The Effect of E-Warong Accessibility on Household Consumption

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KEYWORDS	ABSTRACT
Accessibility; BPNT; Consumption; Distance; E-warong	BPNT/Sembako is a social assistance program the government provides to improve the welfare of people experiencing poverty by providing food with balanced nutrition and choice and control over food. BPNT/Sembako uses e-wrong as the only distribution. Households must come to e-wrong with a KKS. Because e-wrong is the only place for distribution, e-wrong is very important, including the distance of the e-wrong from the beneficiary's location. However, e-wrong still has a limited distribution. The purpose of this study is to generally investigate the effectiveness of the e-wrong program and specifically investigate the effect of e-wrong accessibility on household consumption, especially rice consumption, taking into account aspects of price and quality of rice, characteristics of other consumer goods, household characteristics, residential area characteristics, local government assistance, and consumption motivation. This study uses 4-month panel data (November 2019-February 2020) of BPNT/Sembako recipients in the March 2020 Susenas and the random effects (RE) approach. The results of the study show that the accessibility of e-wrong has a significant effect on household consumption (rice consumption). The farther the e-wrong is, the higher the consumption of rice.

Introduction

In order to improve people's welfare, the government has issued various policy schemes, including social assistance (bansos). One type of social assistance that the government issues is non-cash food assistance (BPNT). BPNT was launched in 2017 as a substitute for the previous program, the Prosperous Rice Program (Rastra). In 2020, BPNT again changed its name to the Sembako program (Anggoro, 2023). Based on the Regulation of the Minister of Social Affairs (Permensos) Number 20 of 2019 concerning the Distribution of Non-Cash Food Assistance, BPNT is a social assistance whose distribution is non-cash every month to KPM using electronic money stored in the Prosperous Family Card (KKS), which can be used to buy food in electronic cooperation stalls (e-wrong). The amount of assistance provided reaches IDR 110 thousand per month

(2017-2019), IDR 150 thousand per month (January-February 2020), and IDR 200 thousand (starting from March 2020).

The BPNT/Sembako program recipients are referred to as beneficiary families (KPM). In the BPNT program, KPM must spend electronic money at e-wrongs, with the right to choose food ingredients according to their needs. E-Warong is the only official place determined by the government to use this assistance in the form of bank agents, traders and other parties who work with channelling banks (Permensos Number 20 of 2019). Permensos Number 20 of 2019 Concerning BPNT Distribution states that BPNT KPM must spend all funds received at the e-wrong (Article 25 Paragraph 1). It is hoped that the designation of e-wrongs as distribution sites will distribute assistance properly in terms of target, quality, and quality (Anggoro, 2023).

By obtaining BPNT/Sembako, it is hoped that the expenditure burden that households must incur to meet food needs can be reduced, households can obtain food with balanced nutrition and can determine for themselves, according to their needs, the type and amount of food consumed (Permensos Number 20 the year 2019). In addition, it is hoped that there will be accuracy in assisting in terms of the right price, quality, quantity, and administration. KPM, which has received assistance from the BPNT/Sembako Program, can use electronic money to shop at e-wrongs. These expenditures can be made at any time according to the needs of KPM. Various commodities can be purchased using the BPNT/Sembako program, starting from food ingredients sourced from carbohydrates, vitamins, minerals, and protein (General Guidelines for the Sembako Program, 2020).

From various developments in food assistance programs from BPNT and the Staple Food Program, rice is still a maintained commodity and can be purchased using KKS at e-wrongs. Rice is one of the staple foods of Indonesian society. Based on data from the Central Bureau of Statistics (2017), the average national rice consumption in 2017 reached 111.58 kilograms per capita per year. Consumption of rice is still essential, especially for people with low incomes. Based on the results (Kurniawan, 2019) in poor rice recipient households (Raskin), there is a greater allocation of resources in consuming rice and other staples in the poorest household group compared to more prosperous groups.

