Analysis of the Socio-Economic-Demographic Characteristics of the Family, Social Capital and Economic Coping Strategy in Increasing Food Security for Urban Poor Households in Jambi Province, Indonesia

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ABSTRACT

This study aims to analyze the influence of socio-economic-demographic characteristics of family (HH), social capital (SC) and economic coping strategies (EC) on level of food security (FS) in urban poor households. Data were collected from surveys in four urban areas in four regencies/cities in Jambi Province, Indonesia. Analysis was carried out descriptively and using SEM-PLS model. The study found that HH (age of household's head, number of members, age structure of members, main activity of members, and family income per capita) had a significant effect on the level of FS. SC had a significant direct effect on EC. However, SC did not have significant direct effect on FS. Although EC had a significant effect on FS, it had a negative direction. It shows that the EC for survival carried out by urban poor communities worsens the condition of FS.

Keywords: coping strategy, cutting back expense, food security, generating additional income, social capital.

Introduction

In the context of household, the inability to access food properly is basically caused by poverty. Poverty has caused households to not be able to meet sufficient food needs for each household member, which has an impact on the low quality of human resources. The low quality of human resources causes limited ability to improve welfare which ultimately causes people to remain poor. Therefore investment in nutrition is an important investment to break off the vicious cycle between poverty and malnutrition (Bappenas, 2007).

In Indonesia, the problem of poverty has indeed been one of the serious problems in the development process and at the same time in the level of household food security. In 2016, there were 14.11 million poor people or 10.86 per cent of the total population of Indonesia (BPS, 2016).

In poor households, increasing food security and welfare is basically inseparable from how families do coping strategies to get out of vulnerable conditions by using various available resources; one of them is social capital (Farrington, Ramasut, & Walker 2002). Social capital can help households in coping for the risk of income fluctuations and it positively correlates with household welfare (Grootaert, Gi-Tai & Swamy, 1999; Alfiasari, 2008). The coping strategy according to Sunarti (2009) differs according to family social class.

Coping strategy is a person's effort to take control, reduce, and tolerate demands or problems faced (Hastuti & Mulyawati 2009). Firdaus (2008) found that families with high economic pressures used coping strategies to reduce family non-food expenditure. Johan, Muflikhati, and Mukhti (2013) found that families often reduce their expenditure rather than getting additional income when their income is declining. Coping strategies for reducing expenditur are easier to do than increasing their income. Coping strategies for increasing income require own resources such as ownership of various assets which in fact are not always owned by the family (Farrington, Ramasut, & Walker 2002).

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Coping strategies are carried out by the family to deal with short-term crises towards adaptation to survive or out of vulnerability (Weber 2011). The fewer coping strategies used indicate an increase in family welfare (Rosidah, Hartoyo, & Muflikhati, 2012).

As one of the regions in Indonesia, the poverty rate in Jambi Province is relatively lower than the national average. In 2016, the poverty rate in Jambi Province was 8.41 per cent, ranked 20th out of 34 provinces in Indonesia. However, if it was based on rural-urban areas, the poverty rate in the urban areas of Jambi Province is relatively high. In the same period, the urban poverty rate in Jambi Province reached 10.86 per cent (7.79 per cent in national) and was ranked 7th out of 34 provinces in Indonesia (BPS, 2016).

In addition to the high rate of urban poverty in Jambi Province, the problems of the poor in urban areas are more complex. Rapid population growth and greater competition for survival make social inequality in urban areas more visible than in rural areas.

Individuals in urban communities are more individualistic, pragmatic and tend to be ignorant. It results in a lack of opportunities for poor urban households to be able to take advantage of social capital in household coping strategies to face poverty and food insecurity.

Based on the explanation, this study aims to analyze the influence of socio-economic-demographic characteristics of family, social capital and economic coping strategies on level of food security in urban poor households in Jambi Province

2. Theoritical Review

2.1 Household Food Security

Food is a basic necessity for all people and a universal dimension of household and personal wellbeing (Bickel, Nord, Price, Hamilton & Cook, 2000). Food security exists when all people have physical and financial access to sufficient safe and nutritious food for an active and healthy life at all times to satisfy their nutritional requirements and food preferences (FAO, 2002). Related to this, Szabo (2016) stated that food insecurity is perceived to exist when individuals lack physical, social or economic access to safe and healthy food or are restricted or uncertain in their capacity to obtain such foods in socially acceptable ways.

The Community Nutritionist Council of BC (2004) also defined food security exist when all people get safe food and personally obtain a nutritious diet personally through a sustainable food system that maximizes good, self-reliant community and receives similar access for all individuals. This definition also includes: (a).The ability to get food is guaranteed; (b). The food is obtained by means of holding on to human dignity; (c). Food secure, adequate and personally acceptable and culturally; (d). The quality and quantity of food is sufficient to maintain healthy growth and development as well as to ward off diseases; and (e). There is no compromise in terms of production, processing and distribution of food in the use of land, water and air for the next generations.

