

Design and Development of Travel-X: An AI-Based Tour Travel Application with Smart Itinerary Features and Optimal Travel Experience

Gomulia Oscar¹, Ronny Samsul Bahri²

¹Sekolah Tinggi Ilmu Ekonomi Harapan Bangsa, Indonesia,

²Binus University, Indonesia

Email: goscarvb@yahoo.com, ronny.bahri@binus.ac.id

ABSTRACT (10pt)

The rapid advancement of digital technology has significantly transformed tourist behavior, particularly in how they independently plan their trips. AI-based applications such as Travel-X have emerged as modern solutions to automatically generate personalized travel itineraries. This study aims to explore user experiences and perceptions of the Smart Itinerary feature within the Travel-X application, designed to provide efficient, personalized, and optimized travel planning. This research adopts a qualitative descriptive approach, utilizing in-depth interviews with ten informants who have used the Smart Itinerary feature within the past three months. Thematic analysis was employed to identify narrative patterns emerging from user experiences. The findings indicate that the Smart Itinerary feature greatly assists users in creating structured and time-efficient travel plans. While users appreciated the system's practicality and organization, some noted the need for improved recommendation personalization and flexibility in adjusting plans. Additionally, the study uncovered emotional engagement and user loyalty toward the application. These findings suggest that the success of AI systems in the digital tourism sector relies not only on technical accuracy but also on the system's ability to understand users' subjective needs.

Keywords: digital tourism, artificial intelligence, automated itinerary, user experience, travel application, Travel-X.

INTRODUCTION

Along with the development of digital technology, the tourism industry has experienced significant disruption. *Digitalization* has changed the way travelers seek information, plan trips, and share experiences after travel. Modern travelers increasingly rely on digital technology to make their travel experience easier, including the use of artificial intelligence (AI)-based applications in ticket bookings, hotels, and travel recommendations (Sari, 2017). AI-powered digital travel platforms provide advantages in terms of efficiency and convenience, reducing the need for human interaction in travel planning (Nugraha, 2020). This technology is also able to optimize the traveler experience by providing more accurate recommendations based on user data. Therefore, the implementation of AI in the travel industry is increasingly considered a must for companies that want to remain competitive in the *digital era* (Setiawan, 2024).

AI has become a very important tool in the personalization of the traveler experience. By utilizing machine learning algorithms, AI can analyze travelers' behavior patterns based on their search history, previous reviews, and travel habits (Raihan, 2016). This technology is able to provide more personalized travel recommendations, ranging from tourist destinations to optimal activity schedules. For example, AI-based chatbots used in travel apps can

automatically provide customer service, answer travelers' questions in real-time, as well as provide travel suggestions that are more in line with user preferences (Aolia et al., 2024). Thus, AI contributes to increasing traveler satisfaction by providing convenience in the planning and execution of their trips. Furthermore, AI also plays a role in managing *big data* collected from various sources, such as social media, user reviews, and travel transaction history. With more advanced data analysis, AI-based systems can identify tourist trends more accurately, helping the tourism industry in developing more effective marketing strategies (Bulchand-Gidumal, 2022).

One of the key features developed in AI-based travel apps is *smart itineraries*. This feature aims to compile more efficient itineraries based on factors such as user preferences, time availability, weather, and traffic conditions (Hitatama, 2021). For example, AI systems can set travel schedules by considering the best time to visit certain attractions to avoid crowds. In addition, this technology is also able to dynamically adjust the itinerary in the event of sudden changes, such as transportation delays or weather changes (Setiawan, 2024). The advantage of *smart itineraries* compared to manual planning methods is their ability to manage various sources of information automatically, allowing travelers to have a more flexible and efficient experience. In addition, AI can suggest alternative destinations that may be more suitable for tourists' interests based on the analysis of previous travel data (Eka Nugraha, 2017).