Data from the Central Statistics Agency (BPS) for 2018 and 2019 regarding the average per capita expenditure per week in rural areas by food commodity and per capita expenditure group per week shows that the proportion of rice expenditure for expenditure groups below IDR 750 thousand holds the most significant amount compared to the proportion of food expenditure other. This proves that rice is still the primary consumption of low-income people.

Meanwhile, the emphasis that rice is still the primary source of carbohydrate fulfilment for low-income people was also conveyed by (Swindells et al., 2019). Among other carbohydrate sources, rice occupies the first portion of the carbohydrate source in household expenditure, which shows that for poor households, rice is still an essential main food ingredient (Swindells et al., 2019).

In addition to rice consumption, which is still a concern of the government, the issue of balanced nutrition and the choice of more types of food consumption are also the main things in the BPNT/Sembako program, as stated in the objectives. KPM is expected to be able to purchase food ingredients in e-wrong according to the needs of each household by ensuring balanced nutritional fulfilment starting from carbohydrates, minerals, vitamins, and protein (Hilmi, 2021).

The goal of the BPNT/Sembako Program is for households to consume food with balanced nutrition and have the freedom to have more excellent choices and control in meeting their food needs. In other words, the BPNT/Sembako Program is expected to increase the amount and variety of KPM consumption. In addition, one of the principles of BPNT distribution is that it is easy to reach and use by KPM (Salim & Darmawaty, 2016).

However, there are several problems in implementing the BPNT/Sembako program using e-wrongs. One of the problems is the location of the e-wrong, which is difficult to access and uneven; for example, e-wrong has a limited range of services because it covers a huge number of areas with an uneven distribution of KPM (Provincial Government of East Kalimantan: 2019), the distribution of e-wrong which is not evenly distributed will hinder the implementation of BPNT (Ministry of Social Affairs, 2019), e-wrongs that are placed without considering distribution and are uneven because e-wrongs are concentrated in one point (Selvia, 2021), e-wrong is challenging to access because of its remote location and narrow road width in Pasir Sari Village, South Cikarang (Nasution et al., 2021), as well as e-wrong in Mugirejo Village, Samarinda City, which are not yet available.

Under conditions in the field, not all stalls, agents, shops, traditional markets and other sellers can obtain e-wrong status. Several criteria must be met in order to become an e-wrong. As a result, the number of e-wrongs is more limited, such as there is 53 thousand KPM with 111 e-wrongs in Kulonprogo in 2019 (Sutanta & Wulandari, 2019), 60 e-wrongs for 29 thousand KPM in Pringsewu in 2021 (Pringsewu District Government, 2021), 27 e-Warongs for four sub-districts in Bangli (Bangli et al., 2020), 59 e-wrongs for the West Jakarta area in 2018 (Provincial Government of DKI Jakarta, 2018), and 8,450 KPM with 12 e-wrongs in Tanjungpinang City (Pramesti et al., 2019). The government targets that for every 250 KPM, there is at least one e-wrong location (BPNT Guidelines 2018).

E-wrong, which is difficult to access and not evenly distributed, must concern the consumption of BPNT/Sembako recipient households. This is important because e-wrongs are the only place for BPNT/Sembako recipient households to disburse assistance obtained by buying food at the e-wrong in order to access staple foods (such as rice), as well as meet the consumption of other commodities (other sources of carbohydrates, animal protein, vegetable protein, vitamins and minerals).

Therefore, it is essential to see the effectiveness of the BPNT/Sembako program by investigating the effect of e-wrong accessibility on household consumption. Moreover, from various literature studies, no research has been found that specifically examines the effect of e-wrong accessibility on household consumption on a national scale using data from the National Socioeconomic Survey (Susenas). Several studies have focused heavily on the effectiveness of implementing the BPNT program with coverage at the sub-district/district/city level and did not focus on distance issues. However, the accessibility problem was mentioned by (Sutanta and Wulandari, 2019) in their research, which attempted to map the distribution network of the BNPT program in the Kulon Progo Regency using a geospatial information system. In his research, it was found that topography and distance have an unequal effect on the distribution network, resulting in more difficult mobility for e-wrongs in the northern part of Kulon Progo, which is dominated by highlands, compared to those in the southern part, which is dominated by lowlands. In general, this study aims to investigate the effectiveness of the e-wrong program. In particular, this study aims to investigate the effect of e-wrong accessibility

on household rice consumption, considering aspects of rice's price and quality, characteristics of other consumer goods, household characteristics, residential area characteristics, local government (panda) assistance, and motivation consumption.

