Location-Enabled Gamification in Tour Guide Mobile Application

A Strategy Matrix for Surakarta Cultural Tourism Destination

Farid Adi Prasetya[1], Sidiq Permono Nugroho[2]
Department of Management
Universitas Muhammadiyah Surakarta
Surakarta, Indonesia

Noviadry Nur Tamtama[3]
Department of Management
Universitas Muhammadiyah Klaten
Klaten, Indonesia

Abstract:- **This research aims to formulate a competitive strategy for a mobile tourism guide application. The case study examines the "Solo Destination" app, a tourism promotion tool developed by the Surakarta City Government. Simultaneously, the data collection started by interviewing 100 active users of the "Solo Destination" app to obtain qualitative data. Qualitative data goes through the stages of data selection and coding. The data selection and coding stages break down the attributes that represent the strengths, weaknesses, opportunities, and threats of the "Solo Destination" application. Pairwise comparisons with AHP are an advanced stage involving key respondents, including the Head of the Tourism Office, the Head of the Communication and Information Service, the Manager of the Central Bureau of Statistics, and the creator of the "Solo Destination" application. Based on prioritization measurements using the Analytical Hierarchy Process (AHP), this research found that adding the location-enabled gamification feature is a relevant strategy for improving and developing the "Solo Destination" app. The results of this study offer the issue of location-enabled gamification in a tour guide application as a novelty. However, involving more than one tour guide application as the object of research presents limitations to this research. It requires further research to analyze more examples of cases or a broader scope to take a closer look at how strategically a location-enabled gamification feature is embedded in a tour guide mobile app.**

Keywords:- Mobile App, Tourism, Gamification, Promotion.

I. INTRODUCTION

The non-primary sector is the most crucial economic support for cities with an urban character. Surakarta City describes this condition relevantly throughout its history of growth. Referring to the Surakarta Central Bureau of Statistics, the agriculture, forestry, and fishery sectors do not play a significant role in Gross Regional Domestic Product (GRDP), contributing 0.50 percent only better than the mining and quarrying sector. The Trade and Communications and Informatics sectors supported more, 21.96% and 14.86%, respectively, which is not surprising considering Surakarta is very well known as a "Shopping Tourism Icon" (Irdana, Rahayuningsih, & Chairunnisa, 2019). Accompanying Trade

Communication and Informatics, the Manufacturing Sector also ranks at the top with a contribution of 8.66%. On a closer look, the Trade and Manufacturing sectors are home to a large portion of tourism workers considering that art artisans and cultural souvenir shops depend on these sectors for their income (Nusantara, Volgger, & Pforr, 2021; Sari, Susanto, & Marimin, 2020). Due to the considerable potential of the Manufacturing and Trade sectors for tourism workers, coupled with the strength of the communication and information sector, the Government of Surakarta bolsters them through the launch of a digital tourism promotion tool, ""Solo Destination"" in 2010 and continues to be developed to date.

The "Solo Destination" mobile application has been downloaded more than 10 thousand times since its inaugural launch, providing primary services regarding detailed information on tourist locations, tourist event calendars and, later in the latest update providing ticket booking services, hotel reservations, and public services including personal tax payments, civil registration and legal business registration (Prasetya & Kussudyarsana, 2020; Wijaya, Vanel, Huwae, & Kristanto, 2020). The travel guide was the initial idea, and adding several public service features on a broader scope proves this app is improving and responsive to user feedback. However, in a typical case with several other regional government-made apps, "Solo Destination" is trapped in obstacles and shortcomings that could disrupt its future promotional function.

The Surakarta Communications and Information Office reports that the reach and impressions have decreased drastically in the last three years, inversely proportional to the first three years of launch. The app got around 450 reviews, 8 thousand downloads, and a 4.5 rating in the 2010 to 2015 range, but until 2021, this app is still entrenched at 10 thousand downloads, less than 700 reviews, and a downgrade of rating. The decline in users and reach is worrying, considering that this application is tasked with promoting the potential of Surakarta, especially cultural tourism. The current situation of the "Solo Destination" application directs the research idea that heuristic strategies need to lead to a mobile application that works as a tourism promotion engine in Surakarta.

