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Understanding Household's Intention of Recycling Clothes: An Extension of TPB with Lack of Facilities and Social Media Usage

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Abstract

This research note addresses the gap in the household's intention to recycle clothes in the Malaysian context. It examines the intention of recycling clothes by integrating lack of facilities and social media usage into The Theory of Planned Behaviour (TPB) framework. An online survey was developed and distributed throughout Malaysia via social media platforms, and data was collected from 148 respondents. They were then screened and analysed. Subjective norms, perceived behavioural control, and social media usage positively impacted the intention, and the lack of facilities negatively impacted intention. This study offers insights into the literature and responds to the call to investigate household intention to recycle clothes.

Keywords: Theory of Planned Behaviour, Social media usage, Recycling intention

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1. Introduction

Clothing has been increasingly seen as disposable since the 20th century. This trend has been exacerbated over the last 15 years by rising demand from an expanding global middle class and the introduction of the “fast fashion” phenomenon, which has caused production to double in that time. As the industry expands at an unprecedented rate, it has also introduced harmful trends such as fast fashion, which are detrimental because clothes are produced cheaply, have a shorter practical service life, and are more prone to creative obsolescence. Approximately 73% of all clothing is disposed of in landfills or incinerated. If current trends continue, the fashion industry will contribute 26% of the carbon budget for 2 degrees Celsius by 2050. (Ellen MacArthur Foundation, 2017).

Malaysia’s clothing industry is also growing at a rate of 104.3 per cent, with a value of \$3.04 billion to \$6.21 billion expected between 2013 and 2022. (Statista, 2022). The fashion life cycle’s linear flow resulted in high waste production (Brambilla et al., 2019). Malaysia, like other countries, has advocated for increased recycling since the 1990s through the 3R’s campaign and environmental legislation such as the Solid Waste and Public Cleansing Management Act 2007. (Act 672). However, the impact has been negligible. Malaysia’s 31.52 per cent recycling rate in 2021 is a depressing figure that costs Malaysia approximately RM476 million in recyclable resources while also harming the environment (Bernama, 2022).

As a result, understanding individual behaviour and motivations would be highly beneficial to society in the context of clothing recycling. To address human behaviour, research has been conducted. The Theory of Planned Behaviour (TPB) is one of the many theories describing an individual’s behaviour. Three fundamental elements of TPB—attitude, subjective norms, and perceived behavioural control—combine to form an individual’s purpose and, eventually, behaviour.

Attitude is “a learned predisposition to respond in a consistently favourable or unfavourable manner when an individual engages in certain behaviours” (Ajzen, 1991). Individuals with a more positive attitude have more positive behavioural intentions, and vice versa (Taylor and Todd, 1995). Subjective norms are concerned with the influence and pressure exerted by an important person on individuals’ behavioural intentions. On the other hand, perceived behavioural control is the individual’s belief in their ability to complete the task (Ajzen, 1991). The TPB has been widely applied to explore recycling

behaviours. The three fundamental elements of TPB, namely attitude, subjective norms and perceived behavioural control, were found to be significant and positively related to recycling behaviour in Belgium (Lizin et al., 2017), China (Wang et al. 2016; Zhang et al., 2021), Brazil (Echegaray, 2016), and Pakistan (Khan et al. (2019)), to name a few.

While the vast majority of research into recycling behaviour has focused on TPB, more recent studies recommend including other components that can explain recycling intention further. Chen and Tung (2010) and Khalil et al. (2017) highlight facility conditions, whereas De Fano et al. (2022) and Mallick and Bajpai (2019) emphasise social media use. The condition of facilities in this study context refers to the ease, frequency, proximity, and availability of access to recycling infrastructure. Individuals' intentions to recycle will be discouraged if such facilities are unavailable, and vice versa (Chen & Tung, 2010; Khalil et al. 2017). Zhang et al. (2016), in their research focusing on waste recycling in China, have confirmed that the lack of adequate recycling facilities has a negative relation to recycling intention. In short, lack of facilities prevents people from sorting and reusing most recyclable wastes.

Blogs, forums, microblogs, social gaming, and video sharing are examples of social media (Aichner & Jacob, 2015). Social media has quickly become an essential communication tool for governments, private companies, and non-governmental organisations worldwide to promote events and initiatives (De Fano et al., 2022). As a result, it is believed that the use of social media can result in timely environmental responses (Roshandel Arbatani et al., 2016). A recent study by De Fano et al. (2022) confirmed the positive influence of social media on plastic recycling.