The classification of household food security into food secure and food insecure can be done using measurements from output indicators, namely food consumption (energy intrigue) or individual nutritional status (especially pregnant women and children under two years old). Households are in food insecure if the level of energy consumption is lower than the cutoff point or TKE <70.0% (Zeitlin & Brown 1990). Another concept of measuring food security developed by Hardinsyah and Roedjito (1986) is based on consumption quality using a food diversification score.

The degree of household food security in this study is based on the cross-classification used by Jonsson and Toole (1991) in Maxwell, Levin, Armar-Kelemsu, Ruel, Moris, Ahiadeke (2000). The degree of household food security is based on calorie adequacy and the share of expenditure food as follows:

Table 1. The degree of household food security

Calorie adequacy	Share of expenditure food	
	Low < 60 %	High >= 60 %
Sufficient > 80 %	Food-secure (rank 4)	Food-vulnerable (rank 3)
Deffient <= 80 %	Food-less secure (rank 2)	Food-insecure (rank 1)

Source: Jonnson & Toole (1991) in Maxwell, Levin, Armar-Kelemsu, Ruel, Moris, Ahiadeke (2000)

The benchmark for calorie sufficiency uses the Regulation of the Minister of Health of the Republic of Indonesia Number 75 of 2013 concerning recommended Nutritional Adequacy Numbers for Indonesian Nations which in Article 4 states "the average energy sufficiency for the Indonesian population is 2,150 kilos of calories per person per day"

2.2 Economic coping strategy

Coping strategies are active processes where individuals and families as a whole manage, adapt, or face stressful situations (Sunarti 2013). According to Friedman (1998) in Puspitawati (2012) there are two types of coping strategies, viz. internal family coping strategies and external family coping strategies.

Sunarti (2010) mentioned strategies to be the most or often used are highly dependent on one's personality and the level of stress from the conditions experienced. Factors that influence individual coping strategies include health, beliefs or positive outlook, problem solving skills, social skills, and social support. Maryam (2007) also suggested coping strategies are often influenced by cultural background, experience in dealing with problems, environmental factors, personality, self concept, social factors, and others.

Copings are important parts that can make families survive. Therefore, every family must have creativity in finding effective strategies for managing the situation. Family resources, coping strategies, and processes are considered to provide a foundation for helping families to adapt and achieve higher well-being (Jones 2003).

Coping resources can be interpreted as everything that is owned by the family both physical and non physical to build coping behavior. Coping resources are subjective and relative so coping behavior can vary in each person. Lazarus and Folkman (1984) said that the way a person or family carries out coping strategies depends on the resources they have.

Furthermore, in the context of economic coping strategies, Puspitawati (1998) divided them into passive strategies in terms of expenditure reduction and active strategies in the form of additional income. Which type of coping strategy to use and how the impact depends on the type of stress or problem faced. According to Coper and Payne (1991), for solving problems, individuals do not just do one coping strategy but rather have some coping strategies that are considered appropriate and in accordance with the problems at hand.

Especially the economic coping strategy to meet their food needs, according to Maxwell (2001), the strategies carried out by the family are: 1) buying less preferred foods and buying cheaper foods; 2) borrowing food or money to buy food; 3) buying food by being in debt; 4) asking for help from relatives or friends; 5) limiting and dividing food at mealtime; 6) saving money from family members to buy food on the street; 7) limiting their own intake to ensure children getting enough food; 8) skipping meals; and 9) skipping eating for a whole day. Furthermore, there are four general categories which are coping strategies at individual level that are determined based on location and culture, viz. 1) dietary changes, that is consuming less preferred and expensive; 2) addition of food access in the short term such as borrowing, getting help, searching for types of food that are rarely consumed in normal condition, and the use of food supplies for consumption; 3) reducing the number of members to be fed (short-term migration); 4) Changes in food ration (limiting food portions, and skipping meals or not even eating all day).

From various economic coping strategies to meet these food needs, it can be grouped into two, as stated by Puspitawati (2012), namely cutting-back expenses strategy income generating strategy. These two groups will also be the basis of this study.

2.3 Social capital

Social capital can be defined as the ability of people to work together to achieve common goals within groups and organizations (Coleman, 1990). Fukuyama (1995) defined social capital as a series of informal values or norms that are shared among the members of a group that enable cooperation between them. In the same context, Ferlander (2007) suggested that social capital is a resource accessed via social networks.

Putnam (1993) defined social capital as trust, network, and norm, which can be described as follows:

a. Trust

According to Lawang (2005), trust is defined as a relationship between two or more parties which bear expectations that benefit one party or both parties through social interaction. In a different sense, Martianto, Alfiasari, Darmawan. (2009) explained that trust is needed in establishing cooperation without any mutual suspicion and can maintain relations with the environment. Humaira (2011) explained that trust is a social relationship that is built on the basis of trust and a sense of belonging in togetherness.

b. Network

Social networks are a source of knowledge which is the main basis for building trust (Lawang 2005). Martianto, Alfiasari, Darmawan. (2009) explained the social network owned by households is a warm and strong neighbor and kinship system. Suandi and Napitupulu (2012) explained that household social networks can be seen in the number of local associations followed by households. Local associations are beneficial for households to be able to help overcome problems faced by households. Humaira (2011) also explained that the ability of the community to participate in a number of associations to build networks through various relationships would be very influential in determining the strength of its social capital. In this context, Woolcock and Narayan (2000) noted that 'social relations provide opportunities for mobilizing other growth-enhancing resources, that social capital does not exist in a political vacuum, and that the nature and extent of the interactions between communities and institutions hold the key to understanding the prospects for development in a given society.'

