Application of Modern Management in the Conservation of Ecotourism in Mahuze Mandiri Wasur Local Village

Semuel Batlajery¹, Dodhy Hyronimus Ama Longgy²
Universitas Musamus, Merauke, South Papua, Indonesia¹,²
Correspondence Email: semuel@unmus.ac.id
ORCID ID: 0009-0004-4728-807X

ARTICLE INFORMATION

Publication information
Research article

ABSTRACT

The study aims to understand the application of modern management in the context of ecotourism in Mahuze Mandiri Wasur local village. This research is qualitative research, involving five informants. The research findings are as follows: (1). The application of quantitative management methods is recommended for Mahuze Ecotourism. Through the use of data and analysis, it enables managers to make more informed decisions, enhance operational efficiency, and tailor rates and services according to visitor needs. (2). Meanwhile, system management allows for departmental integration, process optimization, and the use of an integrated platform, which can increase collaboration between departments and ensure more efficient management. (3). Contingency management equips managers with planning to address unforeseen changes, emergency situations, and potential risks, ensuring operational continuity and visitor safety in unexpected circumstances. The combination of these three management functions provides a strong foundation in maintaining adaptability, efficiency, and the sustainability of Mahuze Wasur ecotourism management amidst evolving changes and challenges.

Keywords: Ecotourism Management, Organization, Quantitative Management
Modern management was created in direct response to classical management theory, which stated that employees were only motivated by money. Modern management theory acknowledges that workers are complex individuals with many reasons to want to succeed in their jobs. It also believes that rapidly changing technology can both cause and solve many workplace problems. In the context of increasing competition, leveraging advanced technology and innovation requires the effective utilization of modern business management methods for business entities (Ergashovna & Eshmuhammadovna, 2022). Essentially, the core of modern management lies in the integration of human elements, equipment (technology), and the environment, with the key to its success lying in the human element. To achieve sustainable support, the modern management paradigm focuses on promoting mutually beneficial interactions.

Modern management is characterized by the recognition that management is a science based on scientific logic, and therefore involves many management and economics experts conducting research that generates various management theories and streams (Riantono, 2014). Modern management combines mathematical analysis with an understanding of human emotions and motivation to create the most productive work environment. A manager using modern management theory will use statistics to measure employee performance and productivity and attempt to understand what makes their employees satisfied with their jobs.

Modern management emerges as a direct response to classical management theory, which assumes that employees are solely motivated by money. Modern leadership theory acknowledges that employees are complex individuals with numerous reasons for success in the workplace. Modern management theory also assumes that rapidly changing technology can both create and solve many workplace issues. Modern management comprises three main management theories: quantitative management, system management, and contingency management.

Modern Management from a quantitative perspective is based on efficiency and mathematical equations that arise from the need for expertise or creativity in calculating innovation. Quantitative management is based on simple numbers derived from assessing the risk of each action before making decisions. This approach utilizes statistics, computer simulations, data modeling, in organizational management. Modern management is used to run business management.

System management sees an organization as a living entity that possesses all the necessary parts for its survival. This theory was developed by Ludwig von Bertalanffy, who stated that all parts of a company, from the CEO to new employees, must work together in harmony for the company to endure. Organizations operating in business must collaborate and build relationships among their various functions as the key to system management.

According to the contingency management approach, every situation requires a different management style, so there is no one theory that fits all offices. This theory was developed by Fred Fiedler in the 1960s and supported by research conducted by Riantono (2014) in his study on Modern Management in Achieving Good Corporate Governance: Optimizing Corporate Goals. Furthermore, this modern management theory states that the task of business leaders is to assess the situation and apply the best management strategy. Fiedler believed that three key variables determine the management strategy to be applied: the size of the organization, the technology used, and the overall management style in the company. Contingency management places
significant responsibility on business leaders. It is also a theory more relevant to the modern workplace because it acknowledges that as technology and business change, leadership styles must also adapt to the environment. Modern management is an excellent management theory to apply today because technological changes happen so quickly that managers need to adapt the work environment and effectively integrate these changes.

Over the past four decades, ecotourism has gained significant attention in issues of sustainable development and global social awareness (Sethy & Senapati, 2023). Ecotourism plays a crucial role in nature conservation, local community development, and the promotion of environmental sustainability. Ecotourism provides opportunities to harness the natural and cultural potential of a place while preserving the fragile environment. Mahuze Mandiri Wasur Village is a notable ecotourism destination. Mahuze Mandiri Wasur Village is situated at the easternmost tip of South Papua Province, Indonesia, and possesses incredible ecotourism potential with its natural wealth, wildlife, and unique local culture. However, in managing ecotourism, challenges arise alongside the growth of this industry. In this context, the implementation of modern management can be the key to maximizing the benefits of ecotourism while safeguarding the fragile environment.

