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The Influence of Collectivism on the Intention to use Tumblers at Work through Theory of Planned Behaviour Predictors

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Abstract:- To increase the intention to use tumblers at work, it is necessary to know what factors influence the intention to use tumblers so that social campaigns and advertisements made by the government and businesses are more effective in influencing consumers to use tumblers at work. No previous research has examined the indirect influence of collectivism culture on the intention to use tumblers at work, through three Theory of Planned Behaviour (TPB) predictor constructs in Indonesia. This study builds a pathway from one of the cultural dimensions, collectivism, into the three predictor constructs of the TPB and then to the intention to use a tumbler. This research was conducted using a quantitative approach and participants were selected using simple random sampling technique. This study involved 100 employees of the Central Bureau of Statistics in North Sulawesi Province. The data analysis technique used was Structural Equation Model-Partial Least Square (SEM-PLS) analysis. The results showed that the higher the collectivism, the better the employee's attitude towards using tumblers. The social pressure and influence received by employees towards the use of tumblers will be higher, and the behavioural control felt by employees towards the use of tumblers will be higher. Collectivism will indirectly increase employees' intention to use tumblers when working either through attitudes, subjective norms and behaviour.

Keywords:- *Collectivism, Theory of Planned Behavior; SEM-PLS.*

I. INTRODUCTION

Various go green campaigns that have been carried out by various parties always remind people to be aware of the surrounding environment. On 25 September 2015, sustainable development goals (SDGs) were agreed upon as a global action plan by world leaders at the United Nations (UN) headquarters. The twelfth goal of the seventeen agreed SDGs is to ensure sustainable production and consumption patterns. In line with the 12th goal of the SDGs, the goal that must be achieved by 2030 is to halve the amount of global food waste per capita at the retail and consumer levels, and to substantially reduce waste production through prevention, reduction, recycling, and reuse. Reducing the intensity of plastic use is one of the activities that can be done to realise this, because plastic has many adverse effects and is harmful to humans, animals and the environment. Jambeck et. al. (2015) stated that Indonesia is the second largest producer of plastic waste into the world's oceans after China, which produces 0.48 - 1.29 million tonnes of plastic waste every year. Data from Statistics Indonesia and the Indonesian Plastic Industry Association (INAPLAS) show that Indonesia's plastic waste reaches 64 million tonnes per year (Puspita, 2018). Fifty per cent of all plastic waste is single-use plastics (Geyer et. al. 2017), which means that the more single-use plastics produced, the faster the growth of the amount of plastic waste generated if not balanced by a high recycling rate. Unfortunately in Indonesia, waste management is still a problem that cannot be handled properly (Purwaningrum, 2016), even as much as eighty-one per cent of all plastic waste generated cannot be managed properly (Jambeck et. al. 2015).

Many businesses sell drinks packaged in disposable plastic bottles, where waste from disposable plastic bottles has a negative impact on the environment (Humas, 2021). A solution that can reduce the number of plastic bottles is to replace them with a tumbler, which is an object that has a shape similar to a drinking place, also known as a drinking water bottle. The government through the Ministry of Communication and Information Technology (Kominfo) together with the Ministry of Environment and Forestry (KLHK) and the Coordinating Ministry for Maritime Affairs formed the One Million Tumbler Movement as a commitment from the government to reduce the impact of plastic waste and also to increase public awareness of using tumblers (Kominfo, 2019).

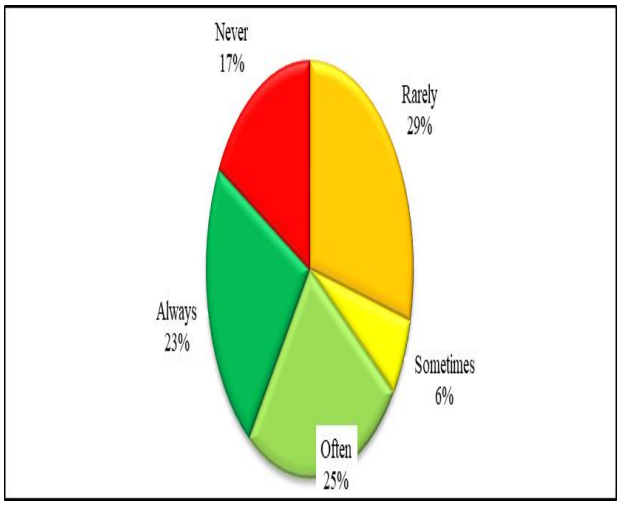

Fig. 1: Percentage of BPS employees in North Sulawesi Province by tumbler usage status

