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Digital Human Resource Management in Tourism SMEs: A Systematic Review and Contextual Insights from Samarinda, Indonesia

Majuliyati, Marjoni Rachman, Imam Nazarudin Latif

Master of Management Study Program, Faculty of Economics and Business, University of August 17, 1945 Samarinda. Email: cintamajuliyati@gmail.com

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ABSTRACT

Objective: Digital transformation has changed the way organizations manage human resources, including in small and medium-scale tourism businesses. Digital Human Resource Management (DHRM) enables the automation of recruitment, training, job scheduling, and performance appraisal processes, while generating data that can be analyzed for strategic decision-making. However, the implementation of DHRM in small- and medium-scale tourism businesses faces limitations in technology capacity, digital literacy, and financial resources. Methods: This article presents an integrative literature review of empirical and conceptual research related to DHRM, e-HRM, and digital transformation of human resources in small and medium enterprises in the tourism and service sectors. Findings: Findings show that the adoption of human resource information systems and DHRM practices is able to improve employee productivity, operational efficiency, and service quality. On the other hand, the main barriers include the cost of initial investment, employee resistance, limited infrastructure, and weak policy support. This article then discusses the implications of these findings for the development of small and medium-scale tourism businesses in Samarinda City which is being positioned as a support for the regional economy and a buffer for the new national capital through river tourism, tourist villages, as well as micro, small and medium enterprises in culinary and creative economy. Implications: This study recommends a phased strategy for the implementation of DHRM that is tailored to the local context, including the collaboration of local governments, educational institutions, and business actors, to strengthen the tourism competitiveness of Samarinda City in a sustainable manner.

I. INTRODUCTION

The development of digital technology has changed the paradigm of human resource management from an administrative function to a strategic role supported by data and information systems. The practice of Digital Human Resource Management (DHRM) develops through the utilization of human resource information systems, web-based applications, cloud computing, artificial intelligence, and data analytics to support the entire human resource management cycle, from workforce needs planning, recruitment, training, performance appraisals, to compensation management and employee engagement.

In the tourism sector, the digitization of human resources is becoming increasingly important due to the characteristics of the industry that is labor-intensive, service-oriented, and highly sensitive to the quality of interaction between employees and tourists. Research shows that digital transformation in the hospitality and tourism sector can improve operational efficiency as well as guest experience through the integration of technologies such as artificial intelligence, internet of things, and data analytics. However, these benefits can only be achieved if the organization is able to develop adequate human resource capacity and manage change systematically (Herawan & Susanti, 2025; Lundjo & Suwarno, n.d.).

Small and medium-scale tourism businesses have a strategic role in the development of tourism and the local economy. In Indonesia, micro, small, and medium enterprises in tourism contribute to job creation, income equity, and community-based destination development. The city of Samarinda, as the capital of East Kalimantan Province and a support for the development of the new national capital, has experienced an increase in the role of tourism and the creative economy, including through tourism on the Mahakam River, tourist villages, festival activities, as well as strengthening micro, small, and medium culinary and craft businesses.

On the other hand, a study on digital small and medium enterprises development programs in Indonesia shows that despite government initiatives to encourage digitalization, obstacles are still found in the form of limited technology literacy of business actors and lack of policy socialization and sustainable support (Efendi et al., 2025; Hapiz et al., 2025). This indicates that the implementation of DHRM in small and medium-scale tourism businesses in Samarinda City has the potential to face similar challenges, so a deeper understanding of the practices and prerequisites for the success of DHRM in the context of small and medium enterprises in tourism is needed.

Based on this background, this study aims to: (1) examine the concept, dimensions, and practices of DHRM in small and medium-scale tourism businesses based on literature review; (2) analyze the impact of DHRM on human resource performance and organizational performance in small and medium tourism businesses; (3) identify challenges and supporting factors for the implementation of DHRM in small and medium tourism businesses; and (4) formulate conceptual and practical implications for the development of DHRM on small and medium-scale tourism businesses in Samarinda City.

II. LITERATURE REVIEW

2.1 Digital Human Resource Management

Digital Human Resource Management (DHRM) refers to the use of digital technology to support human resource management processes, practices, and policies so that human resource functions become more efficient, integrated, and strategic (Hajar, 2024). DHRM covers the development and utilization of human resource information systems, e-recruitment, e-training, e-performance appraisal, employee portals, collaboration platforms, and human resource analytics. Research shows that effective e-HRM configuration can improve organizational performance through improved employee performance and job satisfaction (Nyathi & Kekwaletswe, 2024). Recent studies have found that DHRM strategies integrated with analytics and artificial intelligence strengthen the strategic capabilities of human resource functions, improve employee experience, and support work flexibility (Sani et al., 2024). In the context of small and medium-sized enterprises, the adoption of human resource information systems and DHRM practices has been

proven to improve employee productivity, decision-making quality, and operational efficiency, despite constraints on limited resources and technological capacity (Mohlala et al., 2024).

