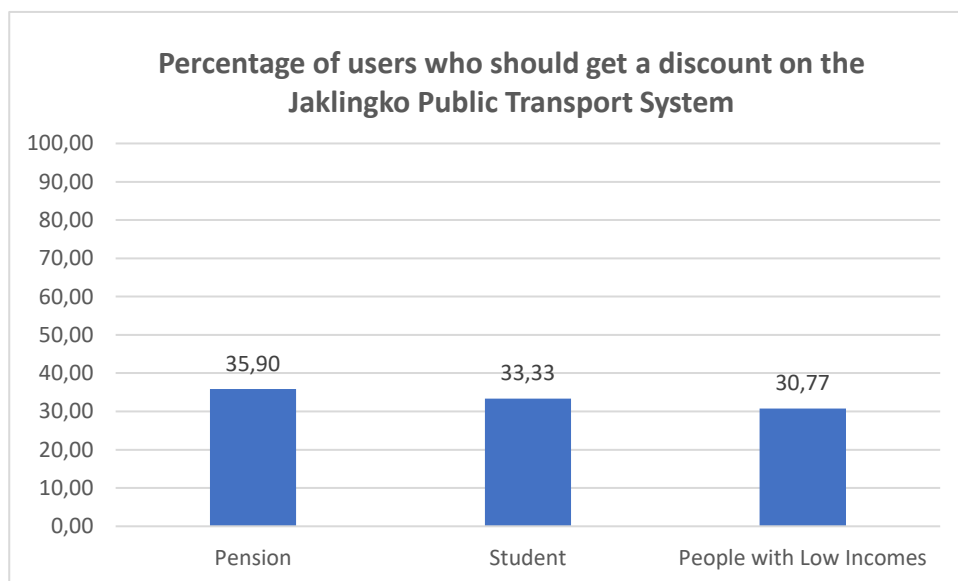


Figure 4.7 Percentage of users who should get a discount on the Jaklingko Public Transport System

The results of the analysis show that these age groups need to apply special schemes in the use of public transportation. This is in line with the fact that in the policy process of providing incentive

services, these age groups need to apply special incentive schemes because these age groups are population groups that are not included in the productive working age so that incentives need to be applied (Paulley *et al*, 2006).

Providing incentive services on public transportation for people who live in Jakarta is one of the obligations that must be carried out by the Jakarta Government in providing social security for public transportation services. **Figure 4.8** shows the incentive scheme carried out by the Jakarta Government for certain groups of people who live and use public facility services in Jakarta.

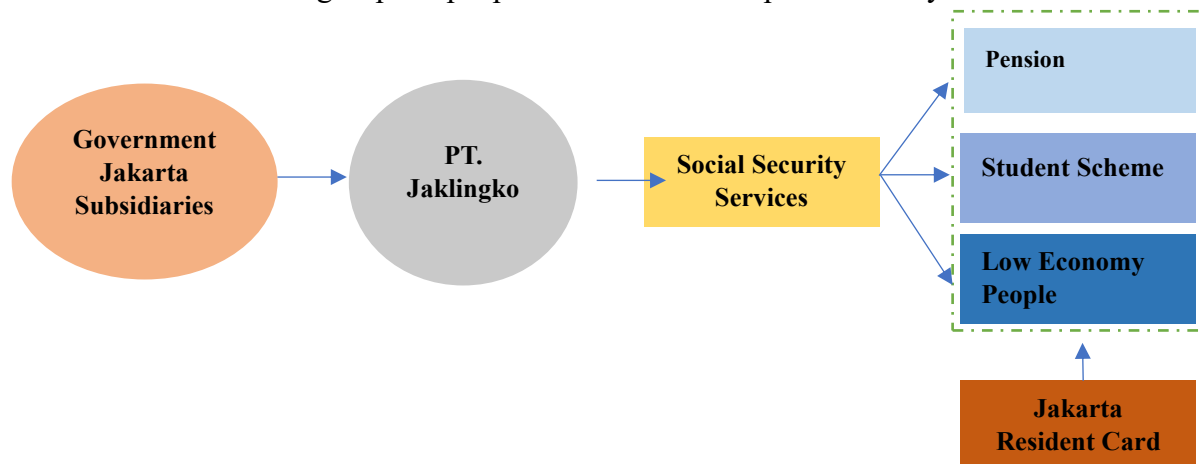


Figure 4.8 Scheme Development of Incentives for Jakarta Residents

The preparation of this payment incentive scheme was carried out by emphasizing the community of special resident card holders who live in Jakarta. This is a policy that must be carried out by the Jakarta Government through subsidy payments to PT Jaklingko in providing public transportation services to certain age groups in accordance with the criteria listed in the basic criteria or requirements for people with certain groups who have priority in providing social protection and security through the provision of incentives on public transportation services managed by PT Jaklingko. This incentive scheme only applies specifically to the people of Jakarta as part of the Jakarta government program that provides protection and social security to certain groups that aim to reduce the burden of expenses or costs on transportation services because they are in the non-productive age phase and not included in the working age. In other words, the development of this incentive scheme focuses on certain groups who have retired (non-productive age), then on groups of students who have not entered the labor force age and entered the productive group sector. As well as for low-income people who aim to provide security and social justice to the people in Jakarta.

4.3 Design Current State Fares of Jaklingko Program

JakLingko is a transportation program in Jakarta with the goal of integrating routes and payment methods. Currently, the JakLingko program lacks incentives for tariff payment, which hinders revenue generation for the system and discourages commuters from using public transport. To address these challenges, it is crucial to design a priority strategy that focuses on increasing local revenue through public transportation taxes. This strategy should involve improving the quality and choice of public transport, addressing capacity issues, reducing traffic congestion, and allocating sufficient funds for vehicle renewal and repair. Additionally, implementing a financial incentive program can play a significant role in motivating commuters to pay their tariffs and use public transport. This can be achieved by offering incentives such as discounted fares, loyalty programs, and rewards for regular and on-time payment of tariffs. This is important as financial incentive programs have shown positive results in improving productivity in the transit industry.

To further bolster the current state fares of the JakLingko program, it is imperative to delve into the specifics of the financial incentive program. One potential approach could be the integration of a cashless payment system that rewards users for consistent and timely payment of fares. This could be facilitated through the creation of a loyalty points system, where frequent and on-time payments earn passengers points that can be redeemed for discounts on future fares or other rewards.

Incentive service payments in the Jaklingko transportation service system have basically been prepared. This analysis is carried out as part of the development stage of the scheme to be prepared by looking at the incentive development policies that have been developed previously (Forino & Putranto, 2023). This is necessary to see to what extent the incentive services that have been built have a good impact on improving public transportation services managed by PT Jaklingko while still paying attention to the aspects of profit obtained from PT Jaklingko itself.