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From a survey conducted by the author in 2022, 77 per cent of BPS employees in North Sulawesi Province had their own tumbler while 23 per cent did not have one. From this ownersh Frame of thought ip status, it can be seen in Figure 1 that not more than 50 per cent of BPS employees in North Sulawesi Province often and always carry tumblers when working. To increase the intention or intention to use a tumbler when working, it is necessary to know what factors influence the intention to use a tumbler so that social campaigns and advertisements made by the government and business actors are more effective in influencing consumers. A person's intention to behave using a tumbler can be influenced by several factors. In the Theory of Planned Behavior (TPB), Ajzen (1991) revealed that there are three main factors that influence behavioural intention, namely subjective norms, behavioural control, and attitudes towards the behaviour. Many studies have been conducted to expand the predictor variables in the TPB theory, especially those that indirectly affect the intention to behave in an environmentally friendly manner through the three main variables mentioned. In society, Indonesia is famous for its culture of togetherness, which is difficult to find in developed countries. Culture is an important dimension to explain consumer behaviour and has been used in previous studies to explain consumer behaviour in purchasing green products. People who hold a strong culture of togetherness, which is then called collectivism, tend to prioritise togetherness over self-interest, so they are willing to carry out environmental care behaviour for the sake of the common good. According to the researcher's knowledge, no previous studies have examined the indirect influence of collectivism culture on the intention to use environmentally friendly products, more specifically the intention to use tumblers, through the three predictor constructs of the TPB in Indonesia. For the development of TPB by Ajzen, this study will build a path from one of the cultural dimensions, namely collectivism, to the three predictor constructs of TPB and then to the intention to use a tumbler.

Behavioural intention is one of the constructs in the Theory of Planned Behaviour (TPB). TPB or theory of planned behaviour was proposed by Ajzen in 1985 which is none other than the development of the Theory of Reasoned Action (TRA) (Ajzen, 1985). In TPB, certain individual behaviours can be predicted by three predictors, namely individual attitudes towards behaviour, subjective norms, and perceived behavioural control. Collectively these three variables lead to the formation of intentions towards behaviour that will influence the behaviour (Ajzen, 1991). The better a person's attitude towards a particular behaviour, the higher the subjective norm, and the greater the perceived behavioural control, finally the stronger the intention to perform the behaviour (Ajzen 1991). TPB is the best model for predicting behavioural intentions (Yadaf and Pathak, 2017). The framework in the TPB is one of the models for predicting behavioural intention and the most researched by social psychologists (Dean, et. al. 2012; Collins and Carey, 2007).

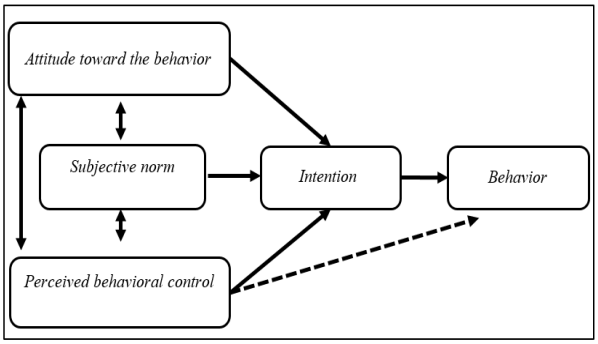

Fig. 2: Frame of thought Theory of Planned Behavior

Attitude towards behaviour is one of the three variables that influence behavioural intention in the Theory of Planned Behavior. Some recent studies in India argue that attitude towards behaviour has the highest direct influence on consumers' green purchase intentions among all the predictor constructs of TPB (Paul et. al. 2016; Yadaf and Pathak, 2017). Social norms have been studied by Zukin and Maguire (2004) and found that they have a large effect on the consumption of green products, and are the basis of many models and theories of consumption. Wiriyapinit (2007) showed that the value of family norms provided by parents in Thailand is related to the intention to buy green products (Maichum et. al. 2019). Most previous researchers have empirically conducted a deeper study of the influence of subjective norms on the intention to buy environmentally friendly products using TPB (Maichum et. al. 2016; Paul et. al. 2016; Sreen et. al. 2019; Wu and Chen, 2014). In the behavioural intention of using a tumbler, individual control is needed (Volva, 2017). Research related to behavioural control has also been conducted to measure the purchase intention of environmentally friendly products, (Moser (2015), Maichum et. al. (2016), Paul et. al. (2016), Yadav and Pathak (2017), and Sreen et. al. (2018). From these studies, they all conclude that behavioural control affects the intention to purchase environmentally friendly products, where the higher the control over behaviour, the stronger the intention to purchase environmentally friendly products. According to the Big Indonesian Dictionary, collectivism is an understanding or teaching that does not require individual property rights, either for capital, land, or means of production (all must be chosen together, except for consumer goods). Hofstede (2011) defines collectivism as a manifestation of togetherness in a group that prioritises harmonisation and places the goals of the group above personal interests. In a collectivist culture, a person desires to be part of a particular group and will enjoy being part of the group, so he or she will spend time with the group. A collectivist considers it his duty to help group members in difficulty and to sacrifice for the benefit of the group. In collectivism, disagreements should be avoided as much as possible, while harmony should be realised.

