

The Effectiveness of Human Resource Quality of Bumdes in The Industry 5.0 Era Based on Local Potential in East Sumba Regency

^{1*}Osfred Umbu Djadji, ²Junaedin Wadu, ¹Mesakh Landu Praing, ¹Kelvin Umbu Kambaru

¹Faculty of Economics, Business, and Humanities, Universitas Kristen Wira Wacana Sumba, Indonesia

²Faculty of Science and Technology, Universitas Kristen Wira Wacana Sumba, Indonesia

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ABSTRACT

This study aims to determine the effectiveness of the quality of human resources (HR) in Village-Owned Enterprises (BUMDes) of the East Sumba Regency in the Industry 5.0 era, utilising local potential to support increased village income. This study employs a qualitative descriptive approach, utilising data collection techniques that include observation, in-depth interviews, and focus group discussions (FGDs) involving the Community and Village Empowerment Office, village heads, and BUMDes administrators. The results of the study indicate that the implementation of BUMDes' HR training and development has been running quite well, as evidenced by an analysis of organizational needs, tasks, and employees, thereby improving the ability to initiate, cooperate, manage finances, market products, communicate, and utilise information technology. However, the effectiveness of training remains limited by budget constraints, unequal access to technology and telecommunications, suboptimal online training methods, and the absence of standardised evaluation indicators. These findings suggest that enhancing the quality of BUMDes' HR contributes to the diversification of village businesses and products; however, its effectiveness is only moderate and requires ongoing improvement. This study concludes that increasing HR capacity based on local potential and technological support is a key factor in creating a competitive advantage and sustainably increasing village income in East Sumba Regency.

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Corresponding Author

Osfred Umbu Djadji

Email: osfred@unkriswina.ac.id

INTRODUCTION

The industry 5.0 era emphasizes the integration of human competence with technological advancements, prioritising human-centricity, sustainability, and resilience (Alves et al.,

2023). According to Muttaqin (2025), Industry 5.0 represents a transition from a technology-driven approach to one that balances technological progress with human well-being. The emergence of Industry 5.0, also referred to as Society 5.0, has led to significant transformations across multiple sectors, including the management of village economies through Village-Owned Enterprises (BUMDes).

Village-Owned Enterprises (BUMDes) are village community institutions that aim to effectively and efficiently develop local economic potential to improve community welfare (Endah, 2018; Hecklau et al. 2016). Empirical data from 2021 shows that there are 140 BUMDes spread across 22 sub-districts in East Sumba Regency. Of these, 66.43 percent are inactive and stagnant, while only 33.57 percent are active (Pakereng and Lede, 2022). In practice, active BUMDes in East Sumba Regency can utilise the potential of village natural resources in the agriculture, plantation, trade, livestock, fisheries, crafts, and tourism sectors, which are processed into various diversified local products.

The results of Djadji and Adindarena (2025) show that the utilisation of village potential in East Sumba Regency is a characteristic and cannot be separated from the potential of Human Resources (HR) owned, such as HR diversity (length of service, age, and gender), work experience, entrepreneurial spirit, spirit of cooperation, initiative, adaptive, professional, and good personality. However, the management of BUMDes still encounters various problems, such as the lack of competence (knowledge, skills, and attitudes) in BUMDes HR in utilising Information Technology (IT) to support operational activities, which include HR, finance, operations, and marketing aspects. The impact is the occurrence of resistance, demotivation, low work productivity, lack of cooperation, inadequate communication, and limited access to capital from financial institutions, as well as conditions that foster conflicts of interest, resulting in operational activities at BUMDes not running smoothly.

Referring to the problems encountered, based on Presidential Regulation Number 63 of 2020 concerning the determination of underdeveloped regions for 2020-2024, East Sumba Regency is included in the 3T (Underdeveloped, Frontier, and Outermost) regions (Kemensesneg, 2020). The Presidential Regulation was used as a reference because the latest Presidential Regulation regarding the determination of underdeveloped regions was not issued at this time. Therefore, efforts are needed to accelerate development and empowerment in East Sumba Regency, one of which is through the sustainable Development of BUMDes, which can contribute to increasing income and community welfare at the village level. One of them aligns with the vision and mission of Asta Cita, as outlined by the President and Vice President of the Republic of Indonesia in points three, four, and six (Subianto and Raka, 2024).