The results of the analysis of the conditions of payment incentives that apply to Jaklingko public transportation system services show that the development of public transportation services in Jakarta related to the development of payment systems and incentives develops on its own and has not paid attention to the parameters of the criteria that are designated according to capacity, age group, type of worker, and certain parameters that are considered relevant. In the Jaklingko payment system, tariff determination is based on usage and mobility time from mode to mode. This tariff determination phase is considered too complicated to be understood by the public and in general the tariff preparation developed applies in general. Basically, this is considered efficient, but in terms of redistribution policies in accordance with thematic characteristics, it does not

represent and provide protection to community components according to the needs and characteristics of the parameters developed. This is in the context of developing a payment system that provides representation for each need and classification of the parameters set.

In terms of products, PT Jaklingko has and develops its own service card products for transportation use. This incentive can only apply to the use of Jaklingko transportation but cannot be used on other transportation vehicles in Jakarta. Then several electronic payment systems issued by several banks have also collaborated with Jaklingko in terms of payment systems for public transportation services owned by Jaklingko transportation services. In the development of the price applies the same as the payment system available on Jaklingko, so that the tendency of the products issued by Jaklingko to be ineffective and attracted by other users because whatever payment system is used uses the same price without any special adjustments to either the products owned by Jaklingko or the parties that collaborate with Jaklingko only in payment. **Figure 4.9** below shows a graph of payment instruments used in the use of public transportation in Jakarta.

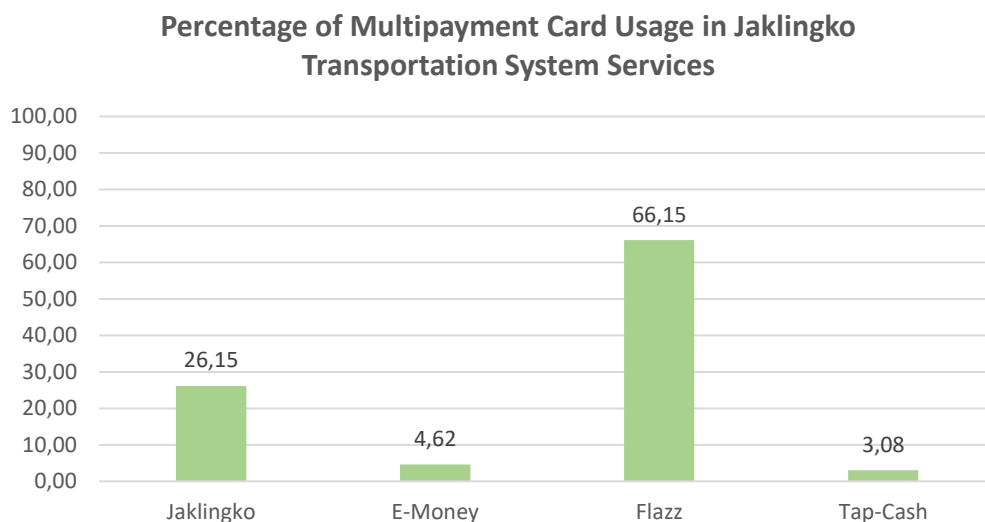


Figure 4.9 Percentage of Multipayment Card Usage in Jaklingko Transportation System Services

The results of the analysis show that Jaklingko transportation service payments are still in the group of users who are at a percentage of 26.15% while the most users in payment are Flazz payment cards issued by BCA Bank as many as 66.15% of respondents who filled out the questionnaire. The lack of users on card products issued by Jaklingko is basically the lack and limitation of promotions and special price offers offered on the use of cards, causing the use of Jaklingko cards to not be used too much. Meanwhile, the use of other cards is generally integrated with the services of the bank that issued the card so that the card top-up process can be done quickly. In addition, the discounts offered by banks also cause users to be more likely to use cards issued by banks than Jaklingko cards.



Figure 4.10 Multipayment Card Usage in Jaklingko Transportation System Services

Basically, payments that are charged the same fee and then limitations in providing promos on special cards issued by Jaklingko cause the tendency of users to prefer to use other cards because of promos and are integrated with the banking system owned by the users themselves. Whereas on the Jaklingko card, the issuing bank is a regional bank so that in terms of developing a payment system it tends to be limited in terms of the card charging process. In addition, the cards issued by each bank in payment are also not integrated with each other. This causes vehicle users to have many cards in use because they are not integrated with each other.

In addition, the limitations in providing promo and special services owned by Jaklingko further cause users to be more likely to use other cards compared to cards issued by Jaklingko. This is one of the reasons why payments issued by Jaklingko are less popular and have a relatively smaller percentage of users today. The development and preparation of promos in certain conditions is needed as part of a business strategy and at the same time increasing consumer users of services owned by Jaklingko.

In order to effectively design the current state fares of the JakLingko program, it is crucial to identify and understand the target market for this transportation program. Conducting comprehensive market research is essential to gather insights into the demographics, preferences, and commuting behaviors of the potential users.

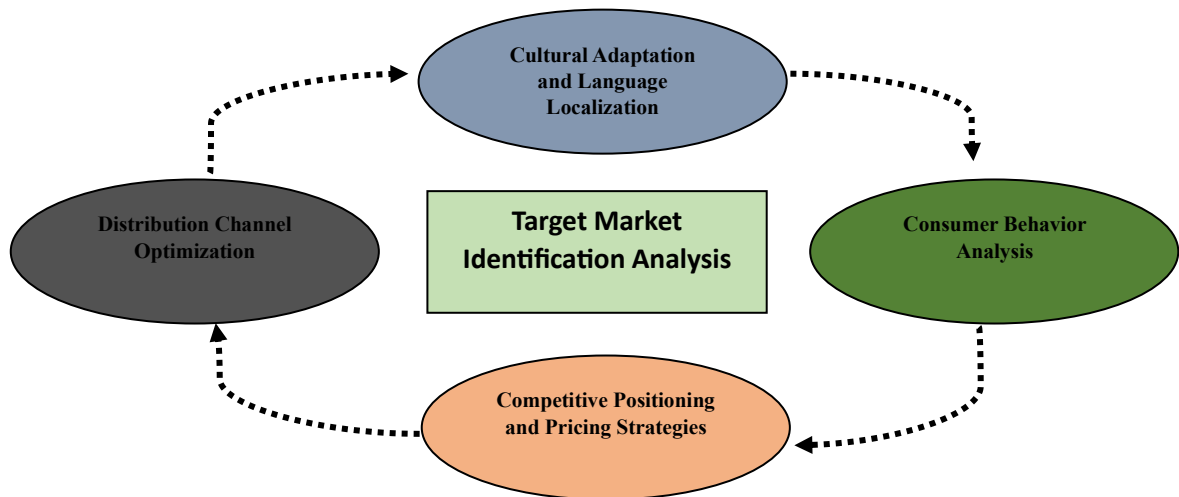


Figure 4.11 Target Market Identification Service

In addition, the limitations in providing promo and special services owned by Jaklingko further cause users to be more likely to use other cards compared to cards issued by Jaklingko. This is one of the reasons why payments issued by Jaklingko are less popular and have a relatively smaller percentage of users today. The development and preparation of promos in certain conditions is needed as part of a business strategy and at the same time increasing consumer users of services owned by Jaklingko. In order to effectively design the current state fares of the JakLingko program, it is crucial to identify and understand the target market for this transportation program. Conducting comprehensive market research is essential to gather insights into the demographics, preferences, and commuting behaviors of the potential users.