This research diagnoses some internal strengths and weaknesses as well as external opportunities and threats to prompt the right strategy. Weighting with the Analytical

Hierarchy Process (AHP) is managed to analyze how the "Solo Destination" should be treated and run as a tourism promotion tool.

II. LITERATURE REVIEW

A. SWOT Analysis

Previous studies that used the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis tool are the basic ideas needed throughout the research process. Some literature on AHP is also powerfully relevant to this study since AHP technically supports and strengthens SWOT and has been applied by many works of literature. The rich body of literature on SWOT and AHP poses the challenge that, ultimately, this research will bring these analytical tools into the realm of more than just tourism promotion. This research talks about tourism promotion apps and the possibilities of strengthening features with gamification.

SWOT shows its analytical ability to scan internal situations, which include strengths and weaknesses, and external situations, which include opportunities and threats from a product, service, or overall business management (David, David, & David, 2017; Gerami & Hosseini, 2021). In a specific scope, several previous studies have used SWOT for tourism development strategies, including promotion, marketing, conservation, and legislation (Büyüközkan, Mukul, & Kongar, 2021; Navarro-Martínez et al., 2020). In the field of digital tourism, SWOT as a strategic analysis tool has also been investigated, including the application of the digital revolution, the use of AI, and smart tourism (Satghare & Sawant, 2019; Setyawan & Kussudiyarsana, 2015; Wijaya et al., 2020).

Supporting and enriching the repertoire of several previous studies that have shown the advantages of using SWOT in strategic decision-making by considering internal-external factors comprehensively for tourism businesses and digitization in the tourism sector, this research offers further and distinctive uses. SWOT in this research will determine how important it is to develop a location-enabled-based tourism promotion app.

B. SWOT-AHP Approach

AHP is widely used for multi-criteria decision-making (Saaty, 2004). Technically, AHP is applied to the SWOT framework by performing pairwise weighting on each factor. The use of conventional AHP in managerial projects has been found in many previous studies (Darko et al., 2019; Hellebrandt, Heine, & Schmitt, 2018). Pairwise weighting with AHP is also applied to several works of literature that examine tourism, especially those used for marketing, promotion, and development strategies (Büyüközkan et al., 2021; Navarro-Martínez et al., 2020; Nurjihadi & Firdaus, 2021).

From what has been done in several previous studies using AHP in the SWOT framework, this study seeks to find a path on how AHP can technically support decision-making on digital-based software updates. The results of the AHP weighting will be used as the basis for this research to find out what strategies can be adopted to maintain the sustainability of

"Solo Destination" as a tourism promotion app which will later be developed with one of the latest technologies, Location-enabled Gamification.

C. Strategy Formulation with SWOT Matrix

The use of the SWOT Matrix, in general, is a follow-up to the results of the SWOT diagnosis, which considers internal and external factors to find alternative strategies (Goranczewski & Puciato, 2010). The SWOT matrix connects four conceptually different strategic groups, including a combination of Strengths-Opportunities (SO), Strengths-Threats (ST), Weaknesses-Opportunities (WO), and Weaknesses-Threats (WT). SO is an approach utilizing the advantage of internal strengths and external opportunities. ST is used through internal strengths to avoid and reduce the impact of external threats. WO is an approach with a path to improve internal weaknesses to take advantage of external opportunities.

Meanwhile, WT invites improvements to internal weaknesses to minimize external threats. A crucial advantage of this approach is the influence of prioritized internal and external factors embedded in the alternative strategy. The main disadvantage of the SWOT matrix is that certain combinations are not considered, such as SW or OT.

