



## Using the Theory of Planned Behavior to understand paddy rice farmers' intention to participate in Warehouse Receipt System

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### ABSTRACT

The Warehouse Receipt System (WRS) is one of the tools available for farmers to combat commodity price instability that often happens during harvest season. The WRS Program, complemented by the WRS Subsidy Scheme, has already been implemented in Indonesia for almost fourteen years but with minimum participation from the farmers. To understand why farmers' intention to join the WRS Program is still low, this research uses the Theory of Planned Behavior to understand the low participation phenomenon. This research found that all direct and indirect determinants of intention based on the TPB construct positively affect farmers' intention to participate in the WRS Program. This research also provides suggestions to improve farmers' participation in the WRS Program based on the result of the research. The Government needs to focus on and increase the frequency of information-sharing sessions regarding the WRS Program to improve farmers' attitudes, subjective norms, and perceived behavioral control. The Government is also advised to build more facilities in the WRS Program warehouse to make it easier for farmers to store their commodities in the WRS warehouses, increasing their perceived behavioral control. The Government can also explore other policy instruments besides the WRS Subsidy Scheme to improve farmers' participation in the WRS Program.

*Keyword:*

*Public Policy, Theory of Planned Behavior, Warehouse Receipt System*

### INTRODUCTION

Price instability is one of many significant problems faced by farmers in Indonesia. The prices of agricultural products can be volatile and unpredictable, which makes it difficult for farmers to plan their production cycle. Agricultural prices are subject to market fluctuations,

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influenced by the demand and supply of the agricultural price at a certain period. These fluctuations can cause sudden price increases or decreases, making it difficult for farmers to predict and plan their production and sales. Extreme market fluctuations usually happen during the harvest season. During the harvest season, prices of agricultural products generally drop due to the increased supply in the market, leading to severe price fluctuation, badly impacting Indonesian farmers.

The Indonesian Government has implemented various measures to stabilize commodity prices during harvest. One such measure is to improve post-harvest management. With better post-harvest management, farmers can preserve their commodities better and sell them when prices are more favorable. Better post-harvest management can help to reduce post-harvest losses and increase the value of agricultural commodities. One specific policy from the Indonesian Government to support farmers' post-harvest management is the "Sistem Resi Gudang" (SRG) or Warehouse Receipt System (WRS).

"Sistem Resi Gudang" (Warehouse Receipt System) was introduced in Indonesia through Law No. 9 of 2006, which regulates the storage and trading of commodities in warehouses. The objective of the Warehouse Receipt System in Indonesia is to facilitate the financing of agricultural producers and other commodities by allowing them to use their stored products as collateral for loans. The system is also intended to improve the quality and quantity of the stored products and promote price stability and market transparency. Under the Warehouse Receipt System in Indonesia, licensed warehouses store commodities, and the warehouse receipts issued by licensed warehouse operators are considered negotiable instruments. These receipts can then be traded on the commodity exchanges market, used as collateral for loans with subsidized and non-subsidized interest rates, and endorsed or transferred to other parties.

The implementation of the Warehouse Receipt System in Indonesia is overseen by the Ministry of Trade, which is responsible for issuing licenses to warehouse operators and regulating their activities. The Ministry also regulates and sets the standard for storing and handling the commodities stored in licensed warehouses to ensure the quality and quantity of the stored products. The Indonesian Government then started the "Skema Subsidi Resi Gudang" (SSRG) or Warehouse Receipt System Subsidy Scheme to encourage the use of the SRG by farmers and other agricultural producers in order to support the implementation of the WRS in Indonesia. The interest subsidy scheme provides farmers with affordable financing by subsidizing the interest charged on loans obtained using the warehouse receipts issued by the licensed warehouses. The subsidy covers a portion of the interest charged on the loans, which can help reduce the financing cost for farmers and make it more accessible to them. The Ministry of Trade administers the Interest Subsidy program with the Ministry of Finance. The program subsidizes commercial banks and other financial institutions that provide farmers and agricultural producers with loans using the Warehouse Receipt System.

