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Case Study

Supporting Factors for Community Participation in The Waste Bank Program: A Study in Sleman Regency of Indonesia

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A B S T R A C T

The waste bank is one of the methods used by the Government of Sleman Regency, DIY, to solve the waste problem. However, citizen participation to be active as customers in the waste bank is still lacking. For this reason, a study was conducted to find out what factors affect the level of activity of citizens in depositing waste into the waste bank. The research uses The Theory of Planned Behavior, coupled with factors: knowledge of how and what and knowledge of consequences. Data was collected through interviews with several bank administrators and customers using questionnaire. Respondents were selected by purposive sampling from 11 waste banks. The analysis method uses multiple linear regression by testing the significance of the regression model, the coefficient of determination, and the partial effect test of each variable. The results showed that attitudes, subjective norms, perceived behavioral control, knowledge of how and what, and knowledge of consequences simultaneously affected 73% of the intention. Among the five independent variables, only the perceived behavioral control has no partial effect. The study also showed that the intention had a significant effect on the waste bank's active behavior with a coefficient of determination of 63%.

INTRODUCTION

Yogyakarta Special Region (Daerah Istimewa Yogyakarta, DIY) is one of the provinces with a population of 3,842,932, with a population of Sleman Regency reaching 1,219,640 [1]. Along with the increasing population growth, the volume of waste has also increased significantly. The amount of waste in the Sleman Regency reaches 8000 m3/day, of which 60% of the total is plastic waste [2].

The large volume of waste is a problem in itself for the local government. So far, most of the waste generated in 3 districts or cities in DIY is disposed of at Tempat Pembuangan Sampah Terpadu (TPST) or landfills Piyungan. The volume of trash disposed of at TPST reaches 600 tons per day [3]. However, over time, the capacity of TPST Piyungan decreased. Residents around the TPST also often block access to the TPST because of the accumulated garbage, and the roads to the location are damaged. This condition cannot be tolerated, so it is necessary to make efforts to reduce the volume of waste disposed of at the TPST. The Head of the Indonesian DIY Ombudsman Institute, Budhi Masthuri, said that there should be groups in the community who care about waste management facilitated by the local regency/municipal government [4]. The waste bank program initiated by the government and outlined in the Regulation of the Minister of the Environment of the Republic of Indonesia Number 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse, Recycle through the Waste Bank, is one way of reducing waste disposed of at TPST or landfills. A waste bank is a place for sorting and collecting waste that can be recycled and reused, which has economic value. In this program, citizen participation is absolutely necessary. However, of the 286 waste banks, only 178 are operating. Several garbage banks have closed due to low citizen participation. For this reason, research is conducted on factors that can encourage residents to participate in waste bank activities so that related parties can make policies by paying attention to these factors.However, the involvement of residents in waste banks is still low, so it needs to be improved.

According to information from Dinas Lingkungan Hidup (DLH) Sleman Regency, there were 272 waste banks spread across all sub-districts in Sleman. After the survey, many waste banks are inactive or even closed. Among 272 waste banks, only 178 are operating [5]. Several waste banks have closed due to low community participation. Research on waste banks that continue to operate due to intensive citizen involvement can be carried out as lessons to revive a waste bank that has been closed or to open a new waste bank. For this reason, research is conducted on factors that can encourage residents to participate in waste bank

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activities so that related parties can make policies by paying attention to these factors.

To examine the reasons why residents are motivated to be active in waste banks, behavioral research can be conducted. A study of this behavior can be used as a reference to find out what factors influence someone to be active in a waste bank, so that it can become a recommendation for the district government, DLH, and local waste bank managers to motivate residents to be active in the waste bank.

Theory of Planned Behavior (TPB) is a theory that studies human behavior [6]. TPB is widely used in various research fields such as entrepreneurship [7] - [9]; household waste management [10] - [12]; energy conservation [13]; shopping behavior [14], [15]; green product purchasing [16]; and others. In TPB, a person's behavior is preceded by intention. The intention is influenced by three factors: attitudes, subjective norms, and perceived behavioral control [17]. Corbett argues that the TPB is quite good at describing human behavior models in some cases because the three independent variables can explain 30% to 50% of the variance of intentions.