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The characteristics of collectivism mentioned by Hofstede (2011) are that a person has felt integrated in the group since birth, emphasises harmony, relationships take precedence over tasks and feels ashamed if they violate group norms. In line with research conducted by Hofstede (2011), collectivist societies are interdependent and group-orientated. Another characteristic of collectivism is that group members play a role according to the context faced by their group and always ask for advice from others. This means that collectivist behaviour is largely determined by the situation of who and where one is with at any given time. In contrast, an individualist has no dependence on others because they have a strong self-identity. In addition, in the context of social life, collectivists highly value social status and rank, and prefer to work in groups.

Thus, the purpose of this study is to determine the direct effect of attitudes towards tumbler use, subjective norms and behavioural control on the intention to use tumblers at work and to determine the indirect effect of collectivism on the intention to use tumblers at work through attitudes towards tumbler use, subjective norms, and behavioural control in Central Bureau of Statistics employees in North Sulawesi Province. The hypotheses proposed in the study are:

Ha1: Attitudes towards using tumblers have a direct and positive influence on the intention to use tumblers.
Ha2: Subjective norms have a direct and positive influence on the intention to use tumblers.
Ha3: Behavioural control has a direct and positive influence on the intention to use a tumbler.
Ha4: Collectivism has a direct and positive influence on attitudes towards using tumblers.
Ha5: Collectivism has a direct and positive influence on subjective norms.
Ha6: Collectivism has a direct and positive influence on behaviour control.
Ha7: Collectivism has an indirect and positive influence on the intention to use tumblers through attitudes towards using tumblers.
Ha8: Collectivism has an indirect and positive influence on the intention to use tumblers through subjective norms.
Ha9: Collectivism has an indirect and positive influence on the intention to use tumblers through behaviour control.

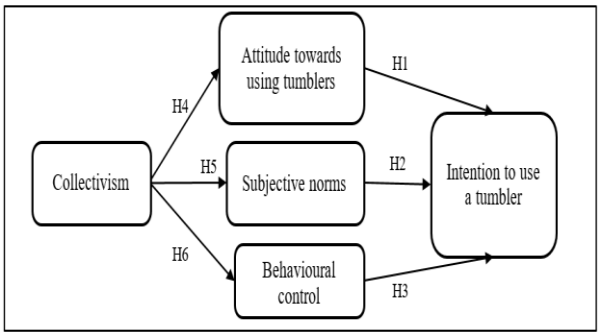

Fig. 3: Research framework

II. METHODOLOGY

The analysis used in this research is structural equation modelling-partial least square (SEM-PLS). The choice of SEM as a data analysis method is based on several reasons such as: (1) In the structural model there is a multilevel causal relationship of variables; (2) these variables are unobservable whose measurements are based on several indicators; (3) In SEM a direct method is available to examine several relationships simultaneously while providing statistical analysis efficiency (Pio et. al. 2019).

The variables used in this study consist of endogenous and exogenous variables. The endogenous variables in this study are intention to use tumblers, attitudes towards using tumblers, subjective norms, and behavioural control. Meanwhile, the exogenous variable in this study is collectivism.

Latent Variable	Operational Definition	Indicator
(1)	*(2)*	*(3)*
Intention to use tumbler (IN)	Also known as tumbler usage intention, is how hard people are willing to try and how much effort they plan to put into using the tumbler at work.	intention to do
		Plan a purposeful action
		Attempt to try
Attitude towards tumbler use (AK)	How does one judge the behavior of using a tumbler as a substitute for disposable plastic bottles at work?	*Behavioral beliefs: beliefs that drive the formation of attitudes*
		Outcome evaluation: positive or negative evaluation that encourages the formation of attitudes
Subjective norm (SN)	Social pressure or influence exerted by the closest person or someone who is considered important on someone to do or not to do certain behaviors.	*Normative beliefs: beliefs about other people's expectations of individuals*
		Motivation to comply: individual motivation in meeting the expectations of others
Behavior control (BC)	The ease or difficulty felt by people or individuals in carrying out the behavior.	*Control beliefs: control beliefs over resources and opportunities*
		Power of factor: perceptions of sources and opportunities that support or hinder
Collectivism (CO)	An embodiment of togetherness in a group that prioritizes harmonization and places group goals above personal interests.	Harmonisation
		The relationship between individuals and groups
		Decision making

Table 1: Operational Definition of Variables

The population in this study were active employees of the City District Statistics Agency in North Sulawesi Province. The population consists of 276 employees. Active employees of the Central Bureau of Statistics in North Sulawesi Province were chosen as the unit of analysis because they have a high level of education (at least high school), in line with Promotosh and Sajedul's (2011) statement that highly educated people will be able to understand the context of research related to environmentally friendly products better, so that it will not cause bias in the answers.

