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DEMPLOT "DOWNSTREAM TFD-BAKAR BATU BASED ON HYDROGANIC ROTATING TUNNEL INNOVATION" TOWARDS GREEN ECONOMY AND MILLENNIAL TOURISM IN THE DIGITAL SOCIETY ERA"

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ABSTRACT

This research was conducted with the aim of carrying out the transfer of technology "tunnel fish dryer-bakar batu" (TFD-Bakar Batu) as a drying device to support the production results of millennial tourism "rotating hydroganic tunnel" which is not sold out in one production cycle, the method used through direct interviews and *online* questionnaire assistance In millennials with a sample of 13,871 respondents and farmers with a sample of 30. In addition, observation methods for temperature measurement at THR for environmental impact. Testing the first hypothesis about the level of motivation of farmers and millennials on the TFD-Bakar Batu and THR demplot using a proportion test with the following hypothesis: Ho : P < 50% Ha : P > 50% Description: Ho: It is suspected that less than or equal to 50% of millennials are interested in THR and H1 tourism plots, it is suspected that more than 50% of farmers have high motivation in carrying out THR tourism demplots supported by TFD-Bakar Batu. Test statistics using Z count. From the results of the study, it was found that the number of millennials who were interested was 8,514 people (61.37%) and those who were not interested as many as 5,357 people (38.63%), farmers who had motivation as many as 28 people (93.3%) and who did not have motivation as many as 2 people (6.7%).

Keywords: *tunnelfishdryer-burn rock, tunnelhidroganikrotating, millennial tourism*

INTRODUCTION

The challenge by 2050 with food needs for more than 9 billion people around the world (Beddington, 2010; Evans, 2009). The FAO Deputy Director-General suggested that "agricultural production needs to increase by 70% worldwide, and mostly 100% in developing countries, respectively to meet the growing demand for food" (Caron et al., 2018), but currently the decline in soil quality and reduced quantity of agricultural land as a result of exposure to residues of inorganic fertilizers and chemical pesticides, land use change and the impact on less than optimal agricultural production thus encouraging the environmentalists to develop various agricultural systems including urban *farming* (Andiani et al., 2019).

In addition, hydroponic cultivation by utilizing organic media and fertilizers known as hydroponics comes from the words "Hydro" and Organic" as an organic cultivation system by combining hydro and organic systems (Putra et al., 2020). According to Budiyanto et al (2019), the advantages and advantages of farming using a rice hydroganic system, namely: first increase yield and higher crop quality, besides being more free from pests and diseases, use water and puluk more efficiently, overcome soil problems, and overcome limited land. While the advantages are that it can be made around the house, on dry land, on buildings or in the mall yard, does not require tillage, does not require crop rotation, gets high yields, uniform and clean, labor efficiency, easy maintenance, and also easy when replacing with new plants, as a place to improve crop quality, not many weeds, pests are easier to control, Does not require

seeding, the use of seeds is more economical, with easy care, does not need irrigation, harvests easier with maximum yields, does not require a lot of water, can be harvested as much as four times healthier yields because it does not use chemical fertilizers and pesticides. The main hydroganic nutrients are sourced from solid and liquid organic fertilizers and pond water treated as plant nutrients (Udin, 2017).

Plot demonstration is a method of demonstrating agricultural extension carried out by demonstration. This demonstration activity was carried out with the aim of showing a new innovation to the target directly (Ginting, 2006). As an approach or strategy to achieve food availability and sustainable food security, relevance is needed with various technologies in the form of appropriate technology that can produce sustainably. TFD-bakar batu is a cabinet dryer model to improve processing of catch capacity that is often excessive so appropriate technology is needed to improve the quality of dried fish using andesite stone as a heat storage reserve placed on the fire as a heating material. The heat is flowed using a fan through a pipe to the fish heating room (Boimau, et.al. 2021). The process of drying fish using smoke is influenced by several factors, namely temperature, air humidity, type of fuel, amount of dry air, dry air flow speed, how to prepare ingredients and also the quality of ingredients (fresh fish) to be used (Leksono et al. 2009). This method of processing is done in order to maintain freshness and can also extend the shelf life (Sahubawa et al. 2018). This research was conducted with the aim of carrying out the transfer of "tunnel fish dryer-bakar batu" (TFD-Bakar Batu) technology as a drying device to support the production results of "rotating hydroganic tunnels" that are not sold out in one production cycle, which is expected to be an alternative new business in a sustainable manner to THR results in Oesao Village, East Kupang District, Kupang Regency, East Nusa Tenggara as a place to carry out research.