It is hoped that the government can use the results of this study as input material in evaluating BPNT/Sembako policies, especially those related to the obligation to use e-wrongs as a place to buy food by KPM for household consumption. In addition, this research will make a new contribution because, from various literature studies conducted, no research has been found that specifically examines the effect of e-wrong accessibility on household consumption on a national scale using National Socioeconomic Survey (Susenas) data. Several studies have focused heavily on the effectiveness of implementing the BPNT/Sembako program with coverage at the sub-district/district/city level and did not focus on distance issues.

Research Methods

This study uses 4-month panel data (November 2019-February 2020) at the household level throughout Indonesia who are respondents to the National Socio-Economic Survey (Susenas) conducted in March 2020 by the Central Bureau of Statistics (BPS), with details of 42,209 households (November 2019), 44,359 households (December 2019), 40,875 households (January 2020), and 45,399 (February 2020).

In processing panel data, steps will be taken using three panel data methods, namely pooled least squares (PLS), fixed effect (FE), and random effect (RE). After obtaining the regression results, the Chow, Hausman, and Lagrange Multiplier tests will be carried out. The test finds the best choice among PLS, FE, and RE.

The dependent variable in this study is household consumption, as seen from rice consumption. The research model to be used:

ConsB it = β 0 + β 1 AE it + β 2 HB it + β 3 KB it + β 4 ΣKL it + β 5 ΣKR it + β 6 KT it + β 7 BP it + β 8 MK it + ε

Cons B is household rice consumption in November 2019, December 2019, January 2020, and February 2020. Rice consumption originates from purchases/shopping at e-wrongs in kg units.

AE is the accessibility of household I e-wrong (distance) to e-wrong locations in November 2019, December 2019, January 2020 and February 2020, in kilometres (km). β 1 shows changes in rice consumption of beneficiaries of the BPNT/Sembako program due to e-wrong accessibility. The β1 value is expected to be negative because it shows that it is increasingly difficult to access e-wrongs, so rice consumption decreases. HB is the control variable for the price of rice per kg purchased by household I in November 2019, December 2019, January 2020 and February 2020 in rupiah units (Rp). β 2 shows changes in rice consumption seen from the price of rice. KB is the control variable for the quality of rice purchased by household I in November 2019, December 2019, January 2020, and February 2020, in the form of a dummy variable (0 if the quality is not good/poor, 1 if the quality is good). β 3 shows changes in rice consumption seen from the quality of rice.

The next control variable is KL ij, which is characteristic of other consumption goods, including the price of eggs per egg (unit Rp) and the number of eggs (unit items) purchased by household I in November 2019, December 2019, January 2020 and February 2020 using BPNT/ Groceries. β 4 shows changes in rice consumption observed from the characteristics of other consumer goods.

KR is a control variable for household characteristics, including the number of household members (ART), ownership of transportation facilities, ownership of food storage items, education level of the head of the family, household expenditure, the proportion of food expenditure to total household expenditure, and the proportion of BPNT/ Staple food for food expenditure from household I in November 2019, December 2019, January 2020, and February 2020. The number of household members is presented in units of people. Ownership of transportation means is described in a dummy variable (0 if you do not have a means of transportation and 1 if you have a means of transportation). Ownership of food storage items is also presented in a dummy variable (0 if they do not have food storage items and 1 if they have storage items; the storage items are proxied in the form of a refrigerator). Education level of the head of the family in the form of a dummy variable (0 if more than elementary school graduates and 1 if the maximum is elementary school graduates). Household expenditure is presented as household expenditure per month (rupiah). The proportion of food expenditure to total household expenditure is the total household expenditure on food (rupiah) divided by the total household expenditure (rupiah) to produce a number with a range of 0-1. The proportion of the BPNT/Sembako amount to food expenditure is the amount of BPNT/Sembako assistance per month that the KPM receives (rupiah) divided by the total household expenditure for food (rupiah) to produce a number with a range of 0-1. $\beta 5$ shows changes in rice consumption observed from household characteristics.

