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EVALUATING THE INFLUENCE OF GPS-BASED CAB SERVICE ON TRADITIONAL PUBLIC TRANSPORTATION IN GUWAHATI: A CASE STUDY

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Abstract: The emergence of GPS-based cab services has revolutionized the transportation landscape, providing convenient and on-demand mobility options. This study aims to evaluate the influence of GPS-based cab services on traditional means of public transportation in Guwahati, India. Through a comprehensive case study, we analyze the impact of these services on passenger preferences, ridership patterns, and the overall public transport ecosystem. The findings shed light on the transformative effects of GPS-based cab services and their implications for the future of urban transportation. This study aims to evaluate the influence of GPS-based cab services on traditional public transportation in Guwahati, India. Through a comprehensive case study, we analyze the impact of these services on passenger preferences, ridership patterns, and the overall public transport ecosystem. The findings shed light on the transformative effects of GPS-based cab services and their implications for the future of urban transportation. The results reveal a significant influence of GPS-based cab services on traditional public transportation, with passengers exhibiting a growing preference for these services due to convenience, ease of booking, and perceived reliability. The study highlights the need for adaptive strategies to ensure the coexistence and integration of both systems, leading to enhanced urban transportation experiences.

Keywords: GPS-based cab service; Traditional public transportation; Guwahati; Influence; Comparative analysis; Passenger behavior; Ridership patterns.

INTRODUCTION

Indonesia Public transportation plays a vital role in urban mobility, providing affordable and accessible transportation options for the masses. However, the advent of GPS-based cab services, such as Uber and Ola, has disrupted traditional public transportation systems worldwide. Guwahati, the largest city in Northeast India, has experienced significant changes in its transportation landscape with the introduction of these services. This study aims to evaluate the influence of GPS-based cab services on traditional public transportation in Guwahati, assessing their impact on passenger behavior, ridership patterns, and the overall transportation ecosystem.

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Public transportation serves as a lifeline for urban mobility, providing affordable and accessible transportation options for the masses. However, the emergence of GPS-based cab services has disrupted traditional public transportation systems globally. Guwahati, the largest city in Northeast India, has also witnessed significant changes in its transportation landscape with the introduction of these services. This study aims to evaluate the influence of GPS-based cab services on traditional public transportation in Guwahati, focusing on the impact on passenger behavior, ridership patterns, and the overall transportation ecosystem.

GPS-based cab services, such as Uber and Ola, have revolutionized the way people travel, offering convenient and on-demand mobility options. These services leverage advanced technologies, including Global Positioning System (GPS) and mobile applications, to connect passengers with available drivers. The ease of booking, real-time tracking, and transparent pricing have attracted a growing number of passengers, challenging the dominance of traditional public transportation modes like buses, taxis, and auto-rickshaws.

Understanding the influence of GPS-based cab services on traditional public transportation is essential for policymakers, transport planners, and service providers to adapt to the changing landscape and ensure sustainable urban transportation systems. By evaluating the impact of these services in Guwahati through a comprehensive case study, this research aims to provide valuable insights into the dynamics between GPS-based cab services and traditional public transportation.

The case study involves collecting and analyzing data from passenger surveys, travel logs, and public transport usage statistics. By comparing passenger preferences, satisfaction levels, and mode choices between GPS-based cab services and traditional public transportation, we aim to assess the factors influencing passengers' decisions. The study also examines changes in ridership patterns, with a focus on shifts in mode choice and usage.

Additionally, the study explores the integration and competition dynamics between GPS-based cab services and traditional public transport providers. The regulatory framework, pricing structures, and service quality of both systems are analyzed to understand the challenges and opportunities arising from their coexistence. The findings will provide insights for policymakers and stakeholders to develop strategies that optimize the strengths of both GPS-based cab services and traditional public transportation in Guwahati.

METHODOLOGY

Data Collection:

A comprehensive dataset is collected, comprising passenger surveys, travel logs, and public transport usage data. The surveys capture passenger preferences, satisfaction levels, and factors influencing mode

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choice. Travel logs provide insights into the frequency, duration, and purpose of trips, while public transport data includes ridership statistics and route information.

Comparative Analysis:

The collected data is analyzed to compare the usage patterns and preferences of GPS-based cab services and traditional public transport modes in Guwahati. Key factors such as affordability, convenience, waiting time, and service reliability are evaluated to assess the influence of GPS-based cab services on passenger behavior.

Impact on Ridership:

The study examines the impact of GPS-based cab services on traditional public transportation ridership. Changes in ridership patterns for buses, taxis, and auto-rickshaws are analyzed to identify any shifts in mode choice and usage.

Integration and Competition:

The study explores the integration and competition dynamics between GPS-based cab services and traditional public transport providers. The regulatory framework, pricing structures, and service quality are examined to understand the challenges and opportunities arising from this coexistence.

RESULTS

The findings reveal a significant influence of GPS-based cab services on traditional public transportation in Guwahati. Passengers exhibit a growing preference for cab services due to their convenience, ease of booking, and perceived reliability. The availability of real-time information through GPS technology has transformed the way passengers plan and undertake their journeys. Consequently, there is a noticeable shift in ridership from buses and auto-rickshaws to cab services, particularly for shorter trips and during peak hours.

DISCUSSION

The results indicate that GPS-based cab services have introduced new dynamics into Guwahati's transportation ecosystem. While these services offer convenience and flexibility, they also pose challenges for traditional public transport providers. To remain competitive, traditional providers need to enhance their service quality, improve efficiency, and adopt innovative technologies. Collaboration between GPS-based cab services and public transport authorities can lead to integrated multimodal solutions that optimize the strengths of both systems.

CONCLUSION

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The evaluation of GPS-based cab services' influence on traditional public transportation in Guwahati demonstrates the transformative effects of these services on passenger behavior and ridership patterns. The findings emphasize the need for adaptive strategies to ensure the coexistence and integration of both systems, ultimately enhancing the overall urban transportation experience. This study provides valuable insights for policymakers, transport

planners, and service providers to address the challenges and leverage the opportunities presented by GPS-based cab services in Guwahati and other similar cities.

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