



---

## Redesigning Tourism Community Participation Management: Integrating Digital Technology with the Soft Systems Methodology (SSM) Approach

Retnowati<sup>1\*</sup>, Eko Nur Wahyudi<sup>2</sup>, Sunardi<sup>3</sup>

Universitas Stikubank, Semarang, Indonesia

Email: [Retnowati@edu.unisbank.ac.id](mailto:Retnowati@edu.unisbank.ac.id)

---

### Keywords

Community Collective Engagement (CCE); Soft Systems Methodology (SSM); Multifactor Evaluation Process (MFEP); Tourism Awareness Group; Participatory Innovation.

### Abstract

The soft systems methodology (SSM) method is used in this study to address the perspective of community collective engagement (Participation with the community) in the context of tourist awareness groups. This study aims to develop a new model that can increase community engagement using digital technology for tourist objectives. This research examines difficulties and formulates novel digital technology solutions through case studies on tourist awareness groups. The findings of this study suggest that the SSM method may give a comprehensive picture and enable the building of relevant and successful models. This study contributes significantly to our understanding of how to improve community engagement in technology-based tourist situations.



© 2024 by the authors. Submitted for possible open-access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

---

### 1. Introduction

The tourism industry has undergone a significant transformation with the adoption of digital technology. While this technology opens up new opportunities, tourism-conscious groups (Pokdarwis), which have an essential role in destination development, face the challenge of participating and effectively utilizing digital technology. Pokdarwis is a local community that plays a role in promoting and preserving tourist destinations. Developing local tourism is essential in improving the economy and welfare of the community, including Pokdarwis. In this context, community collective engagement (CCE) is a relevant approach to integrate active community participation in decision-making (Barnes et al., 2014) related to tourism development.

In the digital era, the use of technology such as mobile applications, social media, and other online platforms can expand the positive impact of this Pokdarwis community. Digital technologies can improve communication, manage data, and provide tools that enable community participation in decision-making. However, significant obstacles must be overcome, such as lack of access to technology, lack of understanding, and challenges in integrating technology into conservation efforts and tourism promotion. This is supported by research results that state that understanding communities is more effective if supported by technology-based tourism initiatives (Umam & Astuti, 2022), (Rukman, Marliani, Muharram, & Yunan, 2023), (Yaakop, Bagul, & Ismail, 2021). Therefore, it is necessary to identify innovative solutions that can help travel-conscious groups (Setiawan, 2022), (Pratiwi, Oetomo, Pi, Asbi, & Hut, 2019) overcome these obstacles and utilize digital technology (Li, 2020)–(Jari & Lauraéus, 2019) more effectively. The existence of pokdarwis participating in

---

managing tourism in their area needs to be optimized, so a framework is required to understand the complex dynamics of pokdarwis as part of Community Collective Engagement (CCE).

The Dynamics Soft Systems Methodology (SSM) approach can be used as a framework for developing conceptual models (Trenerry et al., 2021)–(Wang, Liu, & Mingers, 2015) because SSM is specifically designed to address complex and ambiguous problems. SSM helps detail, analyze, and formulate problems by involving various stakeholders and understanding Pokdarwi's perspectives. The SSM approach can provide a holistic view to identify differences in perceptions and goals between the multiple parties involved in CCE, such as Polaris and others. Thus, SSM helps formulate conceptual models that understand the complex dynamics and conflicts between various elements in the CCE. Therefore, this study aims to develop a new model to strengthen community participation in utilizing digital technology for tourist purposes. In this case, the main focus refers to innovation in the context of community participation and digital technology (Latuperissa, 2020).

This study also wants to know the aspects that will be the basis for the success indicators of conceptual models using the Multi-factors Evaluation Process (MFEP) algorithm. MFEP is also one of the methods in the realm of SSM (Tarifu, Equatora, Abdullah, & Saragih, 2021), (Xu, Guan, Shi, & Blersch, 2018), which can be used to determine the best priority level in several aspects considered in various fields. In this study, the indicators of model success with the SSM approach are efficiency, efficacy, and effectiveness. The study aims to develop innovative models to strengthen community participation in technology-based tourism. At the same time, the benefits involve increased understanding, creative solutions, scientific contributions, and community participation.

This research will make valuable contributions to knowledge in community participation, technology-based tourism, and using SSM as a research approach. In this case, increasing community participation positively impacts the development and sustainability of technology-based tourist destinations.