According to [18], to study certain behaviors, it is necessary to add other variables. Ittiravivongs added socio-demographic, economic, and situational variables [19]. Other variables that can be added to the model are personal norms, self-identity, past experiences, or information [17]. Gadiraju added variables of past experience, inconvenience, knowledge of how and what, and knowledge of the consequences to examine the behavior of recycling waste among students [20]. The results of his research concluded that the factors of knowledge of how and what and knowledge of the consequences had a significant effect that was more dominant than attitudes, subjective norms, and perceived behavioral control. Tonglet et al. also concluded that the knowledge of the consequences is also a significant predictor of waste recycling behavior [21].

Concerning waste management through waste banks, Lestari et al. [22] concluded that attitudes towards waste banks and knowledge about waste management correlate significantly with involvement in waste banks. Astuti et al. write that attitudes, perceived behavioral control have a significant effect on the intention to join and be active in a waste bank [23]. Meanwhile, in [24], it is stated that knowledge about waste influences attitudes towards waste management, then attitudes affect waste management behavior.

Theory of Planned Behavior

Theory of Planned Behavior (TPB) is one of the most potent socio-psychological methods for predicting a person's behavior. There have been many studies related to action in various fields using the TPB approach. The three independent variables contained in TPB, namely attitudes, subjective norms (SN), and perceived behavioral control (PBC), have so far been able to explain 30-50% of behavioral intention variance on average [17]. This intention then encourages someone to behave. Intention describes how strongly a person intends to try or how much effort is planned to be made to realize specific behavior, whereas behavior is an act or human action. Because TPB treats behavior only under individual control, it is appropriate to use TPB to predict behavior that is based on will and awareness and requires skills or resources.

Attitude is an independent variable in TPB, which is the most important predictor of behavioral intention [25]. Some researchers recommend measuring two types of attitudes, namely instrumental attitudes, which describe whether a person considers certain behaviors to be desirable or valuable, and affective attitudes, which indicate whether an action is deemed to be pleasant or attractive.

The second variable that forms behavioral intentions in TPB is the subjective norm. Subjective norms refer to the perceived social pressure to do or not perform a behavior [26]. According to Armitage & Conner [27], the subjective norm is the weakest component that influences the two others. Out of 185 studies, the average contribution of attitudes in predicting behavioral intentions is 0.49, while the average the correlation of subjective norms and intentions is 0,34.

Regression Method

Much research in engineering, science, or society is intended to study or analyze the relationship between two or more variables. The statistical method used to model and explore the relationship between related variables non-deterministically is called regression analysis [28]. There are many applications of regression analysis where there is more than one independent variable or predictor. Regression models with more than one predictor variable are called multiple regression models.

The multiple regression models are expresssed as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_j + \varepsilon \quad (1)$$

Parameter β_k is called the regression coefficient which causes the change in the response variable Y due to the change per unit X_j, assuming the other predictor variables are constant.

There is relatively little research on intention and participation behavior in waste banks using TPB, which is different from waste management behavior. The influence of attitude and PBC on the intention to participate in the waste bank was carried out by Person A, while it did not find the impact of knowledge except in general waste management. This study includes the knowledge variable as an independent variable in the TPB model. This study aims to analyze the factors that influence citizens to participate in the waste bank. Participation in this study means the behavior of depositing waste into the waste bank. Theory of Planned Behavior is used to study the factors that influence behavior and how and what and knowledge of the consequences as used in research [20]. This study uses multiple linear regressions to analyze the effect of independent variables on intention.

