

Job Analysis on Production Employment for New Products in PT. DKM

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Abstract—The purpose of this paper is to analyze the gap between current and future production processes of new products in PT.DKM and to identify the competency and skills required to train and develop the capacity of employees to process new products in PT.DKM. It is also aimed at providing an understanding to owners of small and medium-sized enterprises (SMEs) regarding job descriptions and job requirements. PT. DKM conducted business coaching using structured interviews and analyses to help solve gaps and skills problems/deficiencies while in the processes of generating new products. Training techniques will prepare employees engaged in the production of new products and will be effective in helping to develop employee competency and performance. The scope of this paper is limited only to ascertaining the usefulness of such training for PT. DKM's production sector employees. The paper adds to the literature of job analysis and employee development processes in SMEs in Indonesia by directly using and applying the concept of in-house training.

Keywords—job analysis, job requirements, employee training, competency, performance

I. INTRODUCTION

Since 2014, Indonesia has ranked Number One in the world in terms of the market share of SMEs. According to data from the Ministry of Cooperative and small and medium-sized enterprises (SMEs) concerning Micro, Small and Medium Enterprises (MSME) and Large Enterprise, there were 57.9 million such units in Indonesia. This translates to a 99.97% market share of all businesses. SMEs contribute with the growth of SMEs amounted to 2.41% 1,500 trillion rupiah (constant price) to the country's total gross domestic product, some 57.48%.

Indonesia is one of the world's most up and coming automotive markets. In 2013 car sales reached 1.22 million units, and increase of 10% on the previous year's total of 1.12 million. Besides domestic sales, automotive manufacturers also export large volumes of cars and motorcycles. The volume of production and sales also reflects the potential export market for spare parts, accessories, and supplies for cars and motorcycles. In 2013, component parts manufacture, especially HS 8708 components and motor vehicle accessories, was worth US \$1.42 billion, representing 31.04% of the value of total automotive exports.

PT. DKM was established in 2004 as a motorcycle dealer and service agent that also specialized in selling spare parts. In 2008, it began manufacturing with an initial investment of five million rupiah and employing two people.

PT. DKM is a B2B company that initially made racks, specialist tools, and equipment.

In 2012 PT. DKM contracted to PT. Astra International Tbk to supply bar-headrest components for its Avanza and Xenia models. The company supplies to order based on demand and on average this has been 200,000 units a month.

The main problems for PT. DKM are its weak bargaining power with its main customer, PT. Astra International Tbk, and the threat of competition from Japan and China, who have started to establish automotive component businesses in Indonesia. Over the years PT.DKM has increased its profits and growth but it remains dogged by uncertainty because it is solely reliant on a single customer. It requires new products to maximize existing resources and that can help provide a fixed income.

After significant consultation, the company has decided to diversify into steel clothes hangers.

Analysis of what will be required to diversify into the production of steel clothes hangers requires the collection of data and information relating to the work of production machine operators. It needs to determine job description and job requirements. Data collection will be followed by processing and then implementation of the findings. Analysis entails a detailed description of the current production process. In this regard, the author conducted interviews and discussions with the Director of Operations, Mr. Rajid, to ascertain the design requirements of the production process for the hanger. Using this analysis will allow the company to ascertain the potential for repurposing machinery and the other steps inherent in producing a hanger.

Operational differences will then be analyzed further before a final report is compiled detailing job analysis, description, and requirements. Job requirements are important for focusing and detailing the skills and expertise required. It will certainly affect the effectiveness of employee performance in the field of production.

The purpose of this paper is to analyze the skills that will be required by PT.DKM employees to create the new product.

This paper is structured as follows. The first section contains a background of the SME market and the practices of the automotive industry in Indonesia, as well as a brief description of PT.DKM. The second section provides a mapping conditionality of PT.DKM, including the use of analytical tools to determine the state of the company

internally and externally and the problems that exist. The third section explains the methodology used in this study and the steps taken. The fourth section presents the results and the related discussion. The final section contains suggestions and conclusions. It also highlights important implications of the study.

II. JOB ANALYSIS OF PRODUCTION EMPLOYEES IN PT. DKM

The theoretical basis used in research is job analysis theory.

According to Dessler [1] job analysis is a process to identify and determine in detail the particular job duties and requirements and the relative importance of these duties for a given job. Job analysis is a process where judgments are made about data collected on a job.

Job analysis will generate a job description (job list assignment) and job specification (type of person to be recruited for the job). A job analysis will deliver various pieces of information, such as:

- **Work Activities**
Information on actual work activities such as cleaning, selling, or painting. This information may include how, why, and when workers do their activities.
- **Human Behaviors (human behavior)**
Information gained about the behavior needed in work, such as sensing, communicating, lifting weights, or walking long distances.
- **Machinery, tools, equipment, and work aids**
Information on the tools used, material processes, required knowledge, and services required
- **Performance standards**
Information on performance standards related to quantity and quality levels on each job assignment
- **Job context**
Information on issues such as physical conditions at work, work schedules, incentives, and the number of people who will interact with employees
- **Human requirement**
Information on knowledge or skills, such as education, training, requisite work experience and other requirements such as hobbies, personality, and attitudes.

