DEVELOPMENT OF A RUBBER STRAP CUTTING TOOL AS A SOLUTION TO ACCELERATE THE WORK OF FLIP-FLOP RUBBER STRAP CUTTERS IN KAMPUNG BELAKANG KAMAL RT. 009/RW. 03, KELURAHAN KAMAL, KALIDERES DISTRICT, WEST JAKARTA

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ABSTRACT

One of the areas in Kampung Belakang Kamal has a livelihood as flip-flop rubber cutting workers, specifically the community in RT 009/RW 03. This area is inhabited by around 120 families (KK). Of these 120 families, approximately 50% earn their living as flip-flop rubber cutting workers. The problem that occurs is the lengthy cutting time since they use scissors. The leftover rubber that curves and sticks to the flip-flops must be cut carefully to ensure a neat result. In one day, flip-flop rubber cutting workers can only complete cutting one sack of flip-flops and are paid only Rp. 10,000. The solution that can be offered is to create a rubber cutting tool that can be used by flip-flop rubber cutting workers to save time in the rubber cutting process. In this way, it is hoped to increase the economic value of the flip-flop rubber cutting worker community. The method of community service implementation involves actions or required stages, namely: analyzing the community's situation, identifying problems, setting goals, planning problem-solving strategies, social approaches, activity implementation, and evaluating activities and results. The flip-flop rubber cutting tool is expected to increase the economic value of the local community.

Keywords: cutter, rubber, flip-flops, kampung belakang kamal, economy

INTRODUCTION

The development potential of Kelurahan Kamal includes the agricultural sector, the trade sector, as well as laborers and odd-job workers. From social and economic aspects, the community in Kelurahan Kamal, particularly in Kampung Belakang Kamal, consists of both local residents and migrants from outside Jakarta. The primary occupations in Kampung Belakang Kamal are factory workers, traders, and odd-job workers. One of the neighborhoods in Kampung Belakang Kamal, specifically RT 009/RW 03, is predominantly engaged in the occupation of cutting rubber for flip-flops. This neighborhood is home to approximately 120 households. Of these, around 50% are employed as rubber cutters for flip-flops. The community in RT 009/RW 03 has been engaged in this occupation since the year 2000, and it is mostly dominated by housewives in the area.

Every day, the flip-flop factory, located not far from the residential area, sends several sacks to the residents' homes. These sacks contain the rubber straps of a well-known flip-flop brand. The rubber straps need to be detached from each other, and any remaining rubber on the straps must be cleaned using scissors. The rubber waste from the cutting process must be collected and returned to the flip-flop factory to be recycled as raw material for new flip-flops. The factory distributes 1 to 2 sacks of rubber straps to each household. The process of cutting the rubber straps and cleaning the remaining rubber on them takes about one day per sack, and the payment for cleaning one sack is IDR 10,000. Each week, the local community receives 4 to 5 sacks of rubber straps to clean.

METHOD

The method of community service implementation involves the actions to be taken or the necessary steps in carrying out community service activities. The steps are as follows:

a. Community Situation Analysis

This stage is carried out in two steps: identifying the target audience and determining the specific issues to be analyzed. The target audience for this activity is a particular community in an RT area with similar activities impacting the local economy. The issue to be analyzed is the occupation of the community, specifically the rubber strap cutters for flip-flops.

b. Problem Identification

The problem identification focuses on the flip-flop rubber strap cutters. The main issue identified is the prolonged time required to cut the rubber straps using regular scissors.

c. Setting Goals

In this stage, the "new condition" desired to be achieved through the community service activities must be determined. In other words, the specific changes or improvements expected. The goal of this activity is to enhance the economic situation of the residents (workers) by enabling them to clean the rubber straps more quickly and neatly.

d. Problem-Solving Plan

The identified problems need to be addressed to achieve the set goals (new condition).

e. Social Approach

This involves approaching the target community. The community should be treated as subjects, not objects, of the activity. Therefore, community members must be involved in various community service activities. Their participation in this activity includes providing information and voicing their complaints regarding their work.

f. Activity Implementation

The implementation begins with a survey of the location where the problems are identified, i.e., the flip-flop factory workers' area. Next, problem identification, obtaining activity permits, creating a design for the rubber cutting tool, and producing a full-scale 1:1 prototype.

g. Activity and Result Evaluation

The outcome of this activity is a rubber cutting tool for flip-flops that can be used by the rubber strap cutters, allowing them to cut the rubber faster than using scissors. The activity will be evaluated two weeks after the tool is completed and used by the workers to cut the rubber straps.

RESULT AND DISCUSSION

The activities began with a location survey and obtaining permission from the head of RT. 009/RW. 03, Kelurahan Kamal, Kecamatan Kalideres, West Jakarta. From this survey, permission was obtained from the head of RT. 009/RW. 03, Mr. Bidin, to provide the flip-flop cutting tool made by the community service team to the residents whose occupation involves cutting flip-flop straps. The survey was conducted to understand the conditions and working methods of the community when cutting flip-flops using regular scissors. The results of the survey and observation of the residents of RT. 009/RW. 03 revealed that cutting flip-flops using scissors can take an entire day to process one sack (equivalent to a 15 kg sack) of flip-flop straps, which is estimated to contain 200-300 pairs of straps.

