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ABSTRAK

Provinsi Bali memiliki ketahanan pangan yang sangat baik namun wilayah yang memiliki ketahanan pangan baik, belum tentu seluruh individu di wilayah tersebut memiliki akses yang merata terhadap pangan. Tantangan muncul dari sisi permintaan maupun penawaran. Tujuan penelitian ini adalah untuk mengidentifikasi hubungan modal sosial terhadap ketahanan pangan rumah tangga di Provinsi Bali dan menguji bentuk-bentuk modal sosial dengan kearifan lokal yang berpengaruh terhadap ketahanan pangan rumah tangga di Provinsi Bali. Penelitian menggunakan data primer dimana pengumpulan data dilakukan dengan metode *purposive nonrandom sampling*. Tujuan penelitian dicapai dengan menggunakan analisis regresi linear berganda. Variabel analisis menggunakan modal sosial sebagai variabel *interest* dengan mempertimbangkan variabel kontrol berupa karakteristik individu dan karakteristik rumah tangga. Hasil penelitian menunjukkan bahwa modal sosial berpengaruh terhadap ketahanan pangan sebagai indikator kesejahteraan rumah tangga. Teridentifikasinya modal sosial dengan kearifan lokal rumah tangga di Provinsi Bali menjadi referensi alternatif pendekatan dalam mencapai ketahanan pangan di Provinsi Bali.

Kata kunci: ketahanan pangan, kearifan lokal, modal sosial

Klasifikasi JEL: A13, D10, I31

ABSTRACT

Despite the fact that Bali Province has an excellent level of food security, it does not necessarily mean that all individuals in the region have equal accesses to food. Considerable challenges may arise from both supply and demand sides. The objectives of this research are to identify the effect of social capital on household food security in Bali Province and to examine the various forms of social capital with local wisdom that affect household food security in Bali Province. This research uses primary data collected under the purposive nonrandom sampling method. The research objectives were achieved by employing multiple linear regression analyses. The analysis variable is social capital as variable of interest while also taking into consideration several control variables in forms of individual characteristics and household characteristics. The results show that social capital has an effect on food security as an indicator of household welfare. The identification of social capital with local wisdom of households in Bali Province serves as a reference for alternative approaches in achieving food security in Bali Province.

Keywords: food security, local wisdom, social capital

JEL Classification: C68, F43, L52

INTRODUCTION

In Law Number 18 Year 2012 regarding Food, food security is defined as “the condition of food fulfillment for the state until individuals, which is reflected by the availability of food that is sufficient, both in terms of quantity and quality, safe, diverse, nutritious, equitable and affordable as well as not contrary to any the religions, beliefs, and the culture of the community, in order to be able to live a healthy, active and productive life in a sustainable manner.” FAO defines food security as “a state where all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their needs for an active and healthy life.” It is also stated that food security consists of four dimensions, namely sufficient availability (availability), access to food (access), proper food utilization (utilization), and stability in food stock and price (stability) (Simon, 2012). In Indonesia, based on the concept of food security as defined in Law 18/2012, the measure of food security consists of three dimensions, namely food

availability, food affordability/access, and food utilization. Food security is measured at various levels from national, regional, household, until individual levels.

Bali Province, as one of the many provinces in Indonesia, faces various challenges related to the condition of its food security. Based on food security indicators, the current condition of food security in Bali is very good. One of such indicators is the rate of food inflation (volatile food), which in September 2019 was measured at 1.12 percent (yoy) and significantly lower than the total inflation of 2.54 percent (yoy) (BPS, 2020). However, the condition of Bali's economic development in the future indicates that there are several challenges that need to be anticipated early on. The food security challenges in Bali Province arise from both sides of the equation. First, they arise from the demand side due to the increasing demand as a consequence of the increase in population, the increase of the intensity of activities that require additional mass food demand such as conferences, seminars, ceremonies, holiday

celebrations, and the increase in the number of tourist visits, especially for tourism areas. Second, the challenges from the supply side are caused by the decline in agricultural land which has been altered into residential areas, the decline in the number of farmers who serve as the main actors in the agriculture sector, and the suboptimal implementation of agricultural technology.