METHOD

The conceptual research model is based on the TPB coupled with the variable knowledge of how and what and knowledge of the consequences. In the basic TPB model, the variables that influence intention include attitude (X1), PBC (X2), and SN (X3). In this study, the variable Knowledge of How and What (X4) and Knowledge of Concequencies (X5) were added as variables that affect intention. The addition of these two variables is based on Gadiraju's research on the behavior of recycling waste, where both are variables that are significant predictors of recycling behavior [20]. Next, it is continued to examine the influence of intent to participate in a waste bank on their

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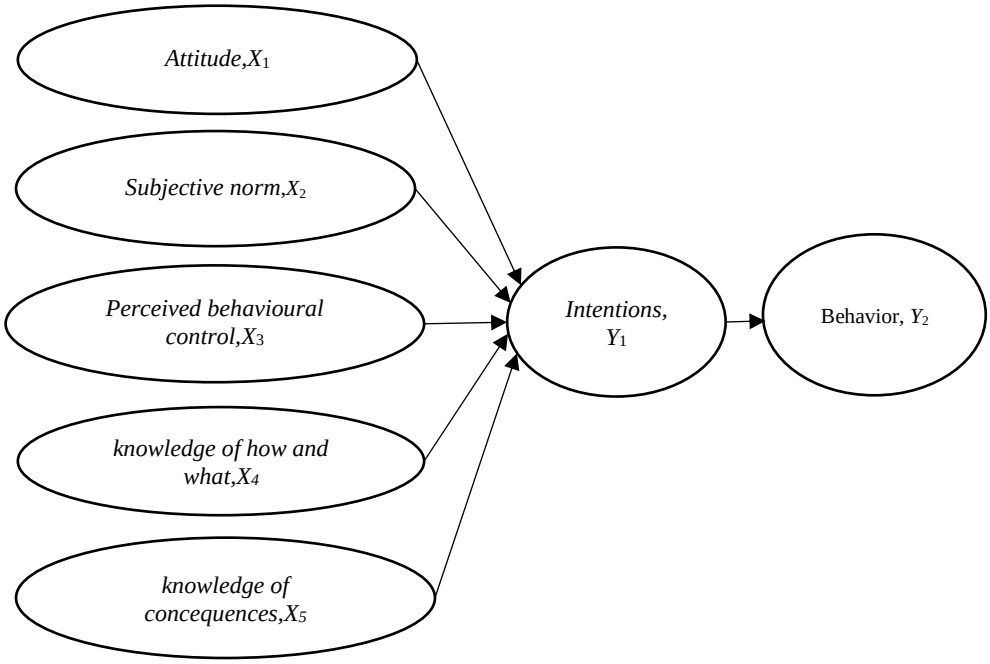


Figure 1. Conceptual Model

behavior. In this case, the researcher wants to investigate how much the intention is to encourage residents to participate in the waste bank finally. The proposed conceptual model can be seen in Figure 1.

Data collection was carried out using a questionnaire with active respondents as members of the waste bank. The questionnaire was developed based on the indicators in [29], [30], and [31] for attitude and PBC variable; [32] and [33] for PBC variable; [34] and [20] for Knowledge of How and What variable; [20] and [35] for Knowledge of Concequencies variable; [36] and [37] for intention variable; and [38], [35], [29], [39] for behavior variable. The minimum number of respondents is five times the number of question items [40]. In this research, the number of question items is 46. So the minimum amount of respondents is 230 (5x46). Respondents were selected using a purposive sampling technique from 11 waste banks. The selected respondents are members of the waste bank who routinely deposit garbage to the waste bank. According to the number of active members, the number of respondents per waste bank ranged from 15-25.

The research hypothesis is as follows:

H1 : attitudes, subjective norms, perceived behavioral control, knowledge of how and what, knowledge of the consequences simultaneously have a significant effect on citizens' intentions in waste bank activities.

H2 : attitudes towards waste banks have a positive and significant impact on the intention of citizen participation in waste bank activities.

H3 : subjective norms have a positive and significant effect on the intention of citizen participation in waste bank activities.

H4 : perception of behavior perceived behavioral control has a positive and significant impact on intention of citizen participation in waste bank activities.

H5 : knowledge of how and what has a positive and significant effect on the intention of citizen participation in waste bank activities.