D. "Solo Destination" as a Tourism Promotion Tool

"Solo Destination" was launched as a public service breakthrough, a work of the Surakarta Regional Government which was collaboratively initiated by the Department of Tourism and Culture and the Department of Communication and Informatics of Surakarta. At the beginning of its launch, "Solo Destination" was introduced as an assistant engine for those who need Surakarta tourism information in the form of a mobile app. Officially born in the final quarter of 2010, the mobile app made by local government apparatus has been modified several times to improve and add service and information features (Prasetya & Kussudyarsana, 2020; Wijaya et al., 2020). In the main menu, tourist information services are presented as the main one. Then several supporting features are added, such as community administration, electronic taxes, licensing assistance, and children's radio content. The Public Works Department also contributes, considering that public facilities are tourism-supporting facilities, by providing a database of public facilities, public spaces, and other supporting facilities such as information on access for persons with disabilities. The latest, "Solo Destination", provides information on local transportation schedules and ticket reservations for City Tours. This application still has potential, and the Surakarta Government will likely continue to develop it, considering that "Solo Destination" is quite reliable in carrying out its role as the initial gateway for promoting Surakarta cultural tourism.

III. RESEARCH METHODS

This study uses a combination of qualitative and quantitative approaches, where the characteristics of a mixed research approach with a sequential exploratory design represent this condition. Exploratory sequential research prioritizes a sequence of stages, where the initial stage is carried

out qualitatively. Then qualitative information is analyzed through quantitative weighting in the hope that the research will obtain comprehensive and objective data (Creswell & Tashakkori, 2007).

The first stage of the study was interviews with purposely selected respondents, including 100 active users who had used at least two primary "Solo Destination" services, including Tourism Information and Tourism Event Calendar. Interviews were conducted to identify internal (strengths and weaknesses) and external (opportunities and threats) attributes, which are described in detail in the SWOT Table. The basic concept of the SWOT table was adopted by (David et al., 2017) and was modified according to research needs. Qualitative data collection was done using the (Saldaña, 2021) procedure, starting with collecting the broadest possible data with a structured questionnaire. Data organization is carried out in the next stage by grouping information based on keywords. The keywords are synthesized into the same patterns to become a code. The codes generated in this process are used as the result of a situational assessment containing the actual conditions regarding the strengths, weaknesses, opportunities, and threats of the "Solo Destination" app.

The second stage of the research was carried out as a follow-up to the results of identifying internal and external attributes. In-depth interviews and paired weighting were submitted to the "Solo Destination" initiators, including the Head of the Department of Tourism, the Department of Communications and Information Service, and the Department of Research in Surakarta. Pairwise weighting is carried out on each factor obtained from the experience of app users. Pairwise weighting considers the level of importance on a scale of 1-9, adopted from (David et al., 2017), where 1 indicates that the two elements being compared are almost equally important, and 9 indicates that one of the two elements being compared is very important and decisive. The paired weighting stages refer to the existing mathematical formula, but in this research process, it is represented by the AHP Expert Choice software version 11.

$$w_i = \sum_{i=1}^{n} \frac{a_{ij}}{n} \qquad (1)$$

In the formulation, wi is a weighted value, while aj/n is the row normality matrix. Each respondent must have consistency in making comparisons of elements. If it is known that A is the matrix of pairwise comparisons where our judgment is perfect for each comparison, then: $a_{ij}.a_{jk} = a_{ik}$ for all i, j, and k.

If A > B and B > C, the respondent logically must state that A> C is based on the numerical values provided. Acceptable assessment results are those with CR ≤ 10% (0.1). If the consistency ratio exceeds the threshold of 0.1, the response given in pairwise comparisons cannot be used as material to continue the research. AHP measures the entire consistency of the assessment using the Consistency Ratio (CR), which is formulated as follows:

$$CR = \frac{CI}{RI} \qquad (2)$$

In compiling the analysis carried out in this thesis, pairwise comparisons and computation of consistency ratios can be done with ExpertChoice version 11. Weighting with ExpertChoice version 11 allows researchers to weight pairwise comparisons more practically, with a calculation basis that is not different from formulas established by (David et al., 2017).

IV. RESULTS

A. Situational Assesment

Through open interviews with 100 active users of the "Solo Destination" app, and after going through the stages of selection, reduction, synthesis, and coding of the data, this research finds factors that can be categorized into attributes of internal strengths and weaknesses as well as external opportunities and threats. The overall attributes are represented in Table 1: SWOT Matrix for "Solo Destination" App.

