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by Wahyu Prastiwi

PERCEPTION AND PREFERENCE OF GOAT BREADER TOWARD LIVESTOCK INSURANCE

W. D. Prastiwi[1], M. Handayani[1], K. Budiraharjo[1] & H. Setiyawan[1]

[1]Study Program of Agribusiness, Faculty of Animal and Agricultural Science, Diponegoro University
B Building 3rd Floor, Kampus drh. R. Soejono Koesoemowardojo Semarang, Indonesia
Corresponding email: wdpustea@gmail.com

ABSTRACT

The paper explores goat breeders' perception and preferences toward livestock insurance. The respondents of the study were goat breeders in Manunggal IV farmers' group in Semarang Regency, Central Java Province. Descriptive analysis was used to illustrate the perception variables. The methodology was then followed by Conjoint analysis to explore the preferences of goat breeders toward livestock insurance based on three attributes. The study found that goat breeders have a negative perception toward livestock insurance product. The results showed that the preferences' utility of flexible premium insurance, outbreak coverage, and less than 1-month claim process are the best option. Premium insurance cost is the most important factor in the livestock insurance product.

Keywords: Conjoint analysis, livestock insurance, preferences.

ABSTRAK

Tulisan ini mengkaji persepsi dan preferensi peternak kambing terhadap produk asuransi ternak. Responden penelitian adalah anggota Kelompok Tani Ternak Manunggal IV Kabupaten Semarang, Propinsi Jawa Tengah. Analisis deskriptif digunakan untuk menggambarkan variabel persepsi tentang asuransi ternak. Analisis Konjoin digunakan untuk mengkaji preferensi peternak kambing terhadap produk asuransi ternak berdasarkan 3 atribut. Penelitian menemukan bahwa peternak kambing memiliki persepsi negatif terhadap produk asuransi ternak. Hasil penelitian menunjukkan bahwa atribut premi asuransi fleksibel, penggantian akibat wabah dan proses klaim kurang dari 1 bulan merupakan utilitas preferensi terbaik. Biaya premi asuransi merupakan faktor terpenting dalam produk asuransi ternak.

Kata kunci: Analisis Konjoin, asuransi ternak, preferensi.

INTRODUCTION

Agricultural insurance arises as a result of high risks in agricultural enterprises such as pest and disease attacks. Sometimes, farmers suffer huge losses when they are unable to repay credit and have no capital. Agricultural insurance is an insurance applied to agricultural enterprises in the form of risk transfer by providing compensation due to loss of farming products so that the sustainability of farming can be guaranteed (Direktorat Jenderal Prasarana dan Sarana Pertanian Kementerian Pertanian RI, 2016).

In general, agricultural insurance covers all risks arising from weather, fire,

theft/ loss of farming products except for buildings and agricultural equipment (FAO, 1992). It further states that the types of agricultural insurance include crop insurance, livestock insurance, fisheries insurance and forestry. This paper discuss on livestock insurance product which is one form of agricultural insurance that focuses on determining the replacement of livestock deaths as a result of illness and injury accident. In general, insured livestock includes beef and dairy cattle, goats, sheep, pigs, poultry, and horses (Iturrioz, 2009).

Research involving farmers is necessary to provide valuable input for the development of a livestock insurance program. Farmer as the object of livestock insurance programs should be the subject of the program goals. Meanwhile, research found that farmers awareness of participation in agricultural insurance is very weak (Liu, 2010) because they find it unacceptable to pay insurance costs incurred from losses that may not directly affect them.

Exploring the willingness, perception, preference, and response of farmers are among the methods of making farmers subject in the livestock insurance program's goal. One reason behind the low awareness and intention to participate on livestock insurance program is the premium cost (Sauter et al., 2016; Sundar & Ramakrishnan, 2013) Hence, a better product planning is needed to provide an insurance product that fit with the needs of farmers. Therefore, study of consumer behavior related to perceptions and preferences for the attributes of agricultural insurance products is important to conduct.

The quality characteristics of a product that consumers (farmers) want, can be obtained through an assessment of consumer behavior based on the conceptual approach to product attributes. This concept assumes that consumers view a product as a unit of certain attributes, which are known as quality indicators (Adiyoga & Nurmalinda, 2012). This quality indicators are an informative stimulus for consumers. Through this quality indicators, consumers can evaluate that a product has the quality according to their preferences or not.