H6 : knowledge of the consequences has a positive and significant impact on the intention of citizen participation in waste bank activities.

H7 : intention has a positive and significant effect on the behavior of citizen participation in waste bank activities.

The method used to analyze the data is linear regression, F-test, and t-test. Furthermore, the assumption tests that must be fulfilled in the regression are also carried out, including the normality test, multicollinearity test, and heteroscedasticity. Data processing was performed using SPSS 22.0.

RESULT AND DISCUSSION

The distribution of questionnaires was carried out for approximately three months. The questionnaires were carried out in 11 waste banks in Depok, Ngemplak, and Ngaglik Districts, namely: Apel, Kasturi, Sawo Kecik, Gerah, Kalibulus, Pandan Wangi, Gowok, Pencarsari, Rejodani, Ngudiraharjo, and Sekarwangi. The number of questionnaires taken was 275 copies. All questionnaires were filled in completely. Tables 1 and Table 2 respectively show the results of the questionnaire validity and reliability tests. Table 3 is the respondent's mean scale value for all variables.

Based on the conceptual model shown in Figure 1, regression tests were carried out twice. The first regression model shows the influence of attitude variables, subjective norms, perceived behavioral control, knowledge of how and what, and knowledge of the consequences on intentions. Meanwhile, the second regression model shows the effect of intention on behavior. The results of data processing for the first model can be seen in Figure 2, 3, and 4.

Table 1. Validity Test Result

Variable	No	Question	References	R-stat	Validity
Attitude	1	Instead of just throwing out the trash, I'd better deposit the garbage in the waste bank	[29]	0,611	valid
	2	In my opinion, it is interesting to participate in waste bank activities.	[30]	0,684	
	3	Joining the trash bank is fun.	[31]	0,643	
	4	The waste bank makes the environment cleaner	[31]	0,589	
	5	A waste bank can fill your spare time	[31]	0,498	
	6	Waste banks can strengthen ties between residents.	[31]	0,361	
Subjective norms	7	I joined the waste bank because many were involved. The waste bank makes it easy for me to process waste.	[41]	0,930	valid
	8	I followed the waste bank on the advice of a neighbor.	[41]	0,859	
	9	I joined the waste bank for the motivation of my family.	[41]	0,354	
	10	I followed the waste bank on the advice and support of the waste bank manager.	[41]	0,824	
	11	Village officials in my neighborhood play an active role in inviting residents to take part in waste bank activities.	[42]	0,693	
Perceived behavioral control	12	The waste bank makes it easy for me to process waste.	[32]	0,466	valid
	13	I don't think it is a problem if I don't follow the waste bank to collect money from the waste bank.	[31]	0,847	
	14	Selling trash to collectors gets money faster than waste banks.	[31]	0,813	
	15	It's easy for me to join a waste bank because of its activities.	[33]	0,614	
Knowledge of how and what	16	I know the activities of the waste bank.	[34]	0,447	valid
	17	I know the advantages of joining a waste bank.	[20]	0,738	
	18	I know how to manage a waste bank.	[20]	0,704	
	19	I joined a waste bank because I know how to select waste.	[20]	0,596	
	20	I will sort my waste more, knowing the impact of joining a waste bank.	[20]	0,558	
	21	I know the types of waste that can be deposited in a waste bank.	[20]	0,487	
	22	Additional income can be obtained by joining the waste bank.	[20]	0,569	
Knowledge of consequences	23	The waste bank makes the environment comfortable.	[20]	0,368	valid
	24	Waste bank prevents natural disasters (floods or disease)	[20]	0,600	
	25	The waste bank provides an advantage.	[20]	0,718	
	26	The waste bank can reduce the volume of waste that is disposed of at the TPA.	[35]	0,468	
	27	My participation in waste bank activity is to share knowledge about how to process waste.	[20]	0,761	
	28	The waste bank supports my knowledge of processing waste.	[35]	0,679	
Intention	29	I am interested in joining a waste bank to process waste	[24]	0,779	valid
	30	I want to take part in the waste bank activities	[24]	0,624	
	31	I am interested in joining a waste bank to invite people to participate in a waste bank	[37]	0,679	
	32	I want to join the waste bank to keep the environment clean	[37]	0,551	
	33	I am interested in joining the waste bank to find out as much information as possible about the waste bank	[37]	0,689	
	34	I intend to join a waste bank to change the way I handle waste	[37]	0,678	
	35	I want to join the waste bank to profit from the trash to participate in the waste bank	[37]	0,485	
behavior	36	I have time to participate in waste bank activities	[38]	0,754	valid
	37	I regularly sort out the trash to put it in the waste bank	[35]	0,571	
	38	I try to reduce the amount of waste in my house.	[38]	0,395	
	39	I routinely deposit trash into the waste bank.	[38]	0,803	
	40	I regularly use some of the remaining trash to deposit into the waste bank.	[35]	0,794	
	41	I sort out the trash to put it in the waste bank.	[38]	0,646	
	42	I am active as a customer of a waste bank.	[35]	0,521	
	43	I participate in waste bank activities according to the applicable procedures.	[29]	0,739	
	44	I joined a waste bank so that the environment was more comfortable.	[39]	0,604	
	45	I joined the waste bank program because the facilities and infrastructure were adequate.	[39]	0,786	
	46	I joined the waste bank to make the government program a success.	[39]	0,478	