Community collective engagement, or CCE, is an essential concept in the tourism industry, mainly if applied to increase the number of people working there. This is due to the realization that tourism is becoming one of the important economic sectors in many countries, which can provide significant financial benefits (Pane et al., 2021); (Moric, Pekovic, Janinovic, Perovic, & Griesbeck, 2021). Community Collective Engagement (CCE) refers to the active and collaborative participation of diverse community members in the decision-making, planning, implementation, and evaluation processes of various projects that affect the lives of the community. This idea highlights the need for community involvement in shaping policies, initiatives, or projects that impact ecological, social, cultural, and economic well-being. The concept of CCE is, first, participation and collaboration, which allows people to share information, knowledge, and different points of view to achieve common goals. Second is joint decision-making, and third is capacity building. Fourth, Transparency and Accountability. Involvement in Planning and Implementation. Sustainability and Empowerment. Positive impact.

MFEP is a quantitative method that uses a weighting system (Retnowati Retnowati, Wahyudi, & Anis, 2022), (Warnilah, Purnia, Adiwisastro, Sutisna, & Ardianto, 2020), (Honorata Ratna Putranti Retnowati & Danang, 2022). Aspects of success indicators of the model to be implemented. This context is essential in decision-making so that the main elements agreed upon get a priority picture for Pokdarwis and decision-makers. All critical criteria in making considerations are given appropriate weighting. The same steps are taken on alternative aspects to be selected and evaluated about these consideration factors. The MFEP method determines that the alternative with the highest value is the best solution based on the criteria that have been selected. The formula used in MFEP can be explained in formula points (1) and (2), which begin by determining the indicators, criteria, and weights of each criterion as the primary source of counters in MFEP (Xu et al., 2018). The next step is to calculate the evaluation weight value (NBE) with the formula:

$$NBE = NBF * NEF \quad (1)$$

Information:

NBE = Evaluation Weight Value

NBF = Value Weight Factor

NEF = Value Evaluation Factor

Once the NBE can be calculated, the next step is to calculate the total evaluation weight (TBE) with the formula:

$$TBE = NBE1 + NBE2 + NBE3 + .....NBE_n \quad (2)$$

**Information:**

TBE = Total Evaluation Weight

NBE = Evaluation Weight Value

Once the TBE can be calculated, the next step is to rank for a decision. CCE is an essential basis for understanding that community involvement is significant in strengthening tourism management, especially Polaris, which must be sharpened by using information technology and digitalization because the current era of tourism is in the digital transformation era. Therefore, it is necessary to build a conceptual model of tourism management by local communities with an SSM approach that strengthens the use of information and digital technology by clarifying the success aspects of the model in terms of efficiency, effectiveness, and efficacy measurably using MFEP.

**2. Materials and Methods**

This research uses a mixed methods approach, combining qualitative (SSM) and quantitative (MFEP). The locus of the case study was conducted on pokdarwis in the city area of Semarang, Central Java. Based on the method and substance of the research, all kinds of data related to the research topic will be used as primary data to help the analysis process. The data collection strategy is observation and in-depth interviews with sources as primary data. Secondary data are based on intellectual studies from various sources. This study's qualitative data analysis strategies include a) data categorization, b) data description, and c) data interpretation. Data analysis was carried out using unique methods to strengthen the idea of collective involvement of pokdarwis communities in tourism management by improving information technology and digitalization.

After the data is collected, analysis is carried out with the SSM approach in seven stages; where after the conceptual model can be described, the resource person is asked for opinions on the model that has been formed to get agreement. Furthermore, from the aspects of efficiency, effectiveness, and efficacy, indicators whose weights will be agreed upon by the resource persons, the main priority level will be calculated using MFEP. The final ranking results of these indicators are used to improve and revise previously built models using SSM. Figure 2 shows the research methods used as a guideline for conducting research. The findings of the SSM stages will be reported based on three groupings, as follows:

1. Stages 1-2 SSM, in this section, discusses the results and information related to the findings of problems in the field or problems in tourism activities in Pokdarwis about information technology transformation and digitalization.
2. Stages 3-4-5 SSM, in this section, describes three things, namely:
  - a) the results of the evaluation of researchers and informants, who then compile a root definition by understanding the point of view of the resource person/participant to build a CCE-based tourism management model with IT optimization and digitalization
  - b) build a conceptual model that contains the activities that have been carried out and that need to be done;
  - c) comparison of conceptual models with actual conditions in the field.
3. In stages 6-7, SSM aims to identify feasible and systemically feasible changes and produce recommendations for changes that can be implemented so that an appropriate system can be obtained with pokdarwis conditions