Sunandang (2011) explained that social networks are demonstrated through community relations ranging from getting to know each other from work, family to frequent daily activities, frequent interactions. Sunandang (2012) further explained that the kinship relationship of the interactions that are often carried out can shape the social network of the community, similar to the concept described by Martianto, Alfiasari, Darmawan. (2009)

c. Norm

Norms are rules that are found in the community formally and informally. Social norms cannot be separated from trust and social networks. Social norms can be in the form of unwritten rules in relationships between households in the community, traditional values that have been passed down from generation to generation, and religious values in establishing social relations Martianto, Alfiasari, Darmawan. (2009). In order to create cooperation, there must be regulating norms.

Sunandang (2012) explained that close kinship and trust create a control in themselves so that values are maintained such as togetherness, mutual cooperation, and cooperation formed by the community. There are rules that are binding on communities that are not formed by formal rules. Togetherness, mutual cooperation and cooperation have their own rules that are respected by the community in their behavior.

2.4 Previous studies

Various studies have been conducted related to socio-economic factors that affect food security, household expenditure for food and aspects of food nutrition. Pankomeera, Houssou and Zellerb (2009) revealed that the most significant determinants of food security in Malawi were land holding, education of household head, ownership of an off-farm enterprise, livestock holding size, gender of household head, household size, and road access.

Several studies in Addis Ababa City, Ethiopeia, revealed factors that significantly affect household food security. The study of Sisay and Edriss (2012) found that household size, household income, age of the head of the household, education of the head of household, bank account ownership and remittances and gifts are significant determinants of

influence food insecurity at the research location. Using data from the 2006/07 Young Lives Household Survey, Gebre (2012) in Addis Ababa City, Ethiopia argued that the variables that determine household food insecurity were household size, age of household head, household head education, asset possession, access to credit service, and access to employment. Through a different approach, the survey undertaken by Birhane, Shiferaw, Gebreyesus & Mohindra (2014) in three sub-cities of Addis Ababa found that household incomes, occupational and educational status of household heads were significant determinants of food security.

Obayelu and Oyekola (2018) in their research on urban poor in Ibadan Metropolis, Southwest Nigeria found that the prevalence of food insecurity among the urban poor is high. Even among urban poor, however, there are disparities in the food security status. Food insecurity status was explained by educational status of household head, household size, per capita income and duration of stay in the slum.

Related to the educational status of household head, Nyako (2013) in Nigeria and Mutisya et al. (2016) in Kenya found that higher education attainment among household heads contributes positively to decreasing the threat of food insecurity. Human asset connotes capabilities, skills and knowledge, and material health that allow households and individuals to fulfill livelihoods outcomes. Empirical studies proposed the connection between human asset and households' well-being, such as studies by Seng (2015), and Kamaruddin and Samsudin (2014) observed that human asset has an effect on the incomes of vulnerable families and individuals which affect food consumption, thus ensuring food security. Similarly, Nee & Mansur (2015) in the study confirmed the impact of human asset as it enhances resilience that reduces vulnerability and further safeguard livelihood results of vulnerable households..

The issue of food security does not only apply in urban areas, but also in rural households. Several previous studies have disclosed that rural components also influence food security in rural households. Bogale and Shimelis (2009) in the rural area of Dire Dawa found that family size, income per year, amount of credit received, access to irrigation, age of the head of the household, land size, and livestock ownership showed theoretical consistency and statistical significance. Dalam konteks yang sama, Mitiku, Fufa, & Tadese (2012) in his research on rural households in Ethiopia found that the size of farmland, total agricultural income, non-agricultural income, and livestock ownership significantly affected the household food security status in a positive way. Meanwhile, household size significantly affects household food security status in a negative way.

Bashir, Schilizzi & Pandit (2012) in Punjab Pakistan found that monthly income, livestock assets (small livestock), and education (middle, intermediate, and graduation) level positively affected the food security of rural households. On the other hand, the increase of the age of the head of the household, the number of the family, and the size of the family had a negative impact on household food security. Research by Mango et al. (2014) in the Mudzi district, Zimbabwe found that household food security was influenced by the age and education level of the head of the household, household size, access to market information, livestock assets, and remittances.