4.4 Study Fare Incentives in Moscow Incentives Payment Structure

Analyzing the Fare Incentives of the Moscow public transportation system can provide valuable insights for designing the current state fares of the JakLingko program. The Moscow public transportation system offers various fare incentives to encourage the use of public transport and increase ridership. These fare incentives include discounted fares for certain groups such as students, seniors, and people with disabilities. Additionally, they offer time-based passes and integrated ticketing systems that allow passengers to use public transportation without any time and distance limitations in one trip. Taking inspiration from Moscow's fare incentives, the JakLingko program can explore implementing similar strategies to attract and retain commuters. One possible way to design the current state fares of the JakLingko program is to introduce a tiered pricing structure based on distance traveled. This approach would not only ensure fairness in fare

calculation but also incentivize longer trips on public transport, thereby increasing the overall ridership.

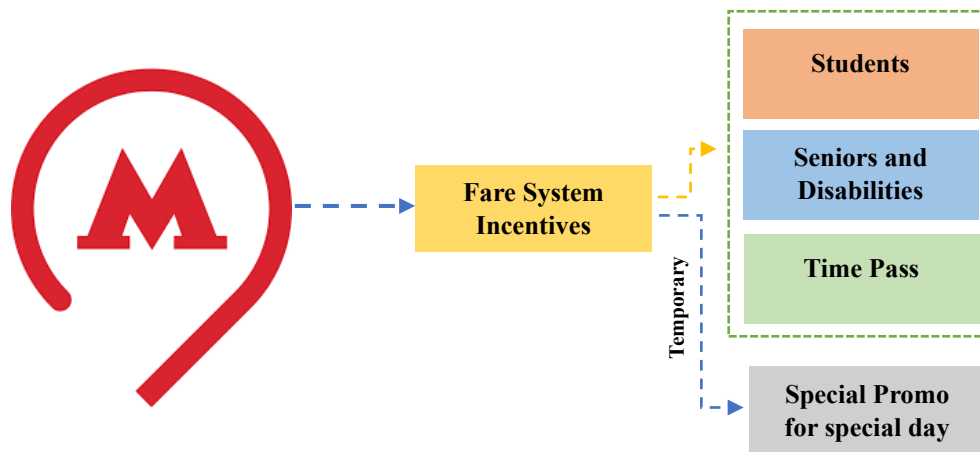


Figure 4.12 Moscow Metro Incentives Payment Scheme

Moreover, studying the fare incentives in Moscow can also provide valuable insights into the implementation of cashless payment systems and loyalty programs. Understanding how Moscow's public transportation system utilizes these strategies to reward and incentivize commuters can serve as a blueprint for the JakLingko program in designing its financial incentive program. It is important to conduct a detailed analysis of the payment structure in Moscow, including the integration of modern payment technologies and the effectiveness of loyalty programs in promoting regular and on-time payment of tariffs. By studying the success factors and challenges faced by the fare incentives in Moscow, the JakLingko program can refine its own approach to ensure maximum impact and effectiveness.

The development of the existing public transport system in Moscow is gradually progressing and new stations are being built to cover a wider and larger range of service needs. This development is also supported by other infrastructure such as an expanded bus network that is increasingly integrated with each other. This gives people a wide range of options for using the transportation services available in Moscow City. This investment in public transportation infrastructure services is carried out to meet the mobility needs of the community towards the use of transportation. In addition, the rapid development of Moscow City also has the potential to cause congestion if the provision of public transportation services is not carried out to meet the needs of the community so that the role of Moscow City transportation services has a function in reducing congestion by encouraging people to switch to public transportation services.



Figure 4.13 Moscow Metro Map

In addition, the JakLingko program can explore introducing time-based passes and integrated ticketing systems to facilitate seamless transfers between different modes of public transport without imposing additional charges. This can significantly enhance the convenience and affordability of using public transportation, thereby incentivizing more individuals to use this mode of travel. Furthermore, the introduction of a tiered pricing structure based on distance traveled can be a strategic approach to ensure fairness in fare calculation. By incentivizing longer trips on public transport, the program can effectively increase overall ridership and promote the use of public transportation for various commuting needs. Another aspect to consider is the implementation of cashless payment systems and loyalty programs. Modernizing payment technologies and incentivizing regular and on-time payment of tariffs can streamline the overall payment process and enhance the user experience.

To gain a deeper understanding of the target market and their commuting behaviors, conducting comprehensive market research and surveys is essential. By segmenting the market based on factors such as age, income level, occupation, and residential area, the program can tailor fare incentives and payment methods to better meet the diverse needs of the target demographic. Analyzing commuter patterns and travel behavior within Jakarta will provide valuable information for targeting specific groups of commuters and identifying key areas where the JakLingko program can have the most impact.

Additionally, gathering feedback from current public transport users and potential commuters through surveys can provide valuable insights into their satisfaction levels, pain points, and expectations regarding fares and payment methods. This direct feedback will be instrumental in shaping the design of the fare structure and incentive programs to better resonate with the target market. By thoroughly understanding the needs and preferences of the local commuters, the JakLingko program can develop tailored strategies to drive increased usage of public transportation and ultimately boost local revenue.

Exploring the social and cultural context in which Moscow's fare incentives operate can provide a nuanced understanding of how these programs align with the needs and behaviors of commuters. This holistic approach can guide the JakLingko program in tailoring its fare incentives to resonate with the local community and create a seamless and rewarding public transportation experience. Overall, drawing insights from the fare incentives in Moscow will enrich the design of the current state fares of the JakLingko program, offering a deeper understanding of effective strategies to incentivize public transport usage and enhance the overall commuting experience.

4.5 Jakarta's New Design of Incentive Fare Program Model Solution

The preparation of payment incentive schemes for public transportation services managed by PT Jaklingko is carried out by taking into account the integration and universal service system in each multimodal. This integration can be synchronized simultaneously so as to provide efficient and fast services in the provision of public transportation in Jakarta. Challenges in the management and development of existing payment incentives in the existing public transportation system in Jakarta are not integrated. For some service developments it is necessary to make universal arrangements in certain categories so that in the governance of applicable policies it is necessary to build coordination between central government policies and local governments that formulate public incentive schemes in Jakarta. Some services need to be made universal payment systems in certain categories so as to provide convenience in reaching access to the use of public transportation. **Figure 4.14** is an opportunity for parameter categories in the development of a public transportation service system that is considered to be synergized between the Central Government and the Jakarta Government.

