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Hotel MaxOne Makassar, 3-4 November 2020
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Email: icastunhas3@gmail.com

Date: 15 October 2020

Letter of Invitation

Dear Authors: Ediset*, Amrizal Anas, Edwin Heriyanto, Aditya Alqamal Alianta

We are pleased to inform you that your abstract (ABS-167, Oral Presentation), entitled:

"MOTIVATION AND OBSTACLE OF CATTLE FARMERS ON ADOPTION INNOVATION DURING COVID-19 PANDEMIC IN AGAM REGENCY, WEST SUMATERA"

has been reviewed and accepted to be presented at ICAST 2020 conference to be held on 3-4 November 2020 in Makassar, Indonesia.

We cordially invite you to attend our conference and present your research described in the abstract.

Please submit your full paper and make the payment for registration fee before the deadlines, visit our website for more information.

Thank You.

Best regards,

A handwritten signature in blue ink, appearing to read "Sri Purwanti".

Dr. Ir. Sri Purwanti, S.Pt., M.Si., IPM., ASEAN. Eng
ICAST 2020 Chairperson





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Motivation and obstacles of cattle farmers on innovation adoption during Covid-19 pandemic in Agam regency, West Sumatera province

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Abstract. The research was conducted to investigate the motivation and the constraints of cattle farmers on innovations innovation during Covid-19 pandemic. It was conducted in Beef Cattle Development Central in Agam Regency, West Sumatera according to Regional Working Plan 2016. The research used survey method and observation with ninety-six cattle farmers in four districts (Ampek Angkek district, Baso district, Canduang district, and Tilatang Kamang district) as respondents which were determined by Slovin's Formula. The results showed that motivation variables (profit, freedom of choice, wishful thinking and independency indicators) were significantly affected by farmers. In contrast, obstacle variables (cost, time availability, the complexity of innovation, and suitability of innovation on what farmers need) were not-significantly effect to farmers. Meaning that the farmers still in high motivation to adopt an innovation during Covid-19 pandemic. The obstacles of innovation adoption were in low level because the farmers still have the desire to level up their wealthiness even in Covid-19 pandemic.

1. Introduction

Agam Regency is one of the beef cattle development centre in West Sumatera province. The cattle population in Agam Regency as much 32,327 head with 12,337 of farmers households [1]. Especially in East Agam (Ampek Angkek district, Baso district, Canduang district, Tilatang Kamang district) has high potential because it bypasses to another province (Riau province and South Sumatera province). It is the reason why the Agam Regency's Government determined East Agam to be the central of beef cattle development [2].

In this Covid-19 pandemic moment, Agam regency province is one of the area with a high number of positive patients. It was decided that Agam regency is in the red zone. This circumstance would be affected by the farmers in running their business, especially with the farm that used innovations in it. Farmers have to deal with Covid-19 protocols which are they must stay at home, to keep physical distancing, using a mask when they go outside and other Covid-19 protocols.

Pembatasan Sosial Berskala Besar (PSBB) or Large-scale Social Restriction applied in order to reduce the number of Covid-19 patients in West Sumatera province. This condition makes farmers in difficult situation because it could be a threat to their business continuity. The farmers would be worried about motivation to run their business such as profit, the freedom of doing their business, the farmers wishes, and independency on their business. The farmers also have to face the constraint that occurs during Covid-19 pandemics such as time availability, farming cost, the availability of raw materials,



complexity of innovation, and suitability of innovation on what farmers need. If the motivation of farmers at a low level, meanwhile the constraints to running their business are high, these would affect the cattle development in Agam regency itself.

2. Material and methods

2.1. Experimental design

The research was conducted in Agam regency on the central of beef cattle development, East Agam (Ampek Angkek district, Baso district, Canduang district, Tilatang Kamang district). It used a survey method, observation and personal interview to collect data. The respondents was ninety-six cattle farmers that determined by Slovin's Formula [3].

The research used a questionnaire with Lickert Scale as a unit of research parameters. The data measured in each then analysed with descriptive quantitative and presented it in the table. Then, the data compared with the range scale that determined with the formula below [4]:

$$\text{Range scale} = \frac{\text{Maximum scale score} - \text{minimum scale score}}{\text{Total of categories}}$$

Based on the formula above, the categories determined:

Table 1. The motivation and constraints range score that determined base on the range scale formula.

Scale score	Motivation variables	Constraint variables
226–290	Significant affect	Significant constraint
161–225	Non-significant affect	Non-significant constraint
96–160	Insignificant affect	Insignificant constraint

3. Results and discussion

3.1. Farmers' motivation to adopt innovations

The result of farmers motivation to adopt innovations during Covid-19 pandemic was showed in table 2.

Table 2. Farmers motivation to adopt innovations during Covid-19 pandemic.

Motivation	Total Score	Result
Profit	259	Significant
Freedom doing their business	268	Significant
Farmers wishes	286	Significant
Independency on their business	268	Significant
Average	270.25	Significant

Profit was significantly affected to adopt innovation during Covid-19 pandemic in Agam regency, West Sumatera province with a total score of 259 points. The farmers will adopt an innovation if the innovations gave profits, however, if there was no profit, farmers tend to ignore it. Crouch and Chamala (1981) stated that profit was the most important for farmers to adopt an innovation [5].