2.2 Small and Medium-Scale Tourism Businesses

Small and medium-scale tourism businesses include various forms of business such as homestays, small hotels, travel agencies, river tourism businesses, tourist attraction providers, restaurants, and destination-based culinary businesses. In many cases, small and medium-scale tourism businesses are managed by families or local communities, so human resource management patterns are often informal and traditional (Kurniawati et al., 2022). Research on the readiness of human resources in small and medium tourism businesses shows that the quality of human resources, especially service competencies, language skills, and digital literacy, greatly determines the ability of businesses to develop, survive crises, and be integrated in a sustainable tourism ecosystem (Satriani et al., 2022).

2.3 Tourism Context of Samarinda City

The city of Samarinda develops various tourism attractions such as Mahakam River tourism, cultural festivals, tourist villages, and public open spaces filled with micro, small, and medium enterprises (Rahman et al., 2024). The city is also part of the creative economy development strategy and micro, small, and medium enterprises of culinary and crafts as a support for the new national capital and an accelerator for achieving sustainable development goals. A study on digital small and medium enterprise development programs in Samarinda City identified that, despite the availability of infrastructure and institutional support, many business actors still experience obstacles in understanding digital programs, low technology literacy, and the lack of consistent follow-up policies to strengthen the use of technology. This condition provides an important context for the implementation of DHRM in small and medium-sized tourism businesses in the region (Diskominfo, 2023).

III. METHODS

This article uses an integrative literature review approach to examine the development of DHRM in small and medium-scale tourism businesses and draw implications for the context of Samarinda City. The literature search process was carried out through indexed international and national journal databases such as Scopus, Web of Science, and several other relevant journal portals, using the keywords "digital human resource management", "e-HRM", "digital HRM", "tourism SMEs", "hospitality", "tourism", and "small and medium enterprises" for the publication period around 2019–2025. Inclusion criteria include: (1) peer-reviewed journal articles that discuss DHRM, e-HRM, or the digital transformation of human resources; (2) studies relevant to the tourism, hospitality, services, or small and medium enterprises sectors; and (3) articles that provide empirical findings or conceptual models related to the impacts, challenges, and implementation strategies of DHRM. The literature was then analyzed thematically to identify the main dimensions of DHRM practices, their impact on human and organizational performance, and the challenges and factors supporting implementation, with special attention to the implications for the context of small- and medium-scale tourism businesses in Samarinda City.

IV. RESULTS AND DISCUSSION

4.1 Dimensions of DHRM Practice in the Tourism Sector

The literature on DHRM in the tourism sector shows that the most common practices include: (1) online recruitment and selection systems; (2) e-learning-based training platforms; (3) digital performance appraisal system; (4) employee self-service portals; and (5) the use of human resource analytics for decision-making (Seočanac, 2025). In the tourism and hospitality sector, Smart HRM 4.0 is characterized by the use of technologies such as mobile applications, cloud computing, and artificial intelligence to manage work schedules, attendance, assignments, and performance evaluations of service staff (Seočanac, 2025). The practice not only streamlines administrative processes but also allows for a quick response to fluctuations in tourist demand and the need for high workload adjustments. In the context of small and medium-sized businesses, research shows that DHRM configurations tend to be simpler and more modular, for example through the use of work scheduling applications, online communication platforms, and affordable cloud-based employee data logging systems (Mohlala et al., 2024). However, despite its smaller scale, the practice can still result in significant improvements in coordination, information transparency, and employee accountability.

4.2 The Impact of DHRM on Human Resources and Organizational Performance

Various studies report that the adoption of DHRM and e-HRM has a positive impact on employee performance, employee engagement, and organizational performance. The application of human resource information systems in small and medium-sized businesses can improve employee productivity, decision-making, and operational efficiency. Other research shows that the use of e-HRM tools and digital platforms is positively related to employee engagement and work motivation, as employees feel easier access to information, process transparency, and wider self-development opportunities (Stachová et al., 2024). In the tourism sector, the utilization of DHRM is associated with increased employee satisfaction and service quality, which ultimately contributes to increased tourist satisfaction and the image of the destination. Nevertheless, not all studies have found a strong and consistent link between e-HRM and organizational performance. Several studies highlight that the impact of DHRM is highly dependent on the suitability of human resources strategies, the quality of implementation, as well as the readiness of the organization's culture to accept change (Alomari, 2023).