The SRG and SSRG have already been implemented for 13 years. Despite being implemented for 13 years, the utilization of both programs remained low throughout the years (Gunawan et al., 2019). Based on the recent WR issuance data from the Ministry of Trade, the issuance of WR in one year is less than 1.000, mainly from the paddy rice commodity. While the paddy rice commodity is still the most issued WR commodity until now, the recent trend is quite alarming, with WR issuance for the paddy rice commodity on the decline since 2019. The usage of WRS in paddy rice commodity is very vital, especially in Indonesia. The main reason for that is because not only paddy rice commodity is one of the commodities with frequent price volatility, but it is also the one commodity estimated to be the main livelihood and staple food for most Indonesian people until 2045 (Ruspayandi et al., 2022).

One of the examples of a low usage rate of WRS for paddy rice commodities can be seen in Demak Regency. Demak is one of the paddy rice production centers in Central Java (ranked 4<sup>th</sup> behind Grobogan, Cilacap, and Sragen). Regarding price instability, it is one of the worst in Central Java (2<sup>nd</sup> lowest price of paddy rice grain at huller level and the highest price out of all four leading paddy rice producers in Central Java 2021). With a high production level and price volatility, the WRS usage in Demak should be relatively high in theory, but what happened in real life is the opposite. Despite having two functional WRS Warehouses in Demak in Dempet and Demak subdistricts, those two warehouses only issued 5 WR in 2018-2022, with the last WR in 2021. That is an insufficient number, especially compared to Grobogan, which issued 121 WRS with only one available public warehouse simultaneously.

The low usage of WRS, especially in the case of the Demak Regency, can be categorized as a policy failure. To understand why it happened, the Government needs to understand the policy implementation process of the policy itself, as the success or failure of a policy heavily depends on the implementation phase (Hudson et al., 2019). The bottom-up approach to policy implementation suggests that policymakers need to understand the behavior aspect of actors involved in public policy implementation (Matland, 1995). Policymakers are also advised to identify and engage various stakeholders that represent the diverse interests of the target group so that potential problems can be identified and shared understanding and potential solutions can be achieved (Sabatier, 1986).

Chater (2022) states that policymakers can use behavioral science and psychological tools to understand various stakeholders' diverse interests and behavioral aspects in a policy implementation phase. While (McKnight et al., 2005) suggest that the role of psychological and behavioral science is generally related to policy analysis and evaluation of its evidence. Hence, implementing behavioral public policy in the context of understanding why the WRS policy fails to achieve its target becomes relevant.

One of the psychological tools often used to understand farmers' decision-making process with their response to government policies, such as the WRS Program, is the Theory of Planned Behavior (TPB) (Burton, 2004). TPB is the improvement of the Theory of Reasoned Action (TRA) proposed by Fishbein & Ajzen (1975). It adds one more determinant, the perceived behavioral control (PBC), towards two already existing direct determinants of behavioral intention (BI), attitude (ATT), and subjective norm (SN). Each of the direct determinants is affected by the salient beliefs of the direct determinant. The effect of the PBC itself is still heavily debated, with recent research such as research done by Barbera & Ajzen, (2020) and La Barbera & Ajzen, (2021) suggesting that the PBC has a moderating effect on the relationship between ATT and SN to BI. Nevertheless, some recent research also suggests no moderating effect of PBC on the relationship of ATT to BI and SN to BI (Hagger et al., 2022).

This research will use the TPB to understand the intention of paddy rice farmers in Demak Regency to participate in the WRS Program. The TPB is chosen because it is one of the best tools for understanding farmers' behavior (Noeldeke et al., 2022). In general, understanding policy implementation using behavioral science is still minimally used, especially in the context of the WRS Program in Indonesia. By understanding the behavioral aspect in the process of farmers' decision-making regarding their participation in WRS Program, Indonesian policymakers can use this research to improve the usage of WRS so that the WRS Program can achieve its intended target.