The Wasur Village Conservation Park is closely linked to the life of the local community at the eastern end of South Papua Province, Indonesia. Ecotourism makes a significant contribution to development. The role of the ecotourism conservation site can be seen in its contribution to the South Papua Province government, specifically in providing employment. However, to date, the ecotourism conservation site in Wasur Village lags behind in terms of modern management, which can be observed through the author's observations. Starting from the allocation of tasks and responsibilities not being organized, the pricing for visitors, which includes "honai," and online promotion hasn't been implemented. The local community groups managing this Ecotourism site have, on average, only completed middle school, and some have even finished only elementary school, which poses a challenge for them in implementing modern management at the Wasur Village Ecotourism site. Therefore, the author's objective is to delve deeper into the activities carried out by the local community in Wasur Village, Merauke, South Papua.

LITERATURE REVIEW

Modern management theories provide guidance on practices that can be applied in business organizations to effectively manage people and processes. They offer various approaches to understanding businesses and how they operate. Once we understand these approaches, we can use them to identify and address various internal and external factors that influence the business we are running. Modern management is a form of management characterized by the recognition of management as a science based on scientific logic in a certain period. This has resulted in significant involvement of management and economic experts in conducting research related to management, leading to a variety of management theories and streams (Riantono, 2014).

Terry states that planning is the key to the work that a group must undertake to achieve predetermined goals (Campbell, 1954). Since decisions involve alternative choices, the ability to forecast the future and model operational systems, planning is, in fact, a decision-making process concerning various options in line with the goals and how this will be implemented in the future to achieve the objectives while systematically and continuously monitoring and evaluating the results of implementation. The process involves a sequence of three actions, namely, assessing the current situation and conditions, designing and determining the desired state (the future). This pertains to what
needs to be done to achieve the desired state. It can be observed from the description above that this is the design of activities to be carried out in the future to reach the goals. The design is based on the four elements of the definition mentioned above, which are 1) predetermined activities, 2) existing processes, 3) the outcomes to be achieved, and 4) achieving the future that is to come.

According to Stoner, as translated by (Certo & Certo, 2019) he explains: "Management is the process of planning, organizing, directing, and evaluating. It is used to manage resources within an organization to achieve predetermined organizational goals." Management is the art and science of planning, organizing, staff training, directing, and supervising to achieve established objectives. Human resource management (HRM) is the work created by human resource management to support management tasks that instruct the organization to achieve predetermined goals. There are several modern management methods that managers can use in an organization. Managers can use a combination of these approaches to lead their teams in supporting the organization's goals. These three approaches are as follows: quantitative management, system management, and contingency management (Manullang, 1996) (Putra, Utama, & Mersyah, 2019).

Quantitative management involves the use of statistics, optimization models, information technology, and computer simulations. The quantitative approach makes a significant contribution to decision-making, especially in the planning and control aspects of management functions (Baskara & Gde, 2013).

The systems approach regards organizations as an inseparable entity, where the organization is an integral part of the external environment in general. As an approach in management systems, it encompasses an understanding of both general and specific systems, and the analysis can be either closed or open. The general systems approach includes principles related to the formal, technical, philosophical, and sociopsychological aspects of the organization. Meanwhile, the more specific management system analysis includes elements such as organizational structure, job design, accounting, information systems, as well as planning and supervisory processes (Rokhayati, 2014).

The contingency approach is typically applied following the best practice approach, with an emphasis on organizational variables, especially top-level management strategies in Human Resource Management (HRM), and the level of alignment, both vertically and externally. In other words, the higher the level of alignment between management strategy and HRM, the higher the expected organizational performance (Nurjaman, Mustajam, Syaifuddin, Lubis, & Abadi, 2020). The contingency approach serves as a tool to bridge the gap between theory and practical reality. In most cases, to link theory with practice, it is necessary to consider the surrounding environmental conditions (Rokhayati, 2014).
According to Damanik, ecotourism is an alternative form of tourism that primarily focuses on preserving the sustainability of tourism resources and being responsible for nature with the goal of environmental conservation and improving the well-being of local communities (Mahitarani, Budiasa, & Ustriyana, 2021). This is because ecosystems play a crucial role in sustainable development, both ecologically, economically, and socially (Handayani & Sugiarti, 2022). This concept is supported by Tanaya, who argues that ecotourism can be analyzed based on its relationship with five essential elements: the wilderness aspect, ecological sustainability, environmental education, benefits for the local community, and the satisfaction of tourists (Hakim, Hayati, Lumbu, Rahmawati, & Septiyana, 2019). Therefore, given the rapid growth of ecotourism today, which is not accompanied by control efforts, resulting in much environmental damage, it is important to develop a set of indicators that can serve as reminders in ecotourism management (Yusnikusumah & Sulystiawati, 2016).