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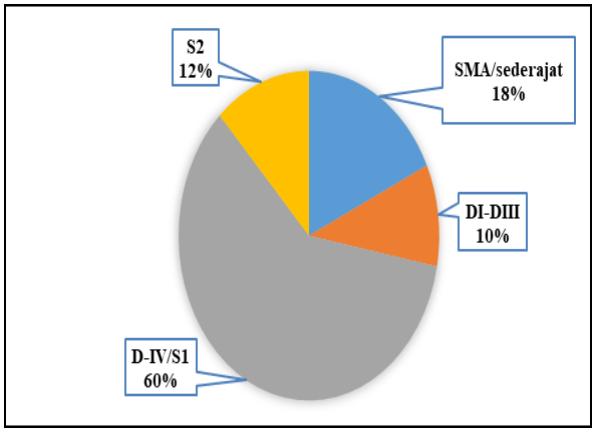

Fig. 4: Percentage of BPS employees in North Sulawesi Province by education level

Before determining the sampling method, it is necessary to first determine the minimum sample size in this study. Determination of the minimum sample size uses the Cochran (2010) formula as follows.

$$n = \frac{N z\alpha_{/2}{}^2 p(1-p)}{d^2(N-1) + z\alpha_{/2}{}^2 p(1-p)}$$

Description:
n : minimum sample size
N : population size
z_(α⁄2) : standard score value, worth 1.645 if α = 0.05
d : degree of precision
(error due to population sampling error)
p: proportion, worth 0.5 because it is assumed that each employee has an equal chance of having a high intention to use a tumbler.

By setting the value of the degree of precision at 0.5, the minimum sample size (n) was obtained as many as 54 respondents. To anticipate non-response, the target sample was increased to 100 respondents, because several studies found that the average response rate of e-mail surveys is quite low, which is around 33.0 to 36.8 per cent (Shih and Fan, 2009; Sheehan, 2001). After determining the sample size, the next step was to determine the sampling method. The sample was selected using a simple random sampling method, known as simple random sampling without replacement (SRS WOR), which is a sample selection method in which each population unit has an equal chance of being selected and the selected unit will not be returned to the population. The reason this method was chosen is because the mode of data collection in this study is in the form of an e-mail survey, so researchers do not need to consider the amount of survey costs, survey area, and auxiliary variables, because the characteristics of respondents in terms of intention to use tumblers are quite homogeneous.

Data collection was carried out from 16 September 2022 to 23 September 2022 which began with a preliminary survey to test the validity and reliability of the research instruments. The instrument used in this study was a questionnaire with a total of 10 questions for individual characters and 35 questions for indicators of the variables used. The Likert scale was used by researchers to measure the variables of this study. In this study, researchers made modifications from the original 5 scale options to 6 scale options with the aim of eliminating neutral / undecided / undecided options on the 5-option Likert scale, so that the category of choices became Strongly Disagree (STS), Disagree (TS), Somewhat Disagree (ATS), Somewhat Agree (AS), Agree (S), and Strongly Agree (SS). This reason is supported by Sukardi's (2013) statement that when many respondents choose answers in the middle category, it is clear that uncertain information will be obtained.

A. Instrument Validity Testing

The instrument validity test used in this study is the content validity test. Content validity was chosen by the researcher because it can directly capture the suitability of the question items in the instrument to the phenomenon being measured. Content validity is done by calculating the correlation value of the score of each item with the total score of a particular variable. To test the validity, the Pearson correlation coefficient test statistic was used which was compared with the r table.

With a preliminary survey sample (questionnaire trial) of at least 30 respondents and the significance level used in the validity test is 0.05, it is found that all question items in the research instrument are valid where the Pearson correlation value of each question indicator exceeds the r table value of 0.3610 and can be concluded to be valid for use in this study Reliable research instruments mean that the research instruments used are reliable enough as tools for data collection (Arikunto, 2010). The measurement results can be trusted if the measurement is carried out several times on the same respondent, then the instrument will give the same results (Asra & Purwoto, 2016). Instrument reliability testing in this study uses the internal consistency test method with the Cronbach's Alpha test. The results of the instrument reliability test show that the seven latent variables used in this study have a very high level of reliability, with a Cronbach's Alpha value in the range of 0.887 to 0.915 so it can be concluded that this research instrument is very reliable for use in research.