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Table 2. The Results of The Questionnaire Reliability Test

No	Variable	Cronbach's Alpha	Reliability
1.	Intention	0,656	Reliable
2.	Attitude	0,677	Reliable
3.	Behavior	0,858	Reliable
4.	Subjective norm	0,829	Reliable
5.	Perceived behavioral control	0,662	Reliable
6.	Knowledge of how and what	0,682	Reliable
7.	Knowledge of consequences	0,685	Reliable

Tabel 3. Average Rating Scale of Each Variable

No	Variable	Avrg.	Std. Dev.
1	Attitude (X_1)	4,46	0,00
2	Subjective norm (X_2)	3,95	0,42
3	Perceived behavioral control (X_3)	3,46	0,53
4	Knowledge of how and what (X_4)	4,34	0,20
5	Knowledge of consequences (X_5)	4,53	0,59
6	Intention (Y_1)	4,36	0,10
7	Behavior (Y_2)	4,29	0,45

Based on Figure 2, it can be concluded that the first model is significant (sig. <0.05), or in other words, the first hypothesis (H1) is accepted. Figure 3 shows that of the five variables, only perceived behavioral control partially does not significantly affect intention. Thus, H2, H3, H5, H6 are accepted (sig. <0.05), while H4 is rejected (sig.> 0.05). The first model regression equation is:

$$Y_1 = 0.375X_1 + 0.183X_2 + 0.008X_3 + 0.124X_4 + 0.308X_5 \quad (1)$$

Figure 4 shows the magnitude of the coefficient of determination, namely 73.4%. Next, the residual normality assumption test is carried out for the first model, whose results are in Figure 5. Based on Figure 5, it is concluded that the model fulfills the normality assumption (sig.> 0.05).

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40,008	5	8,002	152,338	,000[a]
	Residual	14,129	269	,053		
	Total	54,138	274			

a. Predictors: (Constant), X5, X3, X1, X2, X4

b. Dependent Variable: Y1

Figure 2. The First Model Significance Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,062	,204		,305	,760		
	X1	,385	,047	,375	8,145	,000	,457	2,190
	X2	,111	,028	,183	3,974	,000	,456	2,195
	X3	-,008	,034	-,008	-,247	,805	,839	1,192
	X4	,110	,049	,124	2,238	,026	,318	3,144
	X5	,372	,062	,308	5,961	,000	,363	2,755

a. Dependent Variable: Y1

Figure 3. The Regression Coefficient of The First Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.860[a]	,739	,734	,22919

a. Predictors: (Constant), X5, X3, X1, X2, X4

Figure 4. The Coefficient of Determination of The First

		Unstandardized Residual
N		275
Normal Parameters[a,b]	Mean	0.000000
	Std. Deviation	.22708438
Most Extreme Differences	Absolute	.047
	Positive	.047
	Negative	-.042
Test Statistic		.785
Asymp. Sig. (2-tailed)		.568[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Figure 5. First Model Normality Test