**RESEARCH METHODS**

This research employs a qualitative approach and is presented in a descriptive form. The types and sources of data are obtained through primary and secondary data. Data collection techniques used include observation, interviews, and documentation. The informants in this study consist of group leaders, secretaries, treasurers, members, and visitors who come to the ecotourism site, totaling 5 individuals with purposive sampling technique. The research location is the Wasur Local Village Conservation Ecotourism. The data analysis used involves Miles and Huberman, which include data collection, data reduction, data presentation, and drawing conclusions.

**RESULT**

**Overview of Mahuze Mandiri Ecotourism in Wasur Village**

Wasur National Park in South Papua Province is named after the village derived from the word "Waisol," which means garden in the Marori language. The Marori (Morori) language is spoken by the Marori (Morori) elders of Wasur Village, Merauke District, Merauke Regency, Papua Province. Most of the Wasur National Park area is submerged in water for 4 - 6 months each year. The local Wasur village land is alkaline. This ecotourism site is managed by local community groups in Wasur Village. Almost all of these ecotourism groups engage in planting crops and fishing. Geographically, Wasur National Park (WNP) is situated between 140° 29' - 141° 00' East Longitude and 08° 04' - 09° 07' South Latitude. Administratively, it is located in the southeastern part of Papua Island in South Papua Province. The location of the Wasur Village National Ecotourism Site is close to the main road leading to Sota (the Indonesia - Papua New Guinea border).

**Quantitative Management**

The interview with the Head of Mahuze Wasur Ecotourism Management revealed a lack of proper implementation regarding quantitative management in the ecotourism management process. The manager stated that although efforts had been made to measure productivity and efficiency, the application of quantitative methods in financial aspects, resource allocation, and pricing had not been entirely structured.

During field observations, the use of quantitative tools or techniques to measure performance, set rates, or allocate resources was not visibly evident. For instance, there was no quantitative system observed that measured the impact of pricing on visitor numbers on specific days. This suggests that there was no quantitative analysis employed in determining pricing strategies to enhance the number of visits.
Additionally, there are still some groups that lack commitment to collaborate for the progress of the Mahuze Mandiri Ecotourism Group. This is further supported by the interview results with FM, who stated that the financial aspect has not been running optimally because the income from ecotourism services still overlaps. Every visitor who comes is charged ten thousand rupiahs (10,000) per person from Monday to Friday, while on Saturday, it is fifteen thousand rupiahs (15,000), and on Sunday, it is seventeen thousand rupiahs (17,000), with free facilities for the “honai”.

Quantitative management provides guidance for charging fees for the Honai (traditional Papua community houses) occupied by visitors, ensuring that the maintenance costs for Honai are adequately covered. According to the interview results with F.M, they expressed concerns about losing visitors because other tourist destinations do not charge for the use of Honai. However, the advice given is to share knowledge with the administrators of other tourist destinations to discuss this issue so that they can set a price for using the Honai.

Another observation revealed a different perspective, indicating the potential for effective management in the future. The ecotourism managers are not incapable but rather have limited knowledge in management, particularly in quantitative aspects. This was evidenced in the ecotourism revenue management. Managers are responsible for directly depositing it into the conservation center. Some of the income goes into the group's cash register in the form of cash deposits through ATMs, and they are also diligent in paying taxes. At the end of the month, they divide the income. From this statement, even though the Mahuze Ecotourism Group has an average elementary and junior high school education, they have good skills in managing this ecotourism, suggesting that with the implementation of modern management, this ecotourism venture still holds potential for improvement.

Overall, although efforts have been made to improve efficiency and productivity, the implementation of quantitative methods in managing Mahuze Wasur Ecotourism has not been executed effectively. Quantitative aspects such as cost-benefit analysis, income projection, or mathematical modeling are not systematically applied in decision-making. This has the potential to hinder effective and efficient management efforts.