Variabel	*Cronbach's Alpha*	Reliability Level
(1)	(2)	(3)
Intention to use a tumbler (IN)	0,915	Very high
Attitude towards tumbler use (SK)	0,889	Very high
Subjective norm (NS)	0,887	Very high
Behavioural control (BC)	0,816	Very high
Collectivism (CO)	0,890	Very high

Table 2: Reliability test results of research instruments

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B. Measurement Model Evaluation (Model Validity and Reliability)

This study uses reflective indicators in measuring each latent variable, so the measures evaluated in the measurement model will be convergent validity, discriminant validity, and internal consistency reliability. Convergent validity is measured through factor loading and AVE value, where the indicator will be said to be valid if the factor loading value of each indicator exceeds 0.5 and the AVE value of each latent variable exceeds 0.5 (Chin, 1998). . Furthermore, discriminant validity is measured through cross loading, where indicators will be said to be discriminantly valid (each latent variable describes a condition that is not described by other latent variables) if the correlation of the indicator with its latent variable is greater than the correlation of the indicator with other latent variables. The last evaluation measure is internal consistency reliability measured through composite reliability, with the criteria that the value must be more than 0.7 on each variable (Hair et. al. 2014).

C. Structural Model Evaluation

Evaluation of the structural model in this study by looking at multicollinearity in the model through VIF, R2 value, f2 effect size, Q2 predictive relevance value, and looking at the size and significance of the structural path coefficient. The structural model is said to have no multicollinearity symptoms if the VIF value of each relationship between variables is less than 5.0 (Hair et. al. 2014). In PLS analysis, the predictive power of a particular model or construct is assessed using the R-squared (R2) value of the endogenous variables. The interpretation of R2 values in PLS is almost the same as the value of multiple linear regression analysis. The R2 value can indicate the amount of variance of endogenous variables that can be explained by exogenous variables (Chin, 1998). This R2 value represents the quality of the variables in the model (Hair et. al. 2014). The model will be said to be good, moderate, and weak can be indicated by R2 values of more than 0.67, 0.33, and 0.19 respectively (Chin, 1998).

Then, f2 effect sizes of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively (Cohen, 1988). Furthermore, the researcher will conduct blindfolding to determine the value of Q2 must be more than 0 (zero) to be able to predict endogenous variables. Then the path coefficient can be interpreted from its magnitude and significance. In addition to the sign of the path coefficient (positive or negative), the magnitude of the path coefficient in this study can be interpreted by comparing it with other path coefficients. To produce a path coefficient, the researcher must first do bootstrapping. If a path coefficient is greater than the others, it means that the effect on the endogenous variable is also greater. Finally, to see the significance of the research path coefficient, it is seen through the p-value of the t-statistic test results.

III. DISCUSSION

A. Measurement Model Evaluation (Model Validity and Reliability)

Nu.	Latent Variable	Indicator	Factor *Loading*
(1)	(2)	(3)	(4)
1.	Tumbler Intention to Use (IN)	in1	0,934
		in2	0,950
		in3	0,948
		in4	0,868
		in5	0,807
2.	Attitude towards using tumblers (SK)	sk1	0,740
		sk2	0,719
		sk3	0,795
		sk4	0,841
		sk5	0,873
		sk6	0,887
		sk7	0,896
		sk8	0,894
3.	Subjective norm (NS)	ns1	0,907
		ns2	0,919
		ns3	0,709
		ns4	0,796
		ns5	0,806
		ns6	0,854
4.	Behavioural Control (KP)	kp2	0,848
		kp3	0,917
		kp4	0,849
		kp5	0,829
5.	Collectivism (CO)	ko5	0,693
		ko6	0,742
		ko7	0,721
		ko8	0,756
		ko9	0,803
		ko10	0,828

Table 3: Indicator factor loading value

The measurement model is evaluated through three measures, namely convergent validity, discriminant validity, and composite reliability. The convergent validity measurement results for the final research model can be seen in Table 3. Before producing the final research model, the convergent validity test was carried out on the initial model. The result is that there are 6 indicators that must be discarded because they are not convergently valid when viewed from the AVE value and are not discriminantly valid when looking at the AVE quadrad root value compared to the correlation of the constituent indicators and a second model is formed. After the second model is run, it produces a final model where all indicators have met the convergent validity criteria as shown in Table 6 below. In Table 6, it can be seen that the factor loading of each indicator is already above 0.5. This shows that all indicators have good validity, even strong value.