The characteristics of the household (head and household members) will determine the condition of the social capital owned by the household, which will also affect household food security in the next stage. Alfiasari's research (2008) in Bogor City, Indonesia, found that there are other factors that play a role in creating food-resistant households, in addition to household economic capacity. These potentials are not always in the form of money but are economically beneficial in helping households remain food-resistant despite their low economic capacity. One of these potentials is social relations or social capital between poor households. Food-resistant households are households that have higher social capital in the form of trust in establishing relationships without mutual suspicion, higher trust in maintaining a sustainable environment and more social relations in meeting household food needs.

The result of similar studies by Sseguya, Mazur, and Flora (2018) also found that social capital is correlated with beneficial results in food security in rural Uganda. Households with bridging and linking social capital, characterized by membership in groups, access to information from external institutions, and observance of norms in groups, tended to be more food secure. Households with cognitive social capital, characterized by compliance with generalized norms and mutual trust, were also safer than others in terms of food Dzanja, Christie, Fazey, Hyde

(2013) in Malawi found that the food security analysis has demonstrated that some types of social capital are linked to increased food security. It has been shown that the inclusion of the social capital factors improved mostly the explanatory power of the fundamental welfare model, thus emphasizing that social capital could be a missing link in the process of economic development.

Dean and Sharkey (2011) conducted research in Texas. They compared food security and social capital among rural and urban inhabitants and discovered meaning in the evaluation, attitude, and access to food within rural communities and how the subjects perceived their social capital. Research by Morrow (2013) in Alabama on the role of social capital and food security indicated that experience with food insecurity is a greater predictor of knowledge development sourced from social capital. The research concludes that this type of food security adaptation predicts social capital knowledge because sub-groups share food access data.

Household characteristics (head and household members) will determine the economic coping strategies by household in avoiding food insecurity. Gupta, Singh, Seth, Agarwal, & Mathur, (2015) discovered families adopting distinctive coping approaches in their studies in urban slums in Delhi India. Strategies included relying on less expensive foods such as seasonal or local vegetables, limiting portion size of meals and reducing numbers of meals consumed in a day. In order to improve short-term food availability, households borrowed food or loaned cash from friends of relatives, purchased food on credit from private grocery stores, used reserves, and depended on food assistance. In an effort to improve access to food, households ate at religious places, withdrew children from school to save money on the school fees, and also sent them to work. Migration was noted in the case of extreme insecurity.

Norhasmash, Zalilah, Moh Nasir, Kandiah, & Asnarulkhadi (2010) (2010) in Malaysia, Mardiharini (2005) in Indonesia and Agbola (2008) in Nigeria identified that households tended to borrow money from friends and relatives during food insecurity, sell or pawn their own property in order to obtain money and buy food on credit. It is also possible to refer eating at religious places, sending children to eat elsewhere or with neighbors/relatives as food seeking strategies. These strategies were also introduced by Norhasmash, Zalilah, Moh Nasir, Kandiah, & Asnarulkhadi (2010) as part of coping strategies of food insecure families. In Manila, Philippines, poor people borrowed money at high interest rates to feed their families as their daily wages did not cover food, education and utilities (FAO, 2008)

The role of SHG (self help groups) in preventing food insecurity is well documented (Swamy and Tulasimala, 2013). A NGO in Kalahandi, Orissa, formed local SHG where villagers contribute a fixed amount of money and/or food grains every month in order to create local `cash banks' and `grain banks' (Banik, 2007). In times of acute need, any group member may withdraw from the common fund a sum of money or grain. SHGs, thus, reduce poverty and vulnerability of the poor by increasing capital/ asset formation at the household level, enhancing household incomes, empowering women, and improving accessibility of other financial services at the community level.

3. Research methods

Primary data were obtained from survays on urban poor households in Jambi Province. Data collection on samples of households was using questionnaires. Sampling was conducted in two stages. **First stage** is selecting *kelurahan* (urban villages) as research location. Conducted by purposive sampling with approach: 1) Jambi Province has 11 regencies/cities, which are geographically divided into the West and East regions. Two regencies/cities were selected as the representation of West and East regions of Jambi. West region is represented by Jambi City as the only "administrative city" and Tanjung Jabung Barat Regency as the regency with the highest poverty rate. The East region is represented by Sungai Penuh City as the only "administrative city" and Sarolangun Regency as the regency with the highest poverty rate; 2) From each selected regency/city, one *kelurahan* was selected by considering its poverty rate (selecting the highest poverty rate). **Second stage** is choosing a sample of 50 poor households in each selected *kelurahan*, so the total of sample is 200 poor households. Random sampling was conducted.