Even though facilities and social media have enormous potential, little research has been conducted on their impact and significance (Khalil et al., 2017; De Fano et al., 2022). This research note examines Malaysian households' clothing recycling intentions using the TPB with lack of facilities and use of social media as two additional constructs. Exploring the possible effect of facility conditions and social media usage on the intention to recycle, mainly recycle clothes, is vital given Malaysia's depressing 31.52 per cent recycling rate in 2021, which not only costs Malaysia an estimated RM476 million in recyclable resources but also harms the environment (Bernama, 2022).

By understanding these antecedents that led to Malaysians' intention to recycle clothes, this research note contributes to the field of environmental literature by deriving implications critical to the role of government, organisations, and citizens in environmental preservation. As such, based on the above review, this study posits the following hypothesis:

H1. Attitude is positively associated with the intention to recycle clothes.

H2. Subjective norms are positively associated with the intention to recycle clothes.

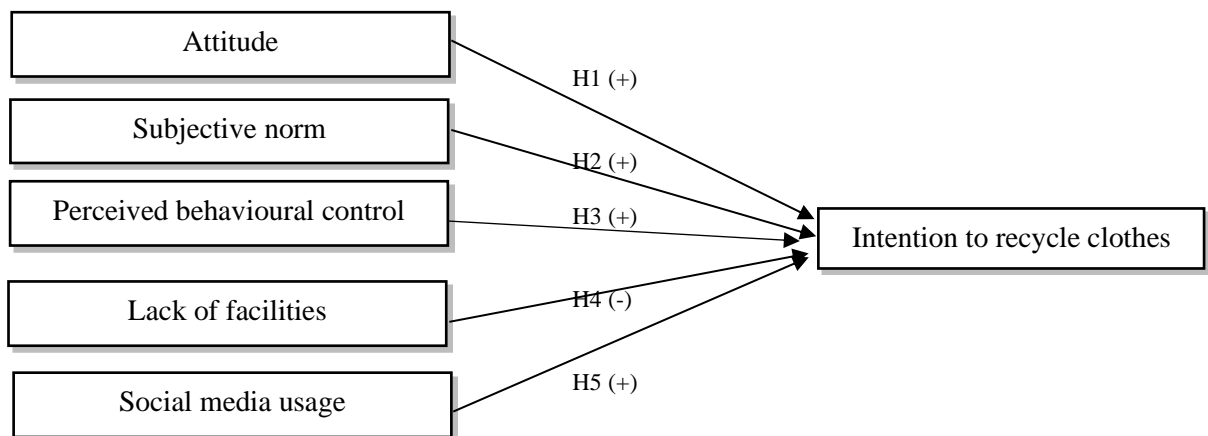
H3. Perceived behavioural control is positively associated with the intention to recycle clothes.

H4. Lack of facilities is negatively associated with the intention to recycle clothes.

H5. Social media usage is positively associated with the intention to recycle clothes.

Figure 1 illustrates a proposed research framework by adding the variables of lack of facilities and social media usage to the TPB model.

Figure 1: Proposed framework



2. Methodology

The data for this study were collected between June and July 2022. Self-administered questionnaires were circulated via social media platforms. A convenience sampling technique was used, which resulted in 148 complete responses. The survey instruments for intention to recycle clothes (Int, 3 items) were adapted from Wan et al. (2017), attitude (ATT, 4 items), subject norm (SN, 3 items), and perceived behavioural control (PBC, 4 items) were adapted from Tonglet et al. (2004). Two items used to measure lack of facilities (LF) were adapted from Chen and Tung (2010); while three items used to

measure social media usage (SM) were adapted from Oakley and Salam (2014). All items were measured using a five-point Likert scale (1-strongly disagree, 5-strongly agree). Data collected were analysed using SPSS software. Data analysis performed to examine the relationships between the study variables were, factor analysis, reliability tests, and regression analysis. The regression analysis was performed based on the proposed framework shown in Figure 1.