Apart from using the factor loading value, convergent validity can also be assessed through the average variance extracted (AVE) value, where the set of indicators on a particular latent variable is said to be valid if the AVE value is greater than 0.5. As seen in Table 7 below, the AVE value of each latent variable is above 0.5, which means that the set of indicators in each latent variable is valid.

No	Variabel Laten	AVE
(1)	(2)	(3)
1.	Intention to Use Tumblers (IT)	0,816
2.	Attitude towards using tumblers (AT)	0,694
3.	Subjective Norm (NS)	0,697
4.	Behavioural Control (BC)	0,742
5.	Collectivism (CO)	0,576

Table 4: Value of *Average Variance Extracted* (AVE)

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The next measure in evaluating the measurement model is discriminant validity. This measure is assessed based on Fornell-Lacker Criterion and cross loading. By looking at the Fornell-Lacker Criterion, discriminant validity is declared valid because the AVE square root value on the main diagonal of behavioural control is greater than the correlation value of the constituent latent variables.

Variabel Laten	IN	SK	NS	KP	KO
(1)	(2)	(3)	(4)	(5)	(6)
Intention to Use Tumblers (IT)	**0,.903**				
Attitude towards using tumblers (AT)	0,800	**0,833**			
Subjective Norm (NS)	0,681	0,701	**0,834**		
Behavioural Control (BC)	0,845	0,822	0,688	**0,861**	
Collectivism (CO)	0,498	0,483	0,608	0,464	**0,759**

Table 5: Fornell-Lacker Criterion

To measure internal consistency, composite reliability is used. In Table 6 above, it can be seen that all variables have a composite reliability value of more than 0.7. This shows that the indicators used to measure latent variables are reliable.

No	Variabel Laten	*Composite Reliability*
(1)	(2)	(3)
1.	Intention to Use Tumblers (IT)	0,957
2.	Attitude towards using tumblers (AT)	0,948
3.	Subjective Norm (NS)	0,932
4.	Behavioural Control (BC)	0,920
5.	Collectivism (CO)	0,890

Table 6: Composite reliability

The next discriminant validity measurement model is by cross loading. When viewed in table 7, the discriminant validity is declared valid because the correlation of the indicator with its latent variable is greater than its correlation with other latent variables, so the discriminant validity criteria have been met. This shows that each latent variable is different from other latent variables and each latent variable describes a situation that is not described by other latent variables.

Indicator	Intention to Use Tumblers	Attitude towards using tumblers	Subjective Norm	Behavioural Control	Collectivism
(1)	(2)	(3)	(4)	(5)	(7)
in1	**0,934**	0,735	0,587	0,781	0,395
in2	**0,950**	0,749	0,669	0,823	0,501
in3	**0,948**	0,744	0,591	0,797	0,411
in4	**0,868**	0,644	0,543	0,728	0,466
in5	**0,807**	0,712	0,686	0,670	0,478
sk1	0,696	**0,740**	0,584	0,692	0,384
sk2	0,494	**0,719**	0,342	0,545	0,147
sk3	0,628	**0,795**	0,488	0,654	0,318
sk4	0,715	**0,841**	0,618	0,729	0,491
sk5	0,656	**0,873**	0,531	0,685	0,314
sk6	0,644	**0,887**	0,668	0,706	0,489
sk7	0,677	**0,896**	0,684	0,679	0,458
sk8	0,763	**0,894**	0,660	0,750	0,498
ns1	0,699	0,746	**0,907**	0,693	0,536
ns2	0,670	0,705	**0,919**	0,654	0,507
ns3	0,469	0,447	**0,709**	0,432	0,454
ns4	0,471	0,438	**0,796**	0,442	0,508
ns5	0,473	0,510	**0,806**	0,493	0,519
ns6	0,586	0,574	**0,854**	0,585	0,525
kp2	0,713	0,777	0,606	**0,848**	0,288
kp3	0,729	0,754	0,554	**0,917**	0,404
kp4	0,815	0,705	0,617	**0,849**	0,419
kp5	0,639	0,581	0,521	**0,829**	0,477
ko5	0,182	0,303	0,288	0,220	**0,693**
ko6	0,211	0,217	0,333	0,169	**0,742**
ko7	0,240	0,250	0,172	0,217	**0,721**
ko8	0,238	0,215	0,265	0,228	**0,757**
ko9	0,625	0,556	0,733	0,585	**0,803**
ko10	0,410	0,354	0,532	0,353	**0,828**

