

Job Characteristics and Job Design Manager For Small Scale Hatchery of Catfish Aquaculture

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ABSTRACT:-Job analysis is the foundation of all the human resource roles which helps the organization understand the job basic need to be completed. can be developed into a job design which contains information about the job description and specification. The Multimethod Job Design Questionnaire (MJDQ) is a job analysis method which employs a job characteristic approach that consists of task characteristics, knowledge characteristics, social characteristics, and working context. The results of the current study revealed that there were significant connection and a very strong linear correlation between knowledge characteristics and task characteristics. This indicates that knowledge characteristics which consist of job complexity, information processing, problem-solving, capability variation, and specialization influence job characteristics which consist of autonomy, job variation, task significance, job identity, and feedback from the job, and vice versa. The Small Scale Hatchery manager job design was created based on the Dessler format which contains the job description (summary, roles, responsibilities and duties, authority, working equipment and documents, work relationships, achievement standards, and working conditions) and job qualifications (education, knowledge, skills, and behavior).

Keywords: job analysis, manager, job design, Small Scale Hatchery

I. INTRODUCTION

Human resource is the central factor in an organization, functioning as the greatest driving force in the organization to create and manage other resources. According to Skorkova (2016), human resource is an irreplaceable accelerator for effectiveness and long-term resilience in an organization due to the knowledge and capability to solve problems possessed.

One of the efforts to improve human resources is through planning human resources with reference to the organization's purpose. Human resource planning requires a job analysis that can then be developed into a job design. Job analysis helps organizations understand the basics of the job that need to be done which influence the selection of suitable candidates, assessment of their suitability for the job market, development of training and development programs, providing guidance for them, or fulfilling the multitude human resource roles adequately (Prien *et al.* 2009).

Catfish aquaculture is divided into seed production, nursery, and rearing activities. According to Effendi (2004), seed production is an aquacultural activity whose purpose is to produce seed; the seed produced then becomes an input component for the rearing activity. Human resources in the catfish seed production are currently numerous and are distributed all over Indonesia; however, their quality and sense of task still fall short of expectations. This study examined the behavior of small-scale catfish seed production businesses known as Small scale hatcheries. Some Small scale hatcheries are run by individuals and some are run by groups. The Small scale hatcheries run by groups are led by a group chairman or a manager.

The manager of a Small Scale Hatchery plays a very important role in the success of this business unit organization. According to Andrew and Dubrin (2006), leadership is a dynamic force in motivating and coordinating the members of the group. Therefore, the support of a highly qualified manager in achieving the purposes of the organization is needed by both the group and the group members due to the strategic role in influencing or mobilizing the members. Based on the explanation above, the purpose of this study was to analyze the job characteristics of a Small Scale Hatchery manager and formulating the appropriate job design for a Small Scale Hatchery manager.

II. THEORI

Job analysis.

Job analysis is a process within human resources planning to determine the contents of a job so that it may be explained to others for managerial purposes. Job analysis is a critical item because it creates a foundation for the development of the human resource, for example, the selection system, training programs, and performance management system (Morgeson and Campion 2000). The results of job analysis are job description and specification. According to Griffin (2004), a job description lists the responsibilities of a job, the working conditions, equipment and materials, and other tools used in a certain job. Job specification lists the skills, capabilities, other requirements needed to complete a job.

Job characteristics

In a job, there are various activities that need to be conducted to achieve the organization's purpose. These activities have different job characteristics to differentiate one job from another. The differences in the characteristics demand proper identification so that the tasks could be carried out well and have satisfactory results (Bangun 2012).

According to Morgeson and Humprey (2006), there are a number of variables in job characteristics, namely task characteristics, knowledge characteristics, social characteristics, and contextual characteristics. Task characteristics focus on how a particular job is completed and the character of the responsibilities fulfilled by that particular job. Task characteristics consist of autonomy, task variations, task significance, task identity, and job feedback. Knowledge characteristics reflect the demand for knowledge, skills, and capability placed on an individual as a function of what is carried out in that job or position. Knowledge characteristics consist of a number of indicators such as task complexity, information processing, problem-solving, skill diversity, and specialization. Social characteristics consist of social support, dependence, interactions outside the organization, and feedback from other people. Contextual characteristics consist of ergonomics, physical demands or requirements, job conditions, and equipment use. These characteristics will have an impact on the determination of the specifications of a Small Scale Hatchery manager.