4.3 Challenges of DHRM Implementation in Small and Medium-Scale Tourism Businesses

The literature focusing on small and medium-sized enterprises highlights some of the key challenges in DHRM implementation. First, limited financial and technological resources make it difficult for small and medium-sized businesses to invest in a comprehensive DHRM system (Mohlala et al., 2024). Second, the capacity and digital literacy of owners and employees are often inadequate to operate the system optimally. In the context of tourism, this challenge is exacerbated by high fluctuations in demand, relatively high employee turnover rates, and the dominance of informal family management patterns so that documentation and standard work procedures are not well organized (Kurniawati et al., 2022). In addition, several studies show that the digital transformation of human resources requires a change in organizational culture towards a culture that is more open to innovation, collaborative, and oriented towards continuous learning (Sani et al., 2024). Without this cultural change, the implementation of DHRM simply ends up as a technological formality that is not fully utilized.

5. Implications for Small and Medium Scale Tourism Businesses in Samarinda City

Dimension	Challenge Description/Strategy Focus	Examples of Initial Implementation in Samarinda Tourism MSMEs	Key Actors
Technology infrastructure	Limited devices, internet connections, and applications that meet the needs of small scale.	The use of attendance and device-based scheduling applications is light and cheap.	Business owners, local application providers, local governments.
Digitized HR processes	The HR process is still manual (recruitment, work schedule, performance appraisal, data archive).	Gradual digitization: starting from recording schedules and attendance, then simple online training.	Business owners/managers, administrative staff.
Digital capacity and literacy	Employees and owners are not yet familiar with digital HR applications and data management.	Brief training on the use of the basic DHRM application for frontliner owners and employees.	Tourism Offices/MSMEs, Universities, Training Institutions.
Governance and policies	There is no standard procedure and internal policy based on human resource digital data.	Simple SOPs for work schedules, leave, and performance appraisals based on digital systems.	Business management, associations of tourism actors.
Collaborations and partnerships	The digitalization program is running partially, not yet coordinated across actors.	Cluster assistance programs (tourism villages, river corridors) with the joint DHRM platform.	City governments, business associations, colleges, communities.
Sustainability & competitiveness orientation	DHRM has not been directed to support sustainable tourism and improve the quality of services.	The use of HR data to manage workloads, design excellent service training and are environmentally friendly.	Destination managers, tourism offices, professional trainers.

1. First, the implementation of DHRM in small and medium tourism businesses in Samarinda needs to be carried out gradually and contextually, starting from the most critical functions to service quality and operational efficiency, such as work scheduling, attendance recording, and management of basic excellent service training. This is in line with the finding that small and medium-sized businesses are more effective at adopting modular and simple DHRM solutions first before switching to more complex systems (Mohlala et al., 2024).

2. Second, the literature emphasizes the importance of human resource capacity development as a prerequisite for the success of digital transformation, including in the tourism sector (Satriani et al., 2022). Therefore, in Samarinda, a targeted training program is needed for owners and employees of small and medium tourism businesses related to the use of the DHRM application, data security, and ethics in the use of technology. This program can be synergized with local government initiatives in the development of digital small and medium enterprises and the promotion of local products (R et al., 2022).
3. Third, the implementation of DHRM in small and medium tourism businesses in Samarinda requires collaboration between local governments, business actors, industry associations, and higher education institutions. Governments can provide policy frameworks, incentives, and shared digital platforms; business actors provide real cases and commitments for change; Meanwhile, universities and training institutions can develop training, mentoring, and applied research packages that support technology adaptation at the small and medium business level (Parektaf, 2023).
4. Fourth, DHRM practices need to be designed not only to improve short-term efficiency, but also to strengthen the sustainability of the business and the competitiveness of destinations. The use of DHRM can be directed to monitor employee workloads, manage work-life balance, and develop competencies that support sustainable tourism, such as understanding the environment, local culture, and inclusive services (Seočanac, 2025).

V. CONCLUSION

This literature review shows that DHRM is one of the important drivers of improving the performance of human resources and organizations in small and medium enterprises, including in the tourism sector. The adoption of DHRM through human resource information systems and e-HRM practices can improve productivity, operational efficiency, service quality, and employee engagement. However, the implementation of DHRM in small- and medium-scale tourism businesses is faced with the challenges of limited resources, digital literacy, and organizational cultural readiness. The context of Samarinda City shows that while there is great potential for tourism development and policy support for digital small and medium enterprises, a more systematic strategy is still needed to strengthen the capacity of human resources and ensure the sustainable use of technology. The practical implications of this study emphasize the need for a gradual and contextual approach in the implementation of DHRM, strengthening the digital literacy of employees and business owners, multi-stakeholder collaboration at the city level, and orientation on the sustainability and competitiveness of destinations.

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