3. Results and Discussions

Out of the 148 respondents, 89 are females and 59 are males, accounting for 60.1 per cent and 39.9 per cent, respectively. 85.1 per cent of those polled are between the ages of 18 and 24. The factor analysis and reliability results for the constructs under investigation are shown in Table 1. All factor loadings were greater than 0.70. Cronbach's alpha values for all constructs were greater than 0.80, indicating that item internal consistency was reasonably reliable (Hair et al., 2019).

Table 1: Factor analysis and reliability tests results

Constructs	Items	Loadings	Alpha Value
Attitude (ATT)	Att1	0.776	0.884
	Att2	0.825	
	Att3	0.741	
	Att4	0.786	
Subjective Norms (SN)	SN1	0.774	0.886
	SN2	0.790	
	SN3	0.758	
Perceived Behaviour Control (PBC)	PBC1	0.856	0.903
	PBC2	0.793	
	PBC3	0.786	
	PBC4	0.766	
Lack of Facilities (LF)	LF1	0.853	0.773
	LF2	0.868	
Social Media (SM)	SM1	0.897	0.947
	SM2	0.891	
	SM3	0.892	
Intention (Int)	Int1	0.864	0.846
	Int2	0.903	
	Int3	0.859	

Regression analysis was performed to evaluate Hypothesis 1 to 5. Table 2 shows the regression estimation of clothing recycling intention. The R square of 0.543 indicates that these five constructs explain 54.3 per cent of the variance in recycling intention. The proposed model was adequate as the F-statistic (=33.787) was significant at the 1 per

cent level. This indicates that these selected constructs were simultaneously significant to the intention to recycle clothes. The VIF values were less than ten and ranged from 1.165 to 2.194, providing solid evidence against the presence of multicollinearity.

Table 2: Results of multiple regression analysis of intention to recycle clothes

	Standardised beta	t-value	p-value	VIF
Attitude (ATT)	0.028	0.358	0.721	1.878
Subjective Norms (SN)	0.228	2.712	0.008	2.194
Perceived Behaviour Control (PBC)	0.275	3.628	0.000	1.781
Lack of Facilities (LF)	-0.126	-2.063	0.041	1.165
Social Media (SM)	0.352	5.442	0.000	1.298

R square = 0.543

Adjusted R square = 0.527

F-statistic = 33.787 (p-value = 0.000)

Note: Results were obtained by regressing the Intention to recycle cloths (ITT) on ATT, SN, PBC, LF, and SM.

As predicted, all coefficients have the expected sign. However, with the p-value > 0.05 , the positive association between attitude and intention to recycle (H1) is not supported. Subjective norm (H2), and perceived behavioural control (H3) are found to positively influence intention to recycle clothes favourably and considerably, with significance values of $p=0.008$ and $p=0.000$, respectively. Aside from the TPB constructs, the findings show a negative and significant association between the lack of facilities and intention to recycle ($p=0.041$). There is also a positive and significant association between social media usage and intention to recycle ($p=0.000$). As a result, this study concludes that the hypothesis of H2 to H5 is supported.

According to the reported standardised coefficient beta, the most important construct influencing the intention to recycle clothes was social media usage ($\text{beta}=0.352$), followed by subjective norm ($\text{beta}=0.2228$), perceived behavioural control ($\text{beta}=0.275$), and lack of facilities ($\text{beta}=-0.126$).

The findings of this study offer several explanations. The findings show that households perceived to have a positive attitude toward recycling do not have the intention to recycle clothes. This contradicts most previous research findings in the theory of planned behaviour. The insignificant relationship between attitude and intention could be explained by the fact that individuals are heavily influenced by their past behaviours (Norman & Conner, 2006). Even if they have a positive attitude toward

recycling, their habit of not recycling may have resulted in them not continuing with recycling behaviour.

According to Eyink et al. (2019), the positive relationship between subjective norms and intention exists because societal pressure and the intrinsic need to fit in have an impact on individual behaviour. This could be because Malaysian cultures are more concerned with what others think of them because they are collectivistic rather than individualistic (Hofstede Insights, 2017). The positive and significant perceived behavioural control, on the other hand, is consistent with Chen and Tung (2010), who found that increasing a household's perceived behavioural control to a threshold level increases the intention to recycle. It is believed that if households are adequately educated on the benefits of recycling, their perceived behavioural control will improve, as will their intention to recycle.