A brief description of consumer preferences and the role of product attributes provides a clearer picture of their potential contribution to the design of new products. This research is aimed at gathering information regarding consumer (farmers) preferences or optimizing the utility of product attributes for livestock insurance products, especially goats. Since the government of Indonesia up to now, conducted only two type of agricultural insurance (for paddy and for cow), study of the insurance for goat will give a valuable insight.

This research was conducted on dairy goat farmers who face the risk of milk

production and the risk of lost during transportation when their cattle had to perform in livestock contests. Based on the above background, research of farmers' perception and preference toward livestock insurance as a strategy in managing agricultural risk is necessary and very important to conduct. This paper also emphasizes the use of Conjoint analysis to capture farmers' preferences for a livestock insurance product. The application of Conjoint Analysis aimed to obtain a utility score that represents the importance of each aspect of the product, so that from this score it can be concluded about the attributes farmers consider the most important in choosing a livestock insurance product.

RESEARCH METHODS

The study was carried out in Manunggal IV farmers' group Semarang Regency, Central Java Province. This group appointed as the study object since they are one of the most potential goat breeders group in Semarang Regency. The group members' won many cattle (goat) competition in regional and national level. Census method was used in this study with the statistical population composed of all goat breeders in the area of study (42 persons) in 2017. The research tool was a questionnaire designed based on previous relevant studies and authors' experience. It included sections of the respondents' personal information, the agricultural and

economic characteristics, the perception, and the preferences of livestock insurance. Perception variables calculated using nominal scale and for the preferences variables (rated on scale from 0 = strongly disagree and 5 = strongly agree) consisted of three attributes of livestock insurance product, namely cost of insurance premium, insurance coverage and claim process.

Basic descriptive statistics (frequencies, percentages, means and standard deviations) of data were calculated to describe the respondents' characteristics and their perception. Conjoint analysis was used to explore the preference of goat breeders toward livestock insurance from three attributes.

Conjoint Analysis is classified as a multivariate analysis method, developed specifically to determine the preferences of respondents on an object based on an assessment of each object. The Conjoint analysis can help quantify the utility for potential consumers who will buy based on certain product attributes. Through the quantification of the utility of product attributes, the optimal utility of the attributes can be identified and used to design products with the attributes most preferred by consumers.

Therefore this analysis is appropriate in determining marketing strategies and even determining market segmentation based on consumer preferences for product attributes. Hence, this analysis already

being used to quantify consumer preferences in many agricultural products (Adiyoga & Nurmalinda, 2012).

In Conjoint analysis, each respondent must select one option from a number of options at different levels or assign ratings (preferences) to the various options provided. The random utility theory framework, assumed that the consumer chooses an object with characteristics that can provide maximum utility to them. The results of this analysis are the identification of the combination of attributes most preferred by consumers and identification of the relative importance of each attribute. Product attributes are product elements that are considered important by consumers and are used as the basis for purchasing decisions (Singgih Santoso & Fandy Tjiptono, 2002). Hence, the stimulus design of the attributes and level are provided in Table 1.

Conjoint analysis allows respondents to evaluate complex products in a realistic decision context and provides a quantitative measure of the relative importance of compared attributes (Fields and Gillespie, 2008). A positive utility value indicates that the preference value for a level of attribute is greater than the overall preference value. Meanwhile, the importance value of the attribute means that the greater the value, it indicates that the attribute is considered more important than any other attributes.

All data were calculated and analyzed using SPSS 22 and MS-Excel software packages. Validity testing in Conjoint analysis was conducted by checking at Pearson's R and Tau Kendal values. The basis for the significance test is:

H0 = There is no strong correlation between Observed Variables and Estimated Preferences

H1 = There is strong correlation between Observed Variables and Estimated Preference

If the significance number is ≥ 0.05 then H0 is accepted. Meanwhile, if the significance number is <0.05 then H0 is rejected.

Table 1. Identification of Attributes and level

Attributes	Level	Explanation
cost of insurance premium	1	Fixed
	2	Flexible
insurance coverage	1	Outbreak
	2	Failure
claim process	1	> 1 month
	2	≤ 1 month

RESULTS AND DISCUSSIONS

Characteristics of the Respondents

Research respondents were dairy goat breeders in Manunggal IV farmers' group and all of them were male. Figure 1

explaines that the age group of 44 – 50 years had the highest frequency (30.95%) whereas the age group up to 36 years had the lowest frequency (7.14%), indicating that the breeders were mostly in their productive age and prone to old age group.

