Alternative Fare Policy for Public Bus Transport in Sri Lanka

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Abstract

An efficient, reliable, and cost-effective public transport service plays a vital role in the development of the country's economy in many ways. According to National Transport Statistics, bus transport services contributed about 35% of the daily need for transportation in 2019. An affordable bus fare is an influential factor in attracting more passengers to public bus transportation in Sri Lanka. Simultaneously, the fare policies should be capable enough to optimise the revenue of the transport operators to preserve a reliable service. The Sri Lankan bus transportation service is currently practising the distance-based fare policy. The fare increases are calculated based on the percentage increase in the weighted average of the vehicle operating costs of ten route categories. However, obtaining the weighted average would not reflect the actual scenarios for such different routes. The existing method calculates vehicle operation cost based on twelve cost components such as fuel cost, crew cost, service, and lubricant cost, tires and tubes, air conditioner maintenance and overhaul, repairs, daily overheads, monthly overheads, annual overheads, depreciation, financing, and provision for risk. These cost components have not been revisited for an extended period. In addition, no consideration of the fixed and variable cost aspects in the calculations can result in less accuracy of the vehicle operating costs. The current fare for air-conditioned service is relatively higher than the normal fare. The frequent variations in fuel costs result in changes in operation costs causing frequent fare revisions. Hence, the operators receive criticism from the passengers about the clarity of the fare revisions as well as the fare levels of the air-conditioned service. Also, no clear mechanism is adopted in the current fare structure to identify and accommodate the transfer costs. Thus, this research attempts to establish an alternative bus fare model for operators and passengers to overcome such issues. It is proposed to calculate the operation costs based on the fixed and variable cost aspects, which realistically reflect changes in the variable operating costs of an operator while maintaining the correct fixed costs for the operation. The twelve existing cost components are reviewed and revised. The revised cost components are categorized into administrative costs, operation and maintenance costs, and finance costs. The expected profit margin is separately identified for each cost component to distinguish the profitability of the bus operators. Also, a simplified fare revision mechanism is introduced to calculate the fare revisions during frequent changes in fuel costs, consumer price indexes, wage levels, and bank interest rates depending on the weights of each parameter to the cost components. The bus routes are classified into seven different services, such as urban, suburban, rural, hill country, and long distance, as per the operation costs. The different fare strategies are determined for each service type to maximise the operators' profitability while minimising the fares for passengers and any transfer penalty. Notably, the air-conditioned service is treated as a separate category, further classified into medium-distance, long-distance, and hill country routes based on operational cost variances. This refinement anticipates a significant fare reduction for air-conditioned services compared to the current structure. In conclusion, this research offers a comprehensive and adaptable fare model that not only ensures the economic viability of bus operators but also prioritizes affordability and clarity for passengers.

Keywords: *bus transport, cost optimization, fare policy, bus operation cost, profitability*

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