The use of the *Travel-X* application with the *Smart Itinerary* feature has experienced significant development since 2020, along with the increasing adoption of digital technology in travel planning. Based on data from Sensor Tower, global travel app downloads reached 2.15 billion from January to September 2024, an increase of 4.4% compared to the same period the previous year, with a projected 2.8 billion downloads throughout the year. This growth reflects increased user interest in apps that offer efficient and personalized travel planning.

The *Smart Itinerary* feature on *Travel-X* leverages artificial intelligence (AI) to analyze user preferences and provide tailored travel recommendations. According to a report from AdamoSoft, the integration of AI in travel apps allows the analysis of user behavior, travel history, and social media activity to create detailed user profiles, so that the app can recommend destinations, activities, accommodations, and restaurants that suit the user's preferences and budget. This increases relevance and convenience in travel planning.

In addition, the use of advanced features such as AI chatbots, virtual assistants, and predictive analytics further enriches the user experience. These features allow users to get answers to their questions, assist in bookings, and provide recommendations 24/7, making travel planning easier and more convenient. Thus, *Travel-X* not only provides itineraries, but also becomes a personal assistant in every stage of the user's journey.

Overall, the development of the use of the *Travel-X* app with the *Smart Itinerary* feature reflects the global trend in the adoption of advanced technology to improve efficiency and personalization in travel planning. By continuing to innovate and integrate the latest technologies, *Travel-X* has the potential to become a leader in the intelligent and personalized travel planning app industry.

While AI offers a wide range of benefits to the travel industry, there are some challenges that need to be overcome in its development. One of the main challenges is the management of the *big data* used to train AI systems. Data in the tourism industry is very complex and includes

various aspects such as user preferences, geospatial data, and reviews from social media (Raihan, 2016). In addition, data privacy and security concerns are a major concern in the use of AI for travel. Because AI relies on user data to provide more personalized recommendations, it is important to ensure that it is managed securely and in accordance with personal data protection regulations (Bulchand-Gidumal, 2022). Therefore, app developers must implement a transparent encryption system and privacy policy to build user trust.

Another challenge in the implementation of AI in the travel industry is the limitations in the adoption of technology by traditional travel service providers. Some industry players may have difficulty adapting to automation and digitalization systems. Therefore, education and support in the application of AI are needed to ensure that this technology can be widely adopted in the tourism ecosystem (Setiawan, 2024).

This research has several aspects of novelty that make it different from previous research. First, this study developed an AI-based *smart itinerary* application that not only provides travel recommendations but is also able to automatically adjust travel schedules based on real-time conditions, such as weather and traffic (Aolia et al., 2024). Second, the study focuses on the integration of AI with user data security, which is still a challenge in the development of digital-based travel applications. By implementing stricter data protection policies, this study offers a safer and more trustworthy solution for travelers (Bulchand-Gidumal, 2022). Third, this research contributes to a more efficient AI-based tourism marketing strategy. By utilizing more accurate user data analysis, this application can assist the tourism industry in developing more targeted and effective marketing campaigns (Hitatama, 2021). Thus, this research not only provides innovation in the development of AI-based travel applications but also presents real solutions to the challenges faced in the adoption of AI technology in the tourism industry.

Previous research has highlighted many technical aspects and system functionality in artificial intelligence (AI)-based travel planning applications, such as the use of the *POIBERT algorithm* for destination recommendations based on user preferences. However, most of these studies have not explored in depth the user experience in the context of using apps such as *Travel-X* with the *Smart Itinerary* feature. Most research focuses more on technical and algorithmic aspects, while the psychological and emotional aspects of users interacting with the app are still less noticeable.

Therefore, based on the phenomenon and gap of previous research, the author is interested in conducting research on “Design and Build *Travel-X* AI-Based Travel Tour Application with *Smart Itinerary* Features and Optimal Travel Experience.”

