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# Analysis of Human Resource Management in The Administration of Food Barns during the COVID-19 Pandemic in East Java, Indonesia

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**Purpose:** This study aims to analyze the evaluation of human resources in managing food barns and how to maximize human resources in managing food barns as a form of service to meet community needs during a pandemic.

**Design/Method/Approach:** The research method uses a literature review study design and a descriptive qualitative approaching method.

**Findings:** The results of the research show that in order to improve the effectiveness of human resources, it can be based on technology and information. As well as optimizing human resources, it can be done through trainings that require community and government participation.

**Theoretical Implications:** This study contributed especially in the existence of literature about the management of food barns in rural area during the time of economic crisis and COVID-19 Pandemic.

**Practical Implications:** Rural area apparatus in the region of East Java, Indonesia must improve their skill about the information system to manage food barns not in traditional way.

**Originality/Value:** This study is different from any other studies in term of human resources, this is because this study has a characteristic about the use of technological information on how to manage the food barns at the moment of COVID-19 Pandemic.

**Research Limitations/Future Research:** Further research to analyze options to optimize human resources in food barn management.

**Paper type:** Empirical

**Keywords:** Human Resources, Management, Food Barn, East Java.

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## Аналіз управління людськими ресурсами в адміністрації продовольчих комор під час пандемії COVID-19 у Східній Яві, Індонезія

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**Мета роботи:** Це дослідження має на меті проаналізувати оцінку людських ресурсів в управлінні продовольчі коморами та дослідити як саме максимізувати людські ресурси в управлінні продовольчими коморами як форми обслуговування для задоволення потреб громади під час пандемії.

**Дизайн / Метод / Підхід дослідження:** Як методи дослідження використано літературний огляд та метод описового якісного підходу.

**Результати дослідження:** Результати дослідження показують, що для підвищення ефективності людських ресурсів можна використовувати технології та інформацію. Окрім оптимізації людських ресурсів, це можна зробити за допомогою тренінгів, які потребують участі громади та уряду.

**Теоретична цінність дослідження:** Дане дослідження забезпечило особливий внесок у існування теоретичних праць щодо управління продовольчими коморами в сільській місцевості під час економічної кризи та пандемії COVID-19.

**Практична цінність дослідження:** Адміністратори сільських районів в регіоні Східної Яви, Індонезія, мають поліпшити власні навички роботи з інформаційною системою задля управління продовольчими коморами в нетрадиційний спосіб.

**Оригінальність / Цінність дослідження:** Дане дослідження відрізняється від інших досліджень в сфері людських ресурсів, оскільки має характеристику використання технологічної інформації щодо управління продовольчими коморами під час пандемії COVID-19.

**Обмеження дослідження / Майбутні дослідження:** Подальші дослідження будуть спрямовані на аналіз варіантів оптимізації людських ресурсів в управлінні продовольчими коморами.

**Тип статті:** Емпіричний

**Ключові слова:** людські ресурси, менеджмент, продовольчі комори, Східна Ява.

## 1. Introduction

Food shortages and poverty are still major problems in Indonesia. The focus of agricultural development is in addressing the problem of a food shortage and poverty through increasing food availability (Sawitri, & Sudarma, 2017). Efforts that can be made are strengthening community food reserves by revitalizing and developing food storage institutions. Based on the BPS (2020), since the COVID-19 pandemic economic growth has negatively been impacted by the agricultural sector which was only able to grow by 0.02 percent annually. Therefore, there is a need for necessary interventions.

Under normal conditions in Indonesia, a food shortage is more than enough to cause problems for society. This condition was further worsened by the COVID-19 that impacted the world. To reduce the impact of a national food shortage, regional food must be mobilized to the maximum. One of the methods is through the empowerment of food barns even though it is still categorized as a minimum effort. In fact, people are still experiencing difficulties in empowering food barns mainly in distributing aid to those affected by COVID-19 and lack of funds in managing food barns.