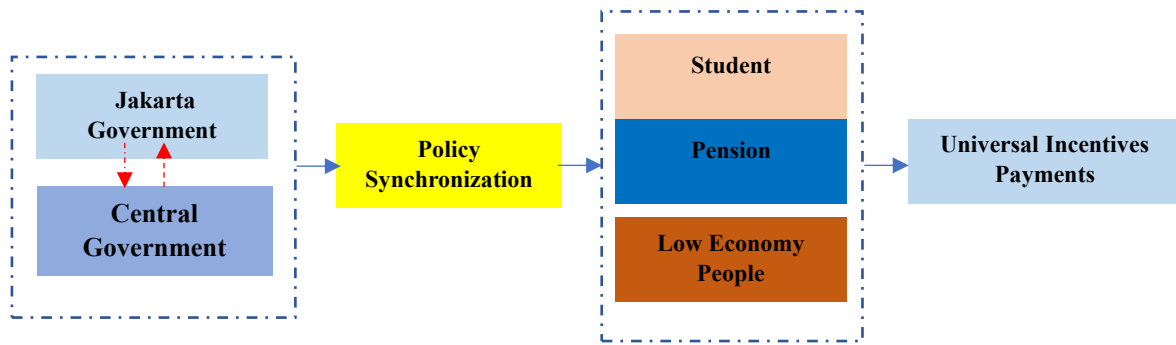


Figure 4.14 Integration of Policy Schemes between Jakarta Government and Central Government in preparing universal incentives payments

Policy synchronization in this category can be carried out by developing and providing tariff incentives that apply universally. This is because policies related to the needs of this category are protected by law so that both the central government and the Jakarta government have an obligation to provide social guarantees and services to this category group. The provision of public transportation services can be carried out by this scheme in providing public transportation services that can be carried out and developed in the community.

Policy synchronization in this category can be carried out by developing and providing tariff incentives that apply universally (Abrate et al, 2009). This is because policies related to the needs of this category are protected by law so that both the central government and the Jakarta government have an obligation to provide social guarantees and services to this category group. The provision of public transportation services can be carried out by this scheme in providing public transportation services that can be carried out and developed in the community.

The use of an incentive system has not been clearly applied to student card users who study at educational institutions in Jakarta. This is the impact of single pricing, causing the provision of services and social security provided by the Jakarta Government to not apply and be developed in the public transportation service scheme managed by PT Jaklingko. In addition, each transportation system outside Jaklingko has its own payment system that is separate from Jaklingko so that it is necessary to synchronize and adjust joint tariffs on multimodal operating in Jakarta in order to provide efficiency and fast service in public transportation services. In addition, the existence of this transportation service has a major impact in mobilizing people to use public transportation compared to private vehicles which have increasingly triggered greater congestion in Jakarta.

Incentive development needs to be done by identifying the conditions of service that are currently operating in the Jaklingko transportation system. The results of data collection from

respondents show the various variable related of service quality of the current Jaklingko transportation mode shown **Table 4.2** below.

Table 4.2 The result of one sample t-test of indicator group of Service and Integration system of public transports modes in Jakarta

Question	Mean	Mean difference	Standard deviation	α	Significant at $\alpha < 0.05$ (Yes/No)
7	4,07	1,072	0,850	0,229	No
8	4,02	1,022	0,894	0,463	No
9	4,11	1,111	0,953	0,140	No
10	3,91	0,911	0,883	0,021	Yes
32	3,83	0,833	1,019	0,055	Yes

Table 4.2 reveals that the largest average value is obtained in indicator number 9, which is 4,02. The mean difference value is 1,111, while the standard deviation value is 0,953. The T-test value is 0.140, indicating that the significance value is above the standard of 0.05. On the other hand, the mean of indicator number 10 showed that 3,91 with a mean difference of 0,911 and a standard deviation of 0,883. The T-test value indicated a result of 0,021, indicating that the significance value was below the standard of 0.05. It means that there is a significant difference in the perception of public transportation in Jakarta regarding the integration of public transportation services. The question number 10 about the assessment of the current digitalization of the integration system of public transportation services in Jakarta showed a significant difference on ($\alpha < 0.05$), suggesting that the result still not reach the satisfied level with the current digitalization of public transportation. Even though the result of the question number 9 has proven that the ease of access and development of digitalization is highly motivated people to use public transportation services than other aspects of public transportation in Jakarta. This may indicate that digitalization efforts, such as mobile apps, online ticketing systems, are having a positive impact on the public perception of transportation services.

Moreover, the likelihood to recommend Jaklingko transportation services, did also show average value 3,83, with the standard deviation value is 0,833 and the T-test value is 0,055 indicating that significance value was below than 0.05. This suggests that there is statistically significant difference in public perception regarding this aspect of public transportation.

It remaining that the quality of transportation services in the case of city of Jakarta is still need more improving, in terms of service conditions and coverage of existing transportation services in Jakarta. This information is one of the important information used in analyzing the condition of transportation services in Jakarta in general. The better quality of service is an indication that more

people are using public transportation services in Jakarta. This needs to be understood because better service conditions, the availability of a real time application system and ticket purchases that can be made online and quickly cause the use of public transportation in Jakarta to increase.

It is important to understand that the better quality service is also supported by more varied intermodal services that are included in the framework of the payment system in Jaklingko. This also makes it easier for people to access public transportation services in Jakarta to relatively small areas. This ease of access has an impact on increasing the frequency of Jaklingko service users in Jakarta. **Figure 4.15** shows the percentage of the quality level of the existing public transportation integration system in Jakarta.

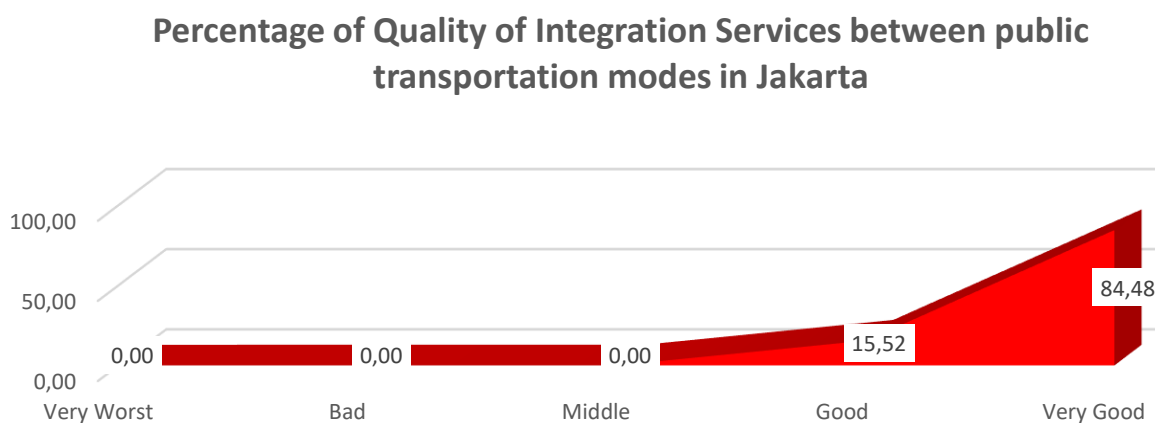


Figure 4.15 Percentage of Quality of Integration Services between public transportation modes in Jakarta (Question 8).

