



## Effectiveness Of Manual Material Handling Tools For Chicken Feed Transporting Rails And Online Marketing Websites

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### ARTICLE INFO

*Keywords:* Material Handling Manual, Chicken Farming, Online Marketing Website

*Received :* 11, February

*Revised :* 13, March

*Accepted:* 28, April

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### ABSTRACT

This research aims to solve problems in the process of feeding broiler chickens on increasing the skills of chicken farmers. The mentoring activities carried out include assisting chicken farmers in using production technology assistance and demonstrating if there is damage or errors in operating Manual Material Handling (MMH) tools or difficulties in managing the website. The results of this research are: 1) 90% respondents understand how to operate Manual Material Handling tools; 2) 90% respondents understand the components of Manual Material Handling; 3) 95% of respondents strongly agree with the material duration in operating manual material handling; 3) 95% participant evaluation results after participating in training for the category of using MMH to Help Broiler Chicken Production answered strongly agree.

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## INTRODUCTION

The broiler chicken farming business can be classified into several parts. According to the Decree of the Minister of Agriculture No. 472/Kpts/TN.330/6/96, livestock businesses are divided into three categories, namely people's livestock, small livestock entrepreneurs, and livestock entrepreneurs. People's farms are breeders who cultivate chickens with a maximum population of 15,000 birds per period. Small livestock entrepreneurs are breeders who breed chickens with a maximum population of 65,000 per period. Meanwhile, livestock entrepreneurs are breeders who breed chickens with a population exceeding 65,000 per period. Especially for livestock entrepreneurs, they can receive guidance and supervision from the government. This is confirmed in the Government Regulation of the Republic of Indonesia no. 16 of 1977 concerning livestock businesses. This government regulation explains that the Minister is responsible for the livestock sector or an official appointed by him is obliged to provide guidance and supervision over the implementation of livestock companies (David, 2013). Broiler chickens are chickens produced by technological cultivation. Basically, this chicken is divided into 2 parts, namely broiler chickens and laying chickens (Jamaluddin, 2019). Broiler chickens are the most economical livestock when compared to other livestock, their advantage is the speed of increase/production of meat in a relatively fast and short time or around 4 - 5 weeks of production, the meat can be marketed or consumed (Rasyaf, 2014). The advantages of broiler chickens include very fast growth with a high body weight in a relatively short time, low feed conversion, ready to be slaughtered at a young age and producing quality soft-fiber meat (Suprijatna et al., 2015). The rapid development of broiler chickens is also an effort to balance society's need for chicken meat (Astuti, 2015). This development is supported by the increasingly strong downstream industry such as breeding companies which produce various types of strains. The production factors used in broiler chicken production are divided into two, namely fixed production factors and variable production factors. Fixed production factors consist of land, cages and equipment. Meanwhile, variable production factors consist of DOC, feed, medicines, vaccines, vitamins, husks, water, electricity, fuel for heating and labor (Marang et al., 2019).

Indonesia is a developing country where you can find many industries that still use human power in moving materials, although several relatively modern industries have used machines as a tool in moving materials, manual material moving activities (MMH) are still very necessary because has advantages compared to using tools, namely that manual material movement can be done in limited spaces and where in carrying out activities workers rely heavily on human physicality to lift goods, but manual material movement (MMH) if not done ergonomically will cause accidents in the industry, which is also called "Over Exertion - Lifting and Carrying", namely damage to body tissue caused by excessive lifting loads (Nurmianto, 2016). Without realizing it, the activity of lifting goods carried out by workers can cause disease or injury to the spine, especially if the work is not carried out properly (Manuaba, 2000) in Tarwaka (1985) says that if the risk of work demands is greater than a person's

ability then work performance will occur. which can be started by discomfort, overstress, work accidents, injuries, pain and unproductiveness.