TABLE I.   SWOT Matrix for "Solo Destination" App

STRENGTHS (S) *What strengths can we build upon?*	WEAKNESSES (W) *What weaknesses do we need to address?*
S1: Easy-to-understand content **S2:** Completeness of tourism information **S3:** Free download **S4:** Contains fewer ads **S5:** Takes up little storage space **S6:** Quick response to the complaint	**W1**: A minimal variety of content **W2**: Looks less attractive **W3**: Thumbnails are limited to images only **W4**: Does not support the virtual tour feature **W5**: Bugs and Errors occur several times
OPPORTUNITIES (O) *What opportunities can we use?*	THREATS (T) *What threats do we need to be aware of?*
O1: The development of virtual technology **O2**: User interest in gamification **O3**: Financial support to the Communications and Informatics (IT) sector **O4**: Development of nearby airports **O5**: Interest in cultural visits to Surakarta	**T1**: Uninstall the application by the user **T2**: Non-government Tourism Guide App **T3**: Tourist destinations outside the Surakarta metropolis **T4**: The development of virtual tourism outside the management of the Surakarta Government **T5**: High cost of surveys and database updates

B. Structures

The "Solo Destination" app is designed as an engine to boost revenue and visits to the Surakarta tourism sector. This is the fundamental goal of the "Solo Destination" app. Some challenges, shortcomings, strengths, and opportunities still need to be fully optimized, necessitating a new strategy. The new strategy is based on the attributes of strengths, weaknesses, opportunities, and threats that are generated from what is conveyed by active users. This procedure then triggers the development of the concept, where hierarchically, this research makes the initial goal of "Solo Destination" the peak and beginning. There are 6 strengths and 5 weaknesses each; opportunities and threats are used as the basis for weighting. The two initial levels are expected to give birth to a new concept in the form of a "Solo Destination" development strategy to promote Surakarta tourism.

Figure 1 is a structure, the conceptual framework of this research. This framework deputizes how the research flow goes and how the strategy will later be applied to the "Solo Destination" app.
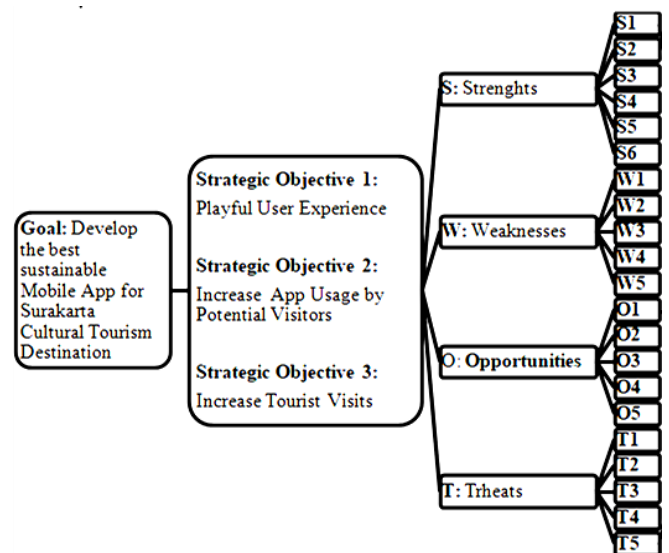

Fig. 1. Research Frameworks

C. Pairwise Comparisons

Telephone interviews guided by a structured questionnaire were submitted to the Head of the Department of Tourism, which was further identified with the code R1, the Head of the Department of Communications and Informatics (R2), the Head of the Department of Research (R3) and the "Solo Destination" Creator Content (R4) in Surakarta. For starters, pairwise comparisons measure each SWOT group, comparing which factor is most decisive, between the most favorable factors (strengths and opportunities) or the least favorable (weaknesses and threats). This pairwise comparison also applies to the measurement process of the three Strategic Objectives (from now on, given the code SO1, SO2, and SO3).