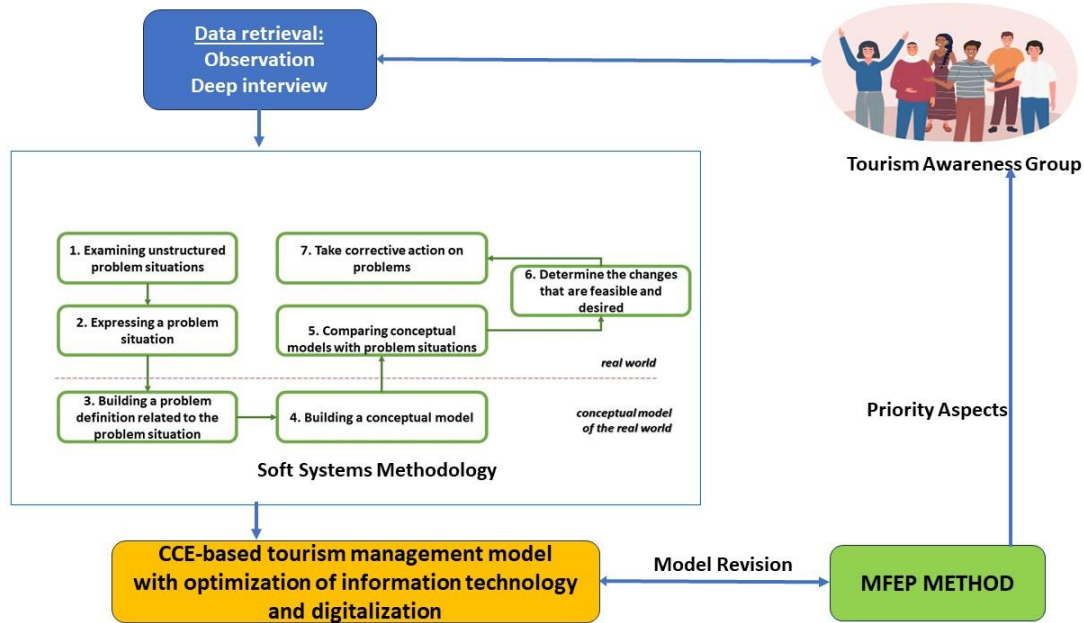


Figure 1. Research Methods

### 3. Results and Discussions

The problems faced by tourism awareness groups in the Semarang city area were understood through in-depth observations and interviews with informants. The collected data is analyzed using an SSM approach with seven stages of completion. The first stage is the identification of unstructured problems. Table 1 describes the identification of the issues in the activities of tourism activists, which is a form of the creation of CCE that is associated with the use and optimization of information technology in the digital era.

Table 1  
Problem Analysis

No.	Problems	Identification
1.	Lack of participation of Pokdarwis in the use of tourism applications	<ul style="list-style-type: none"> <li>• Pokdarwis in tourist locations have limited access and interest in promoting new tourist attractions through digital tourism applications.</li> <li>• An understanding of the importance of tourism promotion using information technology and digitalization is required</li> </ul>
2	Discrepancy of Pokdarwis' expectations with existing information technology, where existing needs and applications are not yet relevant	<ul style="list-style-type: none"> <li>• mismatch between available information technology features and capabilities with the expectations and needs of travel-conscious groups</li> <li>• Technology adjustment is needed by identifying the specific needs of tourism-conscious groups and developing or adjusting information technology to match the expectations and needs of Polaris</li> </ul>
3	The data and information disseminated are not maintained so that the information disseminated is	<ul style="list-style-type: none"> <li>• The inability of HR to manage and maintain the continuity of updating data and information on existing applications</li> </ul>

---

not in sync with the current state	<ul style="list-style-type: none"><li>• HR who understand how to update data and information is needed</li><li>• Cost support is needed to keep information management activities running properly</li></ul>
------------------------------------	--

---

From the problem analysis in Table 1, a description of the situation is carried out using the principle of the rich picture, as shown in Figure 3. Figure 3 shows that the sustainability of pokdarwis participation in tourism management is a shared responsibility between the community, media, government, education, and academics. The community, as the primary source of Polaris, is the host and is the leading actor in carrying out the process of managing and developing tourism in its area. Tourists can be accommodated well when the community provides optimal services and facilities. In contrast, the government provides support related to optimizing human resources for tourism and participating in supervising the development of tourist attractions. With the creation of synergy and coordination between stakeholders, it is hoped that local communities can develop and manage new tourist attractions in the Semarang area using the principles of CCE. The involvement is intended as a form of CCE implementation considering information technology utilization and digitalization.

