

## Campaign Messages of Using Stainless-Steel Straws: A Theory of Planned Behavior Perspective

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**Abstract.** Tackling climate change is the 13<sup>th</sup> goal in the Sustainable Development Goals (SDGs). One of the simple actions that can be taken to prevent the issue of climate change is the use of environmentally friendly straws, specifically the use of stainless-steel straws. For the public to know about the issue of climate change, social media has an important role. This study aims to see the effect of the exposure of messages on social media related to climate change issues on the behavior to use stainless-steel straws. In addition, this study uses predictors of the Theory of Planned Behavior, namely attitudes, subjective norms, and Perceived Behavioral Control (PBC). Using Structural Equation Modeling (SEM), the study results show that attitudes, subjective norms, and Perceived Behavioral Control (PBC) directly influence intentions and indirectly influence the behavior of using stainless-steel straws. Another finding is that exposure to persuasive messages on social media related to the use of environmentally friendly straws owned by family and close friends also has a direct positive effect on attitudes, subjective norms, Perceived Behavioral Control, and behavioral intentions, which in turn have a positive indirect effect on the behavior of using stainless-steel straws.

**Keywords:** climate, stainless-steel straws, social media, theory of planned behavior

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### INTRODUCTION

Climate change has an extensive impact on people's lives. One of the signs of climate change is the increasing temperature of the earth's surface. Based on data sourced from the katadata website, in 2021, there will be an increase in the earth's surface temperature reaching 0.85 degrees Celsius (Aeni, 2022). According to data released by the Meteorology, Climatology and Geophysics Board (BMKG), in 100 years, Jakarta has experienced a temperature increase of 1.5 degrees Celsius (Putri, 2022).

Without realising it, the simple things that most people do contribute to climate change. A straightforward example is using plastic straws (Sartika, 2018). Over time, the attention of environmentalists began to highlight how plastic straws also contribute to climate

change. Based on data from Divers Clean Indonesia, the estimated use of plastic straws in Indonesia every day reaches 93,244,847 sticks (Edwin, 2017).

Tackling climate change is the 13th goal in the Sustainable Development Goals (SDGs), which is to take fast action to address climate change and its impacts (Bappenas, 2015). In delivering this goal, governments, organisations, and community groups must communicate climate change issues to the people in a country. The point of climate change in question can be in the form of impacts and phenomena related to climate change to simple actions to reduce the effects of climate change, for example choosing environmentally friendly bottle packaging or switching to environmentally friendly straws such as using stainless-steel straws (Inspirasiana, 2022).

One strategy for conveying climate change issues that can reach the wider community is using campaigns through social media. In the context of communication-related to climate change issues, social media is a relevant tool for involving the public in discussions about the problem because it can encourage knowledge, mobilisation, and debate about this issue (Anderson, 2017). Social media can also assist in the process of spreading risk-based messages (Dalrymple et al., 2016), as well as encouraging various forms of action related to climate change issues (Anderson, 2017). In conveying climate change issues, it is also necessary to pay attention to the typology of communication strategies through social media, namely objective goals, approach strategies, and interaction strategies (León et al., 2021).

Campaigns related to the issue of climate change in Indonesia have been delivered by various parties, from the government to the environmental community. For example, the Ministry of Environment and Forestry (KLHK) launched the Clean Indonesia Movement Program (KLHK, 2019). The Clean Indonesia Movement has produced a guidebook for campaigning on climate change issues, starting from the 'no straw movement' campaign to the 'Recycle More, Waste Less' Movement (Gerakan Indonesia Bersih, 2020). In addition to the government's involvement in campaigning on climate change issues, this campaign is also carried out by various environmental-loving communities, such as the "Bye Bye Plastic Bags", "Diet Kantong Plastik", "Divers Clean Action", "EcoRanger", "Plastik Detox" (Gerakan Indonesia Bersih, 2020), "Jakarta Tanpa Sedotan" (Ellora, 2019), as well as the "Mulai Tanpa Sedotan" movement (Intan, 2018). Climate change campaigns are also carried out through the making of documentaries such as "Pulau Plastik",

"Sexy Killer", and "Seaspiracy" (Nurul, 2022).

Even though campaigns related to climate change issues are increasingly widespread in Indonesia, these campaigns have not changed most of the behavior of the Indonesian people regarding the use of plastic straws as one of the triggers for climate change issues that have occurred to date in Indonesia. They referred to KLHK data from Kompas.com; the Indonesian people still use and produce 3 million tons of plastic straw waste yearly (Safitri, 2022). This shows that campaigns related to the issue of climate change in Indonesia have not been able to change the behavior of the Indonesian people regarding this issue.