The results of the survey conducted show that the Jaklingko public transportation service integration mechanism shows very good quality in the availability of services provided. This shows that integration services from one public transportation to other public transportation can be reached by the community. The availability of improved access is an indication that in the process of implementing the Jaklingko transportation system, the infrastructure conditions are able to build well-integrated multimodal.

In addition to infrastructure integration conditions, analysis of the Jaklingko transportation service system needs to pay attention to aspects of technological conditions in presenting information about detailed schedules and details of travel routes from transportation modes. Integration of digitalization is a priority element that must be identified before analyzing the plan

to develop an incentive payment system for Jaklingko transportation services. In general, the digitization system on transportation services in Jakarta has real time information regarding departure plans. However, this detailed travel route digitization information is not yet available in other navigation systems that can be updated. So that the digitization system related to transportation travel routes built in the Jaklingko service is still limited to certain places. **Figure 4.16** below shows the percentage of the implementation of the Jaklingko transportation service digitization system that has been used today.

The Percentage of Ease of Access and Development Digitalization Technology of Public Transportartion in Jakarta

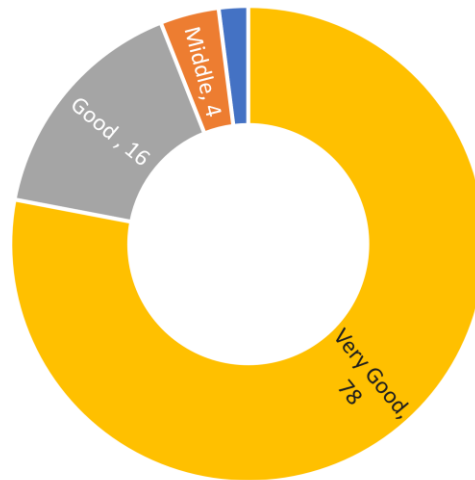


Figure 4.16 Percentage of Quality of ease of digitalization of Public Transport in Jakarta (Question 9)

The results of the percentage of ease of digitization of existing services on public transportation in Jakarta show a very good level in the development of digitization technology developed in the planning of the existing public transportation system in Jakarta. This shows that the development of digitalization services is increasingly showing significant results in line with the integration of physical transportation infrastructure that is built. This condition is in line with the criteria met in carrying out the integration component of public transportation in Jakarta by reviewing the integration infrastructure aspects that build integration of infrastructure and transportation network systems that have an impact on the scope of services reached (Lue et al, 2011). Then in the integration process related to technology services that aim to provide services and accurate information about the condition of travel details and transportation modes that can be monitored regularly (Nourbakhsh & Ouyang, 2012).

The development of incentive payments on transportation services is carried out to classify by emphasizing certain criteria in providing services on the availability of public transportation. The development of incentives for public transportation services aims to build social justice and increase the use of public transportation among certain groups. It aims to create efficiency and sustainability in transportation development and to have an impact on reducing pollution conditions as people switch to using public transportation. The public incentive system developed by Jaklingko is adjusted to various types of transportation. For Transjakarta bus vehicles, tariff adjustments are made at the same price for each route destination used. Then for vehicles such as the Jakarta Mass Rapid Transit (MRT) and Light Rail Transit (LRT), pricing is adjusted to the distance from each station stop, while for other services such as minibuses the price paid applies at the same price. Identification of existing public transportation services in Jakarta needs to be analyzed and adjusted to the conditions of the prices applied to the community can be reached and in accordance with the wishes of the community ideally so that the ability of willingness to pay needs to be identified to what extent the current tariff represents and is in accordance with the ideal price in the community (Hocevar & Novak, 2015). **Table 4.3** below shows a diagram of the level of public satisfaction with the pricing of public transportation services in Jakarta.

Table 4.3 The result of one sample t-test of indicator group of current tariff integration between public transports modes in Jakarta

Question	Mean	Mean difference	Standard deviation	α	Significant at $\alpha < 0.05$ (Yes/No)
14	3,63	0,630	1,065	0,045	Yes
15	3,26	0,260	1,200	0,005	Yes
24	3,64	0,647	1,041	0,026	Yes

Table 4.3 reveals that the largest average value is obtained in indicator number 24, which is 3.64. The mean difference value is 0.647, while the standard deviation value is 1.041. The T-test value is 0.026, indicating that the significance value is below the standard of 0.05. The next question, number 14, yielded an average value of 3.63, with a mean difference of 0.630 and a standard deviation of 1.065. The T-test value indicated a result of 0.045, indicating that the significance value was below the standard of 0.05. Conversely, the lowest mean value is observed in indicator question number 15, which is 3.26 with a mean difference of 0.260 and a standard deviation of 1.200. The t-test value indicates a result of 0.005, indicating that the significance value is below the standard of 0.05.

The results of the analysis can be demonstrated that almost all of the variables included in the various indicators exhibit a significance value of <0.05 . This implies that these variables influence

on the level of approval of the tariff integration policy. This is a sign that the public still thinks that the price of transportation services available in some circles can be affordable in some parties is still considered quite expensive, so basically a mechanism for preparing tariff incentives is needed that provides a clear classification of certain groups that are considered to provide balanced and appropriate prices and criteria and needs. The current tariff application is still too general for certain services, and too expensive for other transportation managed in the JakLingko transportation system (Kohani, 2015). The result of the survey also shows that 90% of the respondents, which dominated by productive ages and with various types of work fields are willing to use public transport more often if they receive incentives from the authority. **Figure 4.17.**

