

CHAPTER I

INTRODUCTION

1.1. Background

The rapid advancement of digital technology has transformed the tourism sector by encouraging travelers to rely on online platforms when searching for information about tourist destinations, including social media, tourism websites, and travel applications. However, the ease of accessing information is not always accompanied by the ability to make informed decisions. The abundance of available destination alternatives often leads to the phenomenon of information overload, in which users experience difficulty selecting appropriate destinations due to the excessive amount of information that must be evaluated. Information overload has become one of the major challenges in modern information systems, highlighting the need for information filtering mechanisms capable of providing recommendations that align with users' needs and preferences [1]. Within the tourism domain, this challenge becomes even more complex because travelers possess diverse characteristics, interests, and travel objectives.

Several international studies have reported that travelers frequently encounter difficulties in selecting destinations that best match their preferences, particularly when personalized recommendation services are unavailable. Conventional tourism information systems generally provide static information without considering individual user requirements, making them less effective in supporting travel decision-making [2]. Other studies have emphasized that recommender systems play a crucial role in travel planning by generating recommendations that are relevant, contextual, and personalized [3]. Therefore, the implementation of recommender systems has become a strategic necessity for enhancing both travelers experiences and the effectiveness of tourism information delivery. This growing demand for personalized recommendation services also presents a valuable opportunity for regions with developing tourism sectors, including Blora Regency.

Blora Regency is located in the eastern part of Central Java Province and shares its eastern border with East Java Province. The regency covers an area of approximately 182,058.797 hectares and consists of sixteen districts [4]. In recent years, the tourism sector in Blora Regency has experienced substantial growth, as

reflected by the increasing number of tourist visits. Official statistics indicate that the number of visitors reached 789,667 in 2023 [5] and further increased to 1,162,982 in 2025 [6]. Furthermore, Blora's inclusion in the Towards 100 Smart Cities Movement has encouraged the local government to strengthen the branding of its tourism sector as an alternative source of regional revenue beyond the mining industry. Tourism management and promotion in Blora Regency are administered by the Department of Youth, Sports, Culture, and Tourism (Dinas Kepemudaan, Olahraga, Kebudayaan, dan Pariwisata). According to official data provided by Dinporabudpar, Blora Regency possesses considerable tourism potential, with fifty identified tourist destinations. These destinations encompass a wide range of categories, including natural attractions, cultural heritage sites, man-made tourist attractions, and creative economy destinations that actively promote community participation within the local tourism ecosystem.

Although the diversity of tourist attractions provides visitors with numerous alternatives, the large number and variety of available destinations often make it difficult for travelers to identify locations that best suit their personal interests. The absence of a platform capable of filtering tourism information according to individual preferences has limited the equitable exposure of these tourism assets. Consequently, there is a need for an innovative technological solution capable of delivering personalized destination recommendations.

Previous studies have attempted to develop recommender systems using single recommendation techniques. One study designed a movie recommender system based on the Content-Based Filtering approach and reported several limitations in generating accurate and relevant recommendations [7]. These limitations were primarily attributed to the scarcity of relevant information within the reference dataset, the complexity of user preferences and behavioral patterns, and the need for more advanced data processing and analytical techniques. Based on these findings, the authors recommended integrating Content-Based Filtering with Collaborative Filtering to improve recommendation performance. They also suggested incorporating personalization factors into the recommendation process to better accommodate the unique preferences of individual users. Similar limitations associated with single-method recommender systems were identified in another

study employing the Collaborative Filtering approach. Although the proposed algorithm was evaluated using a new dataset, the recommendation accuracy remained limited. The study concluded that future research should explore hybrid recommendation models to achieve better recommendation performance and suggested incorporating deep learning techniques to further improve analytical capability [8].

Motivated by the limitations identified in previous studies and their recommendations for future research, this study proposes the development of a web-based tourist destination recommender system using a Hybrid Recommender System that integrates Content-Based Filtering and Collaborative Filtering. The Content-Based Filtering component recommends destinations by measuring the similarity between destination characteristics and user preferences, whereas the Collaborative Filtering component generates recommendations based on the rating patterns and experiences of other users. By combining these two approaches, the hybrid model is expected to overcome the limitations of individual recommendation techniques, including the cold-start problem commonly encountered in Collaborative Filtering and the limited recommendation diversity associated with Content-Based Filtering [9]. Previous research has also demonstrated that hybrid recommender systems generally achieve higher recommendation accuracy and greater user satisfaction than single-method approaches [10].

A web-based implementation was selected because it offers greater accessibility and flexibility, allowing users to access the system without installing additional applications. The proposed system utilizes internal tourism data provided by the Department of Youth, Sports, Culture, and Tourism of Blora Regency as the primary source of destination information, while user preference and rating data are collected through questionnaires. By integrating these two sources of information, the system is expected to generate tourist destination recommendations that are more relevant, accurate, and aligned with travelers' preferences.

The primary objective of this recommender system is to assist travelers in identifying tourist destinations that best match their interests and preferences, improve the utilization of tourism data managed by the Department of Youth, Sports, Culture, and Tourism of Blora Regency, and support the ongoing digital

transformation of the regional tourism sector. Furthermore, this study is expected to contribute to the academic development of Hybrid Recommender Systems within the context of local tourism while serving as a foundation for the future development of sustainable tourism decision support systems.

1.2. Research Problems

1. How can a web-based tourist destination recommender system for Blora Regency be designed and implemented?
2. How can the Content-Based Filtering and Collaborative Filtering methods be integrated into a Hybrid Recommender System?
3. How can the performance and recommendation quality of the proposed system be evaluated?

1.3. Research Objectives

This study aims to design and implement a web-based tourist destination recommender system for Blora Regency that is capable of providing effective and personalized destination recommendations to users. The proposed system employs a Hybrid Recommender System by integrating the Content-Based Filtering and Collaborative Filtering methods to generate recommendations based on both destination characteristics and user preference patterns. Furthermore, the developed system is analyzed and evaluated to assess its performance and the quality of the generated recommendations through system accuracy measurements.

1.4. Research Benefits

This study is expected to provide both academic and practical contributions. From an academic perspective, the study is expected to contribute to the advancement of knowledge in the development of Hybrid Recommender Systems for the tourism domain, particularly through the integration of Content-Based Filtering and Collaborative Filtering techniques. Furthermore, this study is expected to serve as a valuable reference for future research on recommender systems and e-tourism development while providing practical insights into the implementation of these two recommendation methods within a web-based application.

From a practical perspective, the proposed system is expected to assist travelers in selecting tourist destinations that best match their preferences and travel needs by providing more relevant and personalized recommendations. In addition, the

developed system is expected to support the Department of Youth, Sports, Culture, and Tourism of Blora Regency in utilizing tourism data more effectively while strengthening regional tourism promotion through an adaptive digital platform. Moreover, this study is expected to serve as a foundation for the future development of tourism decision support systems.

1.5. Research Scope and Limitations

1. This study is limited to fifty tourist destinations located in Blora Regency.
2. The tourist destination data used in this study were obtained from the internal database of the Department of Youth, Sports, Culture, and Tourism of Blora Regency.
3. User preference and rating data were collected through questionnaire responses from fifty participants, consisting of both local tourists and visitors from outside Blora Regency.
4. The recommender system developed in this study is implemented as a web-based application.