Human resources play a crucial role in the management and development of sustainable BUMDes through increased competency (knowledge, skills, attitudes, organizational learning, and cognitive processes) (Calábria et al., 2018; Dessler and Angelica, 2015). Competent human resources can effectively and efficiently manage businesses, innovate and navigate challenges and changes in the business environment through the use of IT (Alkadafi et al. 2021; Sopanah et al. 2023). The effectiveness of human resource quality is a key factor in creating a competitive advantage and the sustainable existence of BUMDes, thereby impacting an increase in income and community welfare at the village level (Mujtahidiah, 2023). Therefore, the research question is: How effective is the quality of human resources of BUMDes in the Industrial Era 5.0, based on local potential, in

supporting the increase in village income in East Sumba district? This study aims to analyse the effectiveness of the quality of BUMDes' human resources in the Industrial Era 5.0, based on local potential in supporting increased village income in the East Sumba Regency, by referring to the human resource potential that BUMDes already possess. The benefits of this study are a consideration for BUMDes, villages, and regional governments in implementing programs to improve human resource quality at the local level, thereby comprehensively increasing income and the economy at the village level.

The novelty in this study is based on the research of Sinarwati and Prayudi (2021), Prasetyo (2022), Ratnasari et al. (2022), Wahyudi et al. (2022), and Pasali et al. (2022), which only discusses the effectiveness of BUMDes comprehensively without focusing specifically on the human resources aspects that drive BUMDes services, so that the results provided are not optimal and specific. Furthermore, research by Hardiani and Rifandi (2023), Fajarudin and Haerah (2024), and Ikhsan and Priatna (2024) focuses more on the research object (BUMDes) at the village level, so the research results presented do not accurately represent and describe the actual conditions. Therefore, this study is interested in examining the effectiveness of BUMDes' human resource quality in the current industrial era 5.0 at the East Sumba district level as a whole by utilising IT-based operational, financial, human resource, and marketing activities as well as existing local potential in increasing village income through innovation, differentiation, and diversification of new products produced so as to create sustainable competitive advantages. In addition, research on the effectiveness of BUMDes' human resource quality in the Industrial era 5.0 remains limited, so previous research serves as a basis for this study's results.

LITERATURE REVIEW

Human Resource Management

Over time, human resource management has undergone rapid changes. Various types of resources, both tangible and abstract, manifest in the performance results. This is done to achieve organizational goals, meet employee desires, and meet community needs (Bathjo and Shaleh, 2018). Specifically, an organisation's HRM influences adaptation through its methods, including the recruitment of new employees, employee retention, training, and development of existing employees (Ameen et al., 2024; Chowdhury et al., 2023). Sedarmayantin (2016) stated that Human Resource Management (HRM) is the process of utilizing human resources effectively and efficiently through planning, mobilizing, and controlling all resources to achieve organizational goals. Meanwhile, according to Febrianti (2022), HRM is the process of planning human resources in line with organizational goals, education, and training to produce employees who are aligned with their areas of expertise.

According to Siddique et al. (2024), HRM is an evolving and contemporary concept that must pay greater attention to its role in workplace sustainability. Human Resources Management (HRM) is a science and art that begins with the process of planning, organising, directing, developing, compensating, integrating, maintaining, evaluating, and terminating employment (PHK) (Dessler and Angelica, 2015). According to Suparwi (2018), HRM is the science and art of selecting the right and appropriate employees in terms of both quantity and quality to support the achievement of organizational goals. HRM is seen as art that encompasses processes and has four general foundations in art

and science as well as a management function within an organisation that includes planning, organising, implementing, and controlling (Jannah, 2019).

Human Resource Management in the Industry 5.0 Era

Veeramani and Arunkumar (2026) argue that Human Resource Management (HRM) in the industry 5.0 era serves as a human-centred, integrative mechanism that connects sustainability, technological innovation, and value creation. Similarly, Gonzalez and Martin (2024) contend that HRM contributes to the human-centred implementation of Industry 5.0, through the Human Digital Twin (HDT) model.