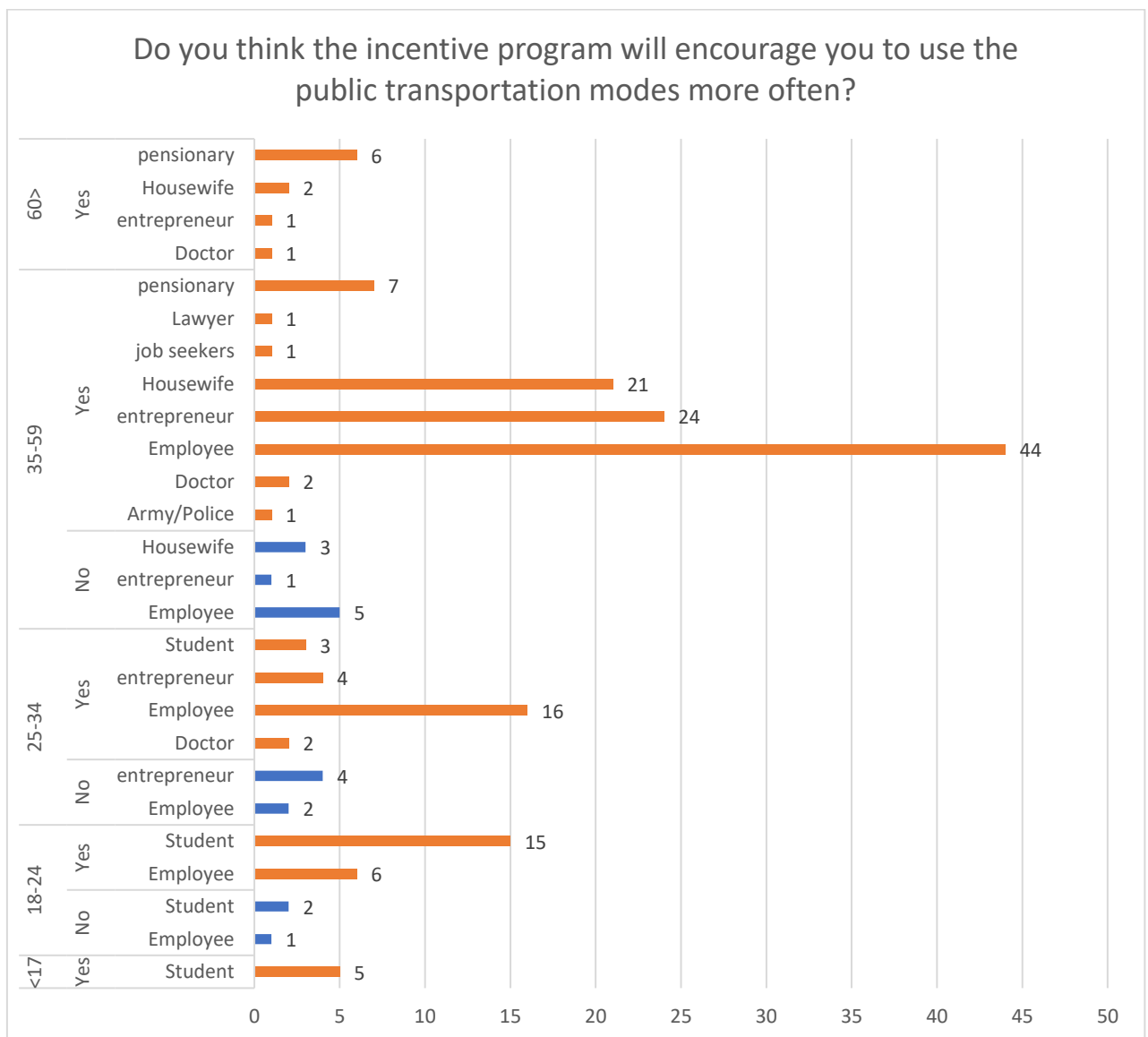


Figure 4.17 The number of respondent who agree/disagree with the incentive program

The preparation of incentives for payment of existing transportation services in Jakarta is basically carried out by considering several parameters and needs that are prioritized in

determining the payment incentive scheme developed so that the development of incentives designed is right on target and in accordance with the characteristics and conditions of the population in Jakarta in general or users outside the domicile of Jakarta so that the implications of the payment system developed are right on target. In addition, the development of the applicable incentive system pays attention to the time travel period targeting both domestic and local tourists who come to Jakarta by offering an incentive payment scheme based on a good time travel period pass. This scheme can be done within 1 day, 3 days, and 7 days through the issuance of a special card with a cheaper price scheme compared to card users on a monthly basis who often travel back and forth to and from Jakarta as a destination due to work.

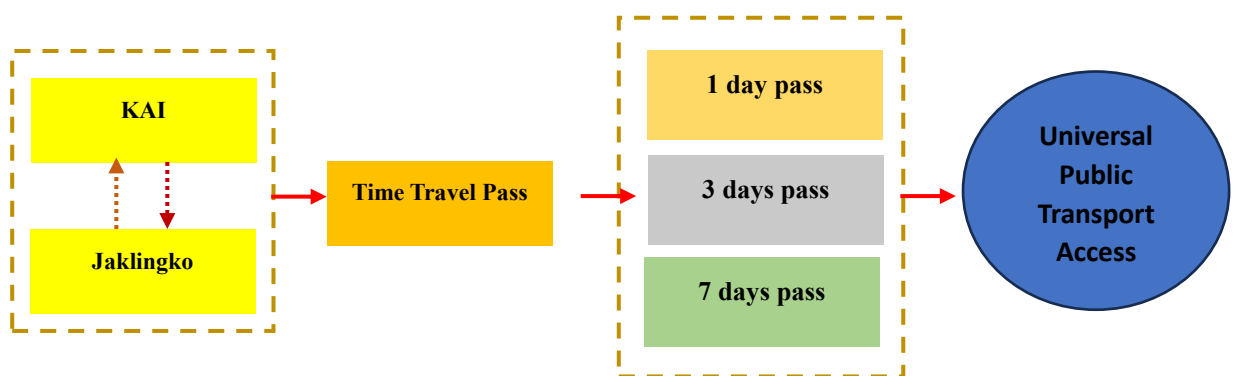


Figure 4.18 Scheme for Implementing Universal Payment Incentives for Public Transportation Services in Jakarta

The development of the time travel pass scheme is for temporary users, meaning that the services provided target users who visit Jakarta in a short period of time for a maximum of 7 days. In addition, this incentive scheme needs to be carried out together with KAI with its commuter train service. This is considering that mobility activities and business activities are not only developing in Jakarta, but also around other areas that are part of the Jakarta agglomeration or Greater Jakarta such as Bekasi, Cikarang, Bogor, and Tangerang so that synchronizing between the two parties is considered to provide goals in order to synchronize and efficiency in public transportation services in Jakarta.

The preparation of incentive payment schemes by looking at work activities and professions needs to be done as part of providing services and guarantees to certain age groups or groups that are targeted in providing public transportation services. For groups, the applicable price is monthly with a certain price according to professional or occupational status. Applicability to groups of students, pensioners, and the economically disadvantaged can have a discount scheme through issuing special Jaklingko or KAI cards that characterize these groups. This goal is to mobilize and

increase professional and student-age groups towards the use of public transportation so as to provide efficiency and reduce the burden on the environment and the use of private vehicles which have an impact on reducing the burden on road infrastructure capabilities because users switch to using public transportation.