Direktorat Jenderal Peternakan dan Kesehatan Hewan Republik Indonesia (2016) stated that by 2015, 40.9% of farmers in Indonesia are over 50 years old and 20.7% are over 60 years old.
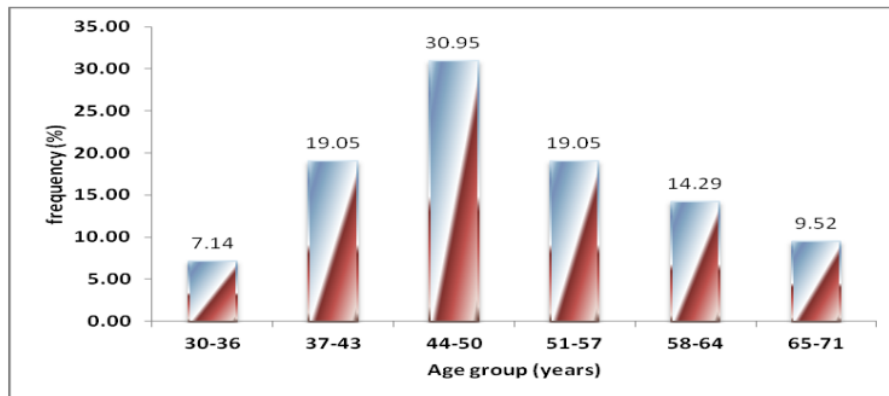

Figure 1. Distribution of Goat Breeders' Age (n = 42, in %)

Table 2 shows that the majority of respondents have finished primary education (35.7%) and nearly 60% of them have taken junior and senior secondary education. Only less than 8% of participants did not complete primary school. Direktorat Jenderal Peternakan dan

Kesehatan Hewan Republik Indonesia (2016) argued that 35.6% of farmers in Indonesia have completed primary education and around 24% have not finished primary school. Thus, most of the study respondents have been educated up to middle level.

Table 2. Distribution of Respondents' Characteristics (n=42)

No.	Characteristics		Percentage (%)
1	Education level	Not finished Elementary	7.1
		Finished Elementary	35.7
		Junior High School	28.6
		Senior High School	28.6
2	Main employment	Crop farmers	71.4
		Farmers	11.9
		Civil servant	2.4
		Laborers	14.3
3	Family number	1 person	7.1
		2 persons	2.4
		3 persons	4.8

		4 persons	21.4
		5 persons	45.2
		>5 persons	19
4	Number of children	0 child	9.5
		1 child	14.3
		2 children	57.1
		3 children	16.7
		4 children	2.4

Source: Primary data processed (2017)

Table 2 also describes that the average of the participants' livestock experience was 6 years and 20 years was the longest. Meanwhile the average number of Ettawa crossbreed Goat (or in local term, PE: peranakan Ettawa) owned by a breeder was 7 head of goats with at least 2 head of goats and at most 17 head of goats. It can be seen in Table 2 that 95.8% of respondents were married and only 4.2% were unmarried. Further explained that the majority of goat breeders had 5 family members (45.2%) and had dependents of 2 children (57.1%).

Perception

Research found that a total of 78.6% of participants had never received any socialization or explanation about livestock insurance, and approximately 86% of respondents claimed they never received a single livestock insurance offer (Table 3). To the survey question, "Will you join livestock insurance program if you had socialization before?" almost 98% of respondents answered "No" and less than 3% of respondents did not answer.

Table 3. Goat Breeders' Perception of Livestock Insurance

No.	Statements		Percentage (%)
1	Livestock insurance socialization	Yes	21.4
		Never	78.6
2	Livestock insurance offered	Yes	14.3
		Never	85.7
3	If you ever had socialization about livestock insurance, will you join the program after?	No.	97.6
		No answer	2.4
4	Intention to join livestock insurance in the future	Not possible	71.4
		Quite possible	19
		Possible	9.5
5	I need livestock insurance	Yes	11.9
		No.	88.1
6	Reason for joining livestock insurance program	Premium cost not expensive	2.4
		Protection to all risk	4.8
		Soft requirements	2.4
		Cost equal to benefit	2.4
		Others	2.4
7	Reason for not joining livestock insurance program	High premium cost	7.1
		Difficult requirements	11.9
		Cost not equal to benefit	2.4
		Difficult claimed process	9.5
		Do not know the info of livestock insurance	4.8

Others	
	54.8

Source: Primary data processed (2017)

The results also found that 88% of respondents said they did not need a livestock insurance product. The reasons for goat breeders did not follow the livestock insurance program were: high premium costs (7.1%), aggravating registration requirements (11.9%), uneasy claims (9.5%), and over 50% of respondents stated other reasons such as: did not know about insurance, no socialization, prioritize the needs of families (still have to finance their children), do not want to bother and do not want to lost money.