Freedom doing their business was also significantly affecting the farmers to adopt innovations with a total score of 268 points. The farmers had the purpose of becoming an entrepreneur that has the freedom to do their business and made their decision to adopt the innovation despite in Covid-19 Pandemic. Dawson and Henley (2012) said freedom of choice or freedom to do their business were a common thing to stimulus the people to keep doing their business [6].

Farmers wishes showed a significant effect to adopt an innovations during Covid-19 pandemic with a total score of 286 points. The farmers believed that their wealthiness will increase when they adopt

innovations. Basrowi (2014) said the people have motivation to run the business because they have a desire to get profit, freedom doing anything with their business and to fulfil personal wishes [7].

Interdependency on business had a significant affect for the farmers to adopt the innovations during Covid-19 pandemic with a total score of 268 points. Meaning that the farmers could not running their business by themselves. They need some help from Extension officer to get new knowledge. Anwar et al (2009) stated that Extension officers existed to improve farmers to manage their business efficiently and effectively [8]. The farmers need to be independent to run their business. This era, the farmers were trying to find new information from media such as the internet, television, newspaper, et cetera. According to Saleh (2006), the society changed the pattern of exchanging information from interpersonal communication to media communication nowadays [9].

3.2. Farmers' constraint

The result of the constraint of farmers to adopt innovations during Covid-19 pandemic was showed in table 3.

Table 3. The constraint to adopt innovation during Covid-19 Pandemic.

Constraint	Total score	Result
Time availability	116	Insignificant
Cost	148	Insignificant
The availability of raw materials	173	Non-significant
Complexity of innovation	108	Insignificant
Suitability of innovation on what farmers need	146	Insignificant
Average	138.2	Insignificant

The constraint for farmers in adopting innovations during the Covid-19 pandemic in time availability indicator was in the low category with a total score of 116 points. Meaning that time availability was insignificant to constraint the farmers to adopt the innovations. The farmers can still adopt innovations despite the Covid-19 pandemic, because almost all farmers in this area have used a smartphone to get information from online media such as YouTube, Facebook, Instagram, or information from extension officer directly with chatting applications. Time availability during Covid-19 would be a constraint when farmers did not know how to use the smartphone device, because this made the farmers would depend on the Extension officers.

The result showed that the cost indicator was in a low category, with a total score of 148. This mean the cost insignificant to constraint the farmers in adopting the innovations during Covid-19 pandemic. It happened because the innovations from Extension officers was cheap. Moreover, some of the innovations provided by the Government and it was free to farmers. According to Anwar et al (2009), the innovations would be adopted by farmers if it was not incriminating and suitable with what farmers needed [8].

The obstacle to the availability of raw materials for innovations was in the medium category, with a total score of 173 points. It categorized as non-significant of constraint, because some of the raw materials for innovation were imported from outside the region so that it required additional costs. Then, there were also types of innovations that must be demonstrated directly by extension officers but was constrained by the limit on the number of crowds that set by the Government during Covid 19 pandemic situation. Rosana (2010) said it was necessary to provide a demonstration from Extension officer, so the farmers felt got attention to their business so that communication constraint caused by attention factors could be reduced [10].

The results showed that the constraint of the complexity of innovations was in the low category with a total score of 108 points. Meaning that the complexity of innovations insignificant affected the farmers to adopt the innovations. These results explained that the types of innovations which were introduced by extension officers could be adopted by farmers properly. Farmers adopted the s because of the urgency of innovations and how to socialise it. Mosher (1991) stated that one of the main tasks in

agricultural development was to find farming methods that can be practised effectively and efficiently by smallholder farmers, as long they were willing to learn and develop their skills [11].

The indicator of constraint for the suitability of innovations on what farmers need was in the low category with a total score of 146 points. It means the constraint of the suitability of innovation was an insignificant effected the farmers to adopt the innovation during Covid-19 pandemic. It happened because the types of innovations that offered or socialised by extension officers to farmers based on farmer needs so that farmers were helped and willing to adopt it. Mardikanto (2010) said that he innovation would have applied by the target group if innovation were not-overlapping, according to their needs, and it became a solution to their problems [12]. Indraningsih (2011) also stated that the factors that affected the farmers to adopt innovation were the level of profit, the suitability of innovation with their needs, difficulty, habits and farmers' perceptions of the influence of interpersonal media as a provider of technical information [13].

4. Conclusion

The motivation factors (profit, the freedom of doing their business, the farmers wishes, and independency on their business) were affected the farmers to adopt the innovations during Covid-19 pandemic in Agam regency significantly. The constraint factors (time availability, farming cost, the availability of raw materials, complexity of innovation, and suitability of innovation on what farmers need) were insignificant affected the farmers to adopt the innovations during Covid-19 pandemic in Agam regency.

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CERTIFICATE

OF APPRECIATION

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