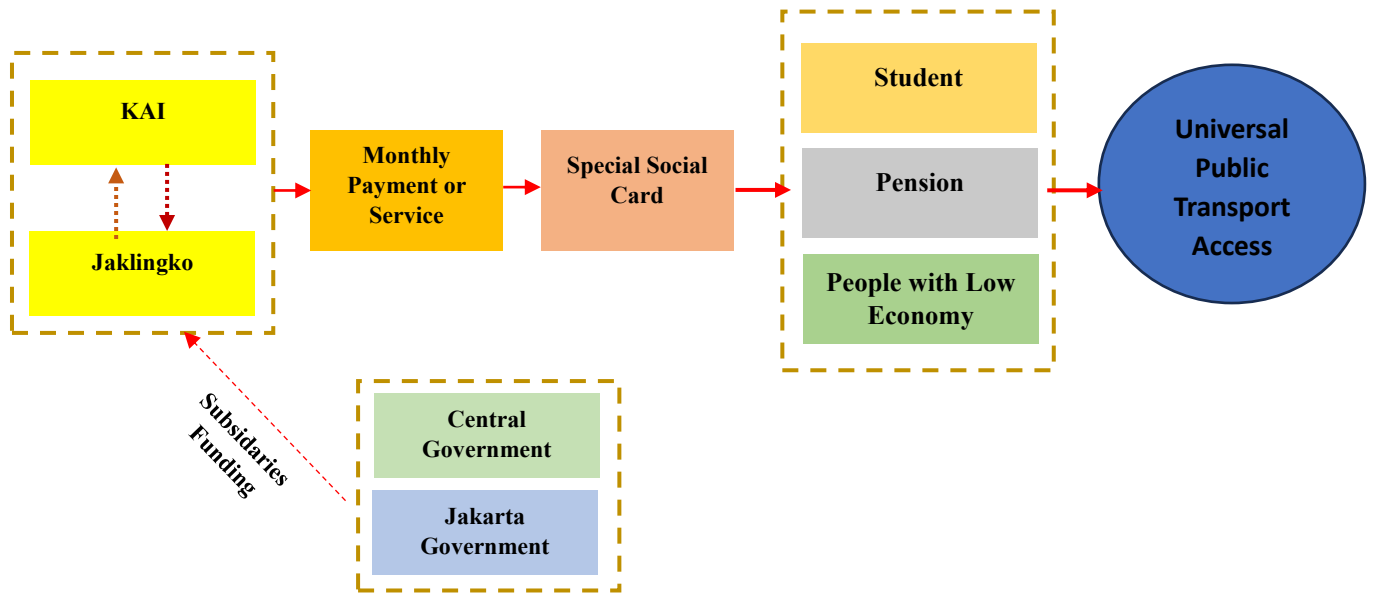


Figure 4.19 Incentive payment scheme according to class classification

The application of this incentive is aimed at certain groups protected by law. In addition, if analyzed further, these groups, especially students and retirees, are unproductive age groups and are no longer included in the productive age group who work so that in the implementation process it is necessary to provide a special mechanism through the provision of special prices for services provided either through Jaklingko or KRL. Then for user groups who are in lower economic conditions, basically public transportation services are universal so that they provide services to all groups, especially to groups with lower economic conditions. This aims to provide equitable access to public transportation services. The scheme for applying fare incentives to these groups is given subsidies by both the Central Government and Jakarta Government to provide transportation access services for users in this group.

Then for the common group, incentives can be provided with a monthly service provision scheme with a special card managed by PT Jaklingko. This service provision does not apply to daily purchases so that the service between daily and monthly purchases will have a slight price difference and the provision of other services on existing transportation vehicles. This scheme was developed to provide coverage of public transportation services to the productive age group or considered able to pay for available public transportation services. This mechanism is not subsidized by the government but is adjusted to the mechanism of agreement between public

transportation service managers in Jakarta to provide affordable prices but groups at productive age are still able to pay for available public transportation services.

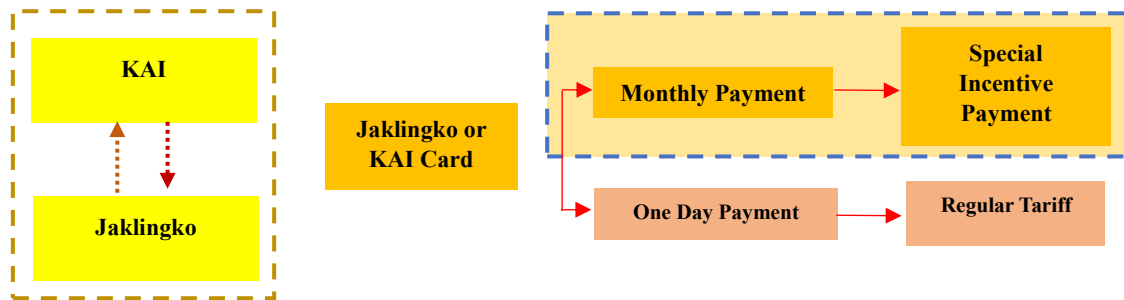


Figure 4.20 Incentive Payment Scheme for General Groups

The provision of incentive schemes to the general public can be emphasized on the use of transportation services on a monthly basis. This encourages the issuance of special incentive schemes that are paid on a monthly basis by calculating the use of public transportation vehicles offered. The provision of this service does not apply to daily purchases because the application of incentives encourages regular use of public transportation in a monthly period. This aims to provide and encourage people to use public transportation regularly and aims to reduce the use of private vehicles to and from Jakarta.

The development of digitalization technology that allows payments to be made digitally through various available payment instruments. This also does not escape the development and mechanism for implementing the incentive scheme offered. Strengthening the role of digitalization is also carried out in providing convenience in various payments that can be made so that they can be made on available transportation services. However, basically it is necessary to apply different prices to cards issued by PT JakLingko This aims to encourage increased use of cards issued from PT JakLingko so that more people use these products. In addition, it needs to be supported by providing services and promotions that aim to maintain the sustainability of consumers as users of public transportation services. Providing prices for cheaper payment services will also cause some users to tend to switch to services issued by JakLingko or other managers who integrate payment systems for the provision of existing public transportation services.

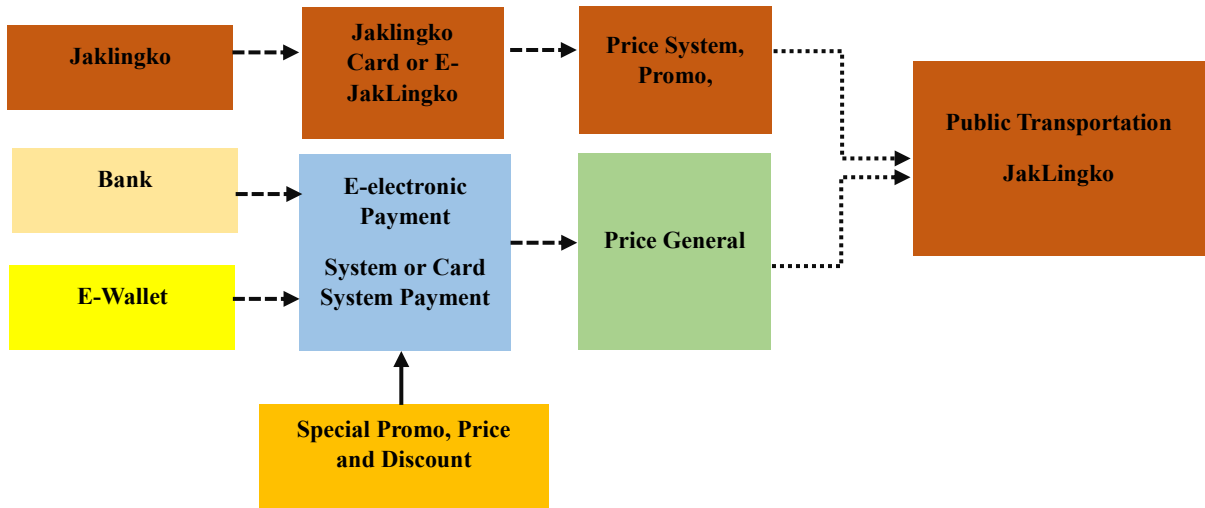


Figure 4.21 Incentive Payment Scheme Criteria for Several Providers

The application of special provisions is emphasized on strengthening JakLingko products. This is due to the transportation service infrastructure facilities owned by JakLingko so that pricing can be carried out in accordance with the mechanism set by JakLingko. In its implementation, the JakLingko system can set a price scheme that is cheaper than the general price by using its products. This is one of the reasons why many users will switch to the service system provided by JakLingko. However, other parties can also apply the same to their products, still paying to JakLingko according to the set price, which can even be slightly more expensive than the payment system using JakLingko. This is one of the incentive enforcement mechanisms that can be applied in the development of the existing transportation service system on JakLingko.

