

most of the respondents have high responsibility, obligation and commitment to household waste sorting.

CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

The purpose of this research is to investigate the factors influencing household's intention towards waste sorting which are Attitude, Subjective Norms, Perceived Behavioural Control, Environmental Concern and Personal Moral Obligation. Additionally, there are five objectives that has been mentioned in Chapter 1, which is to investigate whether Attitude is positively influenced with Behavioural Intention, whether Subjective Norms is positively influenced with Behavioural Intention, whether Perceived Behavioural Control is positively influenced with Behavioural Intention, whether Environmental Concern is positively influenced by Behavioural Intention and whether Personal Moral Obligation is positively influenced with Behavioural Intention.

The unit of observations of this research are Indonesians that lives in Jabodetabek region within the age from 18 years old and above. The reason for this wide age range is because in each household it is believed that each age groups has their own intentions to do household waste sorting. The total responses that has been collected was 341 responses, however due to screening questions that has been applied in the questionnaire, there are only 179 responses that passed the screening questions and eligible and qualified to answers the questionnaires that has been distributed before. The majority of the respondents are dominated by the female by 61.4% while the male covers 38.5% from the total responses. Most of the respondents are also in the age group of 18-26 years old, covering around 44.7% and the second highest responses comes from the age group of 27-53 years old by 22.9% of the total responses. Moreover, the majority of the monthly income from the respondents are individuals who receive between Rp.3,000,000 – Rp.5,000,000 per month and 72% of the total respondents already completes Bachelor Degree studies.

The accumulated data from the responses was then collected and processes using SPSS for the classical assumption test then analyse the data further using multiple regression analysis. There are several outcomes from the Chapter 4 that can be concluded. First, based from the outcome of the F-test, the independent variables seem to have an influenced with the dependent variable. However, according to the outcome from the T-test, Attitude is not positively influenced with Behavioural Intention. Third, Environmental Concern is also not positively influenced with Behavioural Intention. Lastly, Personal Moral Obligation is the most critical factor to influenced Behavioural Intention.

5.2. Managerial Implications

5.2.1. Attitude

Attitude Questions	Majority Result	
	Mean	Median
ATT1: I think Household waste sorting is important.	4.70	Strongly Agree: 77.1%
ATT2: I think household waste sorting is beneficial.	4.56	Strongly Agree: 63.1%
ATT3: I think household waste sorting is wise.	4.51	Strongly Agree: 59.8%
ATT4: I think household waste sorting is important to protect the environment.	4.60	Strongly Agree: 64.2%

*Table 5. 1. Attitude Summary
Source: Author, SPSS Output, 2021*

Although, Attitude does not influence Behavioural Intention based from the findings in this study, the Indonesian Corrugated Cardboard Industry Association (ICCIA) should take into account that Attitude is one of the most critical factors that influence Behavioural Intention. Since Attitude shows the perception of individuals regarding a specific action or behaviour whether it is good or bad, Indonesians need to be aware

of the importance of sorting waste and how it impacted to the society or environment. If there are still low Attitude to sort waste amongst residents in Jabodetabek, then ICCIA needs to educate the people regarding the importance of doing household waste sorting so that the residents in Jabodetabek have a good perception on doing household waste sorting and arguably it can entice the residents to do the action. Therefore, recommendations were made for further improvements in the future.

The table above shows the Attitude summary of ratings from the survey that has been distributed to the respondents. It can be seen that the indicator ATT1 is the most critical factor that positively influenced Behavioural Intention. Moreover, the indicator stated that "I think Household waste sorting is important" goes by 77.1% from the total respondents. Furthermore, Attitude is defined as an individual's perception on whether the action is right or wrong, good or bad, important, attractive, friendly, and interesting to the person (Chan, 1998). This means that 77.1% of the respondents that have done waste sorting before have a perception that doing household waste sorting is important.