METHOD

The method used as the basic method in this study is using quantitative descriptive methods. Quantitative descriptive research is a type of research with the aim of describing systematically, actually and accurately the facts and properties of a particular population or trying to describe a phenomenon in detail using the quantitative approach research (Yusuf, 2014) stage of Isaac and Michael (1980) in (Hays, 1982) stating that the purpose of descriptive research is: "to describe systematically the facts and characteristics of a given population or area of interest." Data collection techniques through direct interviews with the help of questionnaires on millennials with a total population of Kupang City aged 10-44 years as many as 277,427 people (BPS, 2020). The sampling technique uses simple random sampling techniques in the age group of millennials as many as 13,871 respondents. Interviews were conducted with farmers in Oesao village as a place to carry out THR and TFD-Bakar Batu demplot activities with a total of 30 respondents using the Likert scale. The Likert scale is classified as a scale for people, whose basic design is to measure attitudes. Scaling with this method with a number of statements that have been written based on the rules of writing statements and based on a set scale design then respondents will be asked to agree or disagree with the content of the statement in five categories of answers, namely, "strongly disagree" (STS), "disagree" (TS), "doubt" (R), "agree" (S), and "strongly agree" (SS). Testing the first hypothesis about the level of millennial liking for THR tourism plots using a proportion test with the following hypotheses:

Ho: P ≤ 50%

H1: P ≥ 50%

Information:

Ho: It is suspected that less than or equal to 50% of Kupang city millennials are interested in THR tourism plots.

H1: It is suspected that less than or equal to 50% of Kupang city millennials are interested in THR tourism plots.

Statistical test:

Zcount : ..... (1)

$$\frac{\frac{x}{n}-P_o}{\sqrt{\frac{P_o(1-P_o)}{n}}}$$

Information:

x : the number of millennials in Kupang City who are interested in THR tourism plots

n : number of respondents

Significant level (α = 10%), n = 100 with test criteria:

$Z_{hitung} \leq Z_{tabel}$ = Ho accepted, H1 rejected

$Z_{hitung} \geq Z_{tabel}$ = Ho accepted, H1 rejected

Testing of the second hypothesis about farmers' attitudes and relationships with farmers' characteristics towards THR tourism plots supported by TFD-Bakar Batu:

Ho: It is suspected that less than or equal to 50% of farmers have high motivation in carrying out THR tourism plots supported by TFD-Bakar Batu.

H1:D suspect that more than 50% of farmers have high motivation in carrying out THR tourism plots supported by TFD-Bakar Batu.

Statistical test:

x : the number of farmers who have motivation in the THR tourism demplot program supported by TFD-Bakar Batu.

n : Number of respondents

Significant level (α = 10%), n = 100 with test criteria:

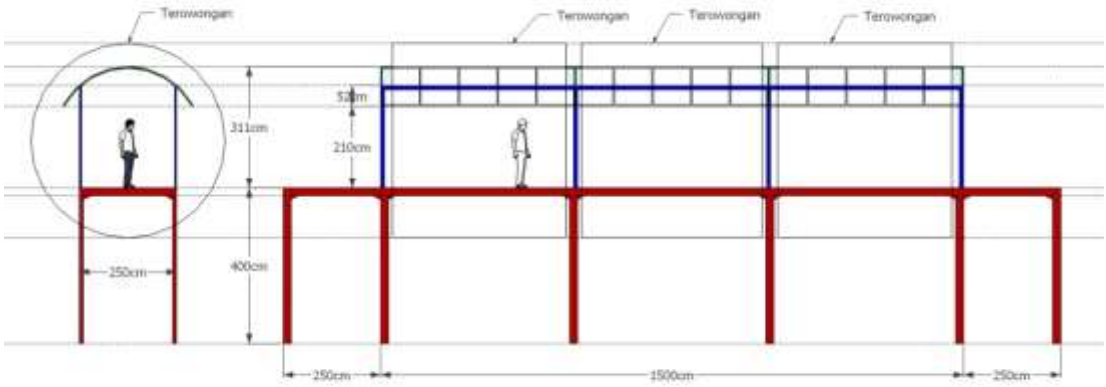
$Z_{hitung} \leq Z_{tabel}$ = Ho accepted, H1 rejected

$Z_{hitung} \geq Z_{tabel}$ = Ho rejected, H1 rejected

RESULTS AND DISCUSSION

The THR designed is a unit that will be tested at the level of acceptance of millennials, while TFD-bakar batu is an innovation that has been produced (Boimau et.al 2021) and will be tested on the level of farmer acceptance of the THR tourism demplot program supported by TFD bakar batu. THR is built from several tunnel units as a container to hang plant pots that are arranged in a circle and continue to rotate to treat pond water using organic fertilizer on plants, glass bridges as a medium to attract visitors, roofs made of reed grass available in the research area. In this design, the THR frame is built using a steel frame, as shown in figure 1.