**System Management**

System management is an integral part of our lives. Within an organizational structure, there are always various components, including human resources, finance, marketing, and production, all collaborating to advance the organization or group. Observation results indicate that the management system within the Mahuze Mandiri Ecotourism Group is not well-established. This is supported by the statement of the head of the Mahuze Mandiri Ecotourism Group in an interview, stating that the system management in ecotourism is not well-structured. There is no systematic application related to the integration between human resources, finance, and marketing divisions to achieve overall goals. Tasks and functions are not entirely executed effectively and efficiently by each division. As a result, when conflicts arise, the leader has to work extra to resolve them.
During observations, it was observed that there was no integrated platform or system connecting the different departments. For instance, visitor traffic data and marketing performance were not effectively linked to finance or human resource allocation. This lack of coordination and alignment in decision-making led the group's leader to manually undertake extra work. From the interviews and observations conducted, it is apparent that System Management in Mahuze Wasur Ecotourism has not been well-implemented. The lack of integration and coherence among different departments hinders operational efficiency and proper decision-making at the organizational level. A more structured and integrated approach is needed to apply System Management principles to enhance overall performance.

Contingency Management
The interview with A.M revealed that modern management has been well implemented. This was evident through field observations where task allocation had been carried out. However, in the application of modern management, it’s not sufficient to solely delegate tasks. This condition was supported by interviews with other sources (FM), revealing the most significant management shortcoming: a lack of adaptation to changes in the external environment. Management tends to be reactive rather than proactive in response to market dynamics, tourism trends, and changes in consumer behavior.

During observations, it was noticeable that promotional efforts remained limited to common social media platforms. The utilization of technology to reach a wider audience, such as mobile applications or interactive strategies, was not significantly observed. This hindered the ability to promptly address changes in promotional trends and consumer behavior. Utilizing social media for promotion should be a priority, not only limited to Facebook but also encompassing other social media platforms such as Instagram, TikTok, YouTube, which are popular among modern communities. This should be done to expand the reach of the target visitors.

From the interview and observations, it appears that Contingency Management in the management of Mahuze Wasur Ecotourism has not been well-implemented. The lack of adaptation to external changes, as well as limitations in utilizing technology to expand promotional reach, pose significant barriers in maintaining relevance and competitiveness in the ever-evolving ecotourism market.

DISCUSSION

Applying Modern Management Functions
Implementing management functions encompassing quantitative management, system management, and contingency management is crucial in the management of Mahuze Wasur Ecotourism. In the dynamic and change-prone context of ecotourism, the quantitative approach enables managers to use data and analysis to enhance productivity, understand visitor behavior, and adjust pricing more accurately. Meanwhile, the application of system management allows departmental integration, the use of integrated platforms, and process optimization, enabling managers to handle resources more efficiently. On the other hand, contingency management prepares managers to address emergency situations, external changes, and unforeseen risks, ensuring the safety of visitors, staff, and operational continuity amid changing conditions. The combination of these three management functions forms a strong foundation in maintaining sustainability, efficiency, and safety in managing Mahuze Wasur Ecotourism.
The implementation of Quantitative Management in managing Mahuze Wasur Ecotourism holds significant potential for enhancing operational efficiency and making more precise decisions. The application of quantitative methods allows managers to measure and improve employee productivity through a measured approach. Through the use of data and statistical analysis, employee performance evaluations and more efficient resource allocation can be conducted, aiding in enhancing output and team effectiveness. Maximizing employee productivity is crucial for companies to gain a competitive edge in their respective industries. This efficiency often serves as a pivotal factor in staying ahead within the competitive landscape (Sitorus & Hidayat, 2023). To fulfill their tasks and responsibilities, managers should ideally allocate tasks among all work groups, such as human resources, marketing, finance, and operations, to serve visitors (Bali & Darma, 2019). Leaders who are consistently active are expected to continuously motivate dedicated employees to fulfill their tasks and responsibilities.

Quantitative Management enables more measured pricing based on the analysis of visitation data, market preferences, and other economic factors. This aids managers in adjusting tariffs more optimally and responsively to changing demands. Additionally, by utilizing quantitative methods, managers can analyze visitation data, duration of stays, and visitor preferences. This assists in tailoring services, facilities, and activities offered to align with visitor preferences, ultimately enhancing visitor experiences and the appeal of the destination. Another crucial aspect is that through quantitative techniques, managers can conduct more in-depth financial analysis. This includes revenue modeling, budget planning, cost-benefit analysis, and more detailed cash flow monitoring. This aids in making more precise and efficient financial decisions.