However, the researcher thinks that most of the Indonesian people, especially in Jabodetabek region, are still not aware or have the perception that sorting waste in their own household is important. Therefore, the researcher proposed a recommendation to the ICCIA to spread the awareness and importance of sorting waste. First, the association can propose a new regulation to the government legislation in Indonesia regarding separating waste in residents' households and to provide effective waste bank for the Indonesian residents to use and dispose their separated wastes with ease. Arguably, this method can improve the awareness of residents around Jabodetabek to sort their waste in their own household and potentially it can develop a habit for the residents to separate their waste in the future.



Figure 5. 1. Instruction to Sort Waste Example
Source: Direktorat Jendral Cipta Jaya

Second, the association can also spread billboards around some of the areas of Jabodetabek, to spread the awareness regarding the importance of sorting waste to the society. Information regarding on how to separate waste correctly can also be applied to the billboards so it can potentially entice the Jabodetabek’s residents to sort their own waste.

5.2.2. Subjective Norms

Subjective Norms Questions	Majority Result	
	Mean	Median
SN1: My family thinks that I should do household waste sorting. (Shen et al., 2019)	4.16	Strongly Agree: 45.8%
SN2: My friends think I should do household waste sorting. (Developed from Shen et al., 2019)	3.77	Agree: 31.8%
SN3: My colleagues think that I should do household waste sorting. (Developed from B. Zhang et al., 2019)	3.85	Agree: 34.6%
SN4: My families and friends are doing household waste sorting. (Developed from Shen et al., 2019)	3.82	Strongly

		Agree: 33.5%
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*Table 5. 2. Subjective Norms Summary
Source: Author, SPSS Output, 2021*

The table above shows the Subjective Norms summary based from the responses that has been collected from the questionnaires. It can be seen that indicator SN1 is the most critical factor that positively influenced with Behavioural Intention. With 45.8% from the total respondents strongly agree with the statements of the indicator. The statement shown is “My family thinks that I should do household waste sorting”. This means that 45.8% of the respondents strongly agree that their families recommended that those individuals to do household waste sorting. Furthermore, Gao et al (2017) mentioned before that subjective norms refers to an individual’s perception of social pressure from people who are important to him or her, who believe that a specific individual should or should not do something. This means that family’s pressure is critical when an individual wants to make an intention to sort waste.

However, the author thinks that not all families suggest their own family members to do household waste sorting. Therefore, a recommendation must be made to increase family’s’ pressure to do household waste sorting as the external factor or subjective norms that can influenced individual’s behaviour intention. In this case the Indonesian Corrugated Cardboard Industry Association should developed a strategy of e-WOM (electronic word of mouth), since spreading the awareness of household waste sorting is faster through the internet and will be more heard and trusted if it came from those who are important to the individuals. The targeted people can be the female residents or housewives since the majority of the respondents came from female, this means that the female residents are the crucial people to make the decisions and doing the behaviour of household waste sorting. By targeting to the female respondents, they can be they key to encourage more people around them to do the action of household waste sorting. Moreover, since Indonesians are family oriented, the housewives or mothers can be the key encouragement for the family to do the action. These social media platforms such as WhatsApp group, Facebook, and Instagram are great platform to share the importance of household waste sorting and putting pressure on those around them.

5.2.3. Perceived behavioural Control

Perceived Behavioural Control Questions	Majority Result	
	Mean	Median
PBC1: Household waste sorting is effortless.	4.08	Agree: 40.8%
PBC2: I have the time and opportunities, to perform household waste sorting.	4.12	Agree: 45.3%
PBC3: I have the willingness to perform household waste sorting.	4.34	Agree: 48.6%
PBC4: I can control myself to do household waste sorting.	4.30	Agree: 48.0%

*Table 5. 3. Perceived Behavioural Control Summary
Source: Author, SPSS Output, 2021*

As it shown from the table above, the indicator of Perceived Behavioural Control who have the highest rating is PBC3 (48.6%). This makes PBC3 the most critical factor from PBC that positively influenced Behavioural Intention. Although, there is a small difference with PBC4 (48.0%) which statement was “I can control myself to do household waste sorting” and PBC3 statement was “I have the willingness to perform household waste sorting”. This means that individuals that have done waste sorting before have the willingness and control over themselves to do household waste sorting.

