

CHAPTER 1

INTRODUCTION

This chapter provides an overview of the issues within the studied system and the supporting factors for resolving the problems based on existing facts. The contents of this chapter include the background, problem exploration, problem formulation, research objectives, and the limitations of the identified issues.

1.1. Background

The presence of pig farms in several cities across Indonesia, particularly in Yogyakarta, has experienced dynamic growth in recent years. Based on various news sources circulating among the public regarding the controversy surrounding pig farming, it is undeniable that consumer demand for pork has continued to increase over time. However, regardless of whether the existence of pig farms is considered controversial, this meat processing industry offers intriguing aspects worth exploring. This serves as the underlying motivation for conducting this research.

The research will be conducted in a small-scale industry engaged in pig meat production, specifically at Pig Farm 'X'. This farm was established in 2010 and is located at Jl. Waru, Kadipiro, Ngestiharjo, Kec. Kasihan, Kab. Bantul, Prov. Special Region of Yogyakarta. The business focuses on the care and growth of piglets up to the slaughtering process. The processed meat from this farm is then sold in traditional markets or directly supplied to major customers, such as restaurants that offer processed pig meat products.

1.2. Problem Exploration

Data from the information obtained during the interview process and field observations with several stakeholders reveal facts concerning the issues occurring at this farm. These problems will be explained in detail as follows.

1.2.1. Licensing Issues

The owner of this business expressed that the first issue lies in the area of licensing. The problem is related to the difficulty in obtaining permits for the construction of a new barn location. This is caused by external factors such as opposition from the local community regarding the presence of a pig farm near residential areas. To this day, the owner is not fully aware of the main triggers that lead the surrounding residents to frequently oppose the construction of the pig farm.

1.2.2. Environmental Issues

Environmental issues have also been raised as complaints from the local community due to the unpleasant odours produced by the pig farm. Relating this to the previous point, it can be hypothesized that the opposition encountered is an indication of the surrounding environmental conditions, which create a negative perception regarding the consequences of building the barn. Nonetheless, this environmental issue is not only faced by the owner of Pig Farm 'X', but also affects other pig farming entrepreneurs who are seeking to expand their pig barns.

1.2.3. Animal Feed Supply Issues

The supply of feed materials for the livestock also faces challenges. The owner sometimes struggles to find suppliers who can consistently provide livestock feed. Given that the pigs being raised consume feed in the form of soybean pulp from leftover tofu production, the availability of livestock feed is highly dependent on tofu producers. The difficulty in meeting the supply of tofu pulp is due to the large quantity required by the owner in a single order. As a result, it is not uncommon for suppliers to be unable to meet the needs of this farm.

1.2.4. Workplace Accident Issues

Barn workers reported that they sometimes encounter difficulties in controlling adult pigs that need to be herded out of the barn. The information indicates that it is not uncommon for workers to experience workplace accidents due to being kicked by livestock, resulting in injuries. This situation causes a loss for both stakeholders: the owner and the barn workers. Consequently, the owner must also contribute to the medical expenses of workers resulting from the

incidents. In addition to the difficulties in controlling livestock, barn workers have also experienced slip-and-fall incidents in the work area. This is attributed to the workers being less vigilant while walking in that area.

Referring to the results of the problem exploration, the following are some key summaries that can be reviewed in Table 1.1. In addition, more detailed information regarding the results of this problem exploration can be found in Appendix 1.



Table 1.1. Summary of Problem Exploration Results

Stakeholder	Roles and Responsibilities	Issues Faced	Conflicts of Interest
Sir. HS (Owner)	<ul style="list-style-type: none"> • Manage farm business and operations • Handle administrative tasks and farmworkers • Market pork products (traditional markets) • Coordinate with the farm section head 	<ul style="list-style-type: none"> • Difficulty meeting feed demand due to inconsistent supply from providers • Challenges in finding sustainable feed suppliers • Trouble securing permits for new farm areas • Environmental issues, including complaints and waste management criticisms • Additional costs for worker accident cases 	<ul style="list-style-type: none"> • Community protests and permit difficulties hinder business expansion • Uncertainty in feed availability affects pig growth and health • Limited budget for ensuring farmworker safety, often deprioritized

Table 1.1. Continuation

<p>Sir. Herman (Farm Section Head)</p>	<ul style="list-style-type: none"> • Oversee farm operations • Report to owner about piglet stock levels 	<ul style="list-style-type: none"> • Complaints from the community regarding environmental issues • Difficulty handling aggressive pigs during herding • Workplace injuries (e.g., kicked by pigs during herding) 	<ul style="list-style-type: none"> • Environmental concerns disrupt operational processes • Desire for ergonomic and safe working conditions not fully realized
<p>Mr. Dian (Farmworker)</p>	<ul style="list-style-type: none"> • Perform farm duties 	<ul style="list-style-type: none"> • Burn injuries from a fire gun during incineration process 	<ul style="list-style-type: none"> • Aspiration for safer and more ergonomic working conditions unmet due to resource limitations

From the various key issues discussed in point 1.2.1. to point 1.2.4. and Tables 1.1., one problem variable has been selected for comprehensive investigation. This variable concerns the workplace accidents experienced by barn workers, which will be addressed in this research. This decision variable is assessed based on the data obtained and considerations that lead to factors such as losses and the sustainability of daily operations at this farm. Therefore, addressing issues in this sector needs to be studied more comprehensively to provide suggestions for improvements or the implementation of a system derived from the research conducted on this problem.

1.3. Problem Formulation

Based on the data collection and supporting information, one issue to be addressed is the control of potential workplace accidents involving barn workers due to negligence in performing their duties and a lack of vigilance among the barn workers.

1.4. Research Objectives

Based on the problem formulation discussed in subsection 1.3., the decision to address the variable related to workplace accidents at this farm aims to control the potential hazard levels in the barn of the "X" Pig Farm while considering the specific needs of this business unit. Thus, the Critical Success Factor of implementing a system design or alternative solutions lies in resolving the workplace accident issues at the "X" Pig Farm by controlling and reducing potential hazard levels categorized as medium, high, or extreme to a manageable or lower level.

1.5. Problem Limitations

This research has limitations in addressing the issues present at Pig Farm 'X'. The limitations of this study are as follows.

1.5.1. Research Location Limitations

This research was conducted at the barn located on Jl. Waru, Kadipiro, Ngestiharjo, Kec. Kasihan, Kab. Bantul, Prov. Daerah Istimewa Yogyakarta. Therefore, if at any time the owner or other stakeholders wish to apply the methods or results of this research in the future at a barn in a different location, it will be necessary to conduct an analysis using different methods suitable for that location.

1.5.2. Workplace Accident Data Limitations

Past workplace accident data at the "X" Pig Farm was obtained from stakeholders during the initial observation and interview process. However, this data was conveyed verbally, and the farm does not have detailed records regarding the timing of accidents involving barn workers. A summary of historical data on workplace accidents in the barn area is presented in Table 1.1. below.

Table 1.2. Historical Workplace Accident Data

Work Accident Timeline	Work Accident Description	Impact
2022 (unspecified)	Occurred 3-5 times annually (workers kicked by pigs, slipped in pens)	Injuries occurred
2023 (unspecified)	Occurred 2-4 times annually (workers kicked by pigs)	No severe injuries occurred