Referring to the perspective of the Theory of Planned Behavior or TPB, some factors influence changes in a person's behavior, both direct and indirect influences. Attitudes, subjective norms, and perceived behavioral control (PBC) are interrelated factors and indirectly influence changes in one's behavior. These three factors directly affect the intention to change a person's behavior, where the intention will directly impact a person's behavior change. Attitude refers to the extent to which a person has a favorable or unfavorable evaluation or assessment of the behavior in question. Subjective norms refer to social pressures a person feels to perform or not perform an act or behavior (Ajzen, 1991), conceptualised as strict rules, general guidelines, or empirical regularities (Fishbein, 2011). Perceived behavioral control or PBC refers to the perceived ease or difficulty in carrying out an action or behavior that is assumed to reflect past experiences, including anticipated obstacles and obstacles. Behavioral intention indicates how hard a person is willing to try or how much effort a person plans to make or perform a particular action or behavior (Ajzen, 1991).

As a bridge between conveying messages or campaigns related to climate change issues in changing one's behavior to be aware of climate change issues by carrying out a simple action in the form of using stainless-steel straws, the factors in the SDG concept will be used in this study. Based on the description above, the research questions are:

RQ: Do the campaign messages on climate change issues and the factors in the Theory of Planned Behavior influence changes in intentions and behavior in using stainless-steel straws as an action to prevent climate change issues?

TPB is used in several studies related to environmental issues and climate change. There is a positive influence between attitude, perceived behavioral control, peer influence, and social media on a person's behavioral intention to carry out recycling actions, which in turn influences recycling behavior. Furthermore, there is a positive influence from peers which is part of the subjective norm on the intention to recycle plastic in America (De Fano et al., 2022a). A study shows that perceived behavioral control, or PBC, positively influences preferences to reduce food waste in Malaysia. Associated with social media, social media positively influences attitudes and subjective norms in food waste prevention behavior in Malaysia (Teoh et al., 2022). Concerning behavioral intentions in preventing climate change issues, a person's behavioral intention to carry out recycling activities also significantly influences plastic recycling behavior (De Fano et al., 2022).

This article is helpful both theoretically and practically because messages or campaigns related to climate change issues, specifically persuasive messages or campaigns not to use plastic straws and to switch to stainless-steel

straws, as well as other factors in the SDG concept that affect people's intentions and changes in behavior, still need to be studied. Furthermore, theoretically, the results of this study can complement the TPB model by adding the use of social media as an influential medium in the digital era in conveying messages or campaigning on climate change issues as an additional predictor. Practically, the results of this study can be used as recommendations for the government, organisations, or groups concerned with climate change issues to understand better the proper communication strategy steps to change the behavior of Indonesian people to switch to using stainless-steel straws as a simple action step in reducing climate change issues.

There are still some gaps that will be covered in this research. First, some research still focuses on a person's behavioral intentions, not yet focusing on a person's actual behavior in using reusable straws (Asmuni et al., 2021; Nu'man & Noviati, 2021). Previous research has also focused on the main predictors in the Theory of Planned Behavior: attitudes, subjective norms, and perceived behavioral control. This study added exposure of persuasive message on social media as a variable related to climate change issues to influence the three main predictors in the Theory of Planned Behavior. Previous research still generally defines "reusable straws", which the types of "reusable straws" are made of steel, bamboo, or other materials that allow the straws to be reused after cleaning (Asmuni et al., 2021). In this study, the specific types of straws discussed are stainless-steel straws. In previous research, indicators of a person's behavioral intention variable in using reusable straws were still limited to buying behavior, regardless of whether someone who purchased the straws would use or buy them later.

**METHODS**

This study uses a positivistic paradigm according to the perspective of the Theory of Planned Behavior through a quantitative approach (Neuman, 2014). The population in this study are people who have been or are being exposed to persuasive messages or campaigns on climate change issues related to using stainless-steel straws on social media. The population in this study was the public who had been or were being exposed to persuasive messages or campaigns of climate change issues related to using stainless-steel straws on social media. Meanwhile, the sample in this study was 189 community respondents who had been or were being exposed to messages or campaigns on climate change issues related to the use of stainless-steel straws. The sample selection in this study used non-probability sampling, where the type of non-probability sampling used was purposive sampling (Neuman, 2014).

The message or campaign on social media used in this study was the persuasive message or campaign of

climate change issues related to using stainless-steel straws on social media. The data collection technique in this study used the survey method by distributing questionnaires online to each respondent (web survey) using the Google Form feature from the google.com site. The research instrument was prepared based on conceptualising and operationalising construct variables used in the research (Neuman, 2014).