The recommendation that can be applied to Indonesian Corrugated Cardboard Industry Association is to work together with the organizations that collect and distribute wastes to the industries that needs them; one of those organizations in Waste4Change. Wast4Change provide rewards to individuals that recycled or dispose waste through their services. Therefore, it can argue that this method can potentially motivate those who haven't done household waste sorting beforehand to have the willingness to do so.

Social media campaign is also preferable since it reach out to more residents around Jabodetabek area. Campaign such as “*Stop Using Plastic Straws*” and “*Reduce, Reuse, Recycle*” are campaigns that has been around for quite a while. It can be applied to the topic of Household Waste Sorting. The association can talk about the damage from not doing household waste sorting such as environmental degradation or the effects of it to the economy of Indonesia since Corrugated Box Industry is one of the biggest contributors to the economy of Indonesia. Therefore, the residents around Jabodetabek area are aware of the importance of household waste sorting and the beneficial that they can get from doing it. The researcher predicts that by doing a campaign, it will improve the factor of PBC that can positively influenced the Behavioural Intention.

5.2.4. Environmental Concern

Environmental Concern Questions	Majority Result	
	Mean	Median
EC1: Environmental issue such as waste is related to human survival.	4.60	Strongly Agree: 64.8
EC2: Activities such as household waste sorting affects the environment survival.	4.53	Strongly Agree: 58.7
EC3: A proper waste sorting is an act to live in harmony with nature to survive.	4.55	Strongly Agree: 62.0

Table 5. 4. Environmental Concern Summary
Source: Author, SPSS Output, 2021

As for the Environmental Concern, it was shown in the findings of this study that the variable has no influence to Behavioural Concern, however, this factor is important for the Indonesian Corrugated Cardboard Association since the industry of corrugated box supports environmental perseverance and practice sustainability action by limiting on using virgin pulp and using recycled paper or waste paper. Therefore, if there is a lack of environmental concern amongst the residents in Jabodetabek, it could affect the lack of sorting waste in a household level, thus, affecting the

corrugated box industry to recycle waste paper. With that, recommendation was made for ICCIA to raise the awareness of environmental concern.

In the table shown above, regarding the Environmental Concern responses, EC1 is the indicator from Environmental Concern that positively influenced Behavioural Intention the most (64.8%). The statement in the EC1 above was “Environmental issue such as waste is related to human survival”. Dunlap and Jones (2002) also described environmental concern as “one’s attitude toward specific environmental topics that are distinct in some ways, but are ultimately reflections of a single, broad environment attitude”. This means that the respondents are aware environmental issues such as waste and perceived those environmental issues to be related with the human survival.



*Figure 5. 2. Public Service Advertisement Prambors
Source: Pramborsfm.com*

The researcher, however, believe that not all Indonesians citizens are aware of the environmental issues and have no concern about it. Therefore, a recommendation for the Indonesian Corrugated Cardboard Industry Association is to spread regarding environmental issues to media such as radio. Similar with the public service advertisement, the advertisement regarding environmental issues can be played

between songs in the radio to spread the awareness so that the citizens can be more concern about the environment. The radio stations that spreads those messages are “*Prambors*”, “*MustangFM*”, and “*Virgin Radio*”. The ICCIA can also work together with the environmentalist organizations in Indonesia to tackle this problem. Spreading information regarding the damage of unsorted waste to the environment and to the society through the social media and also through the radio.