In the advanced stage, each SWOT attribute (Strengths, Weaknesses, Opportunities, and Threats) obtained from user experience was rated using control criteria for five intensity ratings: Very High, High, Medium, Low, and Very Low, introduced by Saaty, 1996. Combining rating scales and eigenvalues, each SWOT group was prioritized. Finally, the global priority of each SWOT factor was calculated as a product of local priority and the scale of each SWOT group, as shown in Table 2. Global priorities of all the factors are summed into one.

Pairwise comparisons are taken from the weighting by the Head of the Tourism Office, Head of the Communications and Informatics Office, Head of the Surakarta Planning Agency, and the Content Creator of the "Solo Destination" app through both conventional questionnaires and e-questionnaires. Comparison aims to compare each attribute in the SWOT, placing the attributes from the most priority to the least priority.

Among the strength attributes, "completeness of tourism information" (S2) is the most priority, followed by "easy-to-understand content" (S1). On the other hand, the attribute "contains fewer ads" (S4) is the least priority.

On the attributes of weakness, "looks less attractive" (W2) is the weakness that needs the most attention, slightly more priority than "does not support the virtual tour trial feature" (W4). This fact is supported by additional information on open-ended questions that interesting metaverses and virtual content are all the rage after the global Covid-19 pandemic. Slightly surprisingly, the attribute "bugs and errors occur several times" (W5) is not a weakness that is too prioritized.

Regarding opportunities, the attribute "user interest in gamification" (O2) gets the most considerable support and needs to be prioritized. Additional information from R2 states that "light game content is the main attraction when it comes to service applications. Several popular apps have already implemented it". Meanwhile, "the development of virtual technology" (O1) ranks second in priority, while "financial support to the communications and informatics sector" (O3) becomes the slightest priority opportunity.

Last but not least, the assessment of threats attributes puts "uninstall application" (T1) as the main threat. The second threat that needs to be considered is "non-government tourism guide apps" (T2) as the leading competitor. "high cost of surveys and database updates" (T5) became the most negligible priority threat by respondents.

The consistency of the general ratio of 0.025 indicates that each respondent has given a consistent weighting and can be used in the analysis process of this research. The results of the pairwise comparison Table 2 briefly describe each attribute in the four SWOT components.

TABLE II.   LOCAL AND GLOBAL PRIORITY SCORES OF SWOT FACTORS

SWOT Factors			Local Priority	Global Priority
S1:	Easy-to-understand content	2	0.2744	0.0719
S2:	Completeness of tourism information	1	0.4136	0.1084
S3:	Free download	5	0.0580	0.0152
S4:	Contains fewer ads	6	0.0340	0.0089
S5:	Takes up little storage space	3	0.1598	0.0419
S6:	The quick response to the complaint	4	0.0601	0.0158
Total			**1.000**	**0.2621**
W1:	Minimal variety of content	3	0.1150	0.0345
W2:	Looks less attractive	1	0.4045	0.1214
W3:	Thumbnails are limited to images only	4	0.0893	0.0268
W4:	Does not support the virtual tour feature	2	0.3251	0.0975
W5:	Bugs and errors occur several times	5	0.0660	0.0198
Total			**1.000**	**0.3000**
O1:	The development of virtual technology	2	0.2895	0.0644
O2:	User interest in gamification	1	0.4451	0.0990
O3:	Financial support to the IT sector	5	0.0324	0.0072
O4:	Development of nearby airports	4	0.0428	0.0095
O5:	Interest in a cultural visit to Surakarta	3	0.1902	0.0423
Total			**1.000**	**0.2224**
T1:	Uninstall the app by the user	1	0.5569	0.1199
T2:	Non-gvmnt. tourism guide app	2	0.1992	0.0429
T3:	Tourist destination outside Surakarta	4	0.0569	0.0123
T4:	A non-event. virtual tourism	3	0.1571	0.0338
T5:	High-cost survey for a database update	5	0.0300	0.0065
Total			**1.000**	**0.2155**