The data analysis technique used to answer research questions and hypotheses is to use Structural Equation Modeling (SEM), which is a statistical analysis technique that allows a series of relationships, either direct or indirect, between one or more independent variables and one or more dependent variables to be analysed (Ullman & Bentler, 2012). SEM was used in this study to look at a series of relationships and influences between the exposure of persuasive messages on social media related to climate change issues, attitudes, subjective norms, and perceived behavioral control on the intention and

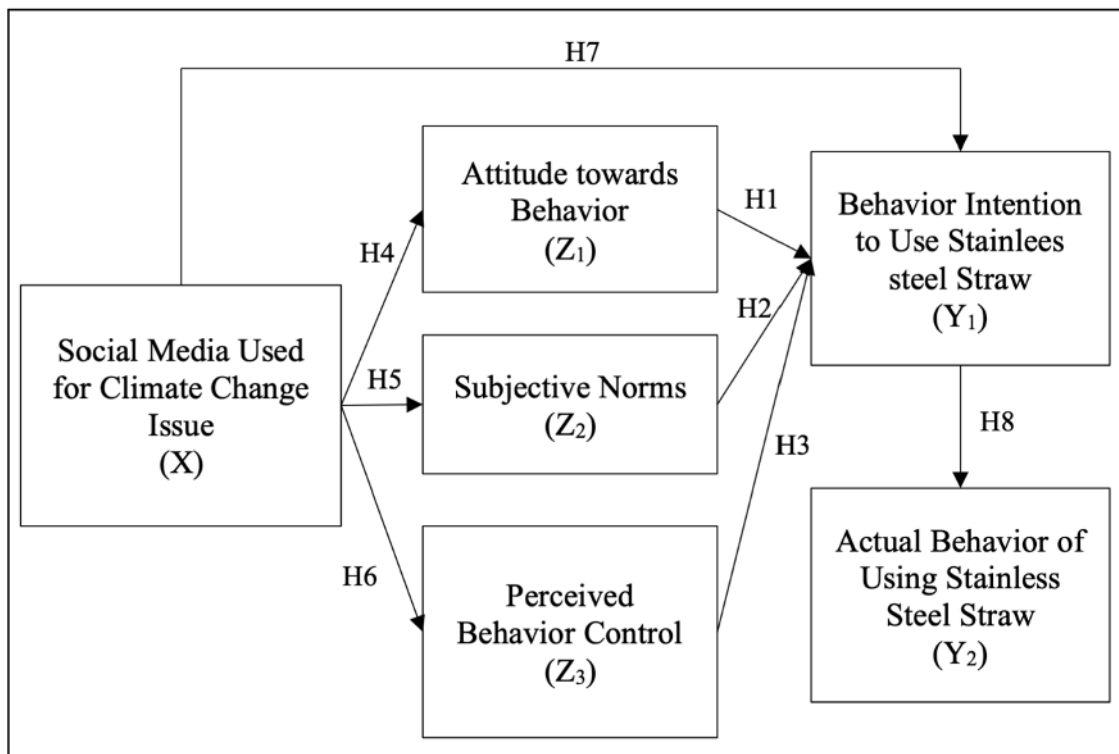


FIGURE 1. Research Model

behavior of using stainless-steel straws as an action in preventing climate change issues. Figure 1 is the research model in this study.

Based on the research model, the hypothesis prepared by the researcher is as follows:

H1: There is a positive influence between attitudes towards a person's intention to use stainless-steel straws as an action in preventing climate change issues.

H2: There is a positive influence between subjective norms on a person's intention to use stainless-steel straws as an action in preventing climate change issues.

H3: There is a positive influence between perceived behavior control (PBC) on a person's intention to use stainless-steel straws as an action in preventing climate change issues.

H4: There is a positive influence between exposure to persuasive messages on social media related to climate change issues on a person's attitude toward using stainless-steel straws as an action in preventing climate change issues.

H5: There is a positive influence between exposure to persuasive messages on social media about climate change issues and a person's subjective norm in using stainless-steel straws to prevent climate change issues.

H6: There is a positive influence between exposure to persuasive messages on social media related to climate change issues on Perceived Behavior Control (PBC) in using stainless-steel straws to prevent climate change issues.

H7: There is a positive influence between the exposure of persuasive messages on social media related to climate change issues on a person's behavioral intentions in using

stainless-steel straws to prevent climate change issues.

H8: There is a positive influence between a person's behavioral intention in using stainless-steel straws and a person's actual behavior in using stainless-steel straws to prevent climate change issues.

Testing the research questionnaire to determine whether the indicators in the study were valid and reliable was carried out through validity and reliability tests. The validity test in this study used the Pearson correlation coefficient test and the reliability test used in Cronbach's Alpha formula. Based on the validity test results, all indicators used to measure exposure to climate change messages through social media, attitudes, subjective norms, perceived behavioral control, behavioral intentions, and actual behavior are declared valid. Meanwhile, the reliability test results in this study showed that all indicators for each variable demonstrated high reliability. The table of validity and reliability test results is shown in Tables 1 and 2.