The next control variable is KT, a characteristic of the residence, seen from the area where households live in November 2019, December 2019, January 2020 and February 2020. This variable is a dummy variable, where there are 2 types of areas, namely cities and villages, with the village being the base. $\beta 6$ shows the change in rice consumption of households living in urban areas compared to rural areas. BP is the control variable for local government (panda) assistance in the past year to the household I in November 2019, December 2019, January 2020 and February 2020 in the form of food social assistance, subsidies, and so on. This control variable uses a dummy variable: 1 if the household I have received local government assistance in the past year, and 0 if not (as a base). $\beta 7$ shows changes in rice consumption seen from ever receiving local government assistance or not. MK is the motivation for household consumption I in November 2019, December 2019, January 2020, and February 2020, namely whether household I determine for himself the type and quantity of commodities purchased. This variable is a dummy variable with 0 if it is not self-determined and 1 if it is self-determined. $\beta 8$ shows changes in consumption of rice/other commodities seen from the consumption motivation.

Results and Discussions

After the Chow Test, Hausman Test, and Lagrange Multiplier Test, it was found that the best method was RE. From these various tests, the RE model was selected to be used in this study. Following are the results of the research analysis using the RE method:

Table 1
Research Results on the Effect of e-Warong Accessibility on Rice Consumption

Variable	Rice Consumption	
	(1)	(2)
Accessibility (Distance) of e-wrong	.0584881 ***	.0164992***

Rice Prices	-.0002994***
Rice Quality	-.3963411***
Characteristics of Other Goods	
Egg Prices	.0009504***
Number of Egg Consumption	.0663821***
Household Characteristics	
Number of Household Members	.1167042***
Ownership of Means of Transportation	-.07309*
Ownership of Food Storage Items	-.2571655***
Education Level of Head of Family	.1085176***
Household Expenses	-7.72e-08***
Proportion of Food Expenditure to Total Household Expenditure	.1069601
The Proportion of the Amount of BPNT / Staple Foods to Food Expenditure	.9256325**
Residential Characteristics	
Other Factors	
Government Assistance	.0010471
Consumption Motivation	-.3128341***

Analysis of the Effect of Accessibility of e-wrong on Rice Consumption

E-wrong accessibility is significant and has a positive direction on rice consumption. Although the distance accessed is getting farther, rice consumption has

increased. This condition aligns with the targets of the BPNT/Sembako program aimed at the poor and vulnerable, where rice is still the main consumption for poor rice recipient households (Raskin). The poorest group of people relatively allocates more resources to consuming rice and staple food compared to the less poor group of people (Kurniawan, 2019). Rice is still the main source of carbohydrates for low-income people, as stated by Hakim et al. (2019). Therefore, there is a tendency that even though access is far away, rice consumption continues to increase.

Analysis of the Influence of Rice Price and Quality, Characteristics of Other Consumer Goods, and Household Characteristics on Rice Consumption

The rice price variable has a significant effect (1% significance level) and a negative direction on rice consumption. This means that the higher the rice price, the rice consumption will decrease. Rice quality also has a significant effect (1% significance level) and a negative direction on rice consumption in all models. This means that improving the quality of rice has the opportunity to reduce rice consumption.

The price of eggs significantly affects rice consumption, with a significance level of 1%, and has a positive association. Regarding the amount of egg consumption, the amount of egg consumption also has a significant effect (1% significance level) in a positive direction on rice consumption. This is in accordance with the research of Dewi & Widiastuti (2016) which stated that eggs are complementary goods to rice.