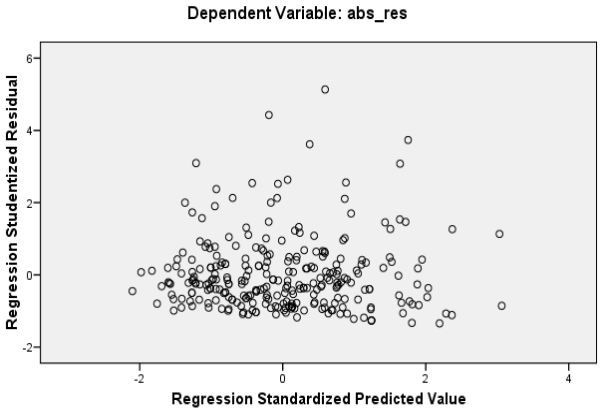


Figure 6. Heteroscedasticity Test Result

The next assumption test is the multicollinearity test. In Figure 3, it can be seen that the tolerance value is greater than 0.1, and the VIF value is smaller than 10, so that multicollinearity does not occur [43]. Simultaneously, the heteroscedasticity test can be seen based on Figure 6, which shows that heteroscedasticity does not happen.

Then an analysis of the second model is carried out, namely the influence of intention on behavior. Figure 7 and Figure 8 show the regression test and the coefficient of determination, respectively. Based on Figure 7, it is known that the intention has a significant effect on behavior (sig. <0.05). Thus H7 is accepted. The second model regression equation is stated as

$$Y_2 = 0.794Y_1 \quad (2)$$

From Figure 8, it is known that the coefficient of determination of the second model is 62.9%. Figure 9 is the normality test result, which shows that the second model fulfills the normality assumption (sig.> 0.05).

The results showed that the respondents had a high intention as indicated by the mean score of intention, namely 4.36 (scale 1-5). However, the average value of behavior is only 4.29, lower than the intention. Indeed, all respondents in the study were members of the waste bank who had registered from the start because they intended to be active in the waste bank. It's just that

Model		Unstandardized Coefficients		Unstandardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,385	,182		2,111	,036
	Y1	,897	,042	,794	21,557	,000

a. Dependent Variable: Y2

Figure 7. The Regression Coefficient for The Second Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,794[a]	,630	,629	,30626

a. Predictors: (Constant), Y1

Figure 8. The Coefficient of Determination of The Second Model

		Unstandardized Residual
N		275
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.30569703
Most Extreme Differences	Absolute	.081
	Positive	.058
	Negative	-.081
Test Statistic		1.347
Asymp. Sig. (2-tailed)		.053[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Figure 9. Second Model Normality Test

many members cannot routinely deposit their trash into the waste bank over time. In fact, according to the results of interviews with several administrators, some members only collected trash once; after that, they stopped depositing for various reasons such as being busy, not having enough time to sort garbage, having difficulty collecting garbage, and so on. Therefore, some respondents have high intentions but do not act actively in the waste bank.

Data processing results show that the five independent variables simultaneously influence intention with a determination coefficient of 73.4%, which means that the five variables contribute to the change in intention variance by 73.4%. Each variable partially had a positive and significant effect on intention, except for perceived behavioral control. Among the four variables that have a considerable impact, seen from the size of the regression coefficient, attitude is the variable with the most significant influence, followed by knowledge of the consequences, subjective norms, and knowledge of how and what. Astuti and Linart1 [23] also shown that attitude is the variable that has the most significant influence on Yogyakarta City workers' intention to be active in the waste bank. Ahmad [44] also stated that residents' attitude towards integrated waste management significantly influences the behavior of joining a waste bank. Nigbur et al. [45] and also concluded that the attitude towards waste recycling was the variable with the highest correlation to recycling intention. In contrast to research of Gusti et al. [24] in the elementary school, however, attitude is the variable with the weakest influence on intentions after perceived behavioral control and subjective norms.