## RESULTS AND DISCUSSION

Based on the data collection results, a survey was conducted on 189 respondents to see how exposure to messages related to climate change issues and predictors in the Theory of Planned Behavior influenced intentions and behavior in using stainless-steel straws. Respondents consisted of 39.2 per cent male and 60.8 per cent female. Judging from the age of the respondents, 36.51 per cent of the respondents were in the age group of 25–29 years. According to educational attainment, 69.3 respondents were at the D4/S1 level. In terms of social media ownership, the three most used social media by respondents are WhatsApp (99.5 per cent), Instagram

TABLE 1. Results of the Research Instrument Validity Test

Indicator	Validity Test Value	Information
Variable: Exposure to Climate Change Messages on Social Media		
	0.666**	Valid
Indicator 1	0.792**	Valid
Indicator 2	0.663**	Valid
Indicator 3	0.779**	Valid
Indicator 4	0.716**	Valid
Indicator 5	0.730**	Valid
Indicator 6	0.714**	Valid
Indicator 7	0.655**	Valid
Indicator 8	0.681**	Valid
Indicator 9	0.740**	Valid
Indicator 10		
Variable: Attitude toward Behavior		
Indicator 1	0.831**	Valid
Indicator 2	0.795**	Valid
Indicator 3	0.509**	Valid
Indicator 4	0.761**	Valid
Indicator 5	0.842**	Valid
Variable: Perceived Behavior Control		
Indicator 1	0.756**	Valid
Indicator 2	0.656**	Valid
Indicator 3	0.332**	Valid
Indicator 4	0.695**	Valid
Indicator 5	0.747**	Valid
Indicator 6	0.646**	Valid
Indicator 7	0.617**	Valid
Indicator 8	0.769**	Valid
Indicator 9	0.739**	Valid
Variable: Subjective Norms		
Indicator 1	0.825**	Valid
Indicator 2	0.845**	Valid
Indicator 3	0.842**	Valid
Indicator 4	0.869**	Valid
Indicator 5	0.797**	Valid
Indicator 6	0.889**	Valid
Variable: Behavior Intention		
Indicator 1	0.722**	Valid
Indicator 2	0.795**	Valid
Indicator 3	0.872**	Valid
Indicator 4	0.784**	Valid
Indicator 5	0.753**	Valid
Indicator 6	0.793**	Valid



Indicator	Validity Test Value	Information
Variable: Actual Behavior		
Indicator 1	0.876**	Valid
Indicator 2	0.838**	Valid
Indicator 3	0.845**	Valid
Indicator 4	0.862**	Valid
Indicator 5	0.897**	Valid

\*\* The validity test value is significant at 0.01.

TABLE 2. Research Instrument Reliability Test Results

Variable	Number of Indicators	Cronbach's Alpha Value	Information
The Exposure of Climate Change Messages on Social Media	10	0.894	High Reliability
Attitude towards Behavior	5	0.803	High Reliability
Subjective Norms	9	0.920	Perfect Reliability
Perceived Behavior Control	6	0.841	High Reliability
Behavioral Intention	6	0.877	High Reliability
Actual Behavior	5	0.915	Perfect Reliability

TABLE 3. Demographic Characteristics of Research Respondents

Demographic Characteristics	Samples/Respondents	
	n	%
Sex		
Male	74	39.2
Female	115	60.8
Age Group (year)		
£ 24	21	11.11
25-29	69	36.51
30-34	59	31.22
35-39	32	16.93
<sup>3</sup> 40	8	4.23

Demographic Characteristics	Samples/Respondents	
	n	%
Educational Attainment		
£ Senior High School	22	11.6
D3/D2/D3	24	12.7
D4/Bachelor	131	69.3
Postgraduate Masters	12	6.3
WhatsApp Media Ownershpa	188	99.5
Line Media Ownership <sup>a</sup>	119	63.0
Telegram Media Ownership <sup>a</sup>	93	49.2
Facebook Media Ownership <sup>a</sup>	161	85.2
Instagram Media Ownership <sup>a</sup>	182	96.3
Twitter Media Ownership <sup>a</sup>	124	65.6
TikTok Media Ownership <sup>a</sup>	111	58.7
Pinterest Media Ownership <sup>a</sup>	58	30.7
Discord Media Ownership <sup>a</sup>	42	22.2
Kaizala Media Ownership <sup>a</sup>	15	7.9
LinkedIn Media Ownership <sup>a</sup>	63	33.3
Snapchat Media Ownership <sup>a</sup>	23	12.2
Viber Media Ownership <sup>a</sup>	1	0.5
WeChat Media Ownership <sup>a</sup>	7	3.7
Skype Media Ownership <sup>a</sup>	27	14.3
Number of Social Media Ownership		
£ 4 Media	30	15.87
5 – 7 Media	115	60.85
8 – 10 Media	30	15.87
<sup>3</sup> 11Media	14	7.41

(96.3 per cent), and Facebook (85.2 per cent). Judging from the amount of social media ownership, the average respondent owns five to seven media outlets with a percentage of 60.85 per cent ( $M=6.42$ ;  $SD=2.131$ ). The descriptive analysis table in this study will be shown in Table 3.