Data were analyzed descriptively and analyzed with Structural Equation Modeling-Partial Least Square (SEM-PLS) with the model framework as follows:
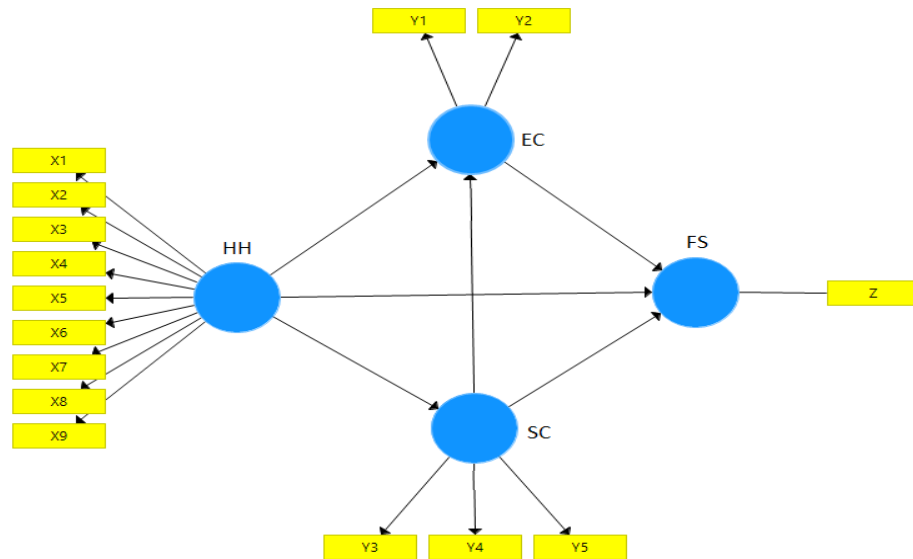
Figure 1. Research model framework

Tabel 2. Definition and measurements of variables

Code	Variable	Definition and measurements
HH	*Characteristics of family*	
X1	Level of education	Level of formal education 1. Elementary school or below 2. Junior high school 3. Senior high school or above
X2	Age of the head of family	Grouped into: 1. <= 29 years old 2. 30 – 39 years old 3. 40 – 49 years old 4. 50 – 59 years old 5. >= 60 years old
X3	Number of household members	Grouped into: 1. 5 persons or more 2. 3 – 4 persons 3. 1 – 2 persons
X4	Gender/Sex structure of household members	Measured by the proportion of male household members to the total household members 1. <= 33,33 per cent 2. 33,33 – 66,66 per cent 3. > 66,66 per cent

X5 – X6	Age structure of household members	X5: The proportion of household members aged 5 years and under (toddlers), grouped into: 1. > 25 per cent 2. <= 25 per cent 3. None X6: the proportion of household members in productive age (15 – 64 years old), grouped into: 1. < 50 per cent 2. 50 – 75 per cent 3. > 75 per cent
X7 – X8	Structure of main activity of household members	X7: proportion of household members who are working 1. > 25 per cent 2. <= 25 per cent 3. None X8: proportion of household members that are students 1. > 25 per cent 2. <= 25 per cent 3. None
X9	Family income per capita	In rupiah per month, grouped into: 1. < 300.000 2. 300.000 – 400.000 3. > 400.000
EC	*Economic coping strategies*	
Y1	generating additional income strategy	The average Likert scale score (on a scale of 1 -5) regarding efforts made in increasing income. Grouped into: 1. Low (average score of less than 2.33) 2. Medium (average score of 2,33 – 3,66) 3. High (average score of more than 3,66)
Y2	cutting back expenses strategy	The average Likert scale score (on a scale of 1 - 5) regarding efforts made in cutting back expenses. Grouped into: 1. Low (average score of less than 2,33) 2. Medium (average score of 2,33 – 3,66) 3. High (average score of more than 3,66)
SC	*Social capital*	
Y3	Trust	The average Likert scale score (on a scale of 1 - 4) regarding elements of trust. Grouped into: 1. Low (average score of less than 2) 2. Medium (average score of 2 – 3) 3. High (average score of more than 3)

Y4	Social network	The average Likert scale score (on a scale of 1 - 4) regarding elements of social network. Grouped into: 1. Low (average score of less than 2) 2. Medium (average score of 2 – 3) 3. High (average score of more than 3)
Y5	Norms	The average Likert scale score (on a scale of 1 - 4) regarding elements of norms. Grouped into: 1. Low (average score of less than 2) 2. Medium (average score of 2 – 3) 3. High (average score of more than 3)
FS	*Food security*	
Z	Level of food security	The levels of household food security are measured by: 1. Food-insecure, if the share of food expenditure is above 60 per cent and energy sufficiency is 80 per cent or less 2. Food-less secure, if the share of food expenditure is 60 per cent or less and energy sufficiency is 80 per cent or less 3. Food-vulnerable, if the share of food expenditure is above 60 per cent and energy consumption is above 80 per cent 4. Food-secure, if the share of food expenditure is 60 per cent or less and energy sufficiency is above 80 per cent (based on a minimum standard of 2,150 kcal per capita per day)

4. Results and discussion

4.1 Characteristics of urban poor households in Jambi Province

The average age of the heads of urban poor households in Jambi Province is 44.54 years. Education level of the head of the household is relatively low, of which more than half (56.50 per cent) has junior high school diploma or below, 42.00 per cent of them have graduated from senior high school and only 1.50 per cent have a diploma or bachelor's degree.