## LITERATURE REVIEW

Manual Material Handling (MMH) is an activity of moving goods or objects in a production process that still uses human power. Manual handling can also be interpreted as transportation carried out by workers, in which case the worker carries out activities such as lifting, pushing, pulling, transporting and moving goods (Wignjosoebroto, 2013). According to the American Material Handling Society, the definition of material handling is the science related to handling, moving, packing, storing and monitoring materials. In a company, Manual Handling activities usually focus on the vertical strength aspect or lifting and lowering activities, even though in MMH this is not limited to these activities but there are still many activities included in MMH such as pulling, pushing and so on. According to Sanders and Mc Cormick (1993), MMH activities that are often carried out by most workers are as follows: lifting an object (Lifting Task), Delivering an object (Carrying task), Pushing an object (Pushing task), and Pulling an object (pulling task). Some work that is done manually in a dangerous way can cause problems in certain parts. Some manual work is carried out in dangerous ways which can cause complaints commonly known as musculoskeletal disorders (MSDs). The risk of MSDs is a major problem in work related to MMH. This risk occurs both in developed and developing countries. The presence of MSDs will cause health problems, decreased productivity, and decreased well-being (Siddiqui & Chacko, 2015).

Some work done manually in a dangerous way can cause disturbances in certain parts. A number of manual work is done by means dangerous ones that can cause complaints commonly referred to as musculoskeletal disorders (MSDs). Risk These MSDs are the main problem in work related to MMH. This risk occurs both in developed countries or in developing countries. There is These MSDs will cause interference on health, decreased productivity, and a decrease in welfare (Siddiqui & Chacko, 2015). Most workers when doing their work have a work posture that is not ergonomic or does not comply with ergonomic principles, namely the spine is too bent, the reach is too long, the reach of the worker's hands and the work equipment are too long less appropriate to anthropometric measurements, resulting in a mismatch between workers and their equipment and work environment (Sanjaya, Wirawan, & Adenan, 2017).

(Philip Kotler, 2000) marketing is a social and managerial process in which individuals or groups get what they need and want by creating offers and exchanging valuable products with other parties. Online marketing can be interpreted as an interactive marketing system that uses one or more advertising media to produce responses, responses and/or transactions that can be measured at a consumer location and without any direct/face-to-face contact with sellers and consumers. In general, social media can be said to be online media, where users through internet-based applications can share, participate and create content in the form of blogs, wikis, forums, social networks and virtual world

spaces supported by advanced multimedia technology. Currently, the most widely used and rapidly growing social media are Facebook, Instagram, WhatsApp groups and websites (Chaffey, Dave, et al. 2000).

Patma Chicken Farm currently supplies the meat needs in Lompoe Village, however the management carried out is still very simple and does not have a good organizational structure. SMEs do not yet have a good and neat bookkeeping system, so the profits or losses they make are not clear. In running its business, Patma Chicken Farm also employs two people as workers in raising broiler chickens, starting from feeding, cleaning chicken drums to the stage when the broiler chickens are ready to be harvested or consumed. Broiler chickens are generally marketed at a live weight of between 1.5-2 kg and a 40 day live weight of 3 kg. After that, the cage was emptied for 2 weeks to interrupt the life cycle of disease in the cage. Apart from that, a relatively slow feeding system and a system for transporting broiler chickens during harvest can also cause broiler chickens to die, which can cause high mortality and cause losses, plus competition between chicken farms with more modern management systems, thus affecting the turnover received. By looking at some of these problems, it can be explained that the aim of this research is to help chicken farmers in solving problems in the process of feeding broiler chickens and marketing problems that focus on increasing the skills of chicken farmers, increasing the turnover of chicken farmers, and increasing the number of assets of chicken farmers..

## **METHODOLOGY**

This research is a correlational descriptive study using a quantitative approach. This research was conducted at a chicken farm in Bacukiki District, Pare Pare City, South Sulawesi. The research subjects were workers on broiler chicken farms. The research began by making direct observations at the location. After conducting observations and interviews, the researcher formulated the problem that occurred. Observation activities were carried out by researchers by visiting directly the chicken farms with which they would collaborate in carrying out research. The activity carried out was direct monitoring of broiler chicken farming areas to explore problems experienced by chicken farmers. The results of observation activities will be used as data in identifying the needs of chicken farmers. At the design and construction stage, technology is prepared to solve the problem of restoring broiler chicken production and accelerating the production process at harvest. On the production technology side, Manual Material Handling (MMH) tools are needed in the form of chicken feeders which function to lighten the work of providing feed and help transport broiler chickens during harvest. Even though the results of applied research already exist, they are still partially modified by paying attention to ergonomic aspects in order to be able to work optimally. Meanwhile, on the product marketing side, information technology plays a role in developing online-based sales. This technology is used to modernize marketing so that it becomes better known so that it can increase sales turnover of broiler chickens. Tool and website design is carried out by making tool design drawings and online-based sales designs that will be applied to chicken

farmers. Making tool designs using Google Scetchup software so that the visualization displayed is more realistic. The results of this design are used as a reference for the design of the Manual Material Handling (MMH) tool in the desired form.