Note: <sup>a</sup>) reflects the number and percentage of respondents who answered “yes” to the questionnaire

Before proceeding with an in-depth analysis related to proving the hypothesis

in this study, the first thing to do is to factorise the indicators and variables in the study through factor analysis. Based on the analysis results, attitude variables, subjective norms, perceived behavioral control, intention, and actual behavior are suitable for use in this research data. Meanwhile, the variable exposure to climate change messages through social media is divided into two factors: exposure to climate change messages through social media owned by the



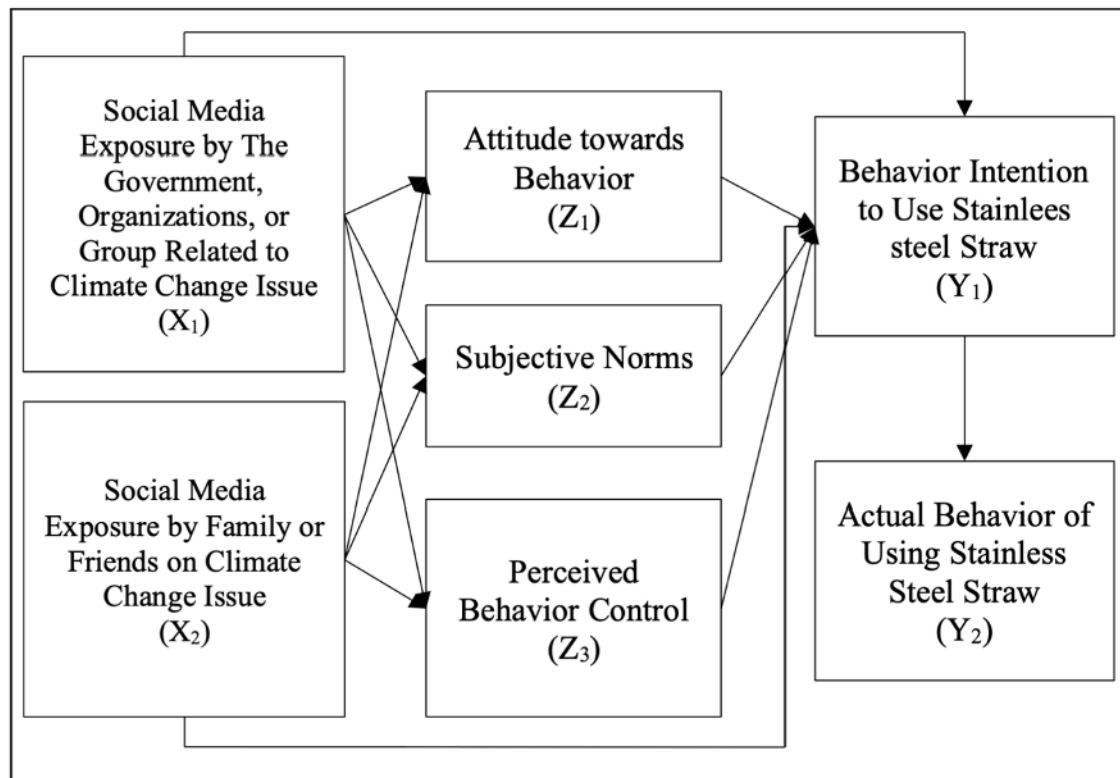


FIGURE 2. Results of The Research Model Based on Factor Analysis

government, organisations, or groups, and exposure to climate change messages through social media owned by family or friends. Based on the factor analysis results, the research model that will be examined and discussed in the study is shown below.

The statistical analysis method used is Structural Equation Modeling (SEM) to answer the research questions and hypotheses in this study. The table 4 and 5 show the influence of the exposure of climate change messages on social media and the three main predictors in the Theory of Planned Behavior on a person's intention and actual behavior in using stainless-steel straws as a preventive action against climate change issues.

Based on Tables 4 and 5, 71.7 per cent of attitudes, subjective norms, perceived behavioral control. Messages or campaigns conveyed by the government, organisations, or community groups regarding the issue of climate

change contribute jointly to a person's intention to use a straw stainless steel as an action to prevent climate change issues ( $R^2 = 0.717$ ). In comparison, the other 28.3 per cent are influenced by other factors. Based on the findings in this study, there is a significant positive effect of 45.5 per cent between attitudes toward one's intention to use stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.455$ ;  $p\text{-value} < 0.05$ ). Furthermore, there is a significant positive effect of 27.1 per cent between subjective norms on one's intention to use stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.271$ ;  $p\text{-value} < 0.05$ ). There is a significant positive effect of 20.1 per cent between perceived behavior control on one's intention to use stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.201$ ;  $p\text{-value} < 0.05$ ). There is a significant positive effect of 12.6 per cent between exposure of climate change messages on social media exposure by governments, organisations, and community groups on

TABLE 4. The Influence of Predictor Factors on the Behavior of Using Stainless-steel Straws as Action in Preventing Climate Change Issues.