## METHODS

The research approach used in this study is the positivism approach. This research tests whether several hypotheses based on the TPB can be applied to explain farmers' intention to participate in the WRS Program in Demak. The data used in this study is primary data collected using a questionnaire administered to farmers selected as a sample of this study. The questionnaire used in this study is printed on paper and uses Bahasa Indonesia, as most farmers can only use Bahasa Indonesia or Bahasa Jawa in their daily interactions. To ensure the validity and reliability of the questionnaire, a pilot test is conducted before administering the final questionnaire. 30 random farmers with sufficient knowledge regarding the WRS Program are selected, and all indicators are valid and reliable.

### Population and Sampling

The population of this study is paddy rice farmers with potential and access to the WRS Program in Demak who have not participated in the WRS Program. Based on the intercensal agricultural survey in 2018, the total number of paddy rice farmers in Demak is 87.446 people. As there are only two WRS licensed warehouses in Demak, and based on the historical data, the only farmers that have participated in the WRS Program come from Demak and Dempet Subdistrict, the population of this study is paddy rice farmers from Demak and Dempet Subdistrict. The Sampling method used in this study is non-random sampling, with farmers participating in the data collection session held in both subdistricts selected as the sample of this study. The sampling breakdown of this study can be seen in Table 1.

**Table 1. Sampling Breakdown**

No.	Subdistrict	Farmers Population	Sample Selected
1.	Demak	6.236	69
2.	Dempet	7.414	81
	Total	13.540	150

Source: Processed Primary Data

This research uses the minimum sample calculation developed by Kock & Hadaya (2018), using the gamma-exponential method to determine the minimum sample size estimation before the data collection and analysis began. The sample used in this study is 150, while the minimum sample required based on above mentioned method is 146.

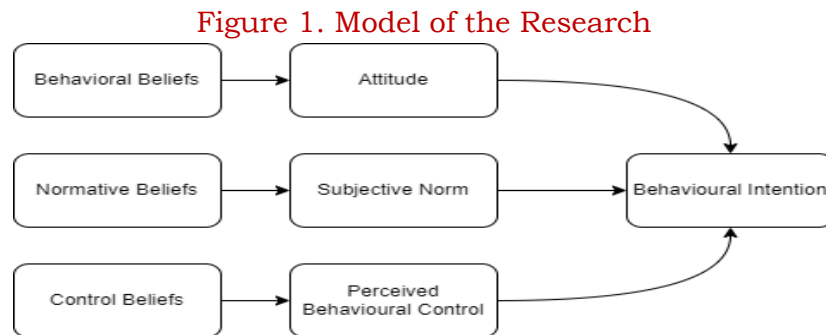
### Data Analysis Method

This research employs two analytical methods: descriptive statistics and PLS-SEM. Descriptive statistics are used to reach a conclusion regarding a particular group (Black, 2019). PLS is a multivariate analysis using a statistical procedure to analyze multiple variables simultaneously. PLS-SEM is regularly called path modelling and is mainly used to develop exploratory research theories (Hair et al., 2017). The PLS-SEM is explicitly chosen because it is one of the most used analyses to test the TPB, especially regarding farmers' behavior (Sok et al., 2021). The PLS-SEM analysis is conducted using the SmartPLS4 application version 4.0.9.2.

## RESULT AND DISCUSSIONS

Based on the Theory of Planned Behavior and adhering to the result of the study conducted by Hagger et al. (2022), this research uses PBC as a direct determinant of farmers'

attitude with no moderating effect on attitude and subjective norm. Hence the model of TPB used are as follows:



Several empirical studies conducted regarding the direct determinant effect of intention (ATT, SN, PBC), especially in the context of farmers participation on agricultural program suggest that the more favorable their attitude toward certain behavior, the more social pressure they get, and the easier they perceive in doing a certain behavior, the more their intent toward doing the behavior (Daxini et al., 2019; Empidi & Emang, 2021; Mohr & Köhl, 2021; Rezaei et al., 2018). Hence the first three hypotheses of this study regarding the effect of the direct determinant of TPB are as follows:

H1: The intention of farmers to participate in WRS is positively correlated with their attitude regarding participation in WRS.