This research formulates several key issues related to the user experience of the *Smart Itinerary* feature on the *Travel-X* application, including how users perceive the convenience, relevance, and flexibility of the feature, as well as their challenges and expectations for future development. The purpose of the research is to explore the user experience, identify perceptions of convenience and efficiency aspects, and analyze constraints and suggestions for further development. The benefits of this research include academic contributions in understanding artificial intelligence-based applications in the tourism industry, enriching the academic literature with insights into user interactions, and providing an overview of the use of qualitative methodologies. From the company’s side, the results of the research are expected to help optimize applications according to user preferences, increase feature attractiveness, and

provide important data for more informed decision-making in improving user experience and application effectiveness.

METHOD

The object of this research is the *Travel-X* application, which was developed as an artificial intelligence (AI)-based travel tour platform with the *Smart Itinerary* feature. This application is designed to automate travel planning—from destination selection and visit schedule settings to the integration of accommodation and transportation reservation data. The *Smart Itinerary* feature utilizes AI algorithms to analyze user preferences such as activity type, budget, and leisure time, as well as real weather data and traffic conditions, to produce an optimal, personalized, and adaptive itinerary.

In this study, the researcher used a qualitative research method. According to Sugiyono (2017), *qualitative* research is a research technique carried out by various individuals or groups that begins with identifying social problems to be studied and seeking their meaning. The purpose of *qualitative research* using this *case study* design is to discuss how human opinions can be used to understand human behavior.

The *quantitative* research method is a research approach that uses data in the form of numbers and statistical analysis to explain, test the relationships between variables, and test hypotheses objectively and measurably. This method aims to measure the extent to which one variable affects other variables and is often used to generalize research results to a broader population.

This research was conducted by making direct observations related to the use of the *Travel-X* application with the *Smart Itinerary* feature in improving the user's travel experience.

RESULTS AND DISCUSSION

Ease in Trip Planning

Many informants stated that the Smart Itinerary feature is very helpful in compiling travel schedules automatically. Previously, they needed to do manual research, gather information from blogs and social media, or ask friends. The presence of this feature saves time and reduces stress in the planning stage.

Informant I is a 26-year-old freelancer who often travels independently, especially for the exploration of cultural cities such as Yogyakarta and Solo. He stated:

"I really like it because everything is arranged instantly. In the past, if you wanted to go to Jogja, you had to make your own excel, now you just have to click and the itinerary is done."

This statement shows that before using the *Travel-X* application, I1 was used to compiling itineraries manually and in detail. The process is considered time-consuming, especially when he has to research tourist attractions one by one. After using the Smart Itinerary feature, he felt that his work was much lighter because the system automatically compiled a neat and logical itinerary. For users who love efficiency and flexibility, this experience is a significant plus.

Informant I2, a 30-year-old private employee from Yogyakarta, revealed that this feature cuts through a lot of the time he normally spends searching for references:

"With this feature, I save time and don't have to bother asking people questions or browsing for a long time."

From this statement, it can be concluded that I2 sees this feature as a practical tool that replaces the usual manual preparation activities such as opening a travel forum or asking friends. The need for speed and practicality is especially important for time-constrained informants like I2, who can only plan vacations in between busy work. Smart Itinerary answers that need directly.

Informant I3, a 23-year-old female student from Bandung, also felt the practical benefits of this system. He stated:

"This application simplifies the process that was previously complicated. Just enter the city and date, and go straight out to all the destinations."

As a digital native, I3 is used to using technology to make daily activities easier, including travel planning. He assessed that the Smart Itinerary feature succeeded in simplifying the stages that usually make novice users feel overwhelmed. The simple input process without the need to fill in a lot of fields or choose places one by one is the main attraction for him.

Informant I4 is a 34-year-old IT consultant from Surabaya who uses Travel-X to plan family trips. He said:

"For me who is not used to planning trips, Travel-X is very helpful. I just have to follow the schedule."

I4 shows that Travel-X is not only relevant for experienced travelers, but also very useful for people who rarely plan on their own. In the context of family travel, where many aspects must be considered (rest time, small children, comfort), the presence of an automatic plan becomes invaluable. This feature helps reduce the burden of decision-making and increase confidence in traveling.