Figure 1. Survey and Observation

The flip-flop cutting tool is designed to suit the needs of people who need a cutting tool that can speed up cutting work. For 25 years, residents in RT. 009/RW. 03 does the job of cutting flip flops using ordinary scissors which takes 1 day for 1 sack of flip flops. It is hoped that the cutting tools made by the PKM team from the Faculty of Engineering,

Budi Luhur University can speed up cutting the flip-flops. The following is the design and shape of the flip-flop cutting tool:

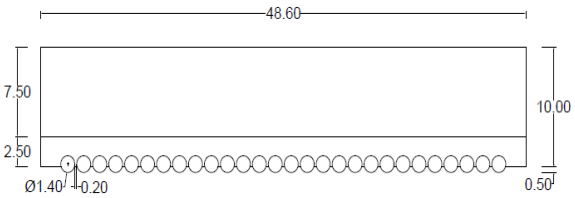

Figure 2. Top view of cutting knife

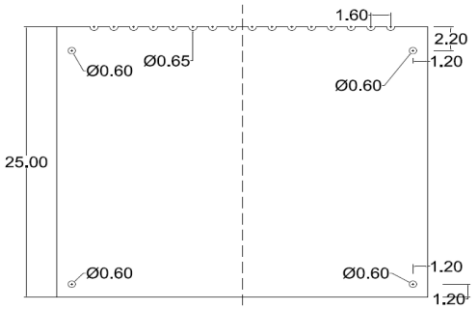

Figure 3. Top view of the cutting tool/machine

Figure 4. Sandal Clip Cutting Tool

How to Use the Tool

Sandal clip sheets are the items that will be cut using this cutting tool. Where slipper clip sheets are made from elastic sandal rubber material, 1 sheet contains 12 to 14 pairs. Based on the nature of the sandal clip material, which is minimal, to be able to cut the hook part of the clip, a tool is needed to press the elastic material of the clip so that the cutting knife can cut the part that needs to be cut precisely. In this way, the tool made has two parts or tool components which consist of the bottom component, namely the base of the pond as a place to place the rubber sheet of sandal clips. The base of this pond is in the shape of the curved pattern of the flip-flops of sandals, made of acrylic. The upper component is in the form of a wavy pond knife that matches the curve of the sandal clip. This pond knife uses steel plate material. The way to use this cutting tool is as follows:

a. The flip-flop sheet is tucked or inserted into the bottom of the cutting tool or into the base of the pond.
b. The flip-flop sheet of the sandal is set to match the groove of the flip-flop on the sandal.
c. Press down on the top of the cutting tool until it cuts the flip sheet from the sandal.
d. Lift the upper lever of the cutting tool and take the clip sheet from the sandal.
e. Done

Figure 5. The clamp sheet is slipped/inserted into the bottom of the machine

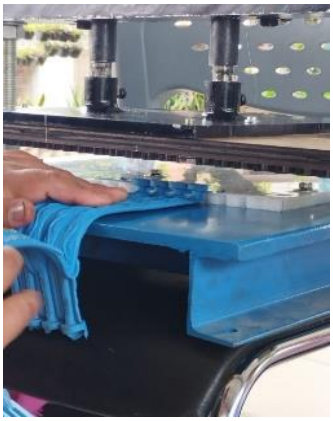

Figure 6. Setting the material according to the knife holder

Figure 7. The lever is pressed to cut

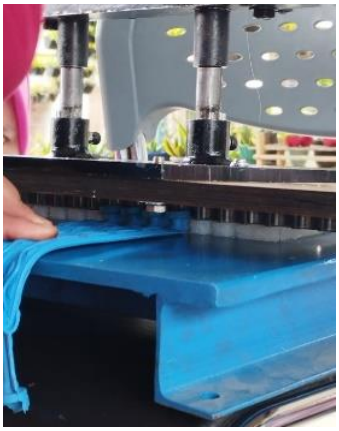

Figure 8. Cutting and done

Handover of Equipment

In the production of flip-flop cutting tools, design improvements or revisions were made several times to achieve a design that met the requirements. After completing the design phase, the next step was the production of the flip-flop cutting machine. During the manufacturing process, several adjustments were needed to align the design with the actual tool, but these issues were successfully resolved. Once the flip-flop cutting machine was completed, the next phase was the socialization and handover of the machine to the community of Kampung Belakang Kamal RT. 009/RW. 03, Kelurahan Kamal, Kecamatan Kalideres, West Jakarta. During the handover, the use of the cutting machine was explained and demonstrated to the residents to ensure they understood how to operate it properly. Below is the documentation of the handover of the flip-flop cutting machine to the community, which took place in February 2024 at RPTRA Cambela.

Figure 9. Explanation of how to use the sandal clip cutting tool/machine

Figure 10. Residents practice using tools/machines for cutting sandal clips

Figure 11. Photo with handover of sandal clip cutting tools/machines

CONCLUSION AND RECOMENDATIONS

Conclusion

Based on the results of the Community Service Program (PPM) in the creation and provision of the Flip-Flop Strap Cutting Tool to the community of RT. 009/RW. 03 Kampung Belakang Kamal, the following conclusions can be drawn:

a. The creation of the cutting tool/machine for straps from swallow flip-flops can be beneficial for the community of Kampung Belakang Kamal, where a significant portion of the population earns a living by cutting flip-flop straps using scissors.

b. The flip-flop strap cutting tool/machine can save time in the strap-cutting process, thereby increasing the production volume of cut flip-flop straps.

Recommendations

The Community Service Program in RT. 009/RW. 03 Kampung Belakang Kamal needs to be evaluated and developed further to enhance the benefits for the community. The design and the flip-flop strap cutting tool created by the PPM team have been accepted by the local community leaders of RT. 009/RW. 03 Kampung Belakang Kamal. Additionally, the feedback from the residents can provide valuable insights for the PPM team, fostering an alignment between academic knowledge and real-world conditions.

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