Against the background of the problems above, this study was conducted to understand the condition of food barns in East Java, Indonesia. Other than that, this study was conducted to propose information on barn management that can overcome food shortages during and after COVID-19 without any assistance from government funds (based on cooperation). The urgency of the research is that Indonesia is currently facing a food crisis that is getting worse due to the impact of COVID-19.

The government's efforts to empower food through the provision of national food barns have not been maximized. Regions that support national food have not empowered food availability yet. If this condition continues, it will have a great impact on the national food chain, hunger, food and national decline. Thus, this research is needed to support the study of human resource management.

The role of a village food barn that accommodates farmers' crops before being sold to the market plays an important role in maintaining the fulfillment of food availability (Sawitri, & Sudarma, 2017). Efforts to develop human resources have objectives related to improving business performance management. Several previous studies have explained how to control human resource management (Mohan, Manikandan, & Abdullah, 2016; Muke, & Niles, 2017; Waridin, Dzulkhijiana, & Mafruhah, 2018; Mamu, Yunus, & Allorante, 2020; Zhu, 2020).

However, the research on the effectiveness and optimization of human resource management has not been significantly carried out. To fill the gap, the purpose of this study is reviewing the latest literature providing recommendations to increase the effectiveness and optimization of human resource management that manage the barns.

## 2. Data and methods

Due to its exploratory characteristics, a qualitative approach was adopted for this study. This research is a type of literature study research using the Literature Review method. Literature review is based on published materials that provide examination of recent or current literature. It can cover a wide range of subjects at various levels of completeness and comprehensiveness (Umar, 2004; Myers, 2019). This study uses a literature review method as a research strategy. Literature review is research based on studies or criticism of topics and research problems that are based on previous studies, study reports that are based on critical perspectives and identification of topics in developing ideas (Brouard, 2020).

Sources of data used in the study are secondary data based on research results published in the form of books or articles in journals. The data of this study was taken from International and

Indonesian journals in the period of 2016-2021. Literature researches were searched by using Google Scholar and repository databases, such as JBCI, EJEM, IJRESTS, IJSR, IJICC, and the Government Annual Report related to literature search keywords including human resourcing, a food barn, and East Java.

Based on the search for articles in this literature review study, data collection techniques review sources that are based on research abstracts, full research papers and articles from research journals. It was found that of the 65 articles reviewed, there were 55 articles that met the criteria, namely those that deal with human resources that manage food barns. Most of the content of the articles touches upon the benefits of barns and how the development of management needs to be improved, focusing on human resources for managing them. Most journals come from abroad and as many as 12 journals are from Indonesian studies.

## 3. Results

### 3.1. Management of Food Barns in East Java During the COVID-19 Pandemic

In the Strategic Plan by East Java Food Security Agency for 2014-2019, there are several strategies to increase food availability in terms of increasing and stabilizing food availability, namely:

- Strengthening community food storage institutions
- Development of community food barns

Based on the program plan, this study is in line with supporting theoretical studies in the plan to increase food availability by the East Java Government. Based on the explained data from the Department of Agriculture and Food Security of East Java Province in 2019, East Java has the potential to become a national food barn because of the Productivity of Rice Field in East Java (Fig. 1).

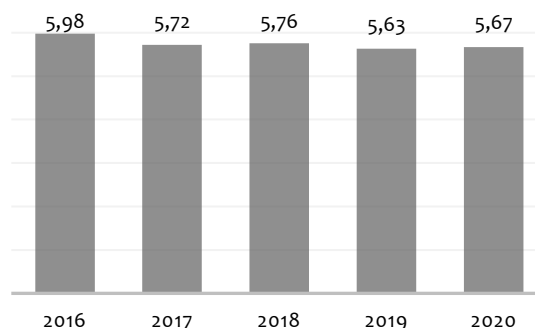


Figure 1: The Productivity of Rice Field in East Java, tons/ha

Source: Badan Pusat Statistik (Central Bureau of Statistics), 2021

In the last five years, rice productivity has fluctuated. Uncertain, the highest productivity was recorded in 2016 at 5.98 tons per hectare and the lowest productivity was recorded in 2019 at 5.63 tons per hectare. East Java Province rice productivity in 2020 has increased compared to productivity in the previous year.