Meanwhile, informant I5, a 28-year-old entrepreneur from Medan, highlighted time efficiency as the main advantage of this application:

"It's faster and more practical. Normally it takes me 2-3 days to make a plan, now it's enough in 15 minutes."

This statement reinforces the finding that one of the main advantages of the Smart Itinerary feature is in terms of time and effort savings. For business actors like I5, time is a very valuable resource. Trips that usually require long research can now be designed in a short time, without compromising the comfort and precision of the arrangement of activities. This shows that Travel-X also supports user efficiency in a professional context, not just a leisure one.

Based on the results of in-depth interviews with five informants who have different backgrounds, ages, and travel needs, it was found that the Smart Itinerary feature on the Travel-X application provides significant convenience in compiling tourist travel plans. The informants agreed that this feature has simplified the planning process that was previously considered complicated, time-consuming, and requires manually searching for information from various sources.

One of the things that is most emphasized is practicality and time efficiency. Informants like I1 and I5 confirm that before using this app, it takes them days to put together an itinerary, but with Smart Itinerary, everything can be done in just a matter of minutes. The automation

system offered is able to set the order of destinations, consider distance and travel time, and provide a logical schedule without having to think twice by the user.

In addition, this feature also answers the needs of users who are not used to it or do not have time to plan trips in detail, as conveyed by I4. By simply entering the destination city and date of travel, users can instantly get a ready-to-use itinerary, making it perfect for anyone—whether it's an independent, family, or group user.

The I2 and I3 statements indicate that these systems also replace the need for "wonder around" or "long browsing" which is usually a major obstacle for novice travelers. For them, Travel-X has succeeded in transforming the planning experience from being confusing to easier and more enjoyable.

Thus, it can be concluded that ease of use is the main advantage of the Smart Itinerary feature. This practicality makes the Travel-X application not only serve as a technical tool, but also as a digital partner that is able to simplify user decisions in the context of modern tourism.

Personalization and Recommendation Suitability

Although the Smart Itinerary feature on Travel-X is considered very helpful in terms of time efficiency and convenience, the level of personalization in preparing travel plans is still a concern for some users. Some informants feel that the recommendations given by the system are sometimes too general, so they do not fully reflect the specific interests or travel style of each individual.

Informant I6, a teacher from Semarang who has a high interest in history and culture, was quite satisfied with the accuracy of the system. He says:

"I'm a history buff and it turns out that the recommended place is indeed a cultural site, it's really suitable."

This shows that the Travel-X system can present a targeted itinerary if the user's preferences match the general categories that have been provided in the application. In the case of I6, the preference for cultural tourism can still be accurately met by the system because this type of tourism is one of the well-defined options in the system category.

It is different from I7, a fan of hidden tourist attractions or those that are not too crowded. He said:

"At first I was skeptical, but after being input into preferences, the itinerary results were more in line with my vacation style."

This statement shows that the system adapts to user feedback, but it still leaves a note that more specific preferences are not immediately reflected from the beginning. Additional input is needed so that the system can correct and provide more appropriate results.

Informant I8, a student who loves nature tourism, also complained about the overly general recommendation results:

"Sometimes there are still places that are too crowded, even though I like quiet ones. It should be more customizable."

This complaint highlights that the system does not yet have a preference depth filter, such as location ambience (crowded/quiet), popularity level, or accessibility. The I8 experience shows that while location is geographically relevant, psychologically and preferentially it does not necessarily match the user's expectations.

I9, a private employee who has used this feature several times, stated that there have been improvements in the results of recommendations over time:

"After several uses, the system seems to learn from previous trips. That's cool."

The I9 experience indicates that the machine learning features in the AI system are starting to run, although they are not yet optimal for all users. He feels that there is an increase in accuracy and relevance along with the increase in the frequency of use. This suggests that the system can learn from user interaction data to generate more personalized results.

Finally, I10, a content creator with a focus on religious tourism, expressed his hope that the preference categories would be made more detailed:

"I hope to be able to choose a more detailed type of place, such as religious tourism or local communities, not just 'nature' or 'city.'"