Result	Effect	Hypothesis statement
Model 1: Predictor ® BI (R <sup>2</sup> = 0.717)		
ATT ® BI	0.455**	H1 is proven
SN ® BI	0.271**	H2 is proven
PBC ® BI	0.201**	H3 is proven
MED1 ® BI	0.126*	H7a is proven
MED2 ® BI	-0.056	H7b is not proven
Model 2: Predictor ® ATT (R <sup>2</sup> = 0.284)		
MED1 ® ATT	0.284**	H4a is proven
MED2 ® ATT	0.295**	H4b is proven
Model 3: Predictor ® SN (R <sup>2</sup> = 0.401)		
MED1 ® SN	0.054	H5a is not proven
MED2 ® SN	0.594**	H5b is proven
Model 4: Predictor ® PBC (R <sup>2</sup> = 0.137)		
MED1 ® PBC	0.065	H6a is not proven
MED2 ® PBC	0.322**	H6b is proven
Model 5: Predictor ® B (R <sup>2</sup> = 0,248)		
BI ® B	0.498**	H8 is proven

Note: MED1 = Exposure to Climate Change Messages on Social Media by The Government, Organizations, or Group; MED2 = Exposure to Climate Change Messages on Social Media by Family or Friends; ATT = Attitude towards Behavior; SN = Subjective Norms; PBC = Perceived Behavior Control; BI = Behavior Intention; B = Actual Behavior; \*) Significant effect at the 0.05 (2-tailed) level; \*\*) Significant effect at the 0.01 (2-tailed) level.

TABLE 5. Direct and Indirect Effect Between Predictor Factors on the Behavior of Using Stainless-steel Straws as Action in preventing climate change issues.

Structural Model	Effect		
	Direct	Indirect	Total
MED1 ® ATT ® BI ® B	-0.205**	0.064**	-0.141**
MED1 ® SN ® BI ® B	-0.205**	0.007**	-0.198**
MED1 ® PBC ® BI ® B	-0.205**	0.007**	-0.198**
MED2 ® ATT ® BI ® B	0.222**	0.067**	0.289**
MED2 ® SN ® BI ® B	0.222**	0.080**	0.302**
MED2 ® PBC ® BI ® B	0.222**	0.032**	0.254**

Note: MED1 = Social Media Exposure by The Government, Organizations, or Group Related to Climate Change Issue; MED2 = Social Media Exposure by Family or Friends on Climate Change Issue; ATT = Attitude towards Behavior; SN = Subjective Norms; PBC = Perceived Behavior Control; BI = Behavior Intention; B = Actual Behavior; \*) Significant effect at the 0.05 (2-tailed) level; \*\*) Significant effect at the 0.01 (2-tailed) level.

a person's intention to use stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.126$ ;  $p\text{-value} < 0.05$ ). However, there is no significant influence between exposure to climate change messages on social media by families and communities on a person's intention to use stainless-steel straws ( $p\text{-value} > 0.05$ ).

Concerning exposure to messages or campaigns through social media, the results of the study show that there is a significant positive effect of 28.4 per cent between exposure to climate change messages on social media by governments, organisations, and community groups on a person's attitude in terms of using stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.284$ ;  $p\text{-value} < 0.05$ ). There is also a significant positive effect of 29.5 per cent between family and community exposure to messages on social media related to climate change on a person's attitude regarding using stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.295$ ;  $p\text{-value} < 0.05$ ). There is a significant positive effect of 59.4 per cent between exposure to climate change messages on social media by family and friends on a person's subjective norm in terms of using stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.594$ ;  $p\text{-value} < 0.05$ ), but not there is a significant influence between exposure of climate change issues on social media by governments, organisations, and community groups on a person's subjective norm in terms of using stainless-steel straws ( $p\text{-value} > 0.05$ ). Another finding is that there is a significant positive effect of 32.2 per cent between exposure to climate change messages on social media by family and friends on a person's Perceived Behavior Control in terms of using stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.322$ ;  $p\text{-value} < 0.05$ ), but there is no significant influence between exposure to climate change messages on social media by the government, organisations,

and community groups on the behavioral control that a person feels in terms of using stainless-steel straws ( $p\text{-value} > 0.05$ ). Concerning the behavior of using stainless-steel straws, the results showed a significant positive effect of 49.8 per cent between one's intention on one's behavior to use stainless-steel straws ( $b_{\text{standardised coefficient}} = 0.498$ ;  $p\text{-value} < 0.05$ ).