### 3.2. Impact of the COVID-19 Pandemic on Food Security in East Java

Riptanti, and Qonita (2017) found that food barns play an important role in helping people who experience food shortages. The food constraint also refers to market access constraints as an aspect to support the growth and development of regional food granaries. The role of the government is also needed to achieve the effectiveness of a granary. Food barns can be a means of village economic growth. Food Security Agency (2019) stated that the development of community food barns needs not only the role of the government, but also full participation of members of farmer groups in its management.

East Java area has the potential to become a national food barn because of the availability of food crops and horticultural commodities, but there are several basic problems, including:

1. Low public understanding of healthy plant management;
2. Lack of optimization of the application of cultivation technology (intensification) of food crops and GAP on horticultural crops, post-harvest technology and product processing;
3. Farmers' access to technology, information, markets, and capital, as well as farm protection;
4. Lack of knowledge and public awareness of the importance of food quality and safety standards.

COVID-19 has shown how important it is to optimize human resources in every sector. Increasing digitalization can help agricultural businesses, such as food barns that have been intensified by the government as a forum for providing useful food for the community, especially during the pandemic.

### 3.3. Human Resource Management in Management of Food Barns During the COVID-19 Pandemic

Food barns are considered effective in overcoming food insecurity communities in chronic food insecure areas, but not enough to overcome transient food insecurity due to unfavorable conditions or unexpected events such as disasters and instability in prices. To tackle transient food insecurity, the central government and the government area require backup food provision. However, human resources need to be improved (Riptanti, & Qonita, 2017; Hardjono, Widiputranti, & Dorojati, 2019; Azizi et al., 2021).

According to *Government of Manitoba (2015)*, it is stated that management of food barns is generally still very scarce, and the activeness of members and membership sustainability are still major problems in the management of food barns. Moreover, during the COVID-19 pandemic, as quoted by *Ikhsan, and Virananda (2021)*, human resource (HR) has drastically decreased due to staff reductions, and there are no guidelines that systematically regulate an HR mechanism in the barn. An extension program becomes important for the dissemination of agricultural technology information to support knowledge, technical skills, managerial skills in agricultural development by rural farmers, especially in the COVID-19 pandemic era (*Bidarti, 2021*).

The role of human resources is important in the implementation of barns as explained by *Mardiyati and Natsir (2017)*. During the COVID-19 pandemic, there was a change in the behavior of human resources that had an impact on the outcome of activities. This condition has badly affected the Asian economies in service sectors and human resource management (HRM), thus leading to negative consequences on employment and employees' work performance (*Dissanayake, 2020*).

This phenomenon leads to lack of optimal human resources in terms of modern and manual administration. This is supported by the study by *Gunawan (2020)* that states that during a food crisis, there will be a shift in macroeconomic behavior and human resource management in state management. Further handling is needed to maintain the performance of human resources as program supporters.

Facing a new normal era, transition is needed to optimize human resources for food barn administrators, in line with research by *Sahusilawane, and Sahusilawane (2021)* stating that the handling of food shortages is not merely related to direct aspects in the field of food production and supply. For this reason, supporting elements such as the availability of infrastructure and improvement of human resources are needed.

### 3.4. Optimization of Human Resources in the Implementation of Barns

A deeper study of the management of human resources in barns is considered to be still not optimally discussed, so specific interventions are needed as a form of implementation of increasing effectiveness. As reported by *Arathoon, Raithatha, and Tricarico (2021)*, recommendations need to be provided by the government to minimize the negative impact of the pandemic on rural economies.