Job description

A job description is one of the information points obtained from a job analysis, related to the tasks, responsibilities, and authority demanded by a certain job (Bangun 2012). An inaccurate job description could decrease the effectiveness of the training or may lead to the creation of an unrealistic performance standard.

Job design.

Job design is a process created to understand the characteristics of a certain job. An appropriate job design begins with the identification of the job's aims and the importance of designing the job and determining the approaches and legal considerations (Bangun 2012). An effective job design formulation is a process of combining a job with an organizational purpose, maximizing employee motivation, achieving work standards, and aligning the employee's skills and capabilities with the job requirements (Sunarto 2003).

III. METHOD

This study focused on the job characteristics and job design for a Small Scale Hatchery manager in catfish seed production. The job design was created by developing the job analysis which included the description and qualifications of a manager. This study was conducted in the Mulyorejo Small Scale Hatchery in Maguan Village, Ngajum Sub-district, Malang Regency, East Java. The types of data employed in this study were both primary and secondary. Primary data were collected through in-depth interviews and questionnaires filled by the Managers. The data collection technique was purposive sampling. The secondary data used in this study originated from journals, relevant websites, textbooks, and other scientific studies such as theses and dissertations. The job characteristics as a job analysis approach were processed using statistical methods in the form of mode percentage and the Spearman's rank correlation test. According to Firdaus *et al.* (2011), the Spearman's rank (r_s) correlation coefficient is one of the descriptive measurements to assess the level of correlation between two variables, under the condition that the two variables at least reached ordinal measurement. The job design was created using the Multimethod Job Design Questionnaire (MJDQ) as a comprehensive method developed by Morgeson and Humprey (2006). The job design formulation in the current study used the Dessler template (2010). The sampling technique was purposive sampling with 32 respondents as the subjects who were selected out of individuals who had an understanding of the study's questions.

IV. RESULTS AND ANALYSIS

General Description. The Mulyorejo I Small Scale Hatchery was established on October 15, 2009, with 13 initial members. At the time of the study, there were 131 members. In order to facilitate communication and coordination among members, 6 sub-groups which reported to the main group were formed.

The members of the group were mostly from the younger generation who worked in agriculture, even though there were some who were traders, employees, factory workers, *et cetera*. The land possessed by this group was mostly managed by the members themselves, even though some was leased or managed by other people. The average income of the members was IDR 2 million per month.

The majority had a junior high school, senior high school, or university education. Their ages ranged from 17 to 60 years old. The mutual cooperation (*gotong-royong*) activities as a reflection of the agricultural community culture in this group were fairly good. This could be seen from the relationship between the members, the management, and the surrounding community which was fairly healthy, making it possible to minimize conflict.

There were approximately 296 ponds which were made of plastic tarp. The production in every selling season was quite good. This could be seen from the seed productivity every selling season. During the harvesting season, an average of 50,000 seeds/period was produced. The fish farmers' income depends on the market price.

The infrastructure facilities were adequate because the access roads to Maguan Village were all asphalt and easily traveled with either small or large vehicles.

The Manager Job Characteristics

The job characteristics of a Small Scale Hatchery manager in the present study consisted of task, knowledge, social, and working context. Task characteristics included autonomy, task variations, task significance, task identity, and feedback from the job. Knowledge characteristics included task complexity, information processing, problem-solving, capability variation, and specialization. Social characteristics included social support, dependence, interactions outside of the organization, and feedback from other parties. The manager's working context included ergonomics, physical requirements working conditions, and equipment use. The results of the Spearman's rank correlation significance test for each of the characteristics can be seen in the following Table.

Table 2. The results of the Spearman's rank correlation significance test

	Task Characteristic	Knowledge Characteristic	Social Characteristic	Working Context
Task characteristic				
1. Correlation coefficient	1.000	0.839	0.370	- 0.628
Notes		Very strong and linear	Adequate and linear	strong and nonlinear
2. Significance	.	0.000	0.037	0.000
Notes		Significant	significant	significant
Knowledge Characteristic				
1. Correlation coefficient	0.839	1.000	0.405	- 0.627
Notes	very strong and linear		Adequate and linear	strong and nonlinear
2. Significance	0.000	.	0.021	0.005
Notes	Significant		Significant	Significant
Social characteristics				
1. Correlation coefficient	0.370	0.405	1.000	- 0.386
Notes	Adequate and Linear	Adequate and Linear		Adequate and and nonlinear
2. Significance	0.037	0.021	.	0.029
Notes	Significant	Significant		Significant
Working context				
1. Correlation coefficient	- 0.628	- 0.486	- 0.386	1.000
Notes	Strong and nonli near	Adequate and nonlinear	Adequate and nonlinear	
2. Significance	0.000	0.005	0.029	.
Notes	Significant	Significant	significant	