Figure 1.
THR schema diagram



Temperature test on prototype

The impact of vegetation has an important role for the environment. One of them is the impact felt from the collection of vegetation as a regulator of the microclimate indicated by air temperature and humidity (Tika, 2010). This study measured the temperature on the THR prototype using an air temperature measuring device carried out on March 13, 2023, at 09.00 WITA. The results of the study that inside the THR has an air temperature of 29.5 o C while the temperature outside the THR prototype is 30.7 o C. This condition has a tendency that shows that the farther the distance from the THR, the air temperature increases. The results of temperature measurement can be seen in figure 2.

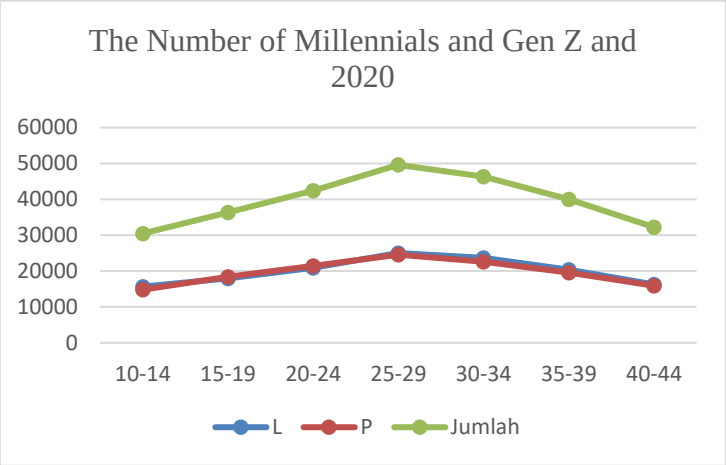
Figure 2.
temperature inside the THR prototype and outside the THR prototype

Real test of tool acceptance

Millennials

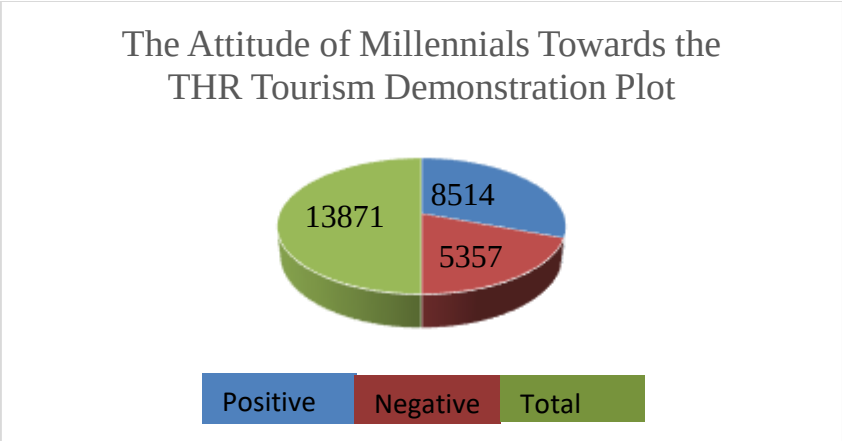
The millennial generation is the generation born in 1981 to 1996 or who are currently aged 27 to 42 years. Gen Z is a generation born in 1997 to 2012 or currently aged 11 to 26 years (W et al., 2020). The number of millennials and gen z in Kupang City can be seen in figure 3.

Figure 3.
Number of people in Kupang City by age group 10-44 years



Based on an online survey conducted on respondents, namely millennials and farmers (figure 4.) it is known that the level of acceptance of the demplot "fish dryer-bakar batu tunnel and millennial hydrogenic tunnel rotating towards a green economy in the era of digital society." can be said to be high. The millennials with the highest level of acceptance where around 61.37% of respondents feel attracted to glass bridges placed with a height of 4 meters and 38.63% of respondents who do not feel interested in glass bridges because they are afraid of heights, do not like to go to recreation places.

