

## **Relationship Between Coffe Steam Prototype Innovation and Coffe Farmers Cikoro Village Gowa Regency**

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### **Abstrack**

Temperature greatly affects the drying process of coffee, while the village of Cikoro is one of the cold-temperature areas. to produce a hot temperature before the community had tried oven techniques but it was less successful, so the alternative used so far was to do drying in Makassar. In the study that became participants were coffee farmers in Cikoro. The purpose of the studies we conducted clearly provided solutions to the community for the problems experienced. To understand and resolve this problem we use the design thinking method that focuses on users or users with several stages, namely sense and sensitivity, empathy study, collecting data, clustering, insight, statement, persona, ideation, prototype, and co-coreation then obtained more accurate data so as to create an innovation in the form of a prototype coffee drying machine (Coffee Steam) as a solution for coffee farmers in Cikoro. The purpose of this study was to determine the response of the community in accepting the innovation of coffee steam prototype.

**Keywords** : Temperature, Coffee, Innovation, Public response, Design thinking.

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### **INTRODUCTION**

Currently, Indonesia has become the fourth largest coffee producing country in the world after Brazil, Colombia and Vietnam. Coffee produced in Indonesia is Arabica and Robusta coffee which is classified as having good quality so that it is widely exported to developed countries which are coffee consuming countries, including America, Japan, the Netherlands, Germany and Italy (Panggabean, 2011). In Indonesia, the largest source of coffee producers is precisely in the South Sulawesi area which has

a national coffee plantation area of 12.5% which produces 9,8044 tons of robusta coffee and 21,994 tons of Arabica coffee. This is evidenced by the election of the South Sulawesi area in the International Coffee Day event in 2018. Coffee plantations are very common in the high mountains of South Sulawesi, including the Cikoro area, Tompobulu sub-district, Gowa district which is the locus of our research. Cikoro village, Tompobulu sub-district with the capital city in Malakaji, is about 147 km from Sungguminasa, Gowa district. It is a highland area with an altitude of 1000 meters above sea level. The total population in 2013 was 29,749 people. Because Cikoro is an area with geographical conditions that strongly support plant growth, the population generally works as rice farmers, secondary crops, and coffee gardeners.

Coffee is a drink that comes from the processing of coffee beans. The enjoyment contained in coffee makes people inseparable from the habit of drinking coffee and has even become a lifestyle in all their activities. Because delicious coffee comes from the right planting, the process of planting to produce quality coffee beans must be paid more attention to by farmers. Then there are several factors that affect the growth of coffee, one of which is a geographical factor in the form of soil that has a deep and fertile top layer and a good climate for coffee plants which has rainfall in one year, altitude, temperature, and wind conditions.

All of these factors are needed in the development of the coffee plant until the harvest. But not in the processing of coffee beans. Why is that, because one of the problems is that the cold high altitude temperatures do not support the coffee bean drying process and this is inherent in the conditions in the Cikoro area. To produce quality coffee beans, the water content contained must reach 16%. Previously, coffee farmers in Cikoro village had tried the oven method, but it didn't work because the coffee turned white so that the quality of the coffee aroma was lost. And the alternative that has been used so far is that coffee farmers in Cikoro village dry their coffee by bringing the coffee beans to the Makassar area which is hot and then brought back to Cikoro and then sent again to Makassar and so on until the second drying process until the sale of coffee beans. This consumes a lot of time, cost, and effort so that the income of farmers is not balanced with the proportion of expenditures. An innovation was created in the form of a prototype coffee dryer (Coffee Steam) as a solution for cikoro farmers in drying their coffee. With this innovation, the last interesting result to be tested is regarding the reciprocal relationship provided by the community/farmers (community response) because with this community relationship it can indirectly affect the socio-economic life of the community for the better.

Leraning Express (LeX) is a social project activity carried out by University of Muhammadiyah Makassar students and students from Singapore Polytechnic as a form of community service by contributing ideas or solutions to problems faced by the community. Then the participants in this activity were farmers and village heads in the Cikoro area. Design thinking is a method used in LeX activities to get more accurate data to produce an innovation.