This study found that respondents have negative perception toward livestock insurance. It indicates from the finding that the respondents thought that they did not need a livestock insurance product (Table 3) This condition made farmers feel that the risks they are facing can still be overcome. It can be assumed that respondents feel that the risk experienced is still within the tolerance threshold. The same situation was also found in the study of Liu et al. (2016) which states that farmers' perceptions of agricultural risks experienced affect the level of consumption of agricultural insurance products. When farmers realize that the agricultural risks they experience are beyond the tolerance threshold, they will participate in agricultural insurance program.

Their negative perception is also indicates from their low intention to join livestock insurance program in the future (Table 3). Therefore, it is important to conduct education and socialization. This education can be conduct by the extension agents through extension and monitoring programs. Socialization of livestock insurance is important to increase respondents' knowledge about the transfer of risk due to climate change. Xiu et al. (2012) and Fonta et al. (2015) found in their studies that farmers' knowledge of insurance products could increase their participation in cow insurance programs.

Preferences

Conjoint analysis found that the flexible premium insurance cost had higher preferences' utility than the fixed one (Table 5). Respondents stated that the preferences' utility of insurance coverage were higher in outbreak than for failure coverage. In the case of last utilities, it was found that the preferences' utility for claim process were higher for less than 1 month.

Table 4. Preferences' utilities and Importance Value

No	Attributes		Utility Estimate	Standard Error	Importance Value
1	Premium cost	Fixed	-0.110	0.092	83.184
		Flexible	0.110	0.092	
2	Coverage	Outbreak	0.125	0.092	10.124
		Failure	-0.125	0.092	

3	Claim	> 1 month	-0.022	0.092	
		≤ 1 month	0.022	0.092	6.693
4	Constant		2.375	0.092	

Source: Primary data processed (2017)

The result of importance value analysis (Table 4) showed that in general respondents assumed that premium insurance cost is the most important factor in a livestock insurance product (83.18%) and claim process was the least important factor with value as low as 6.69%.

Table 5. Validity Testing

	Correlation Values	Significancy
Pearson's R	0.674	0.033
Kendall's Tau	0.500	0.042

Source: Primary data processed (2017)

Table 5 shows the correlation measurements both Pearson and Kendall, resulting in a relatively strong number of above 0.5. this indicates a quite strong relationship between Estimates and Actual, or there is a high predictive accuracy in the Conjoint process. The results of Pearson's R and Kendalls Tau correlation to the utility ($\hat{Y}$) with actual utility (U (x)) positively correlated and had a significance value of below 0.05. Thus, it can be concluded that there is a real correlation between the conjoint results and the respondents' opinions.

Their perception and concern about the high premium cost of insurance (Table 3) are relevant with the result of the Conjoint Analysis (Table 4 and Table 5). Article 39 paragraph (1) and (2) of Law 19/2013 stated

that in accordance with its authority, the central government and local governments will facilitate every farmer into an insurance member. One such facilitation is assistance premium payment. Such premium assistance comes from national budget and/ or provincial budget, which is paid until declared by the government and local governments that farmers can afford to pay their own premiums (Djunedi, 2016).

Since the insurance premium has the highest importance value, the government should very carefully design the insurance premium cost and the combination of subsidy related with this. The premium should be carefully made as reasonable as it can and in the lower level of range which farmers can accept (Xiu, Xiu, and Bauer, 2012) . Goodwin and Smith (2013) in Isaboke et al. (2016) stated that in USA, with heavily subsidized agricultural insurance resulted in high uptake of the insurance.

Djunedi (2016) further mentioned that in China the subsidy for swine insurance in 2008 was in total 80% consisting of 50% (by central government) and 30% (by local government) and for dairy cattle insurance was subsidized up to 60% (by central and local government). This research finding confirmed the study of Ghazanfar et al. (2015) who found that premium insurance cost was highly significant and positively correlated with the decision for not to

participate in crop insurance among Pakistani farmers. A careful insurance premium cost design will reduce farmers' hesitation to join livestock insurance.

Xu & Liao (2014) found in their research that premium subsidy of crop insurance constantly improves agricultural output. However Xiu et al. (2012) underlined that the insurance companies should conduct the insurance clause thoroughly and encourage farmers to have confidence in them. When farmers already realize the benefit of joining insurance, they would like to participate and pay for it. Therefore, it is important to fully support the development of livestock insurance, especially in the initial stage which can encourage farmers to take an active role in risk management and participate in insurance systems.