The proposed suggestion aims to develop human resource management to be more productive, effective, and reliable in managing food barns. The strategy implemented by the Community Food Pantry Development Programme is to provide support to facilitate activities in the form of training, mentoring, socialization and monitoring evaluation. This is done to strengthen the group's ability to secure and manage food supplies so that they are always easily accessible and available to its members on an ongoing basis (*Sima, Gheorghe, Subić, & Nancu, 2020*).

The role of human resources in food barns can be increased by empowering the community. This empowerment has the potential to be useful for identifying the capabilities of each individual as a sustainable productive economic effort (*Dissanayake, 2020*). The training was carried out for groups by the province in the context of empowerment to increase the group's capacity in the management of barns. The purpose of performance management is to improve the ability and quality of employees and create more value for an enterprise (*Azizi et al, 2021*).

The results of the analysis show that the main actors in the community empowerment program are the community followed by the local government and academicians. Contributing actors help them to maintain sustainability and maintain projects built by the government actively (*Waridin, Dzulkhijiana, & Mafruhah, 2018*). That is the reason for optimizing the management of human resources, and local government assistance is needed to achieve optimal results. This is supported by *Gunawan (2020)* stating that the village government requests assistance from the central government in the provision of human resources. Collaboration between public and private sectors seems to be some of the key success in developing human resource management in an agricultural sector (*Rozaki, 2020*). In order to do that, some suggestions can be given as a form of optimizing human resource management in the management of barns, including 2 types of intervention below.

#### *Increasing Effectiveness by Utilizing Information Technology*

In the era of the continuous development of information technology, enterprises can achieve their own healthy development only by keeping up with the pace of society. Other than that, it can be achieved by combining information technology with human resource management to sort out the human resource operation system under internet management (*Razak, 2020*).

During the pandemic period, the use of internet information provides scientific information support for information and communication operations. *Muke and Niles (2017)* explains that technology can be availed to the people living in rural areas to help in improving their lifestyle. Other than that, technology can help them to enable quantitative management of human resources, establish an enterprise employee database, expand more data sources of enterprises, provide more digital data for enterprise human resources decision making, and improve the scientific accuracy of decision-making (*Zhu, 2020*).

The results show that farmers are adapting modern agriculture technologies that have increased their productivity and profitability. The livelihood of the farmers also has been improving satisfactorily (*Pasa, 2017*). The pandemic has led to increased cross-border distance problems, it needs to be anticipated with Emphasis on Performance (dominant variable of measurement of work performance), Competence Development (dominant variable of organization of

work), Ensuring Continuity (dominant variable of career management) (Caligiuri et al, 2020; Vrabcová, & Urbancová, 2021).

#### Organizing Training to Improve Human Resource Performance Management

During the transition to a new normal era, it requires the application of technology and information. Implementation requires preparation by conducting trainings and providing information about management and agricultural assistance. The training held needs to have substance in the activities of increasing competence in the implementation of technology and information in the granary management sector as a form of improving performance management.

There is still a lack of participation from village officials and a local government in the current condition of the implementation of human resources (Muhyiddin, & Nugroho, 2021). With the support of the government and the participation of the community, it will achieve the optimization of good human resources as in the research which explains that some villages have been successful in terms of empowerment activities.

## 4. Discussion

### 4.1. Impact of COVID-19 on Human Resources

Human Resource Management is part of organizational management that focuses on a human element (Hernández, Osorio-Londoño, & Serna-Gómez, 2021). According to Hariandja (2017), HRM's main focus is to contribute to the success of a company. Human resources need to develop following the development of a company. It is supported by (Kusuma, & Kautsar, 2020) that Change Management is a structured and strategic approach to manage individuals'/teams' behavior and attitude towards the change to transition in the field of business processes, technology implementation of any other policies of an enterprise.