The International Public Relations Association (IPRA) in (Ferry Duwi Kurniawan Luluk, 2014; Firmansyah, 2016; Sri Andika Putri, 2017) defines public relations as a management function of attitude that is planned and carried out continuously by organizations, public and private institutions used to obtain and foster mutual understanding, sympathy and support from those who are related and suspected to be related, by assessing public opinion with the aim of linking policies and management as far as possible in order to achieve more productive cooperation, and to fulfill common interests more efficiently through planned and widespread information activities.

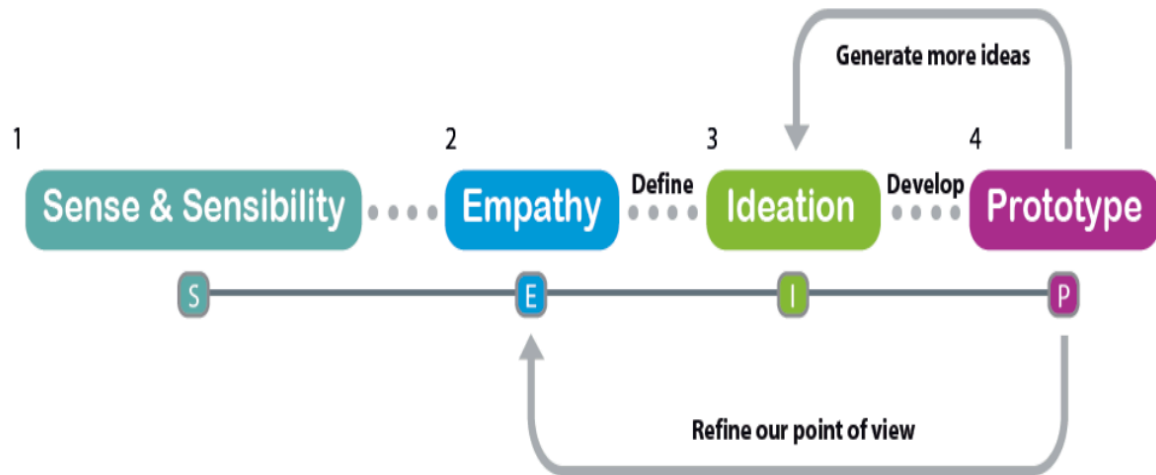
There are many terms about innovation that are conveyed by experts. Roger (1993) in (Puspitasari, 2017) says that innovation is an idea, practice or object that is considered new by individuals. Innovation enters the area that allows differences in views between an individual, community, or social system in viewing an innovation. An innovation can only have been found for a long time but if there are still individuals who still consider the innovation as something new, then something can still be called an innovation that is new to them (Guntur, 2019; Zainal, 2017; Zainal, Gani, Guntur, & Akib, 2019).

Innovation in agriculture in the form of technology or extension to help the agricultural process. Technological innovations in agriculture can be in the form of agricultural equipment, cultivation techniques, production inputs, production management, and others. The goal of technology is to achieve higher outputs and inputs from a given amount of land, labor and resources (Drucker, 1985; Huhtala, J.-P., Sihvonen, A., Frösén, J., Jaakkola, M., dan Tikkanen, 2014; Miller, D. and Friesen, 2012).

Abraham Maslow revealed the theory of needs, he explained in detail about the needs that humans need. Abraham Maslow's theory of needs states that humans are creatures who will not be satisfied only with the fulfillment of one need, but he will be satisfied if all needs are met. Maslow (Minderop, 2011) conveys his theory of multilevel needs which are structured as follows: physiological, security, love and belonging, self-esteem and actualization. Basic (physical) needs, namely physiological basic needs which include the need for food/drink, clothing, rest, sex, and a place to live must be met before moving on to spiritual fulfillment (love, security, and self-esteem).

However, in this modern era, the fulfillment of farmers' needs is more directed to the fulfillment of technology-based needs (demand-driven) or knowledge extension about agriculture in order to make it easier for farmers in their efforts to achieve prosperity. The development of science and technology is aimed at improving the welfare of the people and the progress of the nation. Because farmers are actors who play a role in meeting the needs of clothing and food, it is appropriate for academics to empower or prosper farmers in fulfilling their farming business needs through agricultural knowledge extension or the contribution of ideas in creating innovations that can be used by farmers.