The conclusion drawn from the above discussion illustrates that managers or leaders within the Mahuze Independent Ecotourism Group should employ mathematical approaches, information models, and computer simulations to make more efficient decisions using quantitative techniques. The results of this research align with the study conducted by Jatmiko on the Evolution of Management Theory, which states that Management Science emerged in response to issues related to global warfare (Jatmiko, 2020). This perspective encourages managers to use mathematics, statistics, and other quantitative techniques to make decisions. Managers can use computer models to depict the best way, for example, to save money and time. Managers employ various applied mathematical science applications to aid in making projections about crucial aspects of the planning process. Operations Management is a small branch of the quantitative approach in management. Its focus is on managing the process of transforming materials, labor, and capital into useful goods and services. The output of the product can be goods and services.

Effective operations management applies to both manufacturing and service organizations. Input resources or factors of production include various raw materials, technology, information capital, and the people needed to create the final product. Management Information Systems is one of the quantitative stream fields. MIS organizes past, current, and projected data, both from internal and external sources, into useful information that is available to managers. Information is vital for strategic decision-making to achieve a company's objectives. Every managerial decision is the outcome of processed data, positioning information as an essential resource for any company (Pohan, 2021). MIS also enables the organization of data into a useful and easily accessible format. As a result, managers can quickly identify options, evaluate alternatives using spreadsheet programs.
Meanwhile, the implementation of Systems Management is equally important as it enables the integration of different departments, such as human resources, finance, marketing, and operations. Through an integrated system, managers can ensure better collaboration between divisions, facilitate smooth information flow, and enable more unified processes. In implementing Systems Management, managers can leverage integrated platforms that connect various operational aspects. For instance, an integrated data management system allows managers to access information about visitor numbers, customer profiles, and financial data in one platform, streamlining the decision-making process.

From this standpoint, as a leader in Mandiri Mahuze Ecotourism, task allocation should be clearly and objectively managed. Tasks should be distributed proportionally. Furthermore, ensuring a control function is crucial to hold each division accountable for the responsibilities entrusted to them. Ecotourism leaders should also provide guidance on the organization’s objectives and how to achieve the predetermined goals. Essentially, task integrity and functions need to be accurately executed. These findings align with research conducted by Slamet Hariyanto on Management Information Systems. The results of the study indicate that ERP systems are generally used by large companies to manage and integrate supervising various working areas, such as Finance, Accounting, Human Resources, Marketing, Operations, and Inventory Management (Hariyanto, 2016).

The implementation of Contingency Management provides a robust foundation for responsive and adaptive management in a dynamic environment. With good planning, risk preparedness, and comprehensive evaluation, managers can ensure that Mahuze Wasur Ecotourism continues to operate smoothly and offers a safe experience for its visitors. This implementation involves a responsive attitude towards external changes, decision-making flexibility, resilience, risk preparedness, involvement of the local community and staff in handling contingencies, and the evaluation and learning from these contingent events.

Approaches like this should be taken by a leader to stay relevant and ensure the continuity of their business. These findings align with a study conducted by N.M. Puriati and G.S. Darma on how technology can be used as a promotional medium (Puriati & Darma, 2021). Modern management in the utilization of technology has transformed the way we promote tourist destinations. With technological tools like social media, interactive websites, and mobile applications, the tourism sector can reach a global audience quickly and effectively. This enables Mahuze Ecotourism to promote their unique attractions, interact with potential visitors, and provide real-time information. Technology also allows for more efficient resource management and services, creating a more satisfying experience for travelers while maintaining environmental sustainability and local community welfare. With a modern management approach focused on technology, Mahuze Ecotourism can continue to evolve and become more inclusive and sustainable.
CONCLUSION

The research findings indicate several crucial conclusions for Mahuze Ecotourism. The synthesis of these management functions offers a robust framework to sustain adaptability, efficiency, and long-term viability within Mahuze Wasur ecotourism. First, implementing quantitative management enables informed decision-making, operational streamlining, and customized services. Second, system management’s integration enhances inter-departmental collaboration and overall efficiency. Lastly, contingency management prepares for unexpected scenarios, ensuring operational continuity and visitor safety. Their collective implementation creates a resilient structure essential for navigating the changing landscape and challenges faced by Mahuze Wasur ecotourism.

REFERENCES