Food security is a vital condition due to its direct relationship with the survival of the community. Various studies have proven that food security is not only influenced by factors related to activities in the agriculture sector, but also influenced by other factors, such as by socio-economic factors and even by cultural factors. One of the social factors that is closely related to such culture is the social capital variable. Similar researches in the past measured social capital with relatively general indicators such as networking, trust and norms. These indicators have several weaknesses since they are not necessarily compatible with the characteristics of the local community. For this reason, an identification of social capital with local

wisdom is needed. In this research, social capital is seen from the local wisdom point of view of the Balinese people.

Social capital with Balinese local wisdom is a form of social capital that is highly relevant to community life because it is in accordance with the lifestyle of the Balinese people. Based on this, the problems that will be addressed in this research are first, how individual characteristics and household characteristics influence household food security. Second, how social capital with local wisdom influences household food security in Bali Province. Social capital as a factor that affects food security will be more compatible with the characteristics of the Balinese people. Thus, any efforts aimed at achieving a stable and reliable food security will be much easier to obtain and much more likely to occur since social capital with local wisdom is a unique form of capital that is already instilled to the daily lives of the Balinese people.

Kasimin (2015) found that household food security was influenced by income level, the number of household members and the level of household welfare. Education is

another factor that also has a significant role in household food security (Damayanti & Khoirudin, 2016). Suandi (2012), Enderwati and Wahyuni (2014), and Utama and Suprapti (2020) provided evidences that social capital also has a strong influence on household food security. The forms of social capital used in these researches include trust, networks, and social norms. All of which fall under the general view of social capital. No one has yet to identify the influence of social capital under the local wisdom approach. In this research, the influence or role of social capital is emphasized on the local wisdom point of view where social capital is measured using an approach that measures the daily life habits of Balinese people so that food security performances can be maintained and improved in order to achieve an equitable and sustainable food security.

RESEARCH METHODOLOGY

This research uses two types of data, namely primary and secondary data. Primary data were obtained from households in Bali Province. Primary data is the main data used to analyze the effect

of social capital with local wisdom on household food security in Bali Province. Primary data analysis is supported by the analysis of secondary data. The sample was selected using the stratified accidental sampling method where the sampling order was stratified at the district level. The total number of sample is 385 households. The research location is Bali Province and the research object is households in Bali Province.

The examination of the effect of social capital with local wisdom on household food security in Bali Province uses food security as the dependent variable. The dependent variable is expressed as a proportion, i.e. the proportion of household food expenditure relative to the total household expenditure. The use of this variable enables us to see the pattern of household food expenditure. The variable of interest is a social capital variable that identifies several forms of social capital with local wisdom. The forms of social capital used in this research are *sekeha*, *mecingkreman*, and *subak*. Control variables in this research are characteristics that affect food security.

Broadly, these variables are grouped into two main categories, namely:

1. Individual characteristics consisting of:
 - a) Age of the head of the household
 - b) The last education completed by the head of the household
 - c) Gender of the head of the household
2. Household characteristics consisting of:
 - a) Number of household members
 - b) Location of residence
 - c) Household assets
 - d) Total household income

Individual = individual characteristics consisting of the age of the head of the household, the education of the head of the household, and the gender of the head of the household.

HH = total household income, number of household members, location of residence, and household assets.

RESULTS AND DISCUSSION

The analysis of the role of social capital in affecting household food expenditure patterns was done using a multiple linear regression method. The estimation model used is as follows:

$$\text{Food} = \beta_0 + \phi_i \text{social capital} + \text{individual}_i \eta_i + \text{HH}_i \delta_i + \varepsilon_i$$

Food = the proportion of household food expenditure relative to total household expenditure

Social capital = consists of 3 forms of social capital, namely *sekeha*, *mecingkreman*, and *subak*.

The general description of the research samples is showed in table 1. The dependent variable is food security which is identified using the food access approach. This variable was calculated from the proportion of household food expenditure relative to total household expenditure during the most recent one month. This proportion of food expenditure reflects the structure of household expenditure during one month. The average proportion of household expenditure relative to total household expenditure in one month is 44 percent. This indicates that the average household

expenditure on food is not very high. The determinants of food security in this research are identified using individual characteristics, household characteristics and several forms of social capital based on Balinese local wisdom.

