

Exploring Hospital Waste Recycling Intention Among Hospital Managers

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Received: 31 October 2023 | Accepted: 20 December 2023 | Published: 31 December 2023

DOI: <https://doi.org/10.55057/ijbtm.2023.5.4.24>

Abstract: *Recently, the healthcare industry has grown in importance as the number of hospitals has increased in response to the increased number of patients. This signified that the world faced more critical issues regarding hospital waste due to the environmental impact, and managers in the hospital needed to change the current hospital waste handling to reduce environmental pollution. In this study, the researcher used Theory of Planned Behavior comprehensively to reflect the manager's intention to recycle hospital waste. The purpose of this study is to investigate managers' intention to recycle hospital waste in their organization. Others that, moderator effect on the managers intention to recycle hospital waste. Standardized structured questionnaires are distributed through email where the targeted respondent must be ranked manager position and above with medical background. A total of 181 usable were collected and data analyses by partial least square structural equation model (PLS-SEM). They revealed that managers' intention is significantly influenced by the attitudes towards recycling intention and subjective norms has no significant towards managers recycling intention. However perceived behavioral control is not moderate between attitude/subjective norm and intention to recycle hospital waste. A total of 4 hypotheses were tested and one hypothesis were accepted, and three hypotheses rejected. The findings of this study provide important theoretical and practical implications for scholars, managers, and policymakers.*

Keywords: Hospital waste, Recycling Intention, Attitude to Recycle, Personal Norms, Perceived Behavioural Control, Hospital Managers and Healthcare Industry

1. Introduction

The importance of the healthcare industry is undeniable for every country in providing healthcare to the community (Marimuthu et al., 2022; Mushtaq et al., 2022; Shin & Park, 2019). The increased demand for healthcare services has increased yearly in healthcare facilities (Mannocci et al., 2020). The world has been in turmoil with COVID-19 cases since 2019, resulting in an increase in hospital waste around the world. Malaysia reported a 27% (by weight) increase in hospital waste, primarily attributed to COVID-19-related destruction (Radic et al., 2021). Other countries such as China, Jordan, and Indonesia also recorded an increase in hospital waste from 2019 to 2020 at 213%, 1000%, and 17.1%, respectively (Yi et al., 2021).

The volume of hospital waste generated worldwide is growing for several reasons. One of the main reasons is urbanization, which leads to more people living in cities and accessing healthcare services (Eren & Tuzkaya, 2019). The growing volume of hospital waste generated around the world has drawn the attention of scholars from diverse disciplines, many of whom have proposed various alternative processes for recycling hospital waste to reduce the amount of waste before final disposal (Attrah et al., 2022; Liu et al., 2022; Thanh et al., 2011; Yu et al., 2023). Other factors contributing to the growing volume of hospital waste include inadequate waste management practices from the medical personnel, a lack of regulations and enforcement, and an overall need for more awareness about the issue (Mandez et al., 2020).

Concerns about the increase in hospital waste because hospital waste Contaminated hospital waste comprises various types of hazardous waste generated by healthcare activities (Adu et al., 2020; Khan -et al., 2019; Rolewicz-Kalińska, 2016; Sohrab Hossain et al., 2013). With hospitals generating waste like domestic waste, it becomes increasingly crucial for healthcare facilities to prioritize finding effective solutions and implementing sustainable initiatives to manage their waste (Baaki et al., 2018). Most importantly, accumulated hospital waste is often an indicator of poor waste management, reflected in the increasing trend in the amount of waste generated (Kwikiriza et al., 2019).

The increase in hospital waste not only has adverse effects on the environment but there is evidence to show that as the amount of waste generated rises, the costs associated with hospital waste management also increase. This places a significant financial burden on hospitals for the disposal of such waste (Adhikari & Supakankunit, 2014; Ali, Wang, Chaudhry, et al., 2017; Askarian, Heidarpour, & Assadian, 2010; Lee, Vaccari, & Tudor, 2016; Melanen, 2016). Therefore, recycling hospital waste is important in reducing volume and cost, but it faces challenges because hospital waste is associated with bacterial contamination (Anabaraonye et al., 2019).

Therefore, scholars have seen the effectiveness of hospital waste management practices, particularly recycling, relies heavily on the involvement of hospital managers (Lee & Lee, 2022). These managers play a crucial role in ensuring the successful implementation of recycling practices within the hospital setting. According to Mensah and Ampofo (2020), a manager is a person who oversees the working-level group and closely interacts with the detailed and comprehensive process flow. They provide initial insights into whether the process is feasible and are responsible for that task. This study will help top management assess managers' capability to implement effective hospital waste recycling at their workplaces, ensuring the effective operation of hospital waste management.

Other than that, the attitude of medical personnel toward recycling and their commitment to prioritizing and championing sustainable practices within an organization significantly influence the behaviors and perceptions of the entire workforce (Babaei et al., 2015). In addition, scholars also mention that perceived behavioral control is significantly impacted by the organization's infrastructure and support systems (Cristea & Gheorghiu, 2016). Furthermore, scholars add personal norms in their study to identify individual's internal values and beliefs about recycling, which play a pivotal role in driving sustainable behavior among employees (Kim & Seock, 2019). Therefore, in this study, the researcher used this factor to examine the factors affecting managers' intention to recycle hospital waste in Malaysia's healthcare industry.

2. Problem statement

Hospital waste has been identified as the leading cause of environmental destruction, particularly in industrialized countries (Borowy, 2020). A total of 6300 million metric tonnes of primary and secondary (recycled) waste were generated, with only 9% recycled, 12% incinerated, and the remaining 79% discarded either at designated landfill sites or illegally discarded (Ronkay et al., 2021). Hospital managers may have multiple intentions to recycle hospital waste, such as cost savings, environmental responsibility, compliance with regulations, reputation, community engagement, and employee engagement. Environment Quality Report (EQR) recorded as per Figure 1 shows an increasing number of hospital wastes in the years 2015 (25,523.33), 2016 (23,844.91), 2017 (28,375.24), 2018 (30,757.04), 2019 (33,756.99), 2020 (39,883.32) and 2021 (57,378.48). It illustrates the importance of the problem in managing hospital waste and more research to be done.