Table 7: Cross loading factor

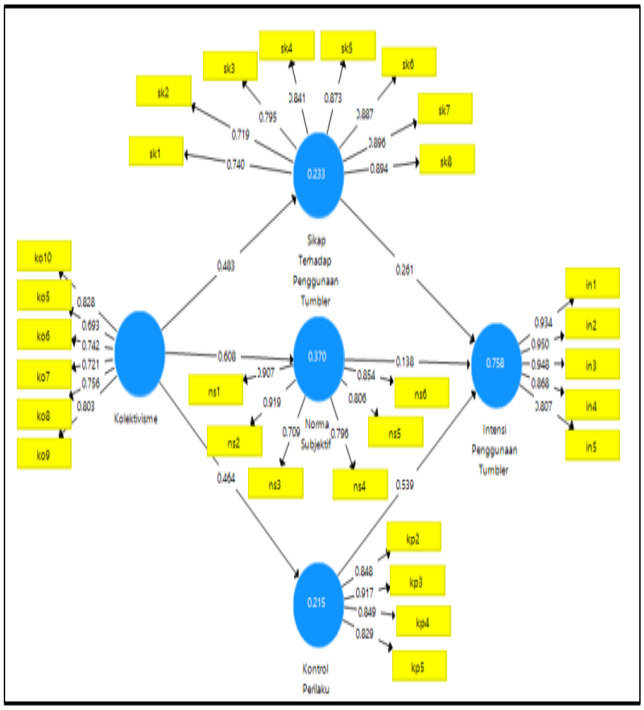

Fig. 5: Final research model (hybrid)

B. Structural Model Evaluation

The initial stage in evaluating the structural model is to ensure that there is no multicollinearity problem in the model, namely by looking at the VIF value of each independent variable in each structural equation. In Table 8, it can be seen that all independent variables in each equation have VIF values that are less than 5 (five). Thus it can be said that there is no multicollinearity problem in each equation, so further analysis can be carried out.

Equality	Endogenous Variables	Independent Variable	VIF	R^2	f^2	Q^2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Intention to use the tumbler	Intention to use the tumbler	3,536	0,758	0,079	0,608
		Subjective Norm	2,074		0,038	
		Behavior Control	3,250		0,369	
2	Intention to use the tumbler	Collectivism	1,000	0,215	0,305	0,157
3	Subjective Norm	Collectivism	1,000	0,370	0,587	0,255
4	Behavior Control	Collectivism	1,000	0,233	0,274	0,154

Table 8: Value VIF, R^2, f^2, dan Q^2

Based on table 8, it can be seen that the first structural equation is a good model because R2 has exceeded 0.67, while the other three equations are moderate models. In the first equation, R2 is 0.758, which means that 75.8 percent of the diversity of the tumbler use intention variable can be explained by the variables of attitude towards tumbler use, subjective norms, behavioral control. Then R2 in the second equation is 0.215, meaning that the collectivism variable can explain 21.5 per cent of the diversity of the attitude variable towards using tumblers. Furthermore, R2 equation 3 which is worth 0.370 means that 37.0 per cent of the diversity of subjective norm variables can be explained by the collectivism variable. Finally, in equation 4, the R2 value of 0.233 means that the collectivism variable can explain 23.3 percent of the diversity of behavioural control variables.

Furthermore, as seen in table 8, the behavioural control variable will have a large effect if it is removed from the first equation as well as the collectivism variable in the third equation, this is because the f2 value is more than 0.35. The collectivism variable will have a moderate effect if removed from the second and fourth equations, this is because the f2 value is above 0.15 and less than 0.35. While the rest, which has an f2 value of less than 0.15 and more than 0.02, has a small effect if removed from the equation.

Finally, in Table 8, it can be seen that all four endogenous variables in the model have a Q2 value of more than 0. This shows that the four equations have predictive relevance, which means that the four endogenous variables can be predicted.

C. Hypothesis Testing

Hypothesis	Equation	Path	path coefficient	*Standard error*	t-statistic	*p-value*	Accept Hypothesis
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1	Attitude towards using tumblers → Intention to Use Tumblers	0,261	0,116	2,238	0,013	Ya
2	1	Subjective Norm → Intention to Use Tumblers	0,138	0,065	2,112	0,017	Ya
3	1	Behavioural Control → Intention to Use Tumblers	0,539	0,099	5,432	0,000	Ya
4	2	Collectivism → Attitude towards using tumblers	0,483	0,094	5,154	0,000	Ya
5	3	Collectivism → Subjective Norm	0,608	0,062	9,482	0,000	Ya
6	4	Collectivism → Behavioural Control	0,464	0,079	5,836	0,000	Ya

Table 9: Hypothesis testing results on direct effects

*) Reject Ho or accept the hypothesis if t-statistic > 1.66039 p-value < 0.05

Based on table 9, with a significance level of 5 percent, this study found that the intention to use tumblers on employees of the Central Bureau of Statistics in North Sulawesi Province is directly, significantly, and positively influenced by subjective norms and behavioural control. These results indicate that the TPB construct produces the same effect on tumblers as has been proven on other types of green products, such as green products in general (Paul et. al. 2016; Maichum et. al. 2016) or green products specifically, namely green hotels (Chen & Tung, 2014), green skincare (Hsu et. al. 2017) and energy-efficient household appliances and organic clothing (Zhang et. al. 2019).