Based on the findings in this study, there is a significant positive effect on attitude towards one's intention to use stainless-steel straws. This study's results align with several previous studies (Asmuni et al., 2021; Chetioui et al., 2020; Nu'man & Noviati, 2021; Q. Yang & Wu, 2021). To encourage the use of stainless-steel straws by cultivating attitudes, information about the environmental benefits of using stainless-steel straws needs to be disseminated to the public (Asmuni et al., 2021). For this reason, it is essential to carry out ongoing campaigns to form a more positive attitude toward environmental concern by reducing the use of items that have the potential to become plastic waste (Nu'man & Noviati, 2021) and starting to move towards using reusable straws (Asmuni et al., 2021). Messages, to form a positive attitude, can contain messages that can make people prefer the use of stainless-steel straws and messages that can convince people that using stainless-steel straws is a fun thing.

Furthermore, the study's results also show a significant positive effect between subjective norms on one's intention to use stainless-steel straws. This study's results align with several previous studies, which showed a positive influence between subjective norms on one's behavioural purposes (Asmuni et al., 2021; Dhir et al., 2019; Teoh et al., 2022). The presence of pressure to conform to social expectations of climate change issues has a positive effect on one's intention to take precautions against the issue (Teoh et al., 2022). The government should

promote the practice of using reusable straws as a new norm in society (Asmuni et al., 2021). The existence of subjective norms and support from the family in shaping one's intention to use stainless-steel straws is the primary key to carrying out simple actions related to preventing the issue of climate change. Indonesia, where the majority of its culture adheres to a patriarchal cultural system, makes it possible for a father's role to become an opinion leader in the family in conveying messages of persuasion and providing support to prevent climate change issues through the use of stainless-steel straws.

Another finding in this study is that there is a significant positive effect between Perceived Behavior Control on one's intention to use stainless-steel straws. This study's results align with several previous studies (Konstantoulaki et al., 2022; Nu'man & Noviati, 2021; Pourmand et al., 2020; Y. Yang et al., 2022). The role of perceived behavioural control towards pro-environmental intentions is possible because individuals have strong beliefs and controls to reduce the use of plastic waste, such as plastic straws (Nu'man & Noviati, 2021). This form of strong belief and control can be in the form of independent decision-making in purchasing stainless-steel straws and the presence of awareness to buy these straws. In this case, it is recommended that the Government of Indonesia, together with organisations and groups concerned with climate change issues, expand messages or campaigns on the issue of the dangers of using plastic straws, which in turn makes people aware of and decide to buy and use stainless-steel straws.

Next, there is a significant positive effect between exposure to climate change messages on social media by governments, organisations, and community groups on a person's intention to use stainless-steel straws, where the findings of this study are in line with

several previous studies (De Fano et al., 2022; Gil de Zúñiga, 2012; Priliantini et al., 2020; Q. Yang & Wu, 2021). One of the organisations in Indonesia that promote and continuously address the issue of climate change is Greenpeace Indonesia. Based on a campaign conducted by Greenpeace Indonesia using the hashtag #PantangPlastik, Indonesian people are motivated to carry out environmentally friendly activities, such as the emergence of an intention to reduce the use of plastic straws (Priliantini et al., 2020). To form the intention of the Indonesian people to use stainless-steel straws, the Government must make the issue of climate change a top agenda, where the messages or campaigns delivered are prioritised on climate change issues that occur in the environment around the community.

Social media is currently being used to convey information that is fast and effective enough to be accepted by the public (Teoh et al., 2022). Concerning the exposure to messages or campaigns through social media, the study results show a significant positive influence between exposure to climate change messages on social media by governments, organisations, and community groups on a person's attitude regarding using stainless-steel straws. This study's results align with several previous studies (Belinga et al., 2021; Gil de Zúñiga, 2012; Syafrikurniasari & Widiani, 2020; Q. Yang & Wu, 2021). The campaign carried out by KFC Indonesia with the hashtag #NoStrawMovement, in the context of creating awareness so that plastic straws do not pollute Indonesia's marine environment, was able to change people's attitudes not to using plastic straws (Syafrikurniasari & Widiani, 2020). In the smallest of environments, efforts to shape attitudes towards using stainless-steel straws should also be made. The process of socialisation within the family and friendly environment is

critical in determining the attitude of the Indonesian people toward using stainless-steel straws.

Furthermore, there is a significant positive influence between exposure to climate change messages on social media by family and friends on a person's subjective norm regarding using stainless-steel straws. This study's results align with several previous studies (De Fano et al., 2022; Teoh et al., 2022; Q. Yang & Wu, 2021). Through social media, messages, including climate change issues, can be disseminated to a broader audience more effectively than dissemination through conventional media (Teoh et al., 2022). The government must ensure that messages or campaigns related to the use of stainless-steel straws can be disseminated to the family level, bearing in mind that messages via social media conveyed by families positively affect subjective norms that apply in the family environment.