H2: The intention of farmers to participate in WRS is positively correlated with their subjective norm regarding participation in WRS.

H3: The intention of farmers to participate in WRS is positively correlated with their perceived behavioral control regarding participation in WRS.

One of the good practices of TPB research is identifying influential behavior, normative and control beliefs that cause direct determinants of TPB (Sok et al., 2021). Beliefs are indirect measures that may cause a change in the direct determinant (Coltman et al., 2008). In the context of farmers' participation in agricultural programs, several TPB researchers incorporate beliefs into TPB and found a positive correlation between beliefs and direct determinants of TPB (Noeldeke et al., 2022; Senger et al., 2017). Hence, the hypotheses regarding the effect of beliefs toward direct determinants of TPB are as follows:

H4: Farmers' attitude regarding participation in WRS is positively correlated with behavioral beliefs.

H5: Farmers' subjective norm regarding participation in WRS is positively correlated with normative beliefs.

H6: Farmers' perceived behavioral control regarding participation in WRS is positively correlated with control beliefs.

### Respondent Profile

The respondent of this study consisted of 150 farmers from Demak and Dempet subdistricts participating in the data collection session. The descriptive statistics of the respondent can be seen in Table 2. As shown in Table 2, farmers who participated as respondents are dominantly male, aged 46-60, indicating an aging population. Most of them are elementary, junior high, and senior high graduates with high farming experience. All of them are part of the farmers' group, and most are members of a farmers' group.

Table 2. Descriptive Statistics

Aspect	Total Numbers	Percentage
Sex		
Male	141	94%
Female	8	6%
Age (in years)		
16-30	5	3%
31-45	47	31%
46-60	82	55%
>60	16	11%
Education		
<SD	12	8%
SD	37	25%
SMP	46	30%
SMA	43	29%
S1	12	8%
S2/S3	0	0%
Farming Experiences (in years)		
<5	13	9%
5-9	14	9%
10-15	50	33%
>15	73	49%
Role in Farmers Group		
Leader	23	15%
Caretaker	22	15%
Member	105	70%

Source: Processed Primary Data

### Measurement of the Model

This study based its questionnaire on the questionnaire developed by Fishbein & Ajzen (2010), which is reflective; hence the assessment of reflective measurement model is used. As the model is reflective, the algorithm and bootstrapping used in the SmartPLS application are consistent. Assessment of reflective measurement models consists of internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2017). Internal consistency reliability can be tested using Cronbach's Alpha. The Cronbach's alpha of each latent variable of this study is above the recommended value of 0.708, as suggested by Hair et al. (2019). Besides Cronbach's Alpha, another tool that can be used to measure internal consistency reliability is composite reliability, with a value between 0.6-0.95 can be considered acceptable (Hair et al., 2019). This study also fulfills the composite reliability recommended value with all values in the acceptable range.

The convergent validity test can be done by viewing the Average Variance Extracted (AVE) value, which should be more than 0.50. Aside from that, the size of standardized outer loading also has to be at least 0.708. (Hair et al., 2017). All the above criteria are met, as can be seen in Table 3. Another thing that needs to be checked is discriminant validity, which can be checked using the cross-loading value lower than its outer loading, the Fornell-Larcker Criterion, and the Heterotrait Monotrait Ratio (HTMT). All of the values of this research model met all the criteria needed as can be seen on Table 4. and Table 5.