Recently, the COVID-19 pandemic has created demanding conditions for human resource managers. Human resources before and after the pandemic, the difference is visible, when covid can use technology to improve human resource skills (Giurge, & Bohns, 2020). In the context of dramatic changes around the world due to the pandemic, organizations need to respond and adapt to the alterations and accordingly manage the workforce (Carnevale & Hatak, 2020). HRM has a significant role in helping employees to overcome the difficulties brought by unexpected changes in the workplace as well as in the society (Carnevale, & Hatak, 2020). Besides, the digital and collaborative skills of a workforce are required to move to the virtual work (Sheppard, 2020).

Moreover, increasing unemployment due to the recession imposes more pressure on people. The International Labour Organisation (ILO) estimates that 195 million of full-time workers will lose their jobs worldwide this year (ILO, 2020). Therefore, employees need to learn new skills that increase their employability in the digital space (Sheppard, 2020).

In this regard, HR managers should elaborate strategies enabling employees to use advanced technologies as well as update their digital skills (Parry, & Battista, 2019). In addition, lifelong learning and developing talents are still important, but training sessions take place online (Narayandas, Hebbar, & Liangliang, 2020). Interestingly, the leaders of the surveyed Chinese companies did not conserve resources but invested intensively to increase their competitiveness (Narayandas, Hebbar, & Liangliang, 2020).

### 4.2. Human Resource Management in the Management of Food Barns During the COVID-19 Pandemic

In the management of barns, several aspects need to be considered as factors driving the significance of the progress of output as stated by Giurge & Bohns (2020) where the management of food barns must be supported by a well-

organized management structure, starting from the structure of the organization, the experience of the managers, educational background and also the tasks and the authorities of each division.

This means empowerment by increasing the capacity of managers, with the management of granaries being part of rural economic community's efforts (Hardjono, Widiputranti, & Dorojati, 2019; Syahza, Bakke, Irianti, & Asmit, 2020; Sara, Jayawarsa, & Saputra, 2021).

In the management of barns, there are several aspects that form the basis for supporting the sustainability of its implementation, which is the focus of the study, namely aspects of management, facilities, infrastructure, business scale and cooperation (Presnyakova, & Khryuchkina, 2020; Rathnayake, & Udaya, 2020). Management aspects include organizational devices, experience in developing a business, the nature of management, control, management, and an annual work program (Hardjono, Widiputranti, & Dorojati, 2019). One of the aspects, which is foundation, is human resources of support to direct and become an institutional device with the role described by Mohan, Manikandan and Abdullah (2016) which is to establish and maintain a system and procedures for structured program planning.

In an effort to increase the efficiency of food storage, community economic empowerment can be carried out on the basis of mutual cooperation (Chikmawati, 2019). The importance of cooperative work was also emphasized by Widiastuti, Putra, Utami and Suryanto (2019). In their research, they revealed that cooperative work is capital that will bring trust between community members.

The application of technology and information in the field of food production in several countries is still not optimal. For instance, in Nepal, they are still using traditional and indigenous technology in an agriculture sphere. That traditional and indigenous technology is not able to produce food in large quantity. Besides that, the use of technology also emerges in processes such as recruitment and selection or training and development (Gonçalves et al., 2021). One of the implementations of development is the application of information technology for the effectiveness of work. Before that, it is necessary to identify what kinds of digital information with messages and platforms are actually needed for administrators to be more conducive to agricultural development in the new normal era (Dharmawan, Muljono, Hapsari, & Purwanto, 2020).

Examples of development of improved technologies, such as improved varieties of seeds and inorganic fertilizers in particular, are regarded as the indication of an agricultural change towards the path of commercialization. Seeds, fertilizers, pesticides, farming techniques and use of agricultural tools and instruments and trained human resources have contributed largely to agriculture production (Mamu, Yunus, & Allorante, 2020).