D. Strategy Formulation

The fundamental purpose of strategy formulation is clearly to modify existing conditions and re-establish an image that is not working well. In this context is a tourism promotion tool. Strategy formulation helps achieve the ideal situation as expected. Practically, tourism promotion tools can be modified to find heuristic capabilities in marketing tourist destinations and events, increasing the attractiveness and number of visits. Even so, limitations must exist so that it is impossible to accommodate potential strengths, weaknesses, opportunities,

and obstacles as a whole. There needs to be a prioritization of the entire proposed strategy. The defined strategic alternatives were evaluated to examine which one of these factors is the most effective. The strategic alternative with the most extraordinary desirability index has to be the immediate revival strategic project.

The rating scale technique first developed by (Saaty, 2004) was used to appraise the strategic connection between the SWOT factors. Departing from pairwise comparison, each attribute in SWOT displays a global priority. By relying on the completeness of tourism information and easy-to-understand content, gamification features and virtual technology can be included (SO strategy). The distribution of location points available on the map supports complete tourism information. Thus "using the ease of use support and small storage to add virtual technology and gamification" is a reasonable alternative strategy. Another SO alternative allows "using complete information and easy-to-understand content to attract tourists' interest in Surakarta cultural tourism."

Considering internal weaknesses to take advantage of existing opportunities (WO strategy), based on priorities, an alternative strategy is offered "to improve the unattractive appearance and lack of virtual features to target the market for people's interest in gamification and adapt to the development of virtual technology." In addition, it is also possible to "add content that is still limited by displaying virtual game features." Internal strengths can also be combined with external threats

(ST strategy) with the path of "Utilizing the completeness of tourism information, easy-to-understand content, and minimal advertising to prevent users from wanting to uninstall," or it can also be done by "Utilizing the use of small storage to reduce database update costs." Another alternative is combining internal weaknesses with external threats (WT strategy) based on priorities. The relevant strategy is "Fixing limited, unattractive content and does not support virtual tourism features to keep users from uninstalling the "Solo Destination" app." It is also possible to "Fix bugs, errors and poor thumbnails to compete with rival apps."

In the end, based on the intensities of the rating scale (Saaty, 2004) placing, "fixing the unattractive appearance, bugs and lack of virtual features to target the market for people's interest in gamification and adapt to the development of virtual technology " (WT1) as the most prioritized alternative strategy. As reinforcement, "take advantage of the wealth of tourism information in the Location-enabled feature to build a "Solo Destination" app that game-loving users love" (SO1). Although it is possible to carry out other alternative strategies (can be seen in table 3), at least the Desirability Index shows that the WO1 and SO2 strategies as alternative strategies are currently the most needed to improve the performance of the "Solo Destination" app as a tourism promotion engine for Surakarta Cultural Destinations. The improvement and improvement of the "Solo Destination" app, of course, as stated in the initial goal of determining the strategy, help increase the number of users and the number of tourists to Surakarta.

TABLE III. SWOT MATRIX FOR "SOLO DESTINATION" APP

	STRENGTHS	WEAKNESSES
Opportunities	*SO Strategies: Maxi-Maxi* **SO1:** using the ease-of-use support and small storage to add virtual technology and gamification (S2-S1-S5-O2-O1) **SO2:** using complete information and ease of use content to attract tourists' interest towards Surakarta Cultural Tourism (S2-S1-O5)	*WO Strategies: Mini-Maxi* **WO1:** fixing the unattractive appearance, bugs, and lack of virtual features to target the market for people's interest in gamification and adapt to the development of virtual technology (W2-W1-W4-W5-O2-O1) **WO2:** adding content, fixing bugs, and improving thumbnail that is still limited with financial to the IT sector (W2-W5-O3)
Threats	*ST Strategies: Maxi-Mini* **ST1:** Utilizing the completeness of tourism information, easy-to-understand content, and minimal advertising to prevent users from wanting to uninstall (S1-S2-S4-T1) **ST2:** Utilizing the use of small storage to reduce database update costs (S5-T5)	*WT Strategies: Mini-Mini* **WT1:** Fixing content that is limited, unattractive, and does not support virtual tourism features to keep users from uninstalling the "Solo Destination" app (W1-W2-W4-T1) **WT2:** Fixing bugs, errors, and poor thumbnails to compete with rival apps (W5-W2-T2-T4)