The average number of members of urban poor households (including head of the family) is 4.08 persons, with a relatively balanced proportion between men and women (49.05 per cent of men and 50.95 per cent of women). Based on the age, 11.22 per cent of household members are toddlers (between 0 - 4 years old), 19.70 per cent are 5-14 years old, 65.46 per cent are in productive age (15 - 64 years old) and 3.62 per cent classified as elderly (65 years and above).

In terms of their main activities, 38.18 per cent of household members (including head of the family) are working, 24.50 per cent of them are students, 30.48 per cent of them are managing the household as their main activity, and 6.84 per cent of them are seeking job or other activities. The average family income is IDR. 423,391/capita/month

4.2 Economic coping strategies of urban poor households in Jambi Province

Various strategies are carried out by urban poor households in Jambi Province in fulfilling their needs, both in the context of strategies to generate additional income and cutting back expenses strategies. The analysis of these strategies in this study was assessed based on scale scores of 1 - 5. Furthermore, the strategies were categorized as low if the average score was less than 2.33, moderate with a value between 2.33 - 3.66, and high with an average value above 3.66 (See appendix 1 and 2).

Referring to its strategy score, it can be seen that the efforts made on the two strategies are categorized as being moderate, with the average score for the strategy of generating additional income of 3.09 and the cutting back expenses strategy of 2.74.

In detail, in the strategy of generating additional income there are four strategies in category of high i.e. the head

of the family/mother works harder, is looking for side jobs, starting a small business and planting consumable plants in the garden/land near the house. In the cutting back expenses strategy, there are four strategies in the category of high, i.e. 1). Repairing home or household appliances on their own; 2) Reducing the frequency of trips; 3) Reducing the frequency of purchasing clothes and 4) Reducing the frequency of purchasing household furniture.

4.3 Social capital of urban poor households in Jambi Province

Analysis of social capital in this study was assessed based on a scale score of 1 - 4. Furthermore, social capital is categorized as low if the average value is less than 2, moderate between 2 - 3 and high with an average value above 3 (See Appendix 3)

Referring to the score of social capital, it can be seen that overall, the social capital of urban poor households in Jambi Province is categorized as moderate with a score of 2.78. Based on the elements of social capital, it is seen that elements of social norms are in the category of high with an average score of 3.14. On the contrary, the elements of trust and social networks are in the category of moderate with an average score of 2.87 and 2.56 respectively.

4.4 Food security of urban poor households in Jambi Province

The average share of food for urban poor households in Jambi Province was 65.98 per cent. Furthermore, when if we looked at the proportion of households, more than one third (68.00 per cent) have a share of food in the category of high (the share of food is above 60 per cent of total expenditure). The remaining 37.00 per cent of households are in the low share of food (the share of food is 60 per cent or less of total expenditure). This result affirms Engle's Law of Consumption that it is prevalent for poor households to allocate as much as 60% of their revenue for food, leaving only 40 per cent for other necessities (FAO, 2016).

The average calorie consumption of urban poor households in Jambi Province has not yet reached the expected minimum standard, which is only 66.49 per cent of the standard adequacy of 2,150 kcal per capita per day. Based on the distribution, only 19.00 per cent of households with sufficient consumption are categorized as sufficient ($>=$ 80 per cent of minimum calorie adequacy), and most of the others (81.00 per cent) are in defficient ($<=$ 80 per cent of minimum calorie adequacy).

Based on the share of food and the adequacy of calorie consumption, urban poor households can be classified based on the level of food security. Based on Table 5.3, only 7.50 per cent of households are categorized as food-secure. On the other hand, 56.50 per cent are categorized as food-insecure. In households in food-insecure group, besides having a high share of food expenditure, their calorie consumption is also classified as deficient. Households in the category of food-less secure are 24.50 per cent, in whose, even though the share of food expenditure was low, the calorie consumption was still categorized as low. Furthermore, households in the category of food-vulnerable are 11.50 per cent. In this household, although the consumption of calories is quite sufficient, the share of food expenditure is still relatively high. The results of the study are consistent with the research of Masese and Mula (2016) that found households living in urban at varying levels, with half of the food insecure being moderately food insecure (in this study, food-less secure and food-vulnerable).

Table 3. Urban poor households based on food security in Jambi Province, 2018

Calorie adequacy	Share of food expenditure		Total
	Low	**High**	
Sufficient	Food-secure (4th) 15 (7.50 %)	Food-vulnerable (3th) 23 (11.50 %)	38 (19.00%)
Defficient	Food-less secure (2nd) 49 (24.50 %)	Food-insecure (1st) 113 (56.50%)	162 (81.00%)
Total	64 (32.00 %)	136 (68.00%)	200 (100.00%)

Source: Field survey 2018

4.5 The influence of socio-economic-demograpic characteristics of family, social capital and economic coping strategies on food security in urban poor households

Before carrying out further analysis, an evaluation of the initial model related to the validity and reliability of the indicators in the latent variable (construct) was done. Convergent and discrimination validity tests were used for validity test. Reliability test used two criteria, i.e. composite reliability and cronbachs alpha.