Garcés and Muneta (2023) emphasised that HRM practices and technology function as complementary resources to enhance organizational outcomes. In the context of Industry 5.0, HRM adopts a socio-technical systems (STS) approach that emphasises the integration of human and technological elements, development of adaptive work systems, and creation of innovative job designs (Silva et al., 2026).

Effectiveness

The word "effective" comes from the English word "effective", which means successful in carrying out activities or programs. Effectiveness is crucial for achieving the goals or objectives set by an organisation when carrying out activities or programs. A business is considered effective if it successfully achieves its stated goals or objectives (Hardiani and Rifandi, 2023). According to Akmal and Susanto (2018), effectiveness is a measure of the successful achievement of pre-planned objectives. Effectiveness is a measure of how well an action is carried out, assessed after completion against a specific plan, and evaluated based on cost, time, and quality (Wahyudinarti et al., 2024). Raviyanto (2014) explains that effectiveness indicates how well a job is done and the extent to which an individual can produce outputs that meet expectations.

Human Resource Quality

Human Resources (HR) possess not only comparable value but also competitive, evolving, and innovative value. They utilise the highest levels of energy, such as intelligence, creativity, and imagination. They no longer merely utilize raw energy such as raw materials, land, water, labor, muscle, and so on (Warther, 1987). Garengo et al. (2021) explained that HR quality can be measured through a shift from static to dynamic performance management within an organisation, which is expected to be better aligned with current and future situations, thereby enabling it to acquire high-quality HR. The HR quality redefines its role by automating repetitive tasks and applying predictive analytics to estimate workforce needs through the concept of smart work, which combines technological efficiency with strategic human capital development.

HR quality and capabilities play a crucial role in supporting an organisation's progress (Diah et al., 2021). According to Sedarmayanti (2017), HR quality is a measure that indicates the extent to which HR meets various requirements, specifications, and expectations. Radyanto and Hayati (2020) explained that HR is the ability to effectively carry out aspects of business management. Quality HR can provide effective Human Resource Management services, achieve organizational goals and employee productivity, and gain a competitive advantage (Priyashantha, 2022).

Verma et al. (2021) state that quality HR can be practiced through strategic planning and staffing, teamwork and leadership development, performance measurement and evaluation, job design and analysis, and promotion. Amhas (2018) states that HR quality refers to the abilities and expertise that individuals possess, both physical and intellectual,

that give them extraordinary competence. HR quality is a combination of physical abilities, including health, as well as non-physical abilities, such as the ability to work, think, and mentally, and various other skills an individual possesses that enable them to work and be creative within an organisation (Wirawan, 2015).

Village-Owned Enterprises

According to Minister of Village Regulation Number 4 of 2015, Village-Owned Enterprises (BUMDes) are business entities whose capital is wholly or mainly owned by the village through direct participation originating from village assets that are managed separately to provide assets, services, and other businesses for the greatest welfare of the village community. Meanwhile, explains that BUMDes are village-owned business institutions managed by the community and village government, as an effort to strengthen the village economy, which is formed based on the needs and potential of the village.

Village-Owned Enterprises (BUMDes) are a tool used to develop local economic potential using various advantages and resources. BUMDes aim to encourage economic growth in rural communities, enhance creativity and innovation, and create more effective economic business opportunities. It also aims to encourage the development of small businesses and the informal sector in rural areas, increase income and welfare for rural communities, and strengthen village-based income (Supardi and Budiwitjaksono, 2021).

RESEARCH METHODS

This study used a descriptive research type with a qualitative approach. The informants in this study were the Head of the Community and Village Empowerment Office of East Sumba Regency as the policy maker and maker, the Village Head, BUMDes Management (Director, Deputy Director, Secretary, Members). The determination of informants was based on the level of BUMDes Development classification, such as Advanced, Developing, Growing, and Basic. The data collection techniques employed in this study included field observations and in-depth interviews. Meanwhile, to describe and assess the level of effectiveness of BUMDes' HR quality in the Industry 5.0, Focus Group Discussions (FGD) were employed.