Input from I10 emphasized the importance of adding more diverse and contextual destination classification options. Religious tourism, community tourism, local tourism, and other specific themes have not found enough space in the current structure of the Travel-X system

The results of the interviews show that the personalization of the Smart Itinerary system still needs to be improved, especially to reach more specific and individual preferences. While some users feel that the system has shown fairly appropriate recommendations, others have stated that the choices provided are too generic and do not fully reflect personal vacation styles.

Some users are aware of the improvement in system performance over time, which shows the potential of AI-based system learning (machine learning). However, user needs for richer filters and more contextual destination categories have not been fully met.

Thus, it can be concluded that the Smart Itinerary feature has a fairly good foundation of personalization, but developers need to integrate deeper dimensions of user interests, such as the location atmosphere, tourist theme, and cultural nuances, so that the resulting experience is more relevant and personally meaningful.

Efficiency and Trip Structure

One of the main added points of the Smart Itinerary feature in the Travel-X app is its ability to create efficient and structured itineraries. Some informants revealed that the system is very helpful in managing time and avoiding ineffective travel routes, especially because this feature takes into account the distance between locations, estimated visit times, and tourist attraction operating hours.

Informant I2, a private employee from Yogyakarta, recounted a real experience when he was delayed while traveling in the city:

"I was late to one place because of traffic. But the system immediately readjusts the route, so it remains effective."

This experience illustrates that the system has fundamental adaptive flexibility, at least in rearranging the order of visits based on the time remaining. This is especially useful when unexpected situations occur such as traffic jams, which are often an obstacle at popular tourist locations. Although not yet fully real-time, the system demonstrates the ability to keep the travel structure running logically.

Informant I5, an entrepreneur from Medan, also highlighted how the structure put together by the system makes travel smoother:

"During the trip, I felt more directed. Unlike in the past, sometimes I went back and forth because I didn't know the distance."

This statement reveals that geographically based route organization is helpful in avoiding inefficient movements. Before using Travel-X, the I5 often experienced confusion in setting up routes, which made the trip directionless and time-consuming. Now, the order of visits is more logical and time-saving.

Meanwhile, Informant I3, a college student who often travels for short trips, appreciates the preparation of a dense but realistic schedule:

"Travel-X helps me make the most of my time. It's a tough road to get to the finish line, but it's still realistic."

I3 illustrates that the system not only makes travel plans efficient, but is also able to balance between a lot of activities and reasonable time achievements. This is important for users who have limited time but want to visit multiple destinations.

Informant I4, an IT consultant who plans family trips, found the itinerary structure to be very useful in the context of more complex travel:

"I travel with my parents, and this feature helps us to get enough rest time between visits."

This shows that the system not only organizes activities in a compact manner, but also provides appropriate time allowance for the needs of certain groups, such as the elderly or children. A less crowded schedule and including rest time reflects the system's attention to the user's comfort needs.

Informant I1, who often travels alone, highlights comfort in general thanks to a neat plan:

"My experience was much more comfortable because everything was neatly arranged from morning to night."

This statement reinforces that the overall itinerary structure provides a sense of calm and certainty, as users no longer need to rearrange their agenda every day. Everything is scheduled systematically, from the beginning of the day to the end, making the trip more relaxed and controlled.

From the five user narratives above, it can be concluded that the Smart Itinerary feature contributes significantly to improving user efficiency and comfort during the trip. The system successfully reduces uncertainty in determining the order of visits, avoids inefficient movements, and optimizes the available time.

Users feel more confident because their journey has a clear, flexible, and non-pushy structure. The system-designed schedule takes into account geographical aspects, visit times, and individual or group capacity, resulting in a calmer and more enjoyable travel experience. Thus, the Smart Itinerary feature not only acts as a technical tool, but also as a virtual assistant that accompanies users in managing the rhythm and flow of activities during the tour.