## RESEARCH RESULTS

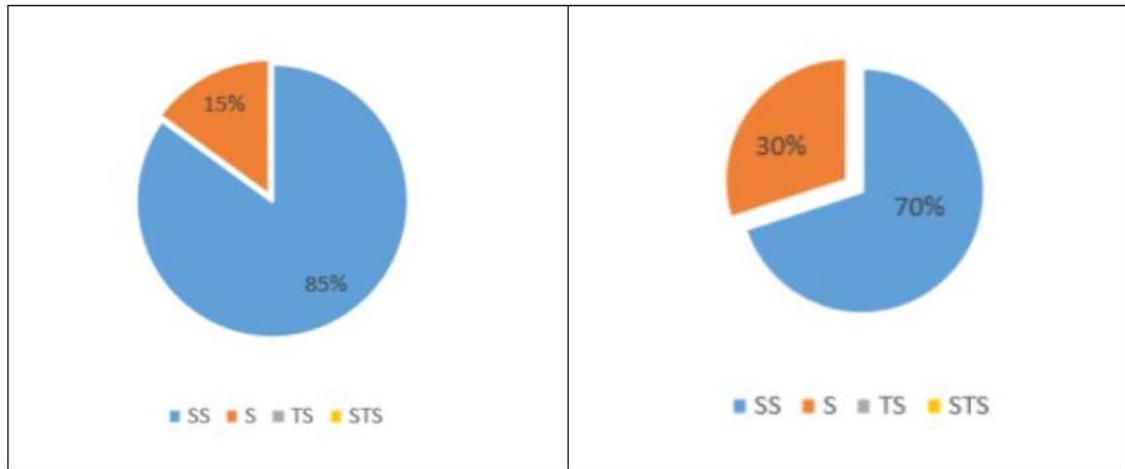
Evaluation of activities is carried out in the form of a questionnaire filled out by participants, related to the activities they have participated in. The resulting output is an increase in participants' knowledge in using Manual Material Handling (MMH) and online-based marketing media. This research hopes that chicken farmers can increase their knowledge in applying technology as an effort to work time efficiency, reduce labor, work effectiveness, work efficiency and increase turnover. Based on the results of the training that has been provided, the participants' responses or evaluation results after participating in training activities in terms of understanding how to operate Manual Material Handling tools are (90% Strongly Agree, 10% Agree). Meanwhile, the evaluation results in terms of understanding how to operate online-based marketing are (80% Strongly Agree, 20% Agree). In order to increase partners' understanding in using MMH tools and Online Marketing, we as the implementing team provide activities in the form of training. In the activities that have been carried out, the implementation team provides training in the form of manual material handling, websites and social media. After training, the average roof tile craftsman is able to operate MMH tools, websites and social media. Of the 20 chicken farmer participants who took part in the training, most of them understood how to use online tools and marketing. The results of data analysis can be seen in the following graphic image:

Figure 1. Participant Respondents Indicator of Understanding of MMH Operations and Online-Based Marketing Media



Evaluation results of participants after attending training for the category of mastery of Manual Material Handling (MMH) components (90% Strongly Agree, 10% Agree). Results of evaluation of mastery of online-based marketing media features (80% Strongly Agree, 20% Agree).

Figure 2. Participant Respondents Indicators of Mastery of MMH Components and Mastery of Online-Based Marketing Feature