In the proposed study, members of the waste bank were far above elementary school children, so their attitudes towards waste management would be different. Adults, as their thinking maturity, tend to have a more consistent attitude than children. Whereas for children, subjective norms that represent external influences that form their intentions are generally more dominant than attitudes as in [24], which states that teachers, school principals, parents, and school carers have a major influence on intentions of children in carrying out sustainable waste management.

The second variable that has a significant effect on intention is the knowledge of the consequences. On average, the waste bank members have a good knowledge that a waste bank can make the environment clean, comfortable, prevent floods, and reduce the volume of waste disposed of at TPST. This knowledge encourages residents to intend to be active in the waste bank. Gadiraju [20] also concluded that knowledge of the consequences had a significant effect on the intention to recycle. Selomo et al. [46] show that knowledge significantly affects waste banks' participation. They includes the knowledge in terms of waste banks, types of waste, types of waste that can be deposited, waste bank management mechanisms, waste management methods, and management objectives. This knowledge is none other than knowledge of how and what. While the knowledge about economic benefits, benefits for the environment, and benefits for the environment are knowledge of the consequences [46].

Manalu et al. [47] also concluded that knowledge of household waste management also influences residents to be active in waste banks. In handling clinical waste and healthcare waste, Olaifa et al. [48] also concluded that knowledge of how and what and knowledge of the consequences affect waste handling practices. Liao and Li [49] also concluded that knowledge of the environment is a variable that has a significant effect on student intentions to sort waste.

Subjective norms in this research show a significant effect on intention, which is different from similar research in Yogyakarta City. It indicates that subjective norms do not affect joining intention to a waste bank. It happens because there are differences in the character of the population in Sleman Regency and Yogyakarta City. In Sleman Regency, residents tend to be more friendly (there is a sense of kindship) so that other people's influence is still felt. The impact of waste bank management makes a significant contribution.

Meanwhile, the perception variable on behavior perceived behavioral control did not significantly influence intention. It is quite unique, considering that most research results indicate that this variable generally has a significant effect after the attitude variable. In contrast, subjective norms generally have the least correlation with intention [27]. Beside, Botetzagias [50] even shown that perceived behavioral control is the variable with the greatest influence on the intention to recycle. Based on interviews conducted with several respondents, it was found that respondents had difficulty distinguishing between the types of waste that were sorted so that the separation was carried out by the waste bank management. In fact, the results of our study are in line with research conducted by Prihatmoko [51] which states that the perceived behavioral control does not significantly affect community intentions because respondents have difficulty processing and sorting waste.

The coefficient of determination of the first model reaches 73%. It means that attitudes and subjective norms influence the variance of intention, perceived behavioral control, knowledge of

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how and what, and knowledge of consequences by 73%. It can be said that the model is quite representative, considering that the average predictor in the TPB model only accounts for 30-50% of the intention variance [17]. There are still other variables that may affect intentions, such as past experiences [20], situational [19] and [47], moral norms [50] and [52].

The second model shows the effect of intention on behavior, and it is known that the model is significant with a determination coefficient of 63%. It shows that the intention has an effect of 63% on variance in behavior. In comparison, the rest of 27% is influenced by other excluded variables, such as moral norms [53], and policy [54].

CONCLUSION

Based on the results of data analysis, the following conclusions can be drawn that Attitude, subjective norms, perceived behavioral control, knowledge of how and what, and knowledge of consequence simultaneously influence the variance of active intention in the waste bank by 73%. Attitude variables, subjective norms, knowledge of how and what, and knowledge of the consequences partially affect the active intention in the waste bank, while the perceived behavioral control has no significant effect on intention. Intention has a significant effect on actual behaviour in the waste bank. Subsequent research can be carried out on the barrier factors of intention and behavior to participate in the waste bank.

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