Based on the rich picture, it can be seen that the main obstacles faced by Pokdarwis indicate the need for improvement, improvement, and strengthening, which will be explained in the CATWOE analysis table (table 2). CATWOE Analysis is an acronym for CATWOE Analysis consisting of Consumer, Actor, Transformation, Worldview, Owner & Environment. CATWOE analysis is an analysis where the researcher is at the abstraction stage, meaning not in the real world. Still, the basis of the abstraction context is the result of collective data derived from the real world.

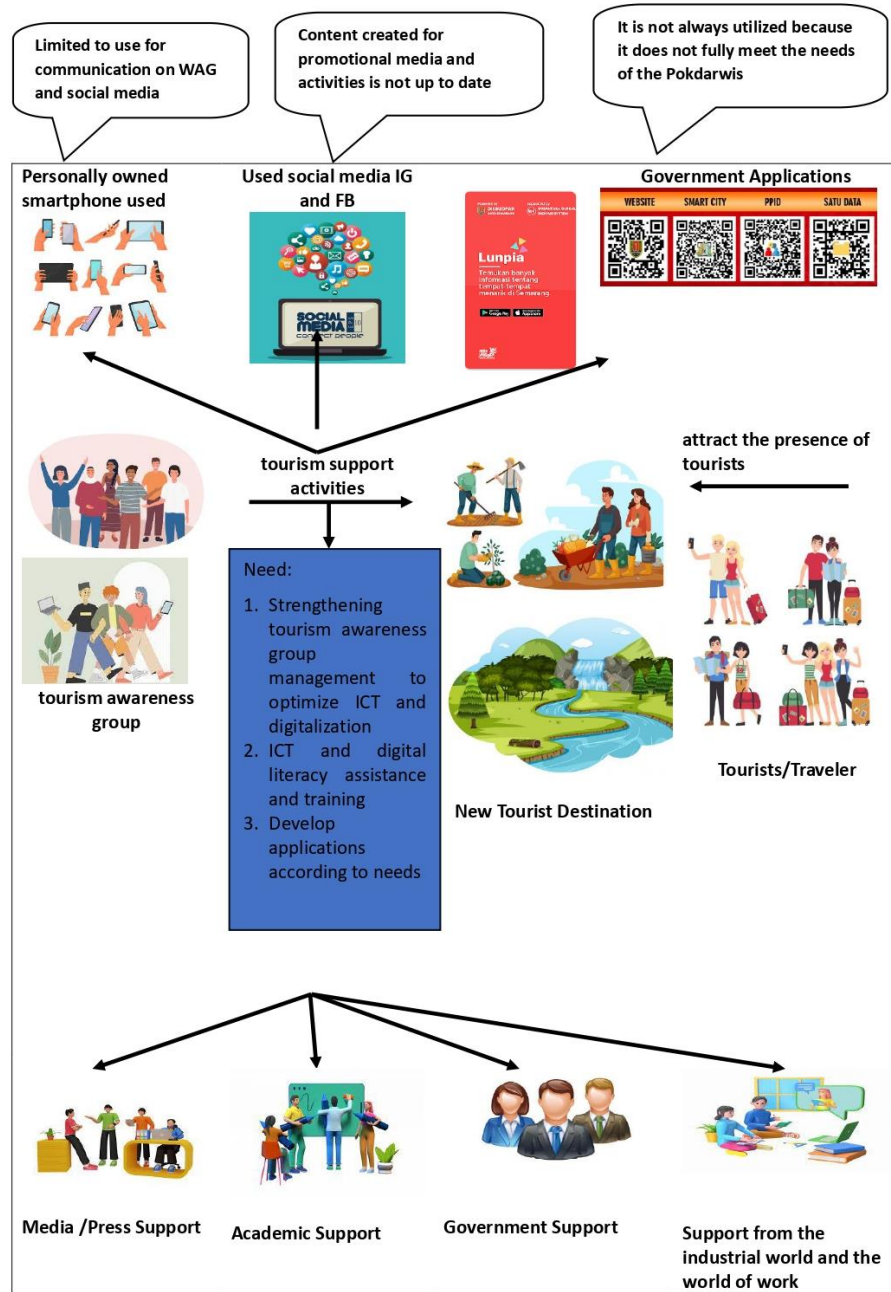


Figure 2. Rich Picture

Table 2  
Analyses CATWOE

Acronym	Analysis	Details
C(Customer)	Customers who receive proceeds from the utilization of information technology by travel-conscious groups	tourists, destination visitors, and interested parties in the promotion of tourist destinations.