A prototype or commonly called a prototype/archetype is an initial form or example of a product that will be developed and made real. Prototypes are usually used by investors or groups to make a product in it in the form of ideas or ideas that are more complete. The role of the prototype is very important in the manufacture of products because it acts in helping to develop products effectively and efficiently.



Prototyping is done through the above methodological system. After the prototype is finished, it is shown to the user. If there are suggestions and input from users, these suggestions are accepted to be included in the prototype. Then, when the user has approved the prototype, then this prototype is developed into a real product. However, during the process the design is carried out in as much detail as possible and also a presentation to the user regarding the prototype that was made and approved so that the results received are in accordance with the user's needs.

## RESEARCH METHODS

This study uses a qualitative descriptive research method to describe the innovation of the steam coffee prototype. Qualitative research that aims to gain an in-depth understanding of human and social problems. Research using a qualitative approach emphasizes the analysis of processes and thought processes inductively related to the dynamics of the relationship between observed phenomena and always uses scientific logic (Gunawan, 2015). The advantage of this research is also to use the design thinking method as a user-focused approach with the aim of producing an innovative steam coffee prototype. The LeX activity was carried out for 4 days in Cikoro village. Through the above process from the beginning of sense and sensibility to making a prototype. After the prototype was finished, we gathered the five farmers who had been interviewed and the Cikoro village community in order to present the results

of the prototype we made. This presentation aims to get advice and input from farmers and community members. When something is missing from the prototype, and filled with suggestions from farmers, we review again to produce the perfect prototype according to the needs of the community.

## **RESULT AND DISCUSSION**

Coffee steam or coffee drying machines are very much needed by coffee farmers in Cikoro village because so far the alternative used by farmers in drying their coffee beans is to bring them to the Makassar area. This becomes a heavy burden for those who have to carry tons of coffee beans to the Makassar area which is far from the village, then they have to rent a means of transportation to get to Makassar and all of that costs a lot of money and time.

As explained in the previous chapter regarding the theory of needs, farming communities/farmers need tools/technology that can help their farming business. Because with the fulfillment of the needs of farmers (clothing and food production actors) they can prosper their lives and also for the surrounding community in terms of the economy. This is also influenced by the demands of a fast-paced era decorated with modern technologies. Farmers in Cikoro deserve this technology because it has become a basic need for agriculture to help and facilitate their business.

Then can this steam coffee be useful for coffee farmers in Cikoro village? Of course Yes. However, the benefits referred to in this case are indirect benefits due to a project to be built or a by-product. The indirect benefit is the contribution of ideas/solutions in the form of a prototype coffee steam innovation to farmers in Cikoro village.

The community and village heads in Cikoro were very responsive to our arrival there in the context of Learning Express activities. Because Lex's goal is to serve the community by contributing ideas/solutions to the problems faced by coffee farmers in Cikoro. In addition to conducting research in Cikoro village, we also build relationships with the community, namely culture exchange. The community and us students from Indonesia introduce Indonesian culture to students from Singapore Polytechnic and vice versa they also introduce Singaporean culture and language. With this activity, it is clear that the reciprocal relationship provided by the community in Cikoro village is clear. Creating harmonious, beneficial, positive and progressive relationships. In fact, appreciation was also given to the Gowa district government for the Learning Express activity.

## **CONCLUSION**

Coffee steam/coffee drying machine is an innovation made in the form of a prototype in order to provide solutions to coffee farmers in Cikoro village, Tompobulu

sub-district, Gowa district. The community response was very positive towards this innovation. Coffee steam is really needed by the community/coffee farmers in Cikoro to dry coffee beans because so far the alternative used by farmers is to dry coffee beans in the Makassar area and this consumes a lot of energy, time and money. The benefits received by the community for this innovation are indirect benefits in the form of ideas/solutions provided in the form of prototypes. The reciprocal relationship given by the community to the Learning Express activity is very good, harmonious, positive and advanced. Referring to the results of the Learning Express activity in the form of a prototype coffee steam innovation (coffee drying machine), we hope that a follow-up will be held for the manufacture of the real machine. This activity is expected to be continuous for the next batch of Learning Express with the same object theme, namely a coffee dryer so that the actual manufacture of the machine is actually held. Gowa regency government is expected to continue to provide support and advice on Learning Express activities. Then suggestions and input are highly expected for the development of this writing.

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