The types of data used in this study include primary and secondary data. Primary data were obtained through observation and documentation, as well as in-depth interviews with informants. Secondary data were obtained through literature review, collecting data or information from various books, journals, magazines, newspapers, and other written works relevant to the research topic.

The data analysis techniques employed in this study included five types (Creswell, 2019) are presented in Figure 1.

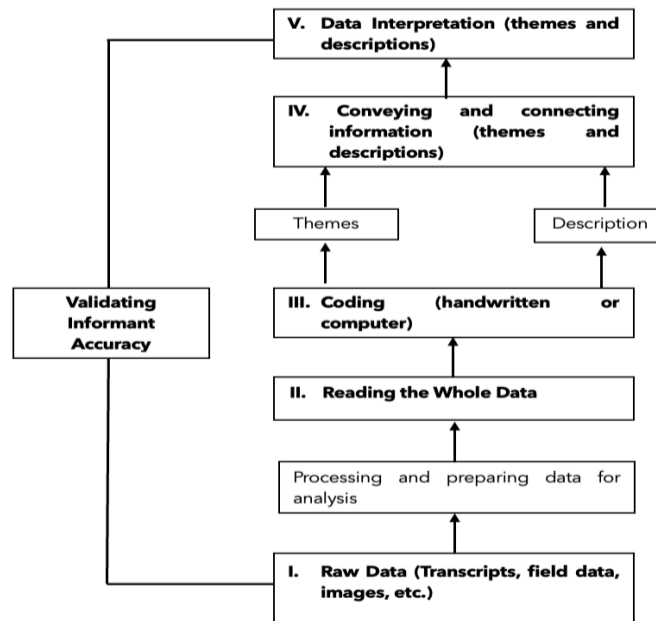


Figure 1. Data Analysis Stages

Figure 1 shows the stages of data analysis, which include: *the first* technique, organising and preparing data for analysis, involved transcribing interviews, optically scanning materials, typing, sorting, and categorising data into different types based on the source of information. *The second* technique, reading all the data, involved understanding the meaning, general ideas conveyed by participants, and overall impressions of the depth, reliability, and applicability of the information. *The third* technique, coding, involves organising data using text or image segments and writing words that represent a category. *The fourth* technique, using the coding results descriptively, involves providing detailed information about people, places, or events in a setting. *The fifth* technique, interpretation in qualitative research, involves concluding the data obtained as a result of the research. To enhance the validity and credibility of the collected data, the study employed source triangulation. Source triangulation involves verifying data validity by comparing information from multiple sources that address the same topic or phenomenon (Moleong, 2019).

RESULTS AND DISCUSSION

Results

Focus Group Discussion Result

The Focus Group Discussion was conducted with resource persons from the Community and Village Empowerment Office of East Sumba Regency as the policy makers and makers (N.1), as well as the Village Head (N.2) and BUMDes Management (Director, Deputy Director, Secretary, Member) (N.3). The selected resource persons met the specified criteria. The results address the research question of the effectiveness of BUMDes' human resources in the Industrial Era 5.0, based on local potential in supporting increased village income in the East Sumba Regency, by referring to the human resource potential that BUMDes already possess. The research question was then measured through human resource training and development, including 1) implementation of training needs analysis, 2) implementation of training programs, and

3) implementation of training program evaluation. This analysis aims to identify and describe stakeholder involvement in drafting human resource development regulations, planning, implementing, and evaluating human resource training programs that are relevant to the current 5.0 era. The results of the Focus Group Discussion are presented below:

Effectiveness of Human Resource Quality of BUMDes in the Industry 5.0 Era Based on Local Potential

The effectiveness of human resource quality through the implementation of training and Development of BUMDes human resources in East Sumba Regency has been carried out and is running quite well. However, several obstacles remain, including limited budget allocation, unavailability of technology and telecommunications in some villages, suboptimal implementation of indirect online training, uneven and inconsistent mentoring processes by stakeholders, and a lack of training evaluation indicators. The achievement of these results is based on several processes, including:

1. Training Needs Analysis

Needs analysis is the process of determining training and Development needs (Dessler and Angelica, 2015). A training needs analysis is an assessment of workplace needs that aims to determine the necessary actions to achieve organizational goals (Marselina et al., 2024). The findings are presented in the following table:

Table 1. Training Needs Analysis

No	Stakeholder	Interview Result
1.	N.1	“Yes, we have conducted a training needs analysis, including competency needs analysis and job demands, particularly in the use of technology, specifically in the financial and marketing aspects. In 2024, training will also be provided for BUMDes, and we will implement training and empowerment initiatives funded by the Village Fund. We cannot yet clearly identify these BUMDes, so we have not yet sorted them specifically or conducted a detailed analysis. However, we are determining whether these BUMDes require mentoring, and if so, the trained BUMDes will also require funding from the APBD. We have a basic training stage, which includes the introduction to BUMDes and an overview of their operations. Additionally, there is an introduction to management and its related concepts.”
2.	N.2	“Our actual needs analysis follows the results of mentoring and supervision carried out on BUMDes. We also often budget for human resource Development at the village level, accepting several partners to conduct training at BUMDes without requiring another training needs analysis.”
3	N.3	“Currently, we require appropriate training, sir, particularly in the use of Information Technology to support financial and marketing management, as well as our communication skills in foreign languages, and our initiative and cooperation skills.”

The findings presented in Table 1 indicate that the implementation of training and development activities for BUMDes HR in East Sumba Regency, a training needs analysis has been carried out through: 1) Organizational analysis was carried out to determine changes in competency and adaptation of Information Technology (IT) in carrying out management aspects, especially in financial and marketing aspects, so

that indicators such as initiative and collaboration skills, financial management (recording and reporting), BUMDes product marketing, and communication skills were obtained). 2) Task analysis was carried out to emphasise the position and duties, roles, and functions of HR and BUMDes as stated in Number 11 of 2021 concerning Village-Owned Enterprises. 3) Employee analysis was carried out to determine the readiness and deficiencies of HR capabilities, such as knowledge and skills, through performance evaluation and mentoring that had been carried out. This analysis was conducted by sorting the BUMDes with and without training access. Next, budget adjustments were made based on the planning to ensure that the training objectives and resource persons were met.

2. Training Program Development

Training is a method used to enhance the abilities and skills of employees who already hold specific positions or jobs within an organization. Dessler and Angelica (2015) escribed training as a learning stage for both new and existing employees. Training that focuses on the current situation can help employees master specific skills and competencies, enabling them to perform their jobs more effectively (Maulyan, 2019). The findings are presented in the following table:

Table 2. Implementation of Training Program

No	Stakeholder	Interview Result
1.	N.1	“We only rely on the DPA, so we conduct regular DPAs from 2023 to 2024 to 2025, but the quota is limited. The budget is limited and tiny. Only 10 villages received training, so we took the initiative to conduct training via Zoom. However, only a few villages have access to their village-owned enterprises.” “Regarding Village-Owned Enterprises (BUMDes), financial management training has been conducted, with assistance from Unkriswina Sumba. Unkriswina trained village women to produce peanut products, a proven way to increase village income. Several villages have already utilized information technology and have websites to promote their products.”
2.	N.2	“Yes, so far, we have undergone training from WVI in 2022, including sessions in Panbontandjara Village and Kuta Village. We have been trained monthly and quarterly for a year. We, as a village-owned enterprise (BUMDes), have participated in Zoom sessions with Airlangga University for a month. Furthermore, the Koppesda Foundation has trained us on digital marketing, financial management, and how to address challenges within BUMDes.”
3	N.3	

The findings presented in Table 2 indicate that the development and implementation of the Village-Owned Enterprise (BUMDes) HR training program in East Sumba Regency have been carried out quite well, in accordance with the needs analysis.

Training activities are planned within the work program of the East Sumba Regency Village Community Empowerment Office and the Sustainable Village Work Program, which aligns with the central government's program every fiscal year. In addition, training is carried out in collaboration with stakeholders, including the Village Government, regional and central government agencies, NGOs, and Universities, both during the mentoring process. The training is carried out using an indirect training method (Off-the-Job Training), which is carried out using offline and online techniques through lectures, assignments, and simulations or practice. Indirect-offline training was conducted through direct face-to-face meetings between

participants and resource persons at a predetermined location. Furthermore, training is carried out because many BUMDes still lack access to technology and telecommunications infrastructure. Meanwhile, indirect online training was conducted using zoom meeting media. Online training is carried out for BUMDes that already have access to technology and telecommunications infrastructure. As a result, several BUMDes have succeeded in managing their operations by creating diversified businesses, products, or services in an effort to increase village income. Furthermore, the training is beneficial in improving the cooperation, knowledge, and skills of HR in carrying out IT-based management aspects, especially in financial and marketing areas.