A(Actor)	Actors who act and participate in the use of information technology	Members of travel awareness groups are involved in the use of information technology, as well as digital literacy training providers, instructors, and management of travel awareness groups.
T(Transformation)	How information technology is changing the process or activity of a travel-conscious group	Transformation involves using information technology to promote tourist destinations, communicate information to customers, and facilitate interaction with travelers.
W(Worldview)	worldviews or perspectives that support or hinder the use of information technology by travel-conscious groups	Worldviews can vary, including beliefs about the benefits of information technology, digital literacy challenges, and relationships with technology in travel contexts.
O(Owner)	are those who own or manage initiatives on the use of information technology by travel-conscious groups	The owner is the tourism-conscious group itself, the local government, or any other entity supporting the initiative, IDUKA, academia
E(Environment)	External factors or environmental constraints affecting the utilization of information technology by travel-conscious groups	Environmental constraints could include access to IT infrastructure, tourism regulations, or economic factors.

---

**Root Definition:**

*A model of developing Pokdarwis participation through actively adopting and utilizing information technology and digitalization by planning digital literacy training programs, tourism applications, and information technology resources so that Pokdarwis benefit from increasing their participation in using information technology and digitalization for tourism promotion.*

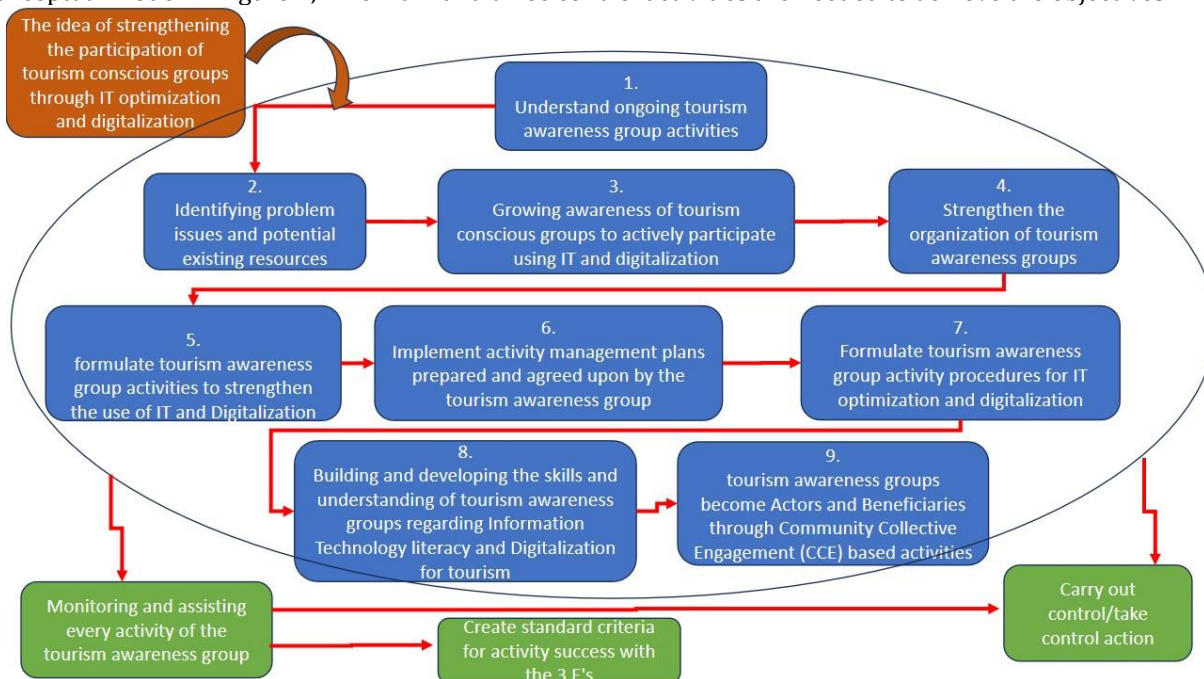
---

**Performance Optimization Measurement**

Efficiency	Control the digital literacy training process and ensure the efficient use of resources such as time, effort, and budget. Measurement of its indicators: 1. Time required to complete a digital literacy training program per member. 2. The budget spent on digital literacy training programs is compared to the benefits generated.
Effectiveness	1. Time spent publishing content online. Evaluate the achievement of tourist destination promotion goals. Measurement of its indicators: 1. The percentage increase in tourist visits after using information technology for promotion.