When viewed from the path coefficient of 0.261, the attitude variable towards using tumblers significantly influences the intention to use tumblers positively. This means that the better the attitude of BPS employees in North Sulawesi Province towards using tumblers, the higher the intensity in using tumblers when working. These results are in line with research conducted by Maichum et. al. (2016) that the better a person's attitude towards environmentally friendly products, the higher the intention will be. Subjective norms have an influence of 0.138 on the intention to use tumblers, meaning that the higher the social pressure or influence obtained by BPS employees in North Sulawesi Province on the use of tumblers, the higher the intention to use tumblers when working. These results are in line with Ekasari's research (2018) where subjective norms increase the intention to use environmentally friendly products. Behavioural control has a path coefficient of 0.539, meaning that the higher the behavioural control felt by BPS employees in North Sulawesi Province towards using tumblers, the higher the intention to use tumblers when working. This result is in line with the research of Paul et. al. (2016) which states that consumer behaviour control will affect the intention to purchase environmentally friendly products.

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Collectivism has a significant influence on attitudes, subjective norms and behavioural control. The higher the collectivism of BPS employees in North Sulawesi Province, the better the attitude of BPS employees in North Sulawesi Province towards the use of tumblers. The higher the collectivism of BPS employees in North Sulawesi Province, the higher the social pressure or influence obtained by BPS employees in North Sulawesi Province towards the use of tumblers. The higher the collectivism of BPS employees in North Sulawesi Province, the higher the behavioural control felt by BPS employees in North Sulawesi Province towards the use of tumblers. This result is in line with research conducted by Sreen et. al. (2018) where collectivism affects three predictor variables of purchase intention of environmentally friendly products. Indonesia, which generally adheres to collectivism, certainly wants to help the community to prosper, not only developing positive attitudes but also feeling a great social influence in the group.

hypothesis	Path	Path Coefficient	*Standard error*	t-statistik	*p-value*	Accept the Hypothesis
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7	Collectivism → Attitudes towards tumbler use → Intention to use the tumbler	0,127	0,061	2,062	0,020	Ya
8	Collectivism → subjektif norm → Intention to use the tumbler	0,084	0,043	1,934	0,027	Ya
9	Collectivism → Behavior control → Intention to use the tumbler	0,250	0,068	3,696	0,000	Ya

Table 10: Hypothesis testing results on indirect effects

***) Reject Ho or accept the hypothesis if t-statistic > 1.66039 p-value < 0.05**

Based on table 10 with a significance level of 5 percent, collectivism has an indirect and positive effect on the intention to use tumblers through the three predictors of TPB, namely attitudes towards using tumblers, subjective norms, and behavioural control. This means that higher collectivism will indirectly increase the intention of BPS employees in North Sulawesi Province to use tumblers when working This is also supported by the results of testing hypotheses 4, 5 and 6.

IV. CONCLUSION

This study found a direct and positive influence of attitudes, subjective norms and behavioural control on the intention to use tumblers of Central Bureau of Statistics employees in North Sulawesi Province when working. Collectivism directly and positively influences the three Theory of Planned Behaviour (TPB) predictor variables of attitude, subjective norms and behavioural control. Collectivism also indirectly and positively influences the intention to use tumblers of Central Bureau of Statistics employees in North Sulawesi Province Indonesia when working.

V. RECOMMENDATION

Based on the conclusions of this study, to improve good attitudes for consumers, entrepreneurs should offer tumblers when consumers shop or free tumblers with a minimum purchase of shopping and briefly explain the benefits of using tumblers compared to disposable plastic drinking bottles. For the Ministry of Environment and Forestry (KLHK) and the Ministry of Communication and Information Technology (KOMINFO) to design social advertisements, especially those uploaded to television or social media, should use scenarios featuring reference groups, including family, peers, or even public figures in order to encourage the audience to use tumblers, more specifically for local governments to increase the frequency and breadth of coverage of environmental awareness campaigns and require every employee to always carry a tumbler when working, it is also necessary to provide free water dispensers in public places to stimulate people to use tumblers in work or daily activities.

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