Flexibility and Challenges of Use

While the Smart Itinerary feature on the Travel-X app was praised for its practicality, most informants expressed hope that the system could provide greater flexibility, especially in the face of dynamic conditions during travel. Experience in the field shows that sudden changes such as weather, location opening hours, and transportation constraints often occur, and the current system is not fully able to adapt responsively.

Informant I8, a nature lover student who tends to organize trips with the weather in mind, said:

"The itinerary is difficult to edit if there is a change in the weather. It should be able to drag-and-drop manually."

These complaints lead to system rigidity. In situations where users want to shift the order of visits due to rain or other external constraints, the system does not provide flexible manual adjustment options. For users like the I8 who often travel to open areas, this is a real obstacle because they need a plan that can be changed quickly.

Informant I10, a religious tourism content creator, added a similar complaint:

"If you want to change one place, you often have to reset everything. It's a bit annoying."

The I10 experience highlights that the itinerary edit feature is global and cannot be done partially. A change to one destination causes the entire schedule to be reset, so users have to reset from scratch. This creates an additional cognitive load and can be annoying to users who need flexibility on a small scale.

Informant I7 shared his experience when visiting Semarang, where one of the planned tourist attractions turned out to close earlier than scheduled:

"When it came time to Semarang, one of the places closed early. But the app can't adjust in real-time."

This issue shows that the system is not yet able to detect situational changes automatically. The application does not integrate with the latest operational data of tourist attractions, so it does not provide notifications or change options when there is a discrepancy with the reality on the ground. This shows the need for real-time data that is connected to trusted sources.

Informant I9, an active user from Jakarta, added that the system should be able to read the condition of public transportation or vehicle delays:

"I once had a train delay, and it was not detected by the application. Maybe it can be integrated with local transportation."

It emphasizes the importance of cross-system integration, especially with transportation services such as trains, buses, or domestic flights. When users experience delays, the app should be able to adjust their next schedule automatically, or at least provide suggestions for adjustments.

Informant I6, a teacher who traveled to a remote area, conveyed the technical obstacles:

"Signal constraints make the application slow when updating data at remote locations. Maybe it needs offline mode."

I6 highlights that in many cases, especially in natural or mountainous tourist areas, the internet connection is not always stable. Under these conditions, Travel-X is not able to run updates or open the itinerary quickly. This is a big obstacle, especially for users who rely heavily on apps as the main travel guide.

Based on the interviews of five informants, it can be concluded that the flexibility of use is one of the main weaknesses of the current Smart Itinerary feature. Although the system has provided convenience in the initial planning stage, users feel that the system's ability to adapt to situational changes during travel is still very limited.

Some of the key challenges that users face include:

- 1) Difficulty editing itineraries manually and partially

- 2) The inability of the system to read changes in real conditions in the field (weather, opening hours)
- 3) Lack of integration with local transportation systems and schedules
- 4) Limited access or system speed in areas with weak signal

Therefore, users expect that developers can improve the real-time customization feature, provide more flexible editing options, and allow offline mode access to anticipate network issues. With these developments, Smart Itinerary can become a planning system that is not only intelligent, but also resilient and adaptive in real conditions.

Emotional Engagement and User Loyalty

Beyond technical functionality and operational efficiency, the Travel-X application through the Smart Itinerary feature also forms an emotional attachment between users and the system. Some informants revealed that the use of this application is not just a matter of planning, but also creates a pleasant emotional experience, confidence, and even loyalty to the brand.

Informant I1, who often travels alone, revealed that he felt more excited ahead of the trip:

"I was excited before the vacation because I had seen the previews of the places on the itinerary."

From this narrative, it can be seen that the itinerary visualization feature is able to evoke positive emotions such as enthusiasm and curiosity before departure. The anticipation of new experiences is formed from the pre-departure stage, which shows that the app has managed to create a "travel experience that starts from the screen".

Informant I3, a female student who is active on social media, shared how the Smart Itinerary feature encouraged her to share with her friends:

"After going home, I shared the results of the itinerary on social media. Many friends are interested and download the app."