Another finding shown in this study is that there is a significant positive influence between exposure to climate change messages on social media by family and friends on the perceived behavioral control of a person in terms of using stainless-steel straws. This study's results align with several previous studies (De Fano et al., 2022; Gil de Zúñiga, 2012; Q. Yang & Wu, 2021). To make decisions independently and increase awareness of buying and to use stainless-steel straws, it is necessary to convey messages regarding using these straws families through social media. Understanding of using stainless-steel straws can be raised when someone sees uploaded posts by family or friends who have used these straws. When the closest people use stainless-steel straws and tell their closest colleagues through social media (submitting messages or simply uploading photos with exciting captions), awareness will automatically arise for those closest to them who see

them to help prevent climate change issues through the use of these straws.

Concerning the behavior of using stainless-steel straws, it was found in this study that there was a significant positive effect between a person's intention on a person's behavior to use stainless-steel straws, where the results of this study were also in line with several previous studies (Ajzen, 1991; Huang et al., 2021; Pourmand et al., 2020; Q. Yang & Wu, 2021). A person's intention to perform an action or behavior certainly influences how the person's actual action or behavior is (Ajzen, 1991). The intention of someone to use stainless-steel straws regularly can positively affect someone's actions to start buying and using these straws. In fact, within a certain period, it can be predicted that someone who has purchased and used a stainless-steel straw will become a messenger or campaign regarding using stainless-steel straws as a simple action to prevent climate change issues through their social media.

In addition to the influences that directly influence a person's behavior to use stainless-steel straws, several indirect impacts influence the behavior of using stainless-steel straws as an action to prevent climate change issues in Indonesia. The exposure of climate change messages on social media by the government, organisations, community groups, families, and friends has an indirect influence on the behavior of using stainless-steel straws which are moderated by attitudes, subjective norms, perceived behavioral control, and one's behavioral intentions. Exposure to climate change messages on social media with family and friends will substantially influence the behavior of using stainless-steel straws if this effect is moderated by the three predictors in the Theory of Planned Behavior. The results of this study are in line with several previous studies which showed an indirect effect



between exposure to messages or campaigns via social media on a person's behavior (Chan, 1998; De Fano et al., 2022; Huang et al., 2021; Mohammed & Ferraris, 2021; Pourmand et al., 2020; Teoh et al., 2022; Q. Yang & Wu, 2021).

## CONCLUSION

The issue of climate change is one of the contexts in communication science. In general, the Theory of Planned Behavior is appropriate to see the effect of the predictors in theory on a person's intention and actual behavior to use stainless-steel straws as a simple action in preventing climate change issues. Attitudes, subjective norms, and perceived control or Perceived Behavior Control positively influence a person's intention to use stainless-steel straws. In contrast to previous studies, in this study, it was found that a person's intention to use stainless-steel straws had a direct, positive effect on his actual usage behavior. This study also found that attitudes, subjective norms, and perceived control also indirectly positively influence the behavior of using stainless-steel straws. In addition, persuasive message on social media by the government, organisations, community groups, families, and friends related to the issue of climate change has an indirect influence on the behavior of using stainless-steel straws which are moderated by attitudes, subjective norms, perceived behavioral control, and one's behavioral intentions. Exposure to messages on social media with family and friends related to climate change will substantially influence the behavior of using stainless-steel straws if this effect is moderated by the three predictors in the Theory of Planned Behavior.

In addition to using predictors in the Theory of Planned Behavior, this study adds a new predictor: exposure to climate change messages on social media. In summary, information in the form of

messages or campaigns related to climate change issues and the use of stainless-steel straws positively affects attitudes, subjective norms, perceived control, and intention to use stainless-steel straws. Indirectly, exposure to climate change messages through social media also positively affects a person's behavior in using stainless-steel straws.

Persuasive messages or campaigns on social media, as a medium that can quickly provide information to the public regarding climate change issues, must be used as optimally as possible to increase awareness, generate intentions, and change people's behavior to be more aware of climate change issues. Governments, organisations, and community groups that pay attention to climate change issues can use social media to convey messages regarding climate change issues and make it the main agenda so that people are increasingly exposed to and take actions or behaviours that can prevent climate change issues, one of which is by using stainless-steel straws. The primary key that information related to climate change issues can be appropriately conveyed is through information dissemination by family or close friends. In line with the research results, the tendency of Indonesians to follow what their closest relatives are doing is proven to be able to change attitudes and shape one's intentions and behaviour to be more aware of climate change. Uploading posts related to the use of stainless-steel straws through social media as a message belonging to a family or close friends turns out to be able to foster intention and change the behavior of those closest to them to also use stainless-steel straws as a simple action in preventing climate change.

The limitations of this study are the number of samples which is still relatively small. Further research needs to use a larger sample to get more representative



results. In addition, future research should determine one theme of the message or campaign on climate change issues to see the effectiveness of the message or campaign and how it influences the behavior of using stainless-steel straws by the Indonesian people.

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