**Table 3. Loading, Cronbach's Alpha, Composite Reliability, and AVE**

Variable	Measurement Item	Loading	Cronbach's Alpha	Composite Reliability	AVE
Attitude	ATT 1	0.866	0.916	0.916	0.733
	ATT 2	0.869			
	ATT 3	0.851			
	ATT 4	0.837			
Subjective Norm	SN 1	0.749	0.858	0.854	0.594
	SN 2	0.732			
	SN 3	0.740			
	SN 4	0.855			
Perceived Behavioral Control	PBC 1	0.839	0.909	0.909	0.714
	PBC 2	0.833			
	PBC 3	0.857			
	PBC 4	0.849			
Intention	I 1	0.874	0.928	0.928	0.763
	I 2	0.806			
	I 3	0.906			
	I 4	0.905			

Source: Processed Primary Data

**Table 4. Fornell-Larcker Criterion**

	ATT	SN	PBC	BB	NB	CB	I
ATT	0.856						
SN	0.231	0.771					
PBC	0.800	0.120	0.845				
BB	0.722	0.275	0.69	1.000			
NB	0.354	0.570	0.319	0.443	1.000		
CB	0.468	0.257	0.547	0.614	0.574	1.000	
I	0.835	0.302	0.841	0.754	0.410	0.514	0.874

Source: Processed Primary Data

**Table 5. HTMT**

	ATT	SN	PBC	BB	NB	CB	I
ATT							
SN	0.230						
PBC	0.800	0.121					
BB	0.722	0.271	0.693				
NB	0.354	0.566	0.319	0.443			
CB	0.468	0.254	0.547	0.614	0.574		
I	0.835	0.298	0.841	0.755	0.411	0.513	

Source: Processed Primary Data

### Assessment of Structural Model

The first step to assess the structural model is determining the Variance Inflation Factors (VIF) to ensure no collinearity. The desired value for VIF is <3, with a value above five that can be categorized as probable and critical collinearity issues. The VIF value of each correlation tested in this study is no more than 5. The next step is to determine the R square and Q square values, and also using PLSpredict, in order to test the explanatory power and out-of-sample predictive power (Hair et al., 2019) The R square for this study is 0.805, which is considered substantial and as it is below 0.90 or higher, it does not belong to the overfit category. The Q square result is the result of blindfolding using seven omission distances. The result of the Intention Q square is 0.570, which is a value depicting a large predictive accuracy of the PLS path model. The last one is using PLSpredict to measure predictive power. As shown in Table 6., half of the results of the PLS-SEM analysis have a lower predictive error

in terms of RMSE or MAE compared to the LM value of each indicator. It means that the model presented in this research has medium predictive power.

**Table 6. PLSPredict Result**

Measurement Item	Q <sup>2</sup> predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
ATT 1	0.377	1.222	0.965	1.254	0.983
ATT 2	0.383	1.184	0.912	1.218	0.926
ATT 3	0.361	1.165	0.945	1.189	0.966
ATT 4	0.369	1.185	0.935	1.217	0.956
SN 1	0.213	1.101	0.907	1.112	0.916
SN 2	0.161	1.246	0.989	1.247	0.990
SN 3	0.159	1.209	0.966	1.215	0.975
SN 4	0.207	1.272	1.026	1.275	1.028
PBC 1	0.174	1.201	0.946	1.069	0.823
PBC 2	0.238	1.253	1.000	1.165	0.941
PBC 3	0.191	1.226	1.003	1.100	0.898
PBC 4	0.233	1.234	1.993	1.180	0.941
I 1	0.362	1.263	1.002	1.220	0.949
I 2	0.326	1.305	1.044	1.229	1.012
I 3	0.357	1.247	1.030	1.213	0.985
I 4	0.409	1.157	0.922	1.109	0.875

Source: Processed Primary Data

The next step in assessing the structural model can be done using consistent PLS-SEM bootstrapping to test the hypotheses proposed previously in this study. The Hypotheses testing can be seen in Table 7.