- Efficacy
2. The level of satisfaction of travelers who have used the information provided by travel-conscious groups through technology.
  1. Convert a tourism website or app visit to a physical visit to a destination. Pokdarwis members have gained increased skills in the use of information technology.
- Measurement of its indicators:
1. Percentage of Pokdarwis members who have completed digital literacy training.
  2. Increased digital literacy before and after training, measured by technology knowledge tests.
1. The level of trust of Pokdarwis members in using information technology for destination promotion.

With the performance assessment based on the formulation above, it is expected that the performance of the conceptual model of CCE-based Pokdarwis participation development can be realized optimally. In the conceptual model in Figure 4, nine main and three control activities are needed to achieve the objectives.



**Figure 3 Conceptual Model of CCE-Based Pokdarwis Participation Development**

In this stage, the conceptual model that has been built needs to be compared to the problem situation (real world) so that recommendations can be obtained and realized. With measurable recommendations, there is expected to be a formulation of suggestions for action steps for improvement, improvement, and change in real-world situations. The comparison of conceptual and real-world models is described as shown in Table 3.

**Table 3 Comparison of Conceptual and Real-world Models**

ACTIVITY	REAL WORLD	RECOMMENDATIONS
Understand ongoing Pokdarwis activities.	Limitations of Pokdarwis human resources on the	Increase Knowledge and insights



	understanding and use of Information Technology and Digitalization	in the form of information technology literacy and digitalization for tourism promotion <b>[increased IT and Digital literacy]</b>
Identify issues, problems, and potential existing resources	Tourism Villages Thematic Villages are tourist attractions with a high intensity of visits. There is already management by Pokdarwis, but strengthening promotion using information technology and digitalization has not been the main focus so that it can interfere with the sustainability of existing tourist destinations.	Maximizing resources and information technology and digitalization to support the expansion of tourism promotion <b>[strengthening IT resources and digitalization]</b>
ACTIVITY	REAL WORLD	RECOMMENDATIONS
Growing awareness of Pokdarwis to actively participate in using IT and Digitalization	Participation and initiation Pokdarwis in optimizing information technology and digitalization takes place in a sporadic and yet sustainable	Organizing mentoring and up-skilling for pokdarwis members on information technology and digitalization to expand and strengthen tourism promotion media <b>[increased IT and Digital literacy]</b>
Strengthening the Pokdarwis organisation	Pokdarwis management has not been fully strengthened with the support of information technology and digitalization, which is currently owned. Not all are managed and maintained correctly, so data and information are not updated correctly.	Assisting and strengthening pokdarwis with governance supported by information technology and digitalization while ensuring maintenance is carried out continuously. <b>[increased IT and Digital literacy]</b>
Formulate Pokdarwis activities to strengthen the use of IT and Digitalization.	Pokdarwis does not yet have a measurable and targeted agenda for tourism promotion programs utilizing IT and digitalization.	Provide assistance to develop measurable, directed, and well-documented plans for promotional activities utilizing IT and digitalization <b>[increasing IT and Digital literacy]</b>

Implement activity management plan prepared and agreed upon by Pokdarwis	The implementation of IT-based promotion development plans and digitalization is still spontaneous and not continuous	Realizing controlled and evaluated IT-based promotion and digitalization development activities through continuous assistance <b>[strengthening IT resources and digitalization]</b>
Formulate Pokdarwis activity procedures for IT optimization and Digitalization.	Procedures and support of resources and funds for developing IT-based promotion and digitalization have not been well presented and documented.	Preparation of standard operating procedures to manage, develop, and control pokdarwis activities for IT-based tourism promotion and digitalization <b>[strengthening IT resources and digitalization]</b>
Build and develop Pokdarwis' skills and understanding of Information Technology literacy and Digitalization for tourism.	The lack of human resources prevents skills in IT and digitalization.	Optimizing existing Pokdarwis human resources, working with human resources outside Pokdarwis to provide ongoing assistance <b>[strengthening IT resources and digitalization]</b>
Pokdarwis become Actors and Beneficiaries through <i>Community Collective Engagement (CCE)--based activities</i> .	Pokdarwis conducts voluntary tourism promotion activities, not maintaining continuity and novelty of information by utilizing social networks and smartphones only.	Pokdarwis has planned, controlled, and evaluated promotional activities, getting support from IT resources and digitalization, continuous assistance so that its participation has an impact on increasing tourists and the welfare of pokdarwis members and the community <b>[strengthening IT resources and digitalization]</b>

The results of the comparison of conceptual and real-world models obtained two main recommendations, namely (1) strengthening IT resources and digitalization (P1) and (2) increasing IT and Digital literacy (P2), where these recommendations must involve the main actors, namely Polaris (society) with the support of the academic world, the business world and the world of work (dudika), the government and the media, to present the level of closeness of CCE that ensures the continuity of the pentahelix.