TABLE IV. DESIRABILITY INDEX FOR ALTERNATIVE STRATEGIES

	Alternative Strategies							
	SO1	**SO2**	**WO1**	**WO2**	**ST1**	**ST2**	**WT1**	**WT2**
Desira-bility Index	0.223	0.219	0.022	0.215	0.222	0.160	0.225	0.191
Norma-lized	0.095	0.131	0.133	0.128	0.132	0.095	0.134	0.114
Ranking	**2**	**5**	**3**	**6**	**4**	**8**	**1**	**7**

V. DISCUSSION

This research utilizes a reliable and systematic methodology in determining marketing strategy planning, which is a marketing strategy tourism tool optimization strategy. This research, together with active users and stakeholders who are most responsible for the Solo Destination application, including the Department of Tourism, Department of Communications and Information Service, and Department of Research in Surakarta and application makers, agree that the primary goal of improvement is to focus on sellers of sustainable Surakarta Cultural Tourism mobile applications. Based on user experience, a community mobile application service needs to offer fun features to retain existing users while adding new ones. More than that, of course, considering the original purpose of the Solo application. Objective: to increase cultural tourism visits to Surakarta.

Strategic objectives that support the main objectives of the application are captured by stakeholders, which contain attributes that are strengths that must be exploited, weaknesses that need to be improved, opportunities that must be captured, and threats that must be countered. This research offers a way of prioritizing each attribute submitted by users. Stakeholders are then asked to determine which attributes need to be the primary concern. Furthermore, the priority attributes are combined crosswise to show what strengths can be maintained to achieve opportunities, what strengths need to be maintained to fight threats, what weaknesses need to be improved with existing opportunities, and what weaknesses need to be improved against threats. Each alternative is weighed again to determine the most relevant strategy to be applied to improve the Solo Destination application.

Pairwise comparison points out that the Solo Destination app has a comprehensive database and map-based resources, a solid foundation for building location-enabled features. In addition, although it has been relied on for a long time, the Solo Goal application is still considered incapable of displaying various features and a light display. Incorporating game features, more popularly known as gamification, is a reasonable effort considering the considerable support from the Surakarta Government for the IT sector. Thus, referring to user experience and careful analysis by stakeholders, the advantages of the tourist location database in Solo Destinasi support promoting modern location-enabled features embedded in simple virtual games based on metaverse.

VI. CONCLUSSION

This research has represented the condition that SWOT analysis with AHP is a reliable, comprehensive, and systematic way to determine tourism marketing strategies, as has been done in previous marketing (Büyüközkan et al., 2021; Gerami & Hosseini, 2021; Navarro-Martínez et al., 2020). This research further represents what previous researchers have done: the SWOT-AHP approach is also a heuristic for modification, improvement, and improvement of mobile app performance as a tourism promotion tool (Büyüközkan et al., 2021; Nurjihadi & Firdaus, 2021).

In the end, it should be stated that to add to the repertoire of the previous literature on tourism promotion mobile apps, and also not to forget that this is a novelty offered in this research, through the SWOT-AHP approach, location-enabled gamification is possible for the government working the same as the IT sector to be presented as a supplement to the tour guide application. This research takes a case study on the Solo Destination app. This Surakarta cultural tourism promotion tool still requires a touch on the display and content variations that need to be simplified. The high user demand for the fun of the application, and the fear of uninstallation behavior among users, require the Solo Destination app to be developed more seriously. This research has provided insights into metaverse technology and user enjoyment in games that location-enabled gamification will bring a new experience to Solo Destination as a competitive strategy in the travel guide mobile app market.

REFERENCES

[1]. Büyüközkan, G., Mukul, E., & Kongar, E. (2021). Health tourism strategy selection via SWOT analysis and integrated hesitant fuzzy linguistic AHP-MABAC approach. Socio-Economic Planning Sciences, 74, 100929.