This statement indicates that users are not only personally satisfied, but also encouraged to spread their positive experiences to social networks. This is an indicator of loyalty that grows organically, and reflects the social engagement that comes from using the app.

The I5 informant, who has used the app for several trips, stated that it gave him a sense of comfort:

"This app feels like a digital travel companion. There is a sense of comfort and confidence while on the pitch."

This phrase shows that Travel-X has crossed the line as a mere digital tool. Apps are starting to be positioned by users as entities that provide a sense of calm and confidence, especially when they have to travel to a new place without the help of others.

Informant I2, an employee from Yogyakarta, highlighted the emergence of a sense of control and attachment:

"I feel like I have more control over the trip, and it makes me more loyal to the app."

This statement illustrates that the experience of using Smart Itinerary empowers users to be active decision-makers over their own trips. This sense of control not only increases satisfaction, but also encourages psychological attachment that ultimately forms long-term loyalty to the app.

Informant I4, a user who plans a family vacation, likes the interactive features in the app:

"The multimedia feature is funny. You can see local photos and stories of places, so I'm even more excited before leaving."

This shows that visual and narrative design elements also strengthen the emotional dimension of users, by creating visual and imaginative connections to the places to be visited. This interactivity becomes an emotional stimulus that enriches the pre-trip experience.

Based on interviews with five informants, it can be concluded that the Smart Itinerary feature in Travel-X not only functions technically, but also builds a strong emotional relationship between users and applications. Enthusiasm ahead of the trip, comfort while in the field, sense of ownership over personal plans, and the drive to share experiences with others are all indicators of real emotional engagement.

The visual, interactive, and personalized features that the app brings create the feeling that users are "accompanied" by a system that understands and supports their needs. When users feel understood and facilitated, loyalty to the app is formed naturally, not out of compulsion, but because of a positive emotional connection.

Thus, Travel-X has succeeded in transforming digital experiences into personally and socially meaningful experiences, and this is a strategic force in the development of AI-based travel applications in the future.

Discussion

The results of this study show that the Smart Itinerary feature in the Travel-X application makes a significant contribution to improving the user experience in planning and undergoing tourist trips. Through a thematic analysis approach to in-depth interviews of ten informants, it was found that this feature not only serves as a technical tool, but also as an interactive partner that helps structure the journey in a more personalized, efficient, and emotional way. This emphasizes the position of artificial intelligence (AI)-based technology not just as a complement, but as a compiler of complex experiences in the context of digital tourism (Hassenzahl, 2010).

In terms of ease of use, Smart Itinerary is proven to simplify the planning process that was previously considered complicated and time-consuming. Informants feel that the app helps organize various aspects of the trip from the destination, the time of the visit, to the travel route. These findings are in line with the user-centered design approach in system development, where user comfort is the top priority (Norman, 2013). This is also in line with previous research by Chien et al. (2021), which stated that AI-based tourism apps can improve user efficiency in planning trips.

In terms of personalization, the Travel-X system has been able to compile an itinerary based on the initial preferences determined by the user. However, most informants revealed that the filters and recommendations generated are still general and do not fully reflect their personal lifestyle or values. This is in accordance with the findings of Buhalis & Amaranggana (2015) who stated that context-aware systems in smart tourism must be able to understand the individual context of users in order to provide more relevant and meaningful recommendations.

For example, some users want more specific destination options, such as religious tours, local community visits, or hidden gems. This suggests that personalization based on historical data, behavioral patterns, and special interests needs to be continuously improved. Previous research by Gretzel et al. (2015) confirms that one of the main challenges in the development

of smart tourism technologies is how to understand user preferences in depth to improve the relevance of recommendations.

In terms of efficiency and travel structure, most informants consider that Smart Itinerary has been able to develop a logical and time-saving plan. This is in line with the optimal itinerary principle according to Zhang et al. (2018), which emphasizes the importance of an efficient sequence of visits based on distance, duration, and travel time between destinations. A clear plan structure also helps reduce confusion during the trip, so the travel experience feels more comfortable and organized.