3. Training Program Evaluation

Training program evaluation aims to monitor whether the implemented training program has been running effectively and efficiently (Harding et al., 2018). Evaluation is a method for measuring the extent to which a training program has progressed compared to its stated objectives (Mathis and Jackson, 2009). The findings are presented in the following table:

Table 3. Training Evaluation Program

No	Stakeholder	Interview Result
1.	N.1	"There are no evaluation indicators, and so far, we have only identified villages that require assistance or not. The BUMDes that are trained also require funds from the APBD, so we do not conduct a specific analysis; instead, we examine which ones have been trained, which ones have not, and which ones have not".
2.	N.2, N.3	"The community needs continuous support, but that is also our problem in the village".

Table 3 shows that the implementation of the training program evaluation in East Sumba Regency has not been running well. The training program evaluation was carried out through uneven and continuous mentoring efforts by stakeholders. Furthermore, the lack of established training evaluation indicators prevented the activity from progressing in accordance with the needs analysis and previous implementation.

Obstacles in BUMDes HR Training

Based on the analysis that has been done, efforts to improve the quality of BUMDes human resources in East Sumba Regency through training are still not optimal because there are several obstacles encountered, including: 1) Limited allocation of training budgets from local and village governments results in not all BUMDes being able to participate. 2) The unavailability of technology and telecommunication access in some villages makes it difficult for BUMDes to communicate and participate in online and offline training. 3) The implementation of indirect online training is less than optimal because it does not involve simulations or IT-based practices, especially in the financial and marketing aspects. 4) The evaluation of training programs through mentoring efforts is conducted unevenly and sustainably by stakeholders. 5) The unavailability of established training evaluation indicators so that activities do not experience development in accordance with the needs analysis and implementation of activities that have been carried out previously.

Discussion

Village-Owned Enterprises (BUMDes) are one of the government's strategic programs aimed at enhancing the economic well-being of village communities. The effectiveness of BUMDes' human resource quality can be measured through the implementation of training and development programs planned by stakeholders. Sustainable human resource training and development can enhance intellectual and personality abilities, making human resources a source of competitive advantage (Kalengkoangan et al., 2023). The implementation of BUMDes' human resource training and Development in East Sumba Regency has been carried out and is running quite well, although it is not yet optimal. This is evident in the implementation of the training process, including training needs analysis, training development analysis, and training program evaluation (Dessler and Angelica, 2015).

Training needs analysis is a workplace needs assessment that aims to determine what needs to be done to achieve organizational goals (Marselina et al., 2024). The findings indicate that a training needs analysis is based on organizational analysis, utilising indicators such as initiative and collaboration skills, financial management (including recording and reporting), BUMDes product marketing, and communication skills, which are the focus of training. Task analysis is conducted to emphasise the position, duties, roles, and functions of HR and BUMDes as stipulated in No. 11 of 2021 concerning Village-Owned Enterprises. Employee analysis is conducted to determine the readiness and deficiencies of HR capabilities, such as IT knowledge and skills, through performance evaluation and mentoring that has been carried out. This approach is crucial for ensuring that the training provided is precisely targeted, and can have a genuinely positive impact on enhancing the overall capacity and management of BUMDes.