[2]. Creswell, J. W., & Tashakkori, A. (2007). Developing publishable mixed methods manuscripts. In (Vol. 1, pp. 107-111): Sage Publications Sage CA: Los Angeles, CA.

[3]. Darko, A., Chan, A. P. C., Ameyaw, E. E., Owusu, E. K., Pärn, E., & Edwards, D. J. (2019). Review of application of analytic hierarchy process (AHP) in construction. International Journal of Construction Management, 19(5), 436-452.

[4]. David, M. E., David, F. R., & David, F. R. (2017). The quantitative strategic planning matrix: a new marketing tool. Journal of Strategic Marketing, 25(4), 342-352.

[5]. Gerami, F., & Hosseini, S. Z. (2021). Planning for Sustainable Tourism Development using SWOT Analysis–Case Study: Pasargad Region–Fars, Iran. Athens Journal of Tourism, 8(1), 43-54.

[6]. Goranczewski, B., & Puciato, D. (2010). SWOT analysis in the formulation of tourism development strategies for destinations. Turyzm, 20(2), 45-53.

[7]. Hellebrandt, T., Heine, I., & Schmitt, R. H. (2018). Knowledge management framework for complaint knowledge transfer to product development. Procedia Manufacturing, 21, 173-180.

[8]. Irdana, N., Rahayuningsih, H., & Chairunnisa, M. (2019). Merchants Perception of Banking EDC Machine Usefulness In Klewer Traditional Market as Shopping Tourism Icon in Surakarta. Paper presented at the 1st International Conference One Belt, One Road, One Tourism (ICOBOROT 2018).

[9]. Navarro-Martínez, Z. M., Crespo, C. M., Hernández-Fernández, L., Ferro-Azcona, H., González-Díaz, S. P., & McLaughlin, R. J. (2020). Using SWOT analysis to support biodiversity and sustainable tourism in Caguanes National Park, Cuba. Ocean Coastal Management, 193, 105188.

[10]. Nurjihadi, M., & Firdaus, R. (2021). Policy and Program Priorities to Accelerate Unemployment Declining Progress in Sumbawa Regency; AHP Approach. International Journal of Innovative Science Research Technology.

[11]. Nusantara, A. C., Volgger, M., & Pforr, C. (2021). Evaluating the complex impact of policy changes on tourism development: The case of Surakarta, Indonesia. Journal of Global Scholars of Marketing Science, 31(4), 614-623.

[12]. Prasetya, F. A., & Kussudyarsana, K. (2020). Indonesian Local Game Developer Marketing Strategy Analysis: Consumer Perspective. Issues on Inclusive Growth in Developing Countries, 1(2), 83-92.

[13]. Saaty, T. L. (2004). Decision making—the analytic hierarchy and network processes (AHP/ANP). Journal of Systems Science Systems Engineering, 13(1), 1-35.

[14]. Saldaña, J. (2021). The coding manual for qualitative researchers. London: SAGE.

[15]. Sari, D. P., Susanto, D., & Marimin, M. (2020). The Form of Kejawen Islam in Nyanggar Janur Kuning Rituals in Indonesia. International Journal of Multicultural Multireligious Understanding, 7(1), 623-628.

[16]. Satghare, H. R., & Sawant, M. (2019). Evaluation of official destination website of Maharashtra state (India) from the customer perspectives. Journal of Global Scholars of Marketing Science, 29(2), 234-247.

[17]. Setyawan, A. A., & Kussudiyarsana, I. (2015). Brand trust and brand loyalty, an empirical study in Indonesia consumers. British Journal of Marketing Studies, 4(3), 37-47.

[18]. Wijaya, L. S., Vanel, Z., Huwae, G. N., & Kristanto, B. (2020). Socialization as Integrated Marketing Communication Strategy in Increasing Brand Awareness (Case study" Solo Destination" Application of Solo City Government):(Case study "Solo Destination" Application of Solo City Government). Petra International Journal of Business Studies, 3(1), 54-63.