Aside from that, the findings show a negative relationship between a lack of facilities and an intention to recycle. This is consistent with previous findings, as it is more likely for someone to have the intention to perform the behaviour when the environment facilitates it. However, the findings contradict the earlier study by Ibrahim et al. (2020), which claims that Malaysians do not trust the facilities' reliability and, as a result, do not believe that the facilities will make a significant difference.

The findings also show that social media usage is associated to recycle. This finding is consistent with the findings of Mallick and Bajpai (2019), who discovered that individuals use social media to engage with one another locally and globally about minor to major environmental issues, such as how people recycle their clothes.

4. Conclusions

The objective of this research note was to utilise the theory of planned behaviour (TPB) model with lack of facilities and social media usage to understand better the intention to recycle clothes among Malaysians. While subjective norms, perceived behavioural control, lack of facilities, and social media usage were strong predictors of Malaysian households' intention to recycle clothes, the attitude to recycling was found to be insignificant in its explanatory function.

Malaysian clothing recycling policies and programmes should build on the findings and encourage habits that support recycling behaviour. Given the significant perceived behavioural control, this study believes that it is critical to focus on education among Malaysians to increase recycling behaviour among households. This is because they can have more confidence in their abilities with proper knowledge. Second, social media should be prioritised to encourage and influence Malaysians to recycle. Various campaigns can be promoted on social media to raise awareness about the importance of recycling clothes. Furthermore, the government should work to improve trust, credibility, and perceived credibility in government institutions or infrastructure. If no one believes the government or private sector can carry out recycling programmes, most households will not bother. The next step is to allow the private sector to play a role in achieving the recycling goal, specifically for clothing. If you have old clothes, you can recycle them at stores like H&M. If the majority of popular clothing stores do this, it will encourage individuals to recycle their clothes.

The current research note is not without limitations. The majority of respondents are between the ages of 18 and 24. This is the most active age group on social media. This is why the construct is believed to have a strong relationship with the desire to recycle. Future research could replicate the proposed research model in different age groups. Furthermore, intentions to recycle may not result in actual behaviour. Future research could concentrate on user behaviour rather than intentions.

References

- Aichner, T., & Jacob, F. (2015). Measuring the degree of corporate social media use. *International Journal of Market Research*, 57(2), 257–276. <https://doi.org/10.2501/IJMR-2015-018>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Bernama. (2022, March 10). Can Malaysia achieve 40 per cent recycling rate by 2025? NewStraitsTimes. Retrieved July 2, 2022, from <https://www.nst.com.my/news/nation/2022/03/778625/can-malaysia-achieve-40-centrecycling-rate-2025>
- Brambilla, G., Lavagna, M., Vasdravellis, G., & Castiglioni, C. A. (2019). Environmental benefits arising from demountable steel-concrete composite floor

- systems in buildings. *Resources, Conservation and Recycling*, 141, 133–142. <https://doi.org/10.1016/j.resconrec.2018.10.014>
- Chen, M-F., & Tung, P-J. (2010). The moderating effect of perceived lack of facilities on consumers' recycling intentions. *Environment and Behavior*, 42(6), 824–844.
- De Fano, D., Schena, R., & Russo, A. (2022). Empowering plastic recycling: Empirical investigation on the influence of social media on consumer behavior *Resources, Conservation and Recycling*, 182, 106269. <https://doi.org/10.1016/j.resconrec.2022.106269>
- Echegaray F. (2016). Consumers' reactions to product obsolescence in emerging markets: The case of Brazil. *Journal of Cleaner Production*, 134, 191–203. <https://doi.org/10.1016/j.jclepro.2015.08.119>
- Ellen MacArthur Foundation. (2017). *A new textiles economy: Redesigning fashion's future*. <https://www.ellenmacarthurfoundation.org/publications>
- Eyink, J. R., Motz, B. A., Heltzel, G., & Liddell, T. M. (2019). Self-regulated studying behavior, and the social norms that influence it. *Journal of Applied Social Psychology*, 50(1), 10–21. <https://doi.org/10.1111/jasp.12637>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Boston: Cengage.
- Hofstede Insights. (2017, August 22). Malaysia. Retrieved July 15, 2022, from <https://www.hofstede-insights.com/country/malaysia/>
- Ibrahim, A. N. H., Borhan, M. N., & Rahmat, R. A. O. (2020). Understanding users' intention to use park-and-ride facilities in Malaysia: The role of trust as a novel construct in the theory of planned behaviour. *Sustainability*, 12(6), 2484. <https://doi.org/10.3390/su12062484>
- Khalil, M., Abdullah, S., Abd Manaf, L., Sharaai, A., & Nabegu, A. (2017). Examining the moderating role of perceived lack of facilitating conditions on household recycling intention in Kano, Nigeria. *Recycling*, 2(4), 18. <https://doi.org/10.3390/recycling2040018>
- Khan, F., Ahmed, W., & Najmi, A. (2019). Understanding consumers' behavior intentions towards dealing with the plastic waste: Perspective of a developing country. *Resources, Conservation and Recycling*, 142, 49–58. <https://doi.org/10.1016/j.resconrec.2018.11.020>
- Lizin S., Van Dael M., & Van Passel S. (2017). Battery pack recycling: Behaviour change interventions derived from an integrative theory of planned behaviour study. *Resources, Conservation and Recycling*, 122, 66–82. <https://doi.org/10.1016/j.resconrec.2017.02.003>