Convergent validity test is done based on the correlation between the item score and the construct score. The indicator is said to be convergingly valid if the correlation (its loading value) >= 0.70. Furthermore, discriminant validity indicators are assessed by looking at the the square root value of average variance extracted (AVE) value of each construct. The square root value of AVE for each construct shows greater than the correlation value between constructs in the model

The reliability test of construct is measured by two criteria, i.e. composite reliability and cronbachs alpha. Both cronbach alpha and composite reliability must be above 0.7. For Cronbach Alpha, value up to 0.6 is still permitted.

Based on the initial model testing it was found that there were two indicators on characteristics of family (HH) and one indicator on social capital (SC) are invalid and unreliable. These are level of education of the head of the family (X1), proportion of male members (X4) and trust (Y3). Those three indicators were removed from the model.

Modified model after eliminating invalid and unreliable indicators is given in the figure 2:
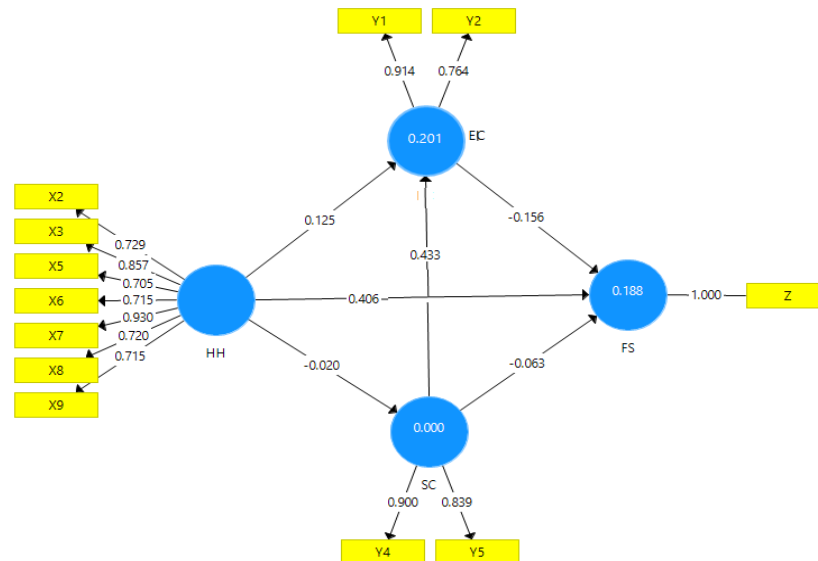

Figure 2. Modified model

Based on Figure 2, it can be seen that the correlation (loading factor) of all construct indicators is above 0.7. The same thing is also seen in the discriminant validity test (Table 4). AVE square root value of each construct shows greater than the correlation value between the construct and other constructs in the model.

Table 4. Correlation between constructs, square root of AVE, cronbachs alpha and composite reliability

| | Correlation | | | | Cronbachs | Composite |
	EC	FS	HH	SC	Alpha	Reliability
EC	1.000	-0.136	0.116	0.431	0.608	0.829
FS	-0.136	1.000	0.389	-0.138	1.000	1.000
HH	0.116	0.389	1.000	-0.020	0.886	0.911
SC	0.431	-0.138	-0.020	1.000	0.683	0.862
square root of AVE	0.8426	1.000	0.7714	0.870		

Table 4. also showed that all variables have composite reliability value of above 0.60. In other words, the model has good reliability.

The relationship between variables can be seen from the parameter coefficient value and significance of t statistics. A relationship is said to be significant if p-value t statistic less than α=0, 01; α=0,05 or α= 0,1 (see figure 3, Table 5 and Table 6).
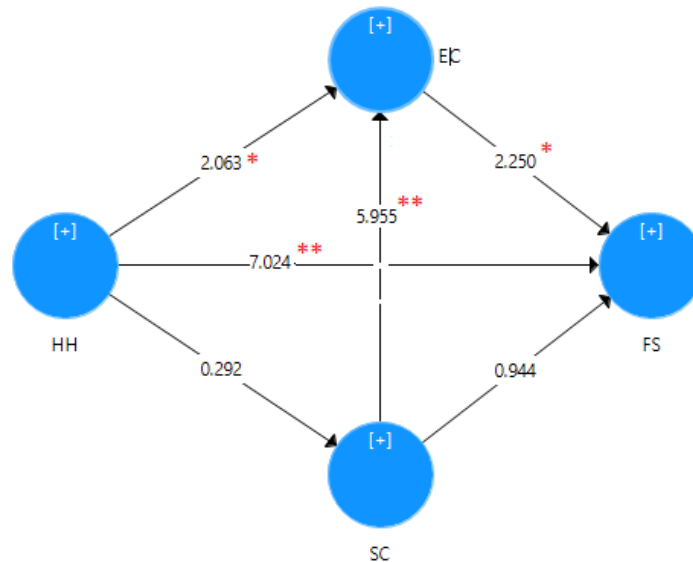
Note: * = significant at α 5%,   ** = significant at α 1%