The number of family members positively and significantly affects rice consumption (1% significance level). This is by the research of (Arief & Kusmaningtyas, 2021). Ownership of transportation facilities also shows a significant effect (10% level of significance) in a negative direction, which means that ownership of transportation facilities tends to reduce rice consumption. Ownership of food storage items (refrigerator) has a significant effect with a significance level of 1% and has a negative direction on rice consumption.

The education level of the head of the family has a significant effect (1% significance level) in a positive direction. Household expenditure shows a significant effect (1% significance level) in a negative direction. The proportion of expenditure on food to total household expenditure does not significantly affect rice consumption. Meanwhile, the proportion of BPNT/Sembako to food expenditure has a significant effect (5% significance level) in a positive direction. An increase in the proportion of aid can increase rice consumption.

Analysis of the Influence of Residential Characteristics and Other Factors (Local Government Assistance and Consumption Motivation) on Rice Consumption

From the results of the study, it was found that there was no significant effect of the area of residence of the BPNT/Sembako recipient households on rice consumption. This condition is different from the results of (Selian & Jannah, 2018) that the area of residence affects carbohydrate consumption. In terms of local government assistance, there is no significant effect of receiving or not receiving local government assistance on rice consumption. Consumption motivation has a significant effect (1% significance level) in a negative direction.

To deepen the analysis regarding the effect of e-wrong accessibility on household consumption, which can determine the type and quantity of commodities purchased by themselves, this study will analyse subsampling. Previously, it could be explained that the main sampling for this study were households receiving BPNT/Sembako in November 2019, December 2019, January 2020, and February 2020 who were respondents to the March 2020 Susenas survey. In the subsampling analysis, an analysis

of the subsampling will be carried out with the following criteria: households receiving BPNT/Sembako in November 2019, December 2019, January 2020, and February 2020, who can independently determine the type and quantity of commodities purchased with details of 7,355 households (November 2019), 7,613 households (December 2019), 7,494 households (January 2020), and 8,201 households (February 2020).

The analysis used panel data random effect (RE) regression on households with a consumption variable dummy = 1. Because it has become a subsampling, the consumption motivation control variable is no longer included as a control variable. Following are the results of the analysis for subsampling (BPNT/Sembako recipient households that can determine the type and amount of commodities purchased) as well as a comparison with the sampling analysis (BPNT/Sembako recipient households):

Table 2

Comparison of Research Results on the Effect of E-Warong Accessibility on Rice Consumption (Sampling and Subsampling)

Variable	Rice Consumption	
	sampling	*Subsampling*
Accessibility (Distance) of e-wrong	.0164992***	.0250645***
Rice Prices	-.0002994***	-.0003444 ***
Rice Quality	-.3963411***	-.3544965***
Characteristics of Other Goods		
Egg Prices	.0009504***	.0008545***
Number of Egg Consumption	.0663821***	.0284931***
Household Characteristics		
Number of Household Members	.1167042***	.1355877***
Ownership of Means of Transportation	-.07309*	-.0152519
Ownership of Food Storage Goods	-.2571655***	-.2636405***
Education Level of Head of Family	.1085176***	.1632062*
Household Expenses	-7.72e-08***	-1.49e-08
Proportion of Food Expenditure to Total Household Expenditure	.1069601	.4090024
The Proportion of the Amount of BPNT / Staple Foods to Food Expenditure	.9256325**	2.879821**
Residential Characteristics		
City	-.0517281	-.2969175***

Other Factors		
Government Assistance	.0010471	-.1646097
Consumption Motivation	-.3128341***	

Analysis of the Effect of Accessibility of e-wrong on Rice Consumption

The results of the sampling and subsampling studies both show that the accessibility (distance) of e-wrongs has a significant effect (1% significance level) and has a positive direction on rice consumption. However, subsampling has a higher coefficient of 0.0250 than sampling, which is only 0.0164. This means there is a more substantial influence of e-wrong accessibility (distance) on rice consumption in the sub-sampling. The effect of e-wrong accessibility (distance) on household consumption appears to be more vital for BPNT/Sembako recipient households, who can independently determine the type and commodity purchased.