CONCLUSION

Goat breeders have a negative perception toward livestock insurance. Premium insurance cost is the most important factor in a livestock insurance product. Government must conduct detail investigation of farmers condition, give an intensive socialization about livestock insurance to increase goat breeders' knowledge about the transfer of risk due to climate change and carefully design the insurance scheme especially for insurance premium cost and the amount of subsidy.

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REFERENCES

Adiyoga, W., & Nurmalinda. (2012). Analisis Konjoin Preferensi Konsumen terhadap Atribut Produk. *J. Hort.*, *22*(3), 292–302.

Direktorat Jenderal Peternakan dan Kesehatan Hewan Republik Indonesia. (2016). *Statistik Peternakan dan Kesehatan Hewan* 2016/ *Livestock and Animal Health Statistics* 2016.

Djunedi, P. (2016). Analisis Asuransi Pertanian di Indonesia : Konsep, Tantangan dan Prospek. *Jurnal Borneo Administrator*, *12*(1), 9–27. https://doi.org/10.24258/jba.v12i1.209

Glossary of Terms for Agricultural Insurance and Rural Finance, FAO Agricultural Services Bulletin (1992).

Fields, D., & Gillespie, J. (2008). Beef Producer Preferences and Purchase Decisions for Livestock Price Insurance. *Journal of Agricultural and Applied Economics*, *40*(3), 789–803.

Fonta, W. M., Sanfo, S., Ibrahim, B., & Barry, B. (2015). Farmers Awareness, Perception of Climate Hazards and their Willingness to Participate in Crop Insurance Schemes in Southwestern Burkina Faso. *Procedia Environmental Sciences*, *29*(Agri), 7–8. https://doi.org/10.1016/j.proenv.2015.07.127

Ghazanfar, S., Qi-wen, Z., Abdullah, M., Ahmed, J., Khan, I., & Ahmad, Z. (2015). Factors Hindering Pakistani Farmers' Choices Towards Adoption of Crop Insurance. *Journal of Northeast Agricultural University (English Edition)*, 22(2), 92–96. https://doi.org/10.1016/S1006-8104(15)30038-6

Isaboke, H. N., Qiao, Z., Nyarindo, W. N., & Ke, W. (2016). Explaining The Perception of Smallholders Toward Weather Index Micro-Insurnace Alongside Risks and Coping Strategies *International Journal of Food and Agricultural Economics*, 4(4), 59–77.

Iturrioz, R. (2009). *Agricultural Insurance The World Bank series*. The World Bank.

Liu, F., Corcoran, C. P., Tao, J., & Cheng, J. (2016). Risk perception, insurance recognition and agricultural insurance behavior–An empirical based on dynamic panel data in 31 provinces of China. *International Journal of Disaster Risk Reduction*, 20(October), 19–25. https://doi.org/10.1016/j.ijdrr.2016.10.005

Liu, Z. (2010). Interaction relationship between agricultural insurance and transfer of land contract rights based game analysis of farmer selection. *Agriculture and Agricultural Science Procedia*, 1, 187–192. https://doi.org/10.1016/j.aaspro.2010.09.023

Sauter, P. A., Möllmann, T. B., Anastassiadis, F., Mußhoff, O., & Möhring, B. (2016). To insure or not to insure? Analysis of foresters' willingness-to-pay for fire and storm insurance. *Forest Policy and Economics*, 73, 78–89. https://doi.org/10.1016/j.forpol.2016.08.005

Singgih Santoso, & Fandy Tjiptono. (2002). *Riset Pemasaran: Konsep dan Aplikasi dengan SPSS*. Elex Media Komputindo.

Sundar, J., & Ramakrishnan, L. (2013). A Study on Farmers' Awareness, Perception and Willing To Join and Pay for Crop Insurance. *Ijbmi.Org*, 2(1), 48–54. http://www.ijbmi.org/papers/Vol(2)1/Version_3/F0214854.pdf

Xiu, F., Xiu, F., & Bauer, S. (2012). Farmers' Willingness to Pay for Cow Insurance in Shaanxi Province, China. *Procedia Economics and Finance*, 1(12), 431–440. https://doi.org/10.1016/S2212-5671(12)00049-4

Xu, J. F., & Liao, P. (2014). Crop insurance, premium subsidy and agricultural output. *Journal of Integrative Agriculture*, 13(11), 2537–2545. https://doi.org/10.1016/S2095-3119(13)60674-7

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