Notes: $\alpha = 0.05$

Source: Processed Data (2018)

The highest job characteristic score for the manager was knowledge characteristics and task characteristics which had a very strong linear significant relationship and correlation. This indicated that knowledge characteristics which consist of task complexity, information processing, problem-solving, capability variation, and specialization influence task characteristics which consist of autonomy, task variation, task significance, task identity, and feedback from the job. These were all required by the manager to complete tasks such as work scheduling, decision making, task varying so that the manager may identify his/her tasks and receive feedback from his/her job.

The second highest job characteristic for the manager was knowledge characteristics and social characteristics which have an adequate and linear significant relationship and correlation. This indicates that knowledge characteristics which consist of task complexity, information processing, problem-solving, capability variation, and specialization in their execution are influenced by social characteristics which consist of social support, dependence, interaction with others outside of the organization and feedback from other parties. Furthermore, it could be determined that an insignificant correlation was found in the relationship between task characteristics, knowledge characteristics, and social characteristics and the working context. This indicates that the working context was not really required by a manager in his/her job.

Manager Task Characteristics.

The manager task characteristics in this study consisted of autonomy, task variation, task significance, task identity, and feedback from the job. Autonomy in the current study consisted of autonomy in work scheduling, autonomy in decision making, and autonomy in working method. The results of the study related to a manager's task characteristics are presented in Table 3.

Table 3. The task characteristics of a manager in a Small Scale Hatchery

No	Indicator	Modus	Percentage (%)	Interpretation
1	Autonomy in work scheduling	4	69.8	Agreed
2	Autonomy in decision making	4	60.2	Agreed
3	Autonomy in the working method	4	78.1	Agreed
4	Task variation	4	85.9	Agreed
5	Task significance	5	68.0	Very Agreed
6	Task identity	4	37.5	Agreed
7	Feedback from the job	4	60.4	Agreed

From the table above, it can be seen that a manager's task significance consisted of a significant impact on other people's lives, the meaning and importance for a greater scheme, the greatest impact on people outside of the Small scale hatchery, and a significant impact on people outside the Small scale hatchery. The results of the current study revealed that 85.90 % of the respondents agreed. This indicates that the manager's job has a significant impact on other people's lives, is meaningful and important for a greater scheme, has a great impact on people outside of the Small scale hatchery, and has a significant impact on people outside the Small scale hatchery.

The Manager's Knowledge Characteristics.

The manager's knowledge characteristics in the present study consisted of five indicators. These indicators were task complexity, information processing, problem-solving, capability variation, and specialization. The results of a manager's knowledge characteristics are presented in Table 4.

Table 4. The knowledge characteristics of a Small Scale Hatchery manager

No	Indicator	Modus	Percentage (%)	Interpretation
1	Task complexity	4	82.81	Agreed
2	Information processing	4	57.29	Agreed
3	Problem-solving	4	43.75	Agreed
4	Skill variation	4	55.47	Agreed
5	Specialization	4	50.78	Agreed

From the table above, it can be seen that the manager's job complexity consisted of completing one activity in the job, simple and straightforward jobs, relatively straightforward tasks, and relatively simple tasks. The results were that 82.8% of the respondents disagreed. This indicated that the respondent that a manager conducts more than one activity in the job, has a complex job that is not simple, has relatively complex tasks, and covers tasks that are relatively not simple.

The Manager's Social Characteristics.

The manager's social characteristics consisted of social support, dependence, interaction outside of the organization, and feedback from other parties. Dependence in the present study consisted of initiating dependence and accepting dependence. The results regarding a manager's social characteristics are presented in Table 5.

Table 5 The Social characteristics of a Small Scale Hatchery Manager

No.	Indicator	Modus	Percentage (%)	Interpretation
1.	Social support	4	71.35	Agreed
2.	Initiating dependence	3	35.42	Dubious
3.	Accepting dependence	4	68.75	Agreed
4.	Interactions outside the organization	4	52.34	Agreed
5.	Feedback from other parties	4	55.21	Agreed

The results of this study revealed that social support had the highest percentage in social characteristic sat 71.35 %. This indicated the respondents agreed that a manager need social support.