5.2.5. Personal Moral Obligation

Personal Moral Obligation Questions	Majority Result	
	Mean	Median
PMO1: Everyone has a moral obligation to conduct household waste sorting behaviours in daily life.	4.27	Strongly Agree: 47.5%
PMO2: I believe that I have a responsibility to conduct household waste sorting behaviours in daily life.	4.37	Strongly Agree: 46.9%
PMO3: I would feel guilty if I were not involved in household waste sorting behaviours in daily life.	3.98	Agree: 42.5%
PMO4: I have a commitment to do household waste sorting to reduce environmental damage.	4.34	Strongly Agree: 47.5%

*Table 5. 5. Personal Moral Obligation Summary
Source: Author, SPSS Output, 2021*

In table 5.5 above, it shows the summary of the respondents of Personal Moral Obligation. PMO is the most critical factor that positively influenced Behavioural Intention, and the indicator that has the strongest result is PMO1 and PMO4 since both have the same result (47.5%). The PMO1 stated that “everyone has a moral obligation to conduct household waste sorting behaviours in daily life”, while PMO4 stated that “I have a commitment to do household waste sorting to reduce environmental damage”. This means that the majority of the respondents that has done household waste sorting before have the commitment to do household waste sorting and feels that everyone has the obligation to do so.

Although, the respondents that have done household waste sorting before have the moral obligation to do the action of waste sorting, the author believe not everyone in Indonesia, specifically around Jabodetabek area, have the obligation to do household waste sorting. Therefore, a recommendation has been made for the Indonesian Corrugated Cardboard Industry Association (ICCIA) to visit school or conducting seminars in schools to educate the young generation to sort waste correctly, since behaviours are developed early in young ages. While educating children on how to sort waste correctly, the author believed that it can entice their moral obligation to do household waste sorting.



*Figure 5. 3. Yakult Seminar in Al-Falaah School
Source: sekolah-falaah.sch.id*

This method has been conducted before by Yakult, they visit schools and neighbourhoods to educate the importance of drinking Yakult for the stomach. The same concept can be applied by the ICCIA to educate the residents around Jabodetabek region on the importance to do household waste sorting.



Figure 5. 4. Yakult Seminar in Nurul Fikri School
Source: nurulfikri.sch.id

5.2.6. Behavioural Intention

Behavioural Intention Questions	Majority Result	
	Mean	Median
BI1: I plan to take part in household waste sorting behaviour shortly.	4.26	Agree: 46.4%
BI2: I will make an effort to take part in household waste sorting behaviour shortly.	4.32	Strongly Agree: 45.3%
BI3: I intend to isolate recyclable waste separately when discarding.	4.43	Strongly Agree: 48.6%
BI5: Although household waste sorting consume time, I still do it.	4.30	Agree: 46.9%

Table 5. 6. Behavioural Intention Summary
Source: Author, SPSS Output, 2021

Based from the table above, it shows the responses summary of Behavioural Intention from the respondents. From the total respondents that have done waste sorting before, there are 48.6% that strongly agree that they intend to isolate recyclable waste separately when discarding. That statement would be very beneficial for the corrugated box industry since the collection process of waste paper would be easier.

However, not all residents are familiar with waste sorting and have the intentions to do so. Therefore, it is suggested that ICCIA would have to make a strategy to make residents in Jabodetabek region to have the intention to sort waste in their household. The recommendation for this would be similar with the recommendations from other variables since the goal is to educate the masses on the importance to sort waste in their own household. Recommendations such as advertisements through media like radio and seminars in schools or neighbourhoods to educate the people regarding the benefits or importance of household waste sorting is to the society.

5.3. Recommendations for Further Research

There are few things that can be improved from this study. First, this study is using the theoretical framework of TPB (Theory of Planned Behaviour) which originally includes the factors of Attitude, Subjective Norms, and Perceived Behavioural Control, with additional Environmental Concern and Personal Moral Obligation that can influenced the Behavioural Intention to the model. It is possible in the future studies to include other variables in the model to be analysed further. This study also targets the respondents from the age of 18 above, therefore, it is recommended to narrow down the respondents age group, to have a more in-depth information and data. The study was also conducted in Indonesia and limited to Jabodetabek region; therefore, it is possible to conduct the research in other countries or in another region in Indonesia. Lastly, this research discusses on the general factors that influenced the intention to sort waste; therefore, it is recommended for future studies to discuss other topics such as intention to recycle bottle, intention to sort organic waste and intention to sort waste correctly in public trashcan.