The obstacle to optimizing human resources is described by Eryana (2018) and states that the level of village officials' understanding of knowledge about human resource management and technical capabilities of village officials is still lacking. In addition, empowerment policies are still difficult to implement in the field, and the fluctuating situation is triggered by several things, including target group's interests (Rathnayake, & Udaya, 2021). Meanwhile, organizations outside the government such as village community associations have not made a major contribution to realizing community empowerment activities in the village (Zhong, Li, Ding, & Liao, 2021).

### 4.3. Organizing Training to Improve Human Resource Performance Management

Performance management is important after a crisis when businesses need to exceed the expectations of their customers and win back their business (Ngoc Su et al., 2021).

The training held focuses on the activities to increase competence in the implementation of technology and information in the granary management sector as a form of improving performance management (Kumar, & Kapoor, 2021).

While HRM practices have improved dramatically in today's digital world, the outbreak of COVID-19 has also required companies to accelerate the integration of digitalization into HRM (Gigauri, 2020). There is a growing need to focus on improving the efficiency of various HR dynamics, including recruitment, employee engagement, performance management, and separation processes (Yadav, Dubey, Chawla, & Jha, 2020).

Training can have a beneficial effect on work. Training is a way for employees to learn knowledge, skills and behaviors and become effective and productive employees (Rahayu, Ruhaeni, & Nurcahyo, 2010). With the outbreak of COVID-19, companies have consistently worked to develop integrated software programs that are suitable for employee involvement to ensure employee satisfaction and work-life balance (Wunderlich, & Løkke, 2020).

Training helps integrate employees into a cultural organization and become productive workers. Training also helps employees work smarter and safer, impacts job performance, and improves productivity and safety (Santi, Sarastiani, Wijaya, & Anggiani, 2021). At the current level of human resource development, the involvement of village officials and local governments is still lacking (Muhyiddin, & Nugroho, 2021).

With government support and community involvement, it will achieve excellent talent optimization, as shown in some studies explaining that some villages are successful in terms of empowerment activities. There is an urgent need for community and government participation as a form of support in the implementation of personnel optimization (Wahaj, 2021).

#### 4.4. Technology For Optimizing Human Resources

Information technology will be a better solution to the problems during training of employees and human capabilities that are combined and thus develop and improve productivity (Wahaj, 2021). Through information technology, a firm or organization can improve capacity building locally and can train their staff from abroad as well as through IT (Martiskova, & Svec, 2020).

There is considerable interest in training and further education to acquire the innovative HR management systems that currently exist. As new technologies bring new skill requirements, companies should always consider their training needs when planning their employees (Zarqan, & Sukarni, 2017).

Therefore, HR professionals play a supportive role in this transformation, and are also responsible for retaining employees by improving their skills and abilities (Parry, & Battista, 2019). Not only is workforce retraining or further qualification essential, but resilience must also be a corporate strategic priority (Van der Lippe & Lippényi, 2019; Kirby, 2020). In addition, employee well-being and health affect their outcomes. As a result, combining work and personal life while working away from home can be a central challenge facing talent (Peasley et al., 2020).

While technology has had a positive effect on a company's internal processes, it has also changed the way HR management works. Technology can help HR experts to make workforce planning easier, make decisions faster, clearly define jobs, evaluate performance, and cost employees want. We will be able to provide effective benefits (Zarqan, & Sukarni, 2017).

## 5. Conclusions

In the era of the COVID-19 pandemic, food barns are the solution to the food crisis. In the management of food barns, one aspect that can support the optimization and effectiveness of activities is human resource management. During COVID-19, human resource management has not been optimally organized as indicated by the lack of community and local government participation in supporting the operation of barns. To improve the effectiveness of human resources in the

implementation of barns, the proposed solution is integration of information technology, preceded by providing training. It is shown that the application of technology and information can run well with government support and active community participation. It is hoped that the proposal in this research can help realize the benefits of food barns as a provision for community needs during the COVID-19.

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## 7. Competing interests

The authors declare that they have no competing interests.

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