The average age of the head of households is 45 years with the youngest being 21 years old and the oldest being 83 years old. The majority of household heads are male. Based on the level of education completed, the average level of education of the household head is 9 years, or generally equal to junior high school level or its equivalents. However, there are household heads who have higher education levels.

The household characteristics consist of location of residence, ownership of household assets, number of household members and total household income. The location of residence is divided based on whether the household is located in urban or rural areas.

More than half of the households is located in urban areas while the rest reside in rural areas. The burden of a household can be approximated by the number of household members. The average number of

household members is six persons. The average total monthly income earned by households is IDR 4.6 million. The household assets is measured from the ownership of several forms of assets, namely the status of having alternative sources of income other than income from land, ownership of savings and ownership of jewelries. The status of owning such assets serve as a form of backup income sources for the household. More than half of the respondent's households own jewelries while not owning any savings and other sources of income other than land.

The social capital based on local wisdom is grouped into three forms. First is *sekeha*. This variable is measured by the amount paid by a household as a contribution to the *sekeha* group where it will be pooled and redistributed to other *sekeha* members as a low interest bearing loans. The average amount spent by households for *sekeha* activities is IDR 400 thousand per month. The second social capital form is the participation status of households in the *mecingkreman* activity. The *mecingkreman* activity is a pattern of

communal living aimed to develop the economy in order to ease the overall burden of the community, which has grown and developed, with a loyal and honest spirit, in the traditions of the Balinese people. Every month, community members, known as *krama*, spend money as contributions, according to a *paruman* (meeting) decree, to be pooled then rolled out as low-interest loans. The number of households participating in *mecingkrem* activities are less than half of the total respondents. The last form of social capital is participation of a household member as a *subak* member. The existence of the *subak* system in Bali is deeply related to the religious values in the region. The *subak* system maintains a balance, i.e. the needs of the community to produce food on one hand and the unwillingness to destroy the nature on the other hand. Less than half of the respondent's households are members of *subak*. *Subak* membership also indicates that the economic activity being carried out is in the primary sector, namely agriculture.

The analysis of the effect of social capital on food security is divided into 3 groups according to the determinants of food security. First, the determinant group comprising individual and household characteristics. Second, the determinant group comprising forms of social capital with local wisdom and the third, the determinant group which comprise all combined determinants of food security. These were also done simultaneously in order to examine whether the influence of social capital, especially in the second and third determinant groups, is robust. In table 2 (column 2), it can be seen that individual and household characteristics affect household food security. The age of the household head has a very significant effect on food security. This means that as the age of the household head increases, the proportion of household food expenditure also increases. This indicates that older age requires greater calorie intake so that the proportion of food expenditure also increases. Another individual characteristic that influences household food security is the education of the household head. The education of the household head has a positive effect on food security. In other words, the higher the education of the household head, the higher the proportion of household food

expenditure. The increase in food expenditure can be traced to two causes: first, the increase in food quantity and second the increase in food quality. Higher education also implies better level of knowledge so that those with higher education tend to be more exposed to information regarding the importance of food quality.

Household characteristics that affect food security are the number of household members and asset ownership status. The number of household members has a significant positive effect on the proportion of food expenditure. The greater the number of household members, the greater the proportion of household food expenditure. This is very natural. The more members a household has, the more quantity of food it needs to consume. Thus, the spending on food will inevitably increase.

Asset ownership status also affects the proportion of household food expenditure. Households with non-land sources of income have a higher proportion of food expenditure compared to households that do not have non-land sources of income.

This is reasonable because having other sources of income means that households have access to additional income that can be used to increase the quantity and quality of food they consume. Likewise, the same case also applies to households that own assets in form of savings.