Figure 3. t-statistics and siginificance of the model

Table 5. Path coeficient of the model

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EC -> FS	-0.156	-0.156	0.065	2.394	0.009
HH -> EC	0.125	0.126	0.061	2.054	0.020
HH -> FS	0.406	0.408	0.056	7.287	0.000
HH -> SC	-0.02	-0.023	0.071	0.279	0.390
SC -> EC	0.433	0.437	0.081	5.363	0.000
SC -> FS	-0.063	-0.062	0.065	0.96	0.169

Based on Figure 3 and Table 5 , it can be seen that the characteristics of family (HH) has a significant direct effect on food security (FS) and economic coping strategy (EC). Economic coping strategy also has a significant effect on food security, but it has a negative direction (see figure 2). Social capital (SC) has a significant direct effect on economic coping strategies (EC). However, SC doesn't have significant direct effect on FS. It means that the initial hypothes that stated social capital directly affects the resiliene of poor households didn't apply to the urban poor.

Indirect effects between variables are given in Table 6. From Table 6 it can be seen that family characteristics also significant indirectly affect food security through economic coping strategies (HH > EC > FS). Selanjutnya, social capital has a significant indirect effect on food security through economic coping strategy (SC > EC > FS).

Table 6. Spesific indirect effect of the model

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
HH -> SC -> EC	-0.009	-0.009	0.031	0.279	0.390
HH -> EC -> FS	-0.02	-0.02	0.013	1.516	0.065
SC -> EC -> FS	-0.068	-0.068	0.03	2.231	0.013
HH -> SC -> EC -> FS	0.001	0.002	0.005	0.25	0.401
HH -> SC -> FS	0.001	0.001	0.007	0.187	0.426

Based on this, it can be stated that, in addition to the importance of the role of family-economic-demographic characteristics, economic coping strategies also have an important role in influencing food security in poor urban households. The effect of this coping strategy, both directly and as a factor that mediates the influence of family characteristics and social capital.

However, it must be realized that the effects of the economic coping strategies of poor urban households have a negative impact on food security. It shows that the economic coping strategy for survival carried out by urban poor communities worsens the condition of household food security.

4.6 Implications

Characteristics of household affect significantly on the level of household food security. Four indicators of household characteristics that determine the level of food security are the education of household's head, the proportion of household members in productive age, the proportion of household members who are working, and household income per capita. The last three indicators refer to household economic condition. In other words, improving economic condition will have an effect to the increase of family food security. However, increasing economic condition will not be significantly importance if it is not supported by the high level of education of household's head.

High level of education of the head of household can be regarded as having better knowledge regarding the nutrition and nutritional food. Therefore, the implication of the studies' finding is that in the context of increasing household food security, it is necessary to increase household knowledge and awareness (especially of the head of household) related to nutrition and nutritional food.

Household characteristics do not affect social capital. The findings indicate that social capital formed in urban communities is not determined by the unique characteristics of household. Nevertheless, social capital directly influences the level of household food security, and indirectly through economic coping strategies. Therefore, the government needs to increase the role of community social organizations in improving the urban communities' social capital.

Economic coping strategies have a significant effect on household food security. However, negative direction indicates that these strategies are not effective in increasing food security. Conversely, the strategies worsen existing conditions.

There are two efforts with highest score conducted by households in the economic coping strategies, namely "the household's head or mother working harder", and "looking for side jobs". The study's findings imply that the creation of better employment opportunities (both for main jobs and side jobs) will be able to improve the urban household's food security.

5. Conclusions and recommendations

5.1 Conclusions

Based on the results and discussion, it can be concluded:

1.   In fulfilling their daily needs, especially food needs, poor households have carried out various strategies,

both for generating additional income and cutting back expenses.

2.   Overall, social capital of urban poor households in Jambi Province is in category of moderate. Based on the element of social capital, it appears that elements of social norms are categorized high. On the contrary, the trust and social network element is categorized as being moderate.

3.   Only 7.50 per cent of urban poor households in Jambi Province are categorized as food secure. The rest are mostly categorized as food insecure (56.50 per cent).

4.   Family characteristics have a significant effect on the level of family food security. Social capital has a significant direct effect on economic coping strategies. However, social capital doesn't have significant direct effect on family food security. Although economic coping strategy has a significant effect on food security, it has a negative direction. It shows that the economic coping strategy for survival carried out by urban poor communities worsens the condition of household food security.

5.2 Recommendations

In increasing the food security of urban poor households, it is recommended that local governments regulate policies to increase household social capital and promote balanced health food patterns for poor households in particular and in urban households in general. Referring to the interrelationships between household characteristics, social capital, economic coping strategies and the level of food security, the main recommendations for policies that could be created by the government specifically are: 1) improving the knowledge and awareness of household's head regarding nutrition and nutrirional food; 2) encouraging community social organizations to be able to play a role in increasing social capital of urban communities; 3) growing employment opportunities for the urban poor.

In addition, to enrich and deepen the study, this study also suggests further research of other socio-economic factors that affect the level of food security of urban poor households.

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