The Development and implementation of the Village-Owned Enterprises (BUMDes) HR training program in East Sumba Regency have been carried out effectively in accordance with the needs analysis. Training activities are planned in the work program of the Village Community Empowerment Office of East Sumba Regency, as well as in the sustainable village work program, which is linked to the central government program in each fiscal year (Mendrofa et al., 2023). In addition, the training is carried out in collaboration with stakeholders, including the village, regional, and central governments, NGOs, and Universities, both during the mentoring process. The training is carried out using indirect training methods (Off-the-Job Training), carried out using offline and online techniques through lectures, assignments, simulations, or practice. The impact is that several BUMDes have succeeded in managing their businesses through the creation of diversification in business, products, or services as an effort to increase village income. Furthermore, the training is highly beneficial in enhancing the cooperation, knowledge, and skills of HR personnel in implementing IT-based management aspects, particularly in financial and marketing areas. This finding aligns with research conducted by Mendrofa et al., (2023), which suggests that training and Development have a positive impact on enhancing employee and organizational performance, as well as improving knowledge, skills, abilities, competencies, and behavior. Needs-based training design, process, and evaluation models; organizational culture and leadership; technology integration; and the impact on employee performance and retention are all factors that can influence the quality of organizational training. Structured and contextualized training significantly enhances organizational capabilities (Zalukhu et al., 2025). Good

training management can play a central role in improving professional competence and employees' ability to adapt to technological developments (Wulandari, 2025).

Efforts to improve the quality of BUMDes human resources in East Sumba Regency through training have not been optimal due to several obstacles encountered, including: 1) Limited training budget allocation from the regional and village governments resulted in not all BUMDes being able to participate. 2) The unavailability of technology and telecommunications access in some villages makes it difficult for BUMDes to communicate and participate in online and offline training. 3) The implementation of indirect online training was less than optimal because it did not involve IT-based simulations or practices, particularly in terms of financial and marketing aspects. 4) The evaluation of training programs through mentoring efforts was conducted unevenly and sustainably by stakeholders. 5) The unavailability of established training evaluation indicators resulted in activities not experiencing development in accordance with the needs analysis and implementation of previously carried out activities.

This situation indicates that Dessler (2020) theory, which emphasises the importance of integrated training needs analysis, design, implementation, and evaluation, has not yet been systematically implemented. Furthermore, the lack of clear evaluation metrics leads to training programs that are not data-driven and hinders continuous improvement. In the Industry 5.0 era, this issue is increasingly important because HR must be transformed into a strategic function that integrates technology with a human-centred approach. Consequently, these limitations prevent Village-Owned Enterprises (BUMDes) HR from adapting to digitalisation, innovation, and the demands of human-technology collaboration.

CONCLUSION

BUMDes is a strategic government program designed to enhance the economic well-being of communities at the village level. The effectiveness of BUMDes is primarily determined by the quality of the human resources that run them, which can be improved through structured and sustainable training and development. The implementation of BUMDes HR training in East Sumba Regency demonstrates that capacity-building efforts have been carried out effectively through a training needs analysis approach, including organizational analysis, tasks, and employee assessments. The training focused on improving initiatives, cooperation, financial management, marketing, communication, and IT skills. The training was designed based on the work program of the Village Community Empowerment Office and sustainable village programs integrated with central policies. Collaboration between stakeholders, including village, regional, and central governments, NGOs, and universities, supports the implementation of training. Although the methods used (off-the-job training) are still not fully optimal, particularly in IT-based practices, this collaboration is beneficial.

The positive impact of the training is evident in improved teamwork, enhanced IT-based managerial competencies, and the development of business diversification in several BUMDes. However, program implementation still faces various obstacles, including limited budget allocation, unavailability of technology and telecommunications in some villages, suboptimal implementation of indirect online training, uneven and inconsistent mentoring processes by stakeholders, and a lack of standardised training evaluation indicators. Overall, BUMDes' HR training in East Sumba Regency shows positive

progress; however, to achieve higher effectiveness, continuous improvement and enhancement efforts are needed in terms of funding, technology, infrastructure, training methods, and measurable indicator-based training evaluation.

Several limitations were encountered during the research process: 1) This research was conducted only in East Sumba Regency, so the results do not fully represent the conditions of BUMDes in other areas with different characteristics. 2) The research and data collection methods, such as observation, interviews, and FGDs, were subjective and highly dependent on the experiences of the informants.

Based on these limitations, recommendations include the following: 1) Research can be expanded and conducted in several districts or provinces so that the results can be generalised and provide a national picture of BUMDes management. 2) Further research can use quantitative methods, such as broader surveys or questionnaire data collection methods and statistical analysis, so that the data can be objective.

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