The third column of the table shows the influence of social capital with local wisdom on food security. The first form of social capital is *sekeha*. *Sekeha* shows a positive influence on the proportion of household food expenditure. The mechanism behind this is that the contributions paid will be returned to the *sekeha* members in form of low interest bearing loans. Having access to these type of loans will make it easier for households to meet their food requirements. Both in terms of increasing the quantity and quality of food consumed. The same case also applies for *mecingkremman*. Households who participate in the *mecingkremman* tend to have better food security compared to those that do not participate in the *mecingkremman*. The mechanism behind the role of *mecingkremman* in increasing the proportion of household food expenditure

follows same mechanism for the *sekeha subak*, farmers will have access to a better membership. The main difference is that irrigation system that enables them to the amount of loan funds that can be obtain better agricultural products in form accessed from *mecingkreman* is likely to be of food produce compared to those who smaller than that of *sekeha*. Another social are not members of the *subak*. Better capital that also affects food security is agricultural products will also provide *subak*, namely *subak* membership. Being a better opportunities for households to *subak* member is synonymous with being a consume better food. farmer. By becoming a member of the

Table 1: Descriptive Statistics of Research Variables

Variables	Mean	Min	Max
HH Income	4.604.234	4166.667	8.66e+07
<i>Sekeha</i>	409.540	0	9.858.333
<i>Mecingkrem</i>	0,07	0	1
<i>Subak</i>	0,31	0	1
Food Security	0,45	0	1
Age of HH Head	45,29	21	83
Education of HH Head	8,64	0	16
Gender of HH Head	0,91	0	1
Number of HH Members	6,00	1	7
Non Land Assets	.1201044	0	1
Savings	.3289817	0	1
Jewelries	.5691906	0	1
Location (rural/urban)	.6031332	0	1

Source: primary data, processed (2021)

In the first column, all independent variables were included in the analysis. When compared with the results presented in column two and column three, it can be seen that the partial effects of the variables did not change significantly. When analyzed from the significance and the direction of the relationship between the variables, it can be seen that these variables did not change in term of their significances except for the education of the household head variable. In the overall analysis, it was found that the education of the household head variable no longer affects household food security. This implies that the education of the household head has an insignificant role in affecting household food security, which is

predominantly influenced by other variables.

Table 2: The Influence of Social Capital, Individual Characteristics, and Households on Food Security

Variables	Food Security		
	(1)	(2)	(3)
Age of HH Head	0.00448*** (0.00120)		0.00506*** (0.00119)
Gender of HH Head	0.0220 (0.0248)		0.0200 (0.0252)
Number of HH Members	0.0158*** (0.00509)		0.0156*** (0.00516)
Education of HH Head	-0.00505 (0.00328)		-0.00547* (0.00329)
HH Income	1.45e-09 (2.08e-09)		1.22e-10 (2.10e-09)
<i>Sekeha</i>	5.69e-08*** (1.92e-08)	6.44e-08*** (1.93e-08)	
<i>Mecingkreman</i>	0.0991* (0.0539)	0.101* (0.0559)	
<i>Subak</i>	0.0584* (0.0328)	0.0772** (0.0303)	
Non Land Assets	0.0824** (0.0419)		0.0894** (0.0427)
Savings	0.0747** (0.0298)		0.0710** (0.0313)
Jewelries			0.00516 (0.0295)
Location (rural/urban)	-0.00107 (0.0306)		-0.0137 (0.0285)
Constant	0.366*** (0.0814)	0.444*** (0.0188)	0.354*** (0.0836)
Observations	383	383	383

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Source: primary data, processed (2021)

CONCLUSION

Social capital with local wisdom has an important role in affecting household food security in Bali Province. Households with social capital will tend to have higher food security compared to households that do not possess social capital. Specifically, the following are factors that influence food security in Bali Province. First, social capital consisting of *sekeha*, *mecingkreman* and *subak* has a significant effect on food security. Households that possess social capital will have better food security than those that do not. Second, individual characteristics, namely the age of the household head and the education of the household head have significant effects on food security, however the role of the education of household head was found to be not robust. This can be seen from the loss of the role of education when food security is controlled by social capital variables. Third, household characteristics have significant effects on household food security. These characteristics consist of the number of household members and household asset ownership. All of these characteristics have positive effects on

household food security. This implies that increase in assets will lead to increase in household food security.

The identification of social capital with household local wisdom in Bali Province serves as a reference for alternative approaches in achieving food security in Bali Province. The importance of the role of social capital in achieving household food security in Bali Province has an implication in form of the need to increase the ownership of social capital in the household, especially social capital based on local wisdom. Social capital with local wisdom is the form of social capital that is most compatible with the characteristics of households in Bali Province.

ACKNOWLEDGEMENTS

The authors would like to thank The Institute for Research and Community Services (LPPM) of Udayana University which has funded this research.

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