In terms of measuring the success of the model that has been built to produce recommendations, it has been agreed that there are 3 E's in the CATWOE analysis (table 2), namely efficiency (E1), effectiveness (E2), and efficacy (E3), each of which has been agreed upon as well as the determining indicators. With data sources obtained from 25 informants as representatives of Pokdarwis members, the desired preferences of Pokdarwis members were obtained for two recommendations, which were then analyzed using the MFEP method. The first step is determining criteria weights E1, E2, and E3, as shown in table 3. The next step is to process data from informants called factor evaluation values (NEF) to calculate evaluation weight values (NBE), as shown in Table 4. Then, ranking was done, and the highest value was found to be P1 or P2.

**Table 4**  
**Criterion Weights**

CRITERION	PERCENTAGE
E1	0,4
E2	0,3
E3	0,3

---

Total	1
-------	---

---

**Table 5**  
**Calculation of Factor Evaluation Value (NEF)**

CRITERION	P1	P2
E1	4,05	4,04
E2	4,49	4,49
E3	4,49	4,52

**Table 6**  
**Calculation of Evaluation Weight Value and Total Evaluation Weight**

CRITERION	NBE P1			NBE P2		
	NBF	NAVE	NBE	NBF	NAVE	NBE
E1	0,4	4,05	1,62	0,4	4,04	1,616
E2	0,3	4,49	1,347	0,3	4,49	1,347
E3	0,3	4,49	1,347	0,3	4,52	1,356
		TBE-P1	4,314		TBE-P2	4,319

Based on the calculation of the evaluation weight values for P1 and P2, it is known that the total evaluation weights of P1 and P2 are relatively the same, but P2 is slightly higher. This shows that the need for information technology literacy and digitalization by recommendations is the main focus supported by the need to strengthen the use of resources provided with contributions from Penta helix components, namely Polaris (community), government, academia, media, and the business world.

#### 4. Conclusion

The main objective of this study is to develop a community engagement model (pokdarwis) for tourism promotion by utilizing information technology and digitalization. By taking into account the CCE perspective that makes pokdarwis the main actors as well as beneficiaries, this model can be built using SSM principles, which produce two main recommendations, namely strengthening IT resources and digitalization and increasing IT and Digital literacy, where using MFEP calculations it is stated that the need for improved literacy is primarily needed and supported by strengthening IT resources and digitalization. The application of recommendations from the model has been created through nine stages, namely understanding the ongoing Pokdarwis activities, identifying problem issues and potential existing resources, growing awareness of Pokdarwis to actively participate in using IT and Digitalization actively, strengthening the Pokdarwis organization, formulating Pokdarwis activities to strengthen the use of IT and Digitalization, implementing the activity management plan prepared and agreed upon by Pokdarwis, formulate Pokdarwis activity procedures for IT optimization and Digitalization, build and develop Pokdarwis skills and understanding of Information Technology literacy and Digitalization for tourism, pokdarwis become actors and beneficiaries through Community Collective Engagement (CCE)-based activities. In the future, this proposed model can be continued by evaluating its application after it has been fully implemented for at least one or two years.