**Table 7. Hypotheses Testing**

Hypot heses	Relationship	Direct effect	Indirect effect	Total effect	t-value	P-value	Support ed
H1	Attitude->Intention	0.437		0.437	3.000	0.003*	Yes
H2	Subjective Norm->Intention	0.145		0.145	2.234	0.026*	Yes
H3	Perceived Behavioral Control->Intention	0.504		0.504	3.897	0.000*	Yes
H4	Behavioral Belief->Attitude	0.722		0.722	20.401	0.000*	Yes
	Behavioral Belief->Intention		0.316	0.316	2.876	0.004*	
H5	Normative Belief->Subjective Norm	0.570		0.570	9.040	0.000*	Yes
	Normative Belief->Intention		0.080	0.080	2.028	0.043*	
H6	Control Belief->Perceived Behavioral Control	0.547		0.547	9.965	0.000*	Yes
	Control Belief->Intention		0.275	0.275	3.550	0.000*	

N=150, \*p<.05.

Source: Processed Primary Data

## Discussion

Based on the statistical analysis presented above, it can be concluded that all of the research hypotheses (H1-H6) are accepted, which is in line with the TPB itself. The highest path coefficient is the ATT -> I, followed by PBC -> I, and SN -> I, which is consistent with majority of the findings of research conducted regarding farmers' behavioral intention toward government agricultural program (Akpan & Udoh, 2016; Daxini et al., 2019; Senger et al., 2017), and specifically, in line with previous research conducted to examine TPB construct in the context of WRS participation in Indonesia (Widodo & Sholichah, 2018).

The positive correlation between farmers' attitudes and intentions indicates that farmers' evaluation of the WRS Program influences their intention to participate in the WRS Program. The more favorable farmers evaluate the participation in the WRS Program to be, the higher their intention to participate in the WRS Program. In the case of this research, it



means that, in general, even farmers without previous experience in participating in the WRS Program have a positive image of the WRS Program itself. This result is in line with Widodo & Sholichah (2018) result, which states that non-warehouse farmers believe that the WRS will improve their farming conditions.

The positive correlation between farmers' subjective norms and intentions shows that social pressure perceived by farmers affects their intention to participate in the WRS Program. The greater they think they are pressured by society, the higher their intention to participate in the WRS Program. This result is in line with Widodo & Sholichah (2018) findings regarding the subjective norm effect towards intention in the context of the WRS Program participation in Indonesia, especially as they also find peer pressure from other farmers and encouragement to participate in the WRS Program come from their fellow farmers.

One of the interesting results of this research is that the subjective norm is very lowly correlated to intention. This phenomenon can be explained using the explanation given by Barbera & Ajzen (2020) who postulate that non-significant interaction between subjective norm and attitude can be caused by the individualistic nature of the behavior itself. In this context, the participation of farmers in the WRS Program is individualistic. With that, the behavior of participating in the WRS Program can be argued to be individualistic and not depend on others.

The positive correlation between farmers' perceived behavioral control and intention suggests that the more they think they have sufficient skill, abilities, time, and other resources to participate in the government agricultural program such as the WRS Program, the greater their intention to participate in it. Previous research has supported this argument (Daxini et al., 2019; Fikadu et al., 2022). Perceived behavioral control also has the highest path coefficient toward the intention. Madden et al. (1992) stipulate that perceived behavioral control plays a dominant role in determining the intention of a particular behavior when participation in that behavior is perceived to be quite tricky. The more straightforward farmers' perception of doing a specific behavior, the more likely farmers will engage in said behavior (Fikadu et al., 2022). Quantity and quality requirement and extra added cost to participate in the WRS Program is one reason why the WRS participation is still low with farmers still perceive participating in the WRS Program requires long and procedural steps (Hidayah et al., 2019).

All salient beliefs (behavioral, normative, and control beliefs) correlate highly positively to their respective direct determinants. The low value of the R square in the interaction of normative belief -> subjective norm and control belief -> perceived behavioral control means that more salient beliefs explain the relationship between the two and are still not included in the models. To elicit more behavioral, normative, and control beliefs, Sok et al. (2021) suggest that a pilot study is conducted before the main study, so the researcher can capture the true salient beliefs happening in the targeted research population.