Job analysis is useful in supporting almost all human resource (HR) activities such as:

- Recruitment and selection
- Performance appraisal
- Compensation
- Training

The benefits of conducting a job analysis are:

1. To establish the rationale for an objective wage and payroll

2. To eliminate any terms of employment that may cause discrimination in the procurement of employees

3. To plan HR needs in the future and act as a basis for planning

4. To determine applicants with available job vacancies

5. To determine training needs for new and established employees

6. To determine an employee career development system that is both appropriate and comprehensive

7. To establish realistic performance standards

8. To locate employees in jobs that suit their skills effectively

9. Organizational positioning and organizational development

10. To ease understanding of the tasks involved, particularly for new employees

11. To improve flow or work-flow

12. To streamline relationships of cooperation and mutual understanding between employees and various units of the organization

Stages of Position Analysis Activities:

- Identify the purpose of job analysis
- Determine the purpose of doing the expected job analysis and output
- Determine who will conduct the job analysis
- How to process the job analysis
- Determine which strategy decisions are used—such as the level of detail collected, resource decision-making, and data collection.
- Data collection
- Documentation
- Develop job description and job specification

Various methods are employed for collecting the necessary information, such as:

1. Interviews

Interviews were conducted to collect specific information. The individuals concerned were chosen because of their detailed understanding of the process. Questions posed related to the scope of the employee's tasks, primary skills required, and the duties and responsibilities.

2. Questionnaire

Questionnaires were supplied to employees, designed to extract comprehensive explanations of their roles and responsibilities

3. Observation

Direct observation was undertaken to cross-check statements, especially if the work pertained to

physical activities such as factory work or reception duties

4. Participant Diary / Logs

An employee would log his or her every task

5. Quantitative Job Analysis Techniques

To provide an assessment of each job position quantitatively

6. Electronic Job Analysis Methods

Electronic or web basis methodology was employed

Job analysis generates a job description (job list assignment) and job specification (type of person that would be suitable for the job).

Jobs' description is a document describing the general tasks or functions and responsibilities of any position. It can be used in addition to details as to who the person should report to and the qualifications and skills they should possess.

The job description should include:

- Job Identification

The name of the specific position

- Job summary

A summary of what the job entails, and the details of the tasks involved. It should also list the equipment that will be used.

- Relationship

Relationship between the job or position with other positions both internal (such as the obligation to report on the position above or external in other positions in other companies). Includes supervision provided and received.

- Responsibilities and Duties

Contains an explanation of the responsibilities and tasks that exist in that position and how be to achieve stated goals.

Job specification is a written description that is a key part of the recruitment of employees. It includes background information on education, ability, personality, experience, and so on.

Job specification is usually the basis for starting the recruitment, selection, and placement process.

III. METHODOLOGY

In conducting this research, several techniques such as SWOT, VRIO, and Porter's Five Forces were used in problem-solving. The results from the various analyses were the results of the adjusted to reflect the differences between the actual conditions and ideal conditions so as to optimize business improvements.

According to a SWOT analysis, there are some problems in the company seen from the current actual conditions, such as unexpected assets of the company as optimal. Thus, it is

expected that the optimization of asset usage will be in various ways for optimal asset usage. From the SWOT and VRIO, it can be ascertained there is a distinct absence of an appropriate employee management system. This means such a system could be applied beneficially in the management of employees at PT. DKM.

And from SWOT analysis and Porter's Five Forces it can be ascertained that scrap and iron waste could be better used in the making of a new product.

Data collection techniques in business coaching activities involved several parties. Mr. Rajid, the owner of the MSME that manages PT. DKM was one key member. The second cohort involved the employees in charge of running the production machinery at the company.

In business coaching activities, the data used are primary data and secondary data. Primary data was obtained by employing field surveys using all original data collection methods [2]. The primary data obtained resulted from interviews conducted by the author with Mr. Rajid and the relevant employees. It also encompasses direct observations.

Therefore, the primary data relates to the actual conditions and internal problems faced by PT. DKM and it can be divided into two parts [2]:

1. Passive primary data collection, through character observation, using mechanical or manual tools, from study elements. The focus of observation includes the characteristics of individuals, objects, organizations, and all kinds of things that are of interest and importance to the researcher.
2. Active primary data collection, created by direct questions to respondents, either personal or not. The active primary data collection method requires respondents to actively participate in the data collection process.

In addition to interviews, observations made during business coaching can be analyzed to obtain the actual conditions.