The Manager's Working Context. The manager's working context in this study consisted of four indicators: ergonomics, physical requirements, working conditions, and equipment use. The results of the present study regarding the manager's working context are presented in Table 6.

Table 6 The Working Context of a Small Scale Hatchery Manager

No.	Indicator	Modus	Percentage (%)	Interpretation
1.	Ergonomics	3	68.75	Dubious
2.	Physical requirements	3	77.08	Dubious
3.	Working conditions	5	56.25	Very Agreed
4.	Equipment use	2	56.25	Disagreed

The results of the present study revealed that 77.08 % of the respondents' responses to the physical requirements for a manager consisting of physical stamina, physical strength, and physical efforts were dubious. This indicated that the manager specifications in the working context were that a manager does not need to be a person who is strong and had physical stamina because not much physical work is involved in this job

The Manager Job Design. The manager job design was made after determining the job characteristics of a Small Scale Hatchery manager. This design was made based on the tasks or activities done by a Small Scale Hatchery manager using the Dessler (2010) job description format which consists of the job identity, job summary, responsibilities and duties, authorities of the position holder, relationships, achievement standard, working condition, and job specification. The job design for a Small Scale Hatchery manager can be seen below:

COMMUNITY CATFISH SEED PRODUCTION UNIT	
JOB DESIGN FRAMEWORK	
Position: Small Scale Hatchery Manager	
JOB DESCRIPTION	
1.	Job Summary A Small Scale Hatchery Manager acts as a facilitator, mediator, coordinator, and motivator for the Catfish Seed farmers
2.	Job Function A Small Scale Hatchery Manager plays a role in building the awareness and changing the thinking pattern of the seed farmers in building a collective business in the effort to improve the competitiveness to increase the Catfish Seed Farmers' welfare
3.	Responsibilities and duties

- Selecting the aquaculture location
 - Estimating the production
 - Planning the production
 - Planning the sales
 - Planning the production operational costs
 - Supervising the production process
 - Monitoring and evaluating the production process
 - Creating a marketing program
 - Supervising the marketing process
 - Monitoring and evaluating the fish shipping and distribution process
 - Budgeting the marketing operational cost
 - Formulating the bookkeeping and database for each catfish parent
 - Listing the parent and seed assets
 - Coordinating and consolidating with related institutions
4. Authority
A Small Scale Hatchery Manager has the authority in budgeting activities, creating working programs, ensuring that every grant received is on target, and ensuring that all the programs are executed well
 5. Working Equipment and Documents
 - A laptop or desktop computer
 - A two-wheeled vehicle
 6. Working Relationships
 - Internal: Coordination between the board members and the members of the Small scale hatchery
 - External: Coordination and consolidation between reGENCY-level government agencies, universities, and the private sector as business partners.
 7. Achievement Standards
 - The catfish seed farmers who are members of the Small Scale Hatchery have a good mindset and high spirits in building the collective business
 - An increase in the productivity of the seed produced
 8. Working Conditions
 - Fairly comfortable places indoors or outdoors (in the field)
 - Free moving space
 - Carries risk of fairly significant work-related accidents/physical disabilities or health hazards
 - Working in fairly hot places, having adequate ventilation
 - The absence of disruptive noises that might interfere with work

JOBSPECIFICATION

- Education: A bachelor degree from any major
- Knowledge: understands issues related to catfish seed production, field conditions and the local community situation, administrative work, bookkeeping, and reporting.
- Skills and capabilities: is able to build collaborations, maintain a communication system, create a work plan, make a business feasibility plan for fish aquaculture, and design the spatial plan for the aquaculture facilities and infrastructure,
- Plans and executes targets, has good leadership and is able to motivate the catfish seed farmers, has the initiative and capability to solve problems, has entrepreneurship, has the good communication and negotiation capabilities, is computer and internet-literate, can operate a two-wheeled vehicle
- Behavior: pays attention to details, disciplined, patient, and focused

V. CONCLUSION

The job characteristics of a manager which had the strongest relationship and interrelation with one another are knowledge characteristics and task characteristics. The job design which produced the specifications of a manager based on the job characteristics identified that the manager's task characteristics had a significant effect on the lives of other people, were meaningful and important to a greater scheme, and had a great and significant impact on the people outside the Small scale hatchery. The working context characteristics revealed that the physical requirements of a manager which consisted of physical stamina, physical strength, and physical effort were not really required because the job does not involve many physical activities.

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