Based on the above findings, this study may yield some policy recommendations for improving Indonesia's WRS Program implementation phase. First, in order to improve farmers' attitude toward participating in the WRS Program, the Government need to hold more information-sharing sessions focusing on the benefit of the WRS Program (increased price, increased quality, ease of selling, and ease of funding access) not only to farmers but also to several stakeholders of the WRS Program in the local governments. Holding information-sharing sessions will improve farmers' understanding of the program and generate word of mouth regarding the requirement and benefits of participating in the WRS Program. This program will improve farmers' attitudes and create social pressure that will positively affect farmers' intention to participate in the WRS Program. Even with a low positive

correlation between subjective norm and intention, those correlations are not to be underestimated, and subjective norm may play an essential role despite their weak main effects (Barbera & Ajzen, 2020).

Second, the Government must also address the lack of farmers' self-confidence in participating in the WRS Program. A handful of research has already pointed out that farmers still perceive participating in the WRS Program as a long and winded procedure. This problem cannot be solved by only holding information-sharing sessions. The Government also needs to improve the WRS facilities, especially the facilities of the WRS Program licensed warehouse. In Demak, the warehouse is functional but lacks processing machinery, such as Rice Milling Unit (RMU), and is hampered by under capacity dryer machine. This condition makes farmers interested in participating in the WRS Program change their minds because they must dry and mill their commodities. It makes them choose to sell their paddy rice grain to local middlemen at a relatively low price but in an effortless procedure. A one-stop WRS warehouse equipped with RMU and a dryer with sufficient capacity will ensure that the farmers will meet the minimum quantity and quality criteria to participate in the WRS Program, which will positively affect their confidence in participating in the WRS Program. An effort has been made to supply farmer groups with dryers and RMU via another government policy conducted by the Ministry of Agriculture. However, this policy does not target the WRS warehouse already operating in Demak. Better stakeholders coordination needs to be implemented so that the Government's policy can be better synergized.

Third, the Government needs to make sure that there are sufficient policy instruments to support the WRS Program itself. Currently, the main policy instrument available to support the WRS Program is the WRS Subsidy Scheme. Right now, the utilization rate of the WRS Subsidy Scheme itself is meager, especially compared to similar interest subsidy schemes such as the Kredit Usaha Rakyat (KUR). While we cannot automatically judge that The WRS Subsidy Scheme itself is also a failure, previous research has already stipulated that economic incentives only tend not to affect behavioral changes (Voorberg et al., 2018). It also means that The WRS Subsidy Scheme is insufficient to support the WRS Program. The Government can explore other policy instruments such as the sermon mentioned in the first policy recommendation and a new kind of policy instrument called the nudge. The Nudge is a policy instrument designated to alter the intended target's behavior without forbidding or giving them any incentives (Thaler & Sunstein, 2021). In order to improve the attitude and perceived behavioral control of farmers, a nudge with information and pictures showing the benefits, procedures, and requirements of the WRS Program can be shown and marketed regularly. To improve the subjective norm, a different kind of nudge with additional social comparison suggests that farmers participating in the WRS Program have achieved all the benefits of the WRS Program. Another form of nudge can also be explored based on specific characteristics of the farmers with the cooperation of the local governments.

## **CONCLUSION**

Our research on paddy rice farmers in Demak suggests that the TPB can be used to predict factors affecting farmers' intention to participate in the WRS Program. Farmers' attitude, subjective norm, and perceived behavioral control positively affect farmers' intention to participate in the WRS Program. Aside from that, each of the salient beliefs of farmers' attitude, subjective norm, and perceived behavioral control directly affect attitude, subjective norm, and perceived behavioral control, and indirectly affect farmers' intention to participate in the WRS Program. Based on that, the Government need to hold information sharing sessions with all the WRS Program stakeholders to increase farmers' attitude and subjective

norm, build more facilities to support the WRS Program, and explore other policy instruments aside from the WRS Subsidy Scheme to support the WRS Program. Further research with randomized and more exhaustive sampling can be employed to improve the predictive power of the models, especially for the out-of-sample predictive power. A pilot study to extract a better and richer salient belief can also be conducted to improve the model further. Adding background factors per the guidelines stipulates by Sok et al. (2021) can also enrich the model.

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