Analysis of the Influence of Price and Quality of Rice, Characteristics of Other Consumer Goods, and Household Characteristics on Rice Consumption

Rice price shows a significant effect (1% level of significance) and a negative direction on rice consumption in both sampling and subsampling, with a larger coefficient in subsampling. This shows that rice prices significantly affect household consumption in the subsampling (households receiving BPNT/Sembako, which can determine the types and commodities purchased themselves). Meanwhile, rice quality has a more minor effect on subsampling.

The price of eggs significantly affects rice consumption, with a significance level of 1%. It is positively associated with both sampling and subsampling, with a more significant coefficient in sampling. This means there is a greater effect of the price of eggs on rice consumption in the sampling (BPNT/Sembako recipient households). The same thing happened with the amount of egg consumption, where a more robust effect was seen in the sampling.

Regarding the number of household members, the influence of the number of household members on rice consumption is much greater in the sub-sampling than in the sampling. Meanwhile, in terms of ownership of means of transportation, a significant effect is only shown in the sampling. In subsampling, there is no significant effect of ownership of transportation facilities on rice consumption. Regarding ownership of food storage items, sampling and subsampling have a significant effect (1% significance level) and a negative direction on rice consumption, with a more significant subsampling coefficient. This means that for households receiving BPNT/Sembako, who can determine the type and commodity to buy themselves, ownership of food storage items has a greater influence on rice consumption. The influence of the education level of the head of the family from the sub-sampling on rice consumption was much higher than that from the sampling. In sampling, household expenditure has a significant influence on rice consumption. Different things occur in the subsampling where household expenditure does not significantly affect rice consumption. The proportion of food expenditure in both sampling and sub-sampling did not significantly affect rice consumption. Meanwhile, the proportion of BPNT/Sembako quantities in both sampling and sub-sampling had a significant effect on rice consumption (5% significance level), with sub-sampling having a more significant effect.

Analysis of the Influence of Residential Characteristics and Other Factors (Local Government Assistance and Consumption Motivation) on Rice Consumption

Residential characteristics significantly affect rice consumption in the subsampling (1% significance level). Meanwhile, there was no significant effect (1% significance level) on rice consumption in sampling. Meanwhile, local government assistance did not significantly affect rice consumption for both sampling and subsampling.

Conclusion

The study concludes that the accessibility of e-wrong has a significant influence on household consumption, especially rice consumption. Although the distance between e-wrong is getting farther, rice consumption is increasing, with more potent effects seen in subsampling. This shows that the effect of distance on rice consumption appears to be more vital for BPNT recipient households, which can determine the type and quantity of goods to be purchased. Based on the results of research for sampling (BPNT/Basic Food recipient households), it was found that the price and quality of rice, the price of eggs, the amount of egg consumption, the number of household members, ownership of food storage facilities, the education level of the head of the family, household expenditure, the proportion of the amount of BPNT/Sembako to food expenditure, and consumption motivation have a significant influence on rice consumption. Meanwhile, the proportion of food expenditure to total household expenditure, regional characteristics, and local government assistance did not significantly affect rice consumption.

Meanwhile, based on the results of research on subsampling (BPNT/Sembako recipient households that can determine the type and quantity of goods purchased), it was found that the price and quality of rice, egg prices, the amount of egg consumption, the number of household members, ownership of food storage facilities, the education level of the head of the family, the proportion of the amount of BPNT/Sembako to food expenditure, and the characteristics of the place of residence have a significant influence on rice consumption. Meanwhile, ownership of transportation facilities, household expenditure, proportion of food expenditure to total household expenditure, and local government assistance did not significantly affect rice consumption.

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