According to Cooper &Schindler [3], observations can be distinguished as follows:

1. Behavioral observation: nonverbal, linguistic, extra-linguistic, and spatial analysis
2. Non-behavioral observations: record analysis, physical conditions, and physical processes

Secondary data is information obtained from indirect sources. The secondary data form used during the business coaching period was in the form of literature, articles, and historic research journals.

A. Interview

The author conducted an interview with Mr. Rajid as the owner and holder of authority in UMKM PT. DKM. The in-depth interview method is designed to obtain information about the attitudes, feelings, motivations, and beliefs of the respondent. In this case it was about his company. The interviewer is tasked with obtaining information about the business. Questioning can ascertain such information as how, when, and why a business was established; the process

of development to date; internal and external difficulties; management issues; any HR problems; details on business processes and future goals.

Based on the results of the interview, the authors obtain important information relating to SMEs – in this instance, PT. DKM. The company was founded by Mr. Rajid in 2008 and currently has two production plants. Currently, Mr. Rajid is in the process of moving production on a single plant.

Mr. Rajid wants to develop new products from raw materials that are already used by the company – i.e., iron – and existing machinery.

B. Observation

The author used the observation method to conduct a direct field review of both PT. DKM plants.

Plant 1 is located on Alternative Cibubur Rd and Plant 2 is located not far away at the road of Taqwa Mosque no.9. The aim of observation was to view first-hand the production process and how employee work practices.

C. Documentation

Documentation is a technique of collecting data in the form of documents and photographs that aims to increase understanding in research. Documentation by the author in this business coaching activity entailed collecting photographs of the state of the factory environment, production machines, and how employees work.

Using the descriptive analysis technique, data analysis in qualitative research is done simultaneously with the process of data collection. According to Miles and Humberman [4], the stages of data analysis are as follows:

1) Data collection

All research data is recorded objectively and in accordance with the results of observations and interviews conducted in the field

2) Data reduction

Data reduction is the process of selecting the main points that fit the research focus. Data reduction is a form of analysis that classifies, directs, discards the unnecessary and organizes the data that has been reduced so as to get a clearer picture of the observation results and make it easier for researchers to look for it when needed.

3) Presentation of data

The presentation of data is a set of arranged information that allows for conclusion and action taking. Presentation of data is an analysis in the form of matrices, networks, charts, or graphics that can be easily understood.

4) Decision-making or verification

After all of the data is processed and displayed, the next step is the conclusion or verification.

To reach a conclusion one must look for patterns, continuity, relationships, and things that often arise, hypotheses, and so forth. Verifiable decisions can be based

on data reduction and data presentation to address the issues raised in the research. The purpose of the analysis is to draw conclusions that can be deployed now and into the future.

IV. RESULT

There are some differences between the current production process for bar stay head rests and that necessary to make clothes hangers. For example, it will require some new machinery. Table 1 below shows the process differences.

TABLE I. PROCESS DIFFERENCES BETWEEN STAY HEAD REST AND CLOTHES HANGER

Process	Bar Stay Head Rest	Clothes Hanger	Difference
Cutting	√	√	Iron has five different sizes
Chamfering	√	√	No difference
Drilling	-	√	Differences in operating the drilling machinery and different hole depths from previously
Milling	-	√	The use of new enhancements in end milling
Welding	-	√	Training required to operate machinery
Grinding	-	√	Training required to operate machinery
Heat Gun	-	√	Training required to operate machinery

Arising from these process differences, additional training is required for employees in the production field. In some instances, machines that have been used in the production process for bar stay headrests and another job line but greater understanding of the new product production process can be expected to increase the machine's effectiveness.

In addition, before starting the production process for the clothes hanger other adjustments should take place, including:

A. New product introduction process

Relevant employees should be shown an illustration of a hanger product image with a detailed explanation of the design details, size, color, and weight. The specifications for the hanger should also be explained.

B. Provide an explanation of the steps taken in the production process of hangers

Segmentation of the operating process depending on the role of a worker in producing the hangers

C. Explain in detail to each employee what to do

If there is a change of use regarding the current operation of a machine and its designated new purpose, a short training and introduction to the processes should be provided

D. Evaluate the work of the operator and the output result in each machine usage

There are some differences in educational background among employees in the production field. If the previous required educational background was only at, say, junior high school level, this attainment level (or related

experience of the machinery) should also be expected for new recruits.

Machine operators should not only be capable of operating the new machines but should be encouraged to pitch in to the creative process with a view to diversifying still further into new products.

V. CONCLUSION

Based on the objectives presented, the conclusions of the business coaching activities are as follows:

The introduction of the hanger product will require some changes to the production process due to the use of new tools. There will also be changes to the current job description for production employees and the HR department should prepare a detailed understanding of the duties and obligations for every production employee.

With the different use of new tools that are not used in the production process bar stay head rest, it can be given training to the employees in the field of production to better

understand how to use new tools to produce new products in the form of clothes hanger.

Understanding the scope of the job description and requirements will likely improve the ability of production employees to make new products, including the proposed clothes hanger.

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