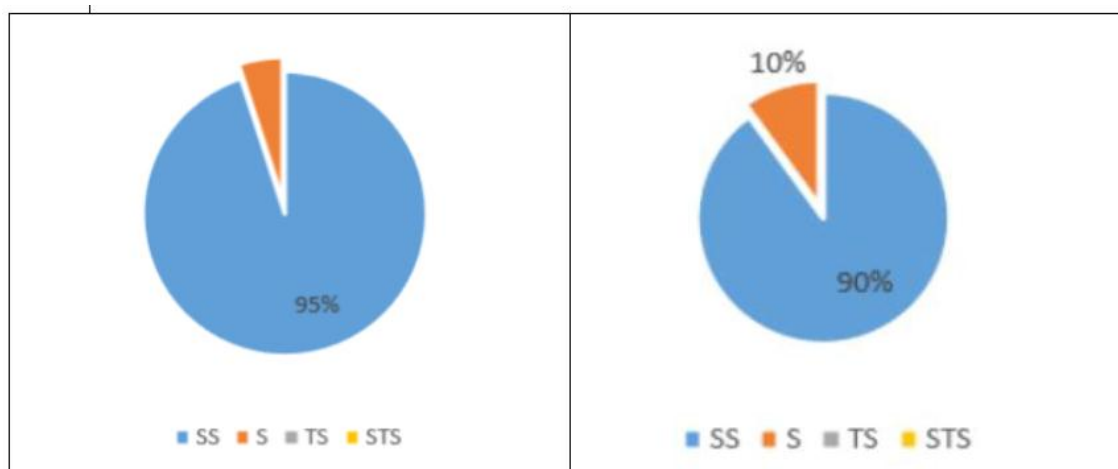
Evaluation results of participants after attending training for the category of adequacy of material duration in operating Manual Material Handling (MMH) in the form of a multipurpose rack (95% Strongly Agree, 5% Agree). Evaluation results of the category of adequacy of material duration in operating online-based marketing media (95% Strongly Agree, 5% Agree).

Figure 3. Participant Respondents Indicators of Adequate Duration of MMH Material and Mastery of Online-Based Marketing Features



Evaluation results of participants after attending training for the category of Using MMH to Help Broiler Chicken Production (95% Strongly Agree, 5% Agree), and for evaluation results of using online-based marketing media to help marketing broiler chickens (90% Strongly Agree, 10% Agree).

Figure 4. Respondent Participants Indicators of Using MMH to Help Broiler Chicken Production and Using Online-Based Marketing Media to Help Marketing Broiler Chickens



Participants who took part in the training activities were workers and owners of broiler chicken farms in Lompo'e Village, Bacukiki District, Parepare City. So far, workers and owners of broiler chicken farms have never used tools in the process of transporting chickens, either when feeding them or during harvest, apart from that, the sales system used is still conventional and not yet familiar with information technology such as websites and social media. The material presented in this training activity is the latest material that they have never received before, thereby broadening the participants' insight.

## DISCUSSIONS

The participants' responses or evaluation results after participating in training activities in terms of understanding how to operate Manual Material Handling tools are (90% Strongly Agree, 10% Agree). Meanwhile, the evaluation results in terms of understanding how to operate online-based marketing are (80% Strongly Agree, 20% Agree). Evaluation results of participants after attending training for the category of mastery of Manual Material Handling (MMH) components (90% Strongly Agree, 10% Agree). Evaluation results of participants after attending training for the category of adequacy of material duration in operating Manual Material Handling (MMH) in the form of a multipurpose rack (95% Strongly Agree, 5% Agree). And Evaluation results of participants after attending training for the category of Using MMH to Help Broiler Chicken Production (95% Strongly Agree, 5% Agree), and for evaluation results of using online-based marketing media to help marketing broiler chickens (90% Strongly Agree, 10% Agree).

## CONCLUSIONS AND RECOMMENDATIONS

1. Based on the results of the training that has been provided, the participants' responses or evaluation results after participating in training activities in terms of understanding how to operate Manual Material Handling tools are (90% Strongly Agree, 10% Agree). Meanwhile, the evaluation results in terms of understanding how to operate online-based marketing are (80% Strongly Agree, 20% Agree).
2. Evaluation results of participants after attending training for the Mastery of Manual Material Handling (MMH) component category (90% Strongly Agree, 10% Agree). Results of evaluation of mastery of online-based marketing media features (80% Strongly Agree, 20% Agree).
3. Evaluation results of participants after attending training for the category of adequacy of material duration in operating Manual Material Handling (MMH) in the form of a multipurpose rack (95% Strongly Agree, 5% Agree). Evaluation results of the category of adequacy of material duration in operating online-based marketing media (95% Strongly Agree, 5% Agree).
4. Evaluation results of participants after attending training for the category of Using MMH to Help Broiler Chicken Production (95% Strongly Agree, 5% Agree), and for evaluation results of using online-based marketing media to help market broiler chickens (90% Strongly Agree, 10% Agree).

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