The development of payment mechanisms can also be done by considering multiple uses of the vehicle over a period of time. This scheme also applies in the development of incentive payment services for subsequent stops using the same mode or different modes. This is aimed at providing services and offering prices that are feasible and in accordance with the needs and demands of community mobility towards heavy use of transportation.

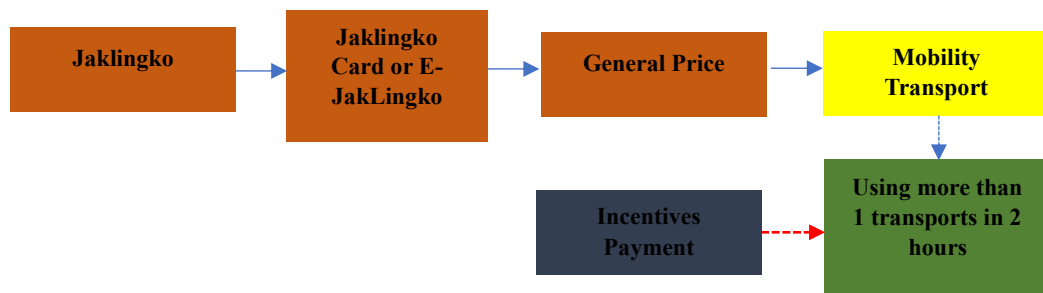


Figure 4.22 Incentive Payment Based on Range Time in Using Multimodal Transports

Providing incentives with this mechanism can be applied in consideration of the high mobility needs for the use of public transportation. Incentivizing payment for transportation services can be done by using this mechanism so that the next use of transportation services has a price reduction with a set time scheme. Generally valid for one to two hours. This mechanism is one of the incentives applied in using the services contained in JakLingko.

In general, the provision of payment incentives aims to provide fair choices and prices in accordance with the criteria and conditions set. Determining the choice of incentive schemes also helps to provide services and choices for the desired public transportation needs in accordance with the time required. The development and preparation of criteria in the need for incentive services aims to provide convenience for service users to the desired transportation service needs of course by building an appropriate and relevant payment incentive mechanism. This is also to provide strengthening for the JakLingko service so that it becomes a service that has large users with the products and offers provided in terms of innovation in the incentive services offered. In general, the incentive mechanism service for the JakLingko service can be developed according to the classification that has been reviewed. The results of the analysis show that the incentive development mechanism that can be applied to the JakLingko service system is shown in **Figure 4.23** below.

The preparation of incentive services in the JakLingko service system is carried out by building several criteria that are considered relevant and several scenarios in the context of integration in the development of an incentive system for JakLingko services. In the service mechanism, subsidies provided by the government are aimed at certain professional and age groups which are considered necessary in providing subsidies as an effort to increase the use of public transportation. Groups that receive this scheme are students, retirees, and those with lower economic conditions through the issuance of special schemes that are needed to provide cheap, quality, and integrated public transportation services so that all levels of society can receive access to these services.

Figure 4.23 Incentives Payment in Using Multimoda Transports PT Jaklingko



Then for the provision of incentives based on time travel passes aims to provide services for users who visit Jakarta within a certain period of time according to their needs. The provision of this scheme is based on a certain period of time by providing price offers that are relevant to the variety of public transportation uses available in the JakLingko service. This scheme is considered relevant for short visits to Jakarta. Service users who are not included in this category can be incentivized by providing a one-month subscription service. This incentive scheme is suitable for productive age user groups who regularly and routinely carry out mobility in Jakarta, besides that there are special incentives for these users regarding the time span in using other modes of transportation managed by JakLingko so that the price adjustment for this scheme is cheaper than the use at the initial price.

Another incentive scheme developed is related to the use of products released by JakLingko by providing special prices outside of the set price. This mechanism encourages the public to switch to using services owned by JakLingko with a series of price offers provided.

Chapter 5 Conclusions and Recommendations

5.1. Conclusion

The conclusions in this study are as follows:

1. The development of payment incentive schemes on the JakLingko public transportation system can be carried out by developing criteria that are considered to provide representation of service users in accordance with certain capacities and parameters.
2. Providing service incentive schemes based on subsidy schemes provided by both the central government and the Jakarta government to users of students, pensioners, and lower economic communities in providing services and coverage of available public transportation services.
3. The JakLingko incentive service can be developed using the time travel pass scenario by building a choice of usage duration and offering a choice of variation packages for the use of JakLingko transportation vehicles offered.
4. Incentive options for the JakLingko service transportation system that can be applied can be carried out for the duration of using the service within a predetermined time, adjustments can be made and prices that are relevant and cheaper than the initial price payment.
5. Incentive schemes systematically build and provide benefits without reducing the quality of service to users by providing innovative, fast, and efficient services and providing incentives that attract new users to use Jaklingko transportation services.

5.2. Recommendations

To ensure the development of an incentive payment system for the JakLingko service can be implemented by paying attention to several recommendations consisting of:

1. The development of payment incentive services needs to pay attention to synergy and coordination on several public transportation services in Jakarta so that the service system built provides benefits and convenience for every transportation service provider in Jakarta.

2. It is necessary to conduct more intensive studies by paying attention to more complex parameters in the process of implementing applicable policies.
3. Digitalization technology support needs to be synergized and synchronized in supporting the development of payment incentives on available public transport services.

5.3. Theoretical Implications

1. Understanding the role of pricing and fares in public transportation, including their impact on demand management, economic and social objectives, and system sustainability.
2. Exploring the potential of marketing and branding strategies to promote incentive fare programs and increase public transportation ridership.
3. Analyzing the effectiveness of financial incentive mechanisms, such as discounted fares, loyalty programs, and rewards, in encouraging commuter behavior and increasing public transportation usage.

5.4. Practical Implications

1. Developing a framework for designing and implementing incentive fare programs in the Jakarta Integrated Transport System (Jaklingko), considering factors such as age, profession, domicile, and frequency of use.
2. Proposing a universal payment incentive scheme that integrates policies between the central government and the DKI Jakarta government to provide social security and services for specific user groups, such as students, pensioners, and low-income individuals.
3. Suggesting the implementation of time-based travel passes and integrated ticketing systems to enhance the convenience and affordability of using public transportation in Jakarta.
4. Exploring the potential of leveraging digital technologies, such as cashless payment systems and loyalty programs, to streamline the payment process and incentivize regular and on-time usage of public transportation.

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