- Mallick, R., & Bajpai, S. P. (2019). Impact of Social Media on Environmental Awareness. In S. Narula, S. Rai, & A. Sharma (Ed.), *Environmental Awareness and the Role of Social Media* (pp. 140-149). IGI Global. <https://doi.org/10.4018/978-1-5225-5291-8.ch007>
- Norman, P., & Conner, M. (2006). The theory of planned behaviour and binge drinking: Assessing the moderating role of past behaviour within the theory of planned behaviour. *British Journal of Health Psychology*, 11(1), 55–70. <https://doi.org/10.1348/135910705x43741>
- Oakley, R. L., & Salam, A. (2014). Examining the impact of computer-mediated social networks on individual consumerism environmental behaviors. *Computers in Human Behavior*, 35, 516–526. <https://doi.org/10.1016/j.chb.2014.02.033>
- Roshandel Arbatani, T., Labafi, S., & Robati, M. (2016). Effects of social media on the environmental protection behaviour of the public (case study: protecting zayandeh-rood river environment). *International Journal of Environmental Resources*, 10(2), 237–244.
- Shi, J. G., Xu, K., Si, H. Y., Song, L. C., & Duan, K. F. (2021). Investigating intention and behaviour towards sorting household waste in Chinese rural and urban–rural integration areas. *Journal of Cleaner Production*, 298, 126827. <https://doi.org/10.1016/j.jclepro.2021.126827>
- Statista. (2022, June). Apparel Report 2021 [Consumer market outlook]. <https://www.statista.com/outlook/cmo/apparel/malaysia>
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144–176. <http://www.jstor.org/stable/23011007>
- Tonglet, M., Phillips, P.S., & Read, A.D. (2004). Using the theory of planned behaviour to investigate the determinants of recycling behaviour: a case study from Brixworth, UK. *Resources, Conservation and Recycling*, 41(3), 191–214.
- Wan, C., Shen, G.Q., & Choi, S. (2017). Experiential and Instrumental Attitudes: Interaction Effect of Attitude and Subjective Norm on Recycling Intention. *Journal of Environmental Psychology*, 50, 69–79. <https://doi.org/10.1016/j.jenvp.2017.02.006>
- Wang, Z., Guo, D., & Wang X. (2016). Determinants of residents' e-waste recycling behaviour intentions: evidence from China. *Journal of Cleaner Production*, 137, 850–860. <https://doi.org/10.1016/j.jclepro.2016.07.155>
- Zhang, L., Ran, W. C., Jiang, S. Y., Wu, H. J., & Yuan, Z. W. (2021). Understanding consumers' behavior intention of recycling mobile phone through formal channels in China: The effect of privacy concern. *Resources, Environment and Sustainability*, 5, 100027. <https://doi.org/10.1016/j.resenv.2021.100027>

Zhang, S. P., Zhang, M. L., Yu, X. Y., & Ren, H. (2016). What keeps Chinese from recycling: Accessibility of recycling facilities and the behavior. *Resources, Conservation and Recycling*, 109, 176–186.
<https://doi.org/10.1016/j.resconrec.2016.02.008>