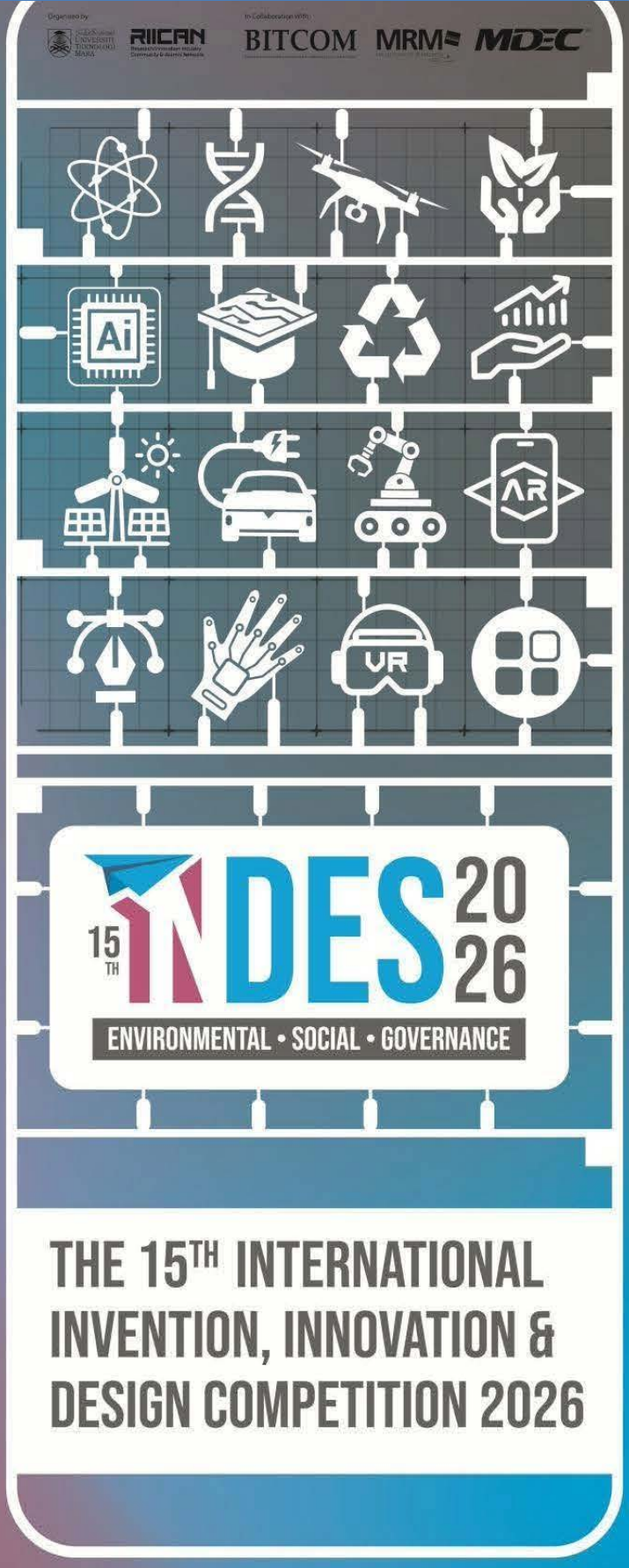


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EXTENDED ABSTRACT

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THE 15th INTERNATIONAL
INVENTION, INNOVATION &
DESIGN COMPETITION 2026

Organized by:
Office of Research, Industry,
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JELAJAHIN: AI-POWERED PLATFORM FOR SMART TRIP DESIGN AND INCLUSIVE TOURISM OPTIMIZATION IN INDONESIA

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ABSTRACT

JELAJAHIN is a smart mobile application that integrates the entire travel planning process into a single platform. It is designed to solve the inefficiency caused by travel information being scattered across multiple applications. Through its Artificial Intelligence (AI)-based smart travel planning feature, JELAJAHIN automatically creates personalized itineraries based on user preferences. These plans come complete with cost estimates, optimized routes, and destination recommendations, specifically highlighting underexplored locations. Beyond providing efficiency, JELAJAHIN carries a social mission to promote equitable tourism development in Indonesia. It achieves this by directing travelers to alternative destinations, which helps empower the local MSME (Micro, Small, and Medium Enterprises) economy. As a business innovation, this platform uses a freemium model targeting domestic tourists aged 18–35. This specifically includes university students, young professionals, and solo travelers who plan their trips independently. The business is projected to be highly feasible, reaching its Payback Period (PBP) in the second quarter and generating a positive Net Present Value (NPV) of IDR 113,625,620.