However, the main challenge found is the lack of flexibility of the system in dealing with changing conditions in the field. The informant mentioned several obstacles such as sudden weather changes, transportation delays, or the closure of tourist attractions. This condition strengthens the urgency of developing a system that is able to adapt in real-time. Research by Xiang et al. (2015) shows that real-time data integration in digital tourism applications greatly affects the quality of travelers' decisions.

The development of integration with external data such as weather information, public transportation schedules, and traffic conditions is an urgent need for Travel-X to provide a more responsive experience. Additionally, features such as automatic re-routing or instant alternative suggestions need to be implemented. This is in line with the recommendations of Verma et al. (2020), which affirm the importance of adaptive systems in dealing with the uncertainty of tourist travel.

What is interesting about the findings of this study is the emergence of the aspect of users' emotional involvement with the application. The informant mentioned that Travel-X not only helped technically, but also built enthusiasm before the trip began. Some even stated that they felt more excited after compiling an itinerary using the feature. This is in line with the view of Hassenzahl (2018), that the user experience with technology should also be designed to meet emotional needs in order to encourage deeper engagement.

Furthermore, the impact of such a positive emotional experience prompted some users to share the results of their itinerary on social media. These findings reinforce the study of Chiu et al. (2022), who found that high emotional engagement in the use of AI-based apps can trigger sharing behaviors or electronic word-of-mouth (e-WOM), which ultimately expands the reach of apps through personalized recommendations.

In terms of user loyalty, this study shows that there is a tendency to continue using Travel-X if the Smart Itinerary feature is further improved. The informant stated that the app that is not only practical helpful, but also provides a personalized and enjoyable experience, will be more likely to be reused on the next trip. These findings are consistent with research by Rahi et al. (2022), which show that positive experiences drive user loyalty in the long run.

In addition to the technical and emotional dimensions, this research also contributes to the development of the theory of human-computer interaction. The Travel-X application, through the Smart Itinerary feature, is not only a digital tool, but also part of the process of building users' personal relationships with technology. This view is in line with the experience-centered design approach developed by McCarthy & Wright (2004), which emphasizes the importance of digital system design that focuses not only on function, but also on user experience narratives.

Methodologically, this study shows the relevance of a narrative-based qualitative approach to uncover the subjective aspects of users in the use of digital applications. Through narrative and deep reflection, researchers are able to capture personal experiences that cannot be reduced to numbers or quantitative scores alone. A similar approach was also used by Odom et al. (2020) in their study of the design of emotional context-based technological experiences.

Practically, the results of this study are valuable input for Travel-X developers to improve application performance. Developers need to conduct continuous testing by involving users in the design process, so that the resulting solution is truly based on real needs. Collaboration with external data providers is also a strategic step so that the system is able to provide a more adaptive, responsive, and contextual travel experience.

Thus, the Smart Itinerary feature on Travel-X has managed to answer most of the needs of modern digital travel users: efficiency, personalization, logical plan structure, and emotional comfort. However, the challenge of flexibility and deep personalization is still an important agenda in further development. To compete in the global smart tourism ecosystem, applications need to continue to innovate and put user experience at the center of their development strategy.

CONCLUSION

Based on research on the user experience of the *Smart Itinerary* feature on the *Travel-X* application, it can be concluded that overall, the user experience is relatively positive, with a system that makes it easier to prepare travel plans automatically and efficiently, thus saving time and effort. Although this feature is considered easy to use, some users feel that the recommendations provided are still general and less responsive to sudden changes, such as weather or transportation delays. Users expect that *Travel-X* can develop a more flexible system with real-time data integration, manual editing features, and more specific preference categories. In this context, suggestions for developers include increased flexibility, external data integration, and offline feature development, while users are advised to actively set preferences and prepare alternative plans. Further research can reinforce these findings with a *quantitative* approach, compare user experiences with similar apps, and explore aspects of interface design and user emotional experiences in more depth.

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