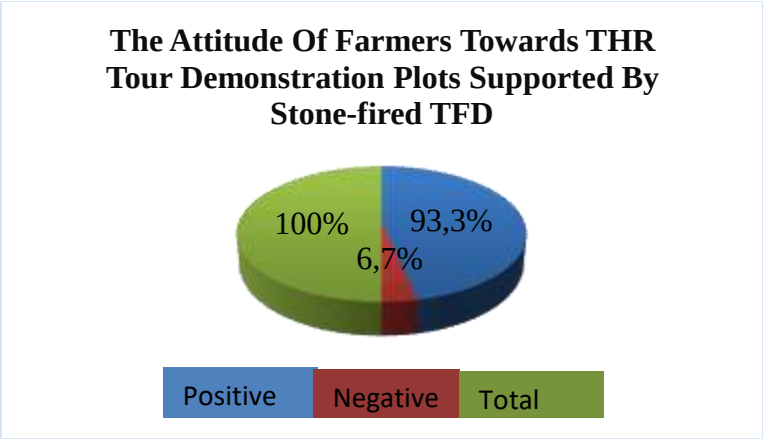
Figure 4.
The Attitude of Millennials Towards the THR Tourism Demplot Program



Aspects of Farmer Motivation

Farmers as many as 93.3% or as many as 28 people are motivated (figure 5.) with THR tourism plots supported by TFD-bakar batu and because it can be very helpful for the processing of agricultural products that have been sold cheaply because at certain times produce abundant agricultural products, and as many as 6.7% or as many as 2 people feel hesitant because they have never experienced overproduction. Figure 4 is the result of data processing on the acceptance rate of demplot "dryer-stone burning fish tunnel and millennial hydroganic tunnel rotating tourism towards a green economy in the era of digital society."

Figure 5.
The attitude of farmers towards the THR tourism demplot program supported by TFD-bakar batu



The aspect of desire or growth aspect to want to develop is a desire to develop by implementing the THR tourism demplot program supported by TFD-Bakar Batu including by increasing knowledge and insight, increasing income, increasing experience so as to increase the capacity of the farming community in implementing the THR tourism program supported by TFD-Bakar Batu (James et al., 2009). Testing the level of motivation of Oesao village farmers so that they can increase their capacity in carrying out THR tourism plots supported by TFD-Bakar Batu. Motivation level testing was carried out with a proportion test of α=5%.

$$Z_{\text{calculate}} : \frac{\frac{x}{n} - P_o}{\sqrt{\frac{P_o(1-P_o)}{n}}}$$

Information:

x : Number of highly motivated farmers (28)

n : Total number of samples (30)

Po : Proportion of Population (50%)

$$Z_{hitung} = \frac{\frac{28}{30} - 0{,}5}{\sqrt{\frac{0{,}5(1-0{,}5)}{30}}}$$

$$= 4.67$$

$$Z_{tabel} = 1.533$$

The results of the analysis with the proportion test obtained a value of 4.67 with the value of . This states that the value of ≥, so it can be concluded that totak H$Z_{hitung}Z_{tabel}$ 1,533$Z_{hitung}Z_{tabel}$o and receive H1 or more than 50% of respondents have high motivation in the THR tourism demplot demplot program supported by TFD-Bakar Batu.

Testing the acceptance rate of millennials was carried out with a proportion test of α=5%.

$$Z_{\text{calculate}} : \frac{\frac{x}{n} - P_o}{\sqrt{\frac{P_o(1-P_o)}{n}}}$$

Information:

x : Number of interested Kupang city millennials (8514)

n : Total number of samples (13871)
Po : proportion of population (5%)

$$Z_{hitung} = \frac{\frac{8514}{13871} - 0{,}05}{\sqrt{\frac{0{,}05(1-0{,}05)}{13871}}}$$

$$= 311$$

$$Z_{tabel} = 1.649949$$

The results of the analysis with the proportion test obtained a value of 311 with the value of. This states that the value of ≥, so it can be concluded that total H$Z_{hitung}Z_{tabel}$ 1.649949$Z_{hitung}Z_{tabel}$o and receive H1 or more than 50% of respondents have high motivation in the THR tourism demplot demplot program supported by TFD-Bakar Batu.

CONCLUSION

The impact of vegetation plays an important role in the environment. The temperature inside the THR has an air temperature of 29.5^o C while the temperature outside the THR prototype is 30.7^o C so that the farther the distance from the THR, the air temperature increases. The acceptance rate of millennials and farmers is high with the number of millennials who are interested as many as 8,514 people (61.37%) and those who are not interested as many as 5,357 people (38.63%), farmers who have motivation as many as 28 people (93.3%) and who do not have motivation as many as 2 people (6.7%).

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