Keywords: Travel platform, Smart Travel Planning, Itinerary Optimization, Social Impact

1. INTRODUCTION

In the digital era, travel planning has become increasingly complex due to the abundance of information scattered across various platforms. Technological advancements have significantly influenced how individuals determine destinations and organize their trips. Rapid access to information through social media and digital platforms has made the process more immediate and preference-driven (Tan et al., 2025). This accessibility has also led to a growing reliance on digital tools for travel recommendations, including the rise of viral destinations on social media that shape travel decisions (Yateen Nandanwar, 2025). This trend aligns with the increasing volume of travel activities, where in 2025, global international tourist arrivals reached approximately 1.5 billion trips (UN Tourism, 2026), while domestic tourism in Indonesia reached 105.12 million trips, marking an 18.99% increase from the previous year.

However, this ease of access is not yet supported by an integrated planning system. Travelers still need to gather and process information independently, such as information on destinations, transportation, costs, and reviews. This issue is referred to as the Tourist Trip Design Problem, which highlights the challenge of developing an optimal travel plan based on individual preferences, time, cost, and desired experiences (Ramdani et al., 2024). This challenge not only results in inefficiencies but also contributes to unequal tourism distribution, where popular destinations face overcrowding while other potential locations remain underutilized. As a result, this condition represents a significant market gap, positioning JELAJAHIN as a solution that simplifies travel planning while promoting more inclusive and balanced tourism development.

2. METHODOLOGY

The development of the JELAJAHIN application was carried out through an integrated approach that combined needs analysis, product development, and business feasibility assessment. The needs analysis focused on the market segment of domestic tourists aged 18–35 (university students, young professionals, and solo travelers). This specific segment was chosen due to its high digital literacy and dominance in independent travel planning. Product development was carried out through the design of a Minimum Viable Product (MVP), derived from a UI/UX prototype to test the Smart Travel Planning feature in generating personalized and efficient recommendations. The commercialization strategy was implemented using a freemium model, supported by collaborations with Key Opinion Leaders (KOLs) to enhance user reach and adoption. Business sustainability was further evaluated through financial feasibility analysis, including projected cash flow and key indicators such as the Payback Period (PBP) and Net Present Value (NPV), which were used to assess long-term viability and growth potential.

3. FINDINGS

JELAJAHIN functions as an all-in-one platform that integrates the entire travel planning process through the use of Artificial Intelligence (AI), enhancing both efficiency and personalization. The system automates travel planning through the Trip Setup, Auto Plan, and Auto Budget modules, generating ready-to-use daily itineraries along with detailed cost estimations. This significantly reduces the complexity associated with manual and fragmented planning. The Smart Destination Insight feature further expands the platform's value by not only recommending popular destinations but also incorporating alternative locations (hidden gems) and local MSME spots (such as authentic culinary and souvenir centers) into the user's daily itinerary based on their travel route. This mechanism directly provides marketing exposure for underexplored locations. Consequently, it reduces tourist centralization while creating an economic multiplier effect through increased transactions and revenue for local tourism MSMEs. Furthermore, based on the financial projections, the JELAJAHIN business model is highly feasible. This is demonstrated by the achievement of the Payback Period (PBP) in the second quarter. This feasibility indicator is further strengthened by a positive Net Present Value (NPV) of IDR 113,625,620. Together, these metrics clearly demonstrate the effectiveness of the platform's capital allocation in generating value and ensuring long-term business profitability.

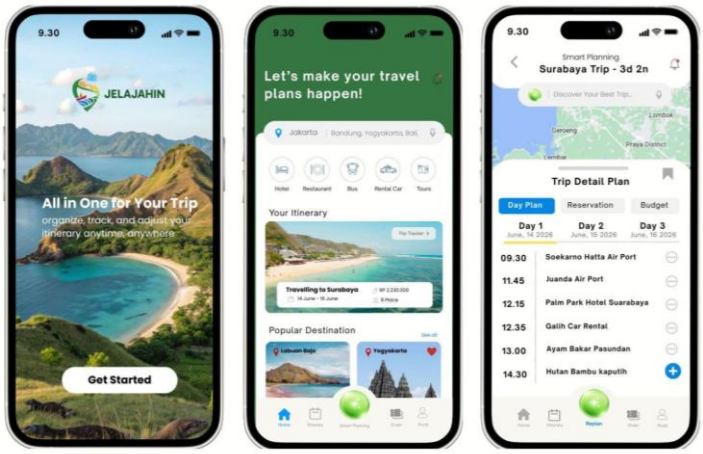


Figure 1 JELAJAHIN Mobile Application Mockup

4. CONCLUSION

JELAJAHIN presents an integrated digital solution to the fragmented nature of travel planning. By leveraging AI, the platform simplifies itinerary creation, budget management, and destination exploration into a seamless and personalized system. With financial projections indicating that the Payback Period (PBP) will be achieved in the second quarter and a positive Net Present Value (NPV) of IDR 113,625,620, JELAJAHIN not only delivers value to users and supports local MSMEs but also demonstrates strong potential for sustainable business growth.

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