## 5. References

- Barnes, Melody, Born, Paul, Harwood, Richard, Savner, Steve, Stewart, Stacey, & Zanghi MSW, Martin. (2014). Roundtable on Community Engagement and Collective Impact. *Stanford*.
- Jari, Kaivo Oja, & Lauraéus, Theresa. (2019). Analysis of 2017 Gartner's three megatrends to thrive the disruptive business, technology trends 2008-2016, dynamic capabilities of VUCA and foresight leadership tools. *Advances in Technology Innovation*, 4(2), 105.
- Latuperissa, Rudy. (2020). Model Konseptual Pengelolaan Pengetahuan Di Pokdarwis Wonderful Sangiran Dengan Pendekatan Soft System Methodology. *Nusantara Journal of Information and Library Studies (N-JILS)*, 3(2), 140–155. <https://doi.org/10.30999/n-jils.v3i2.937>
- Li, Feng. (2020). The digital transformation of business models in the creative industries: A holistic framework and emerging trends. *Technovation*, 92, 102012. <https://doi.org/10.1016/j.technovation.2017.12.004>
- Moric, Ilija, Pekovic, Sanja, Janinovic, Jovana, Perovic, Đurđica, & Griesbeck, Michaela. (2021). Cultural tourism and community engagement: Insight from Montenegro. *Business Systems Research: International Journal of the Society for Advancing Innovation and Research in Economy*, 12(1), 164–178.
- Pane, Deasy Damayanti Putri, Tortora, Piera, Anindito, Istasius Angger, Pertamawati, Lelly Hasni, Wikapuspita, Thaliya, Ardana, Adhitya Kusuma, Manullang, Raja Aldo, Mulyaningsih, Dwi, Renata Abdullah, Rega, & Ashari, Afaf Setia. (2021). *Blue economy development framework for Indonesia's economic transformation*. Ministry of National Development Planning/National Development Planning ....
- Pratiwi, Agnesa Hilda, Oetomo, Ir Andi, Pl, M., Asbi, Adnin Musadri, & Hut, S. (2019). *EVALUASI KAPASITAS KELOMPOK SADAR WISATA (POKDARWIS) DALAM MENDUKUNG PENGEMBANGAN WISATA PANTAI MINANG RUA DESA KELAWI KABUPATEN LAMPUNG SELATAN*. February.
- Retnowati, Honorata Ratna Putranti, & Danang, Danang. (2022). Level Of Work Engagement Of Workers Based On Gamification Of Work Using Multi-Factor Evaluation Process (Mfep) Method. *Journal of Positive School Psychology*, 6(8), 6070–6084.
- Retnowati, Retnowati, Wahyudi, Eko Nur, & Anis, Yunus. (2022). Mengukur E-Participation Masyarakat di Era Transformasi Digital dengan Metode Multi Factor Evaluation Process (MFEP). *JUSIFO (Jurnal Sistem Informasi)*, 8(2), 51–60.
- Rukman, Alghif, Marliani, Yayu Ulfah, Muharram, Luthfia Hastiani, & Yunan, Arif. (2023). STRATEGI PENGEMBANGAN BISNIS BERKELANJUTAN BERBASIS KOMUNITAS DENGAN MENGGUNAKAN TRIPLE LAYER BUSINESS MODEL CANVAS (STUDI KASUS: KOMUNITAS MAGOTSUKA). *Jurnal Bisnis Dan Kewirausahaan*, 19(1), 13–21.
- Setiawan, Aby. (2022). Peran Pokdarwis Dalam Pengembangan Destinasi wisata Pantai Biru Kersik Kecamatan Marangkayu Kabupaten Kutai Kartanegara. *Jurnal Administrasi Bisnis FISIPOL UNMUL*, 10(3), 263.
- Tarifu, La, Equatora, Muhammad Ali, Abdullah, Dahlan, & Saragih, Yasmirah Mandasari. (2021). Decision support system simulation application with mfep method. *Journal of Physics: Conference Series*, 1845(1), 12027. IOP Publishing.
- Trenerry, Brigid, Chng, Samuel, Wang, Yang, Suhaila, Zainal Shah, Lim, Sun Sun, Lu, Han Yu, & Oh, Peng Ho.

- (2021). Preparing workplaces for digital transformation: An integrative review and framework of multi-level factors. *Frontiers in Psychology, 12*, 620766.
- Umam, Khaerul, & Astuti, Feni. (2022). The embodiment of global governance through Hexahelix in preserving terracotta architecture. *Iapa Proceedings Conference, 74–94*. <https://doi.org/10.30589/proceedings.2022.684>.
- Wang, Wei, Liu, Wenbin, & Mingers, John. (2015). A systemic method for organisational stakeholder identification and analysis using Soft Systems Methodology (SSM). *European Journal of Operational Research, 246*(2), 562–574. <https://doi.org/10.1016/j.ejor.2015.05.014>
- Warnilah, Ai Ilah, Purnia, Dini Silvi, Adiwisastra, Miftah Farid, Sutisna, Herlan, & Ardianto, Rian. (2020). The implementation of the mfep (multi factor evaluation process) method in determining the learning model. *Journal of Physics: Conference Series, 1641*(1), 12036. IOP Publishing.
- Xu, Guomin, Guan, Wenjian, Shi, Suan, & Blersch, David. (2018). Adsorption model development for mass transport characteristics of MFEP structure by physisorption method. *Chemical Engineering Journal, 354*, 922–931.
- Yaakop, Azizul Yadi, Bagul, Awangku Hassanal Bahar Pengiran, & Ismail, Fathilah. (2021). Community engagement framework for a sustainable sea turtle conservation marketing: a conceptual framework. *BIMP-EAGA Journal for Sustainable Tourism Development, 10*(1), 35–43. <https://doi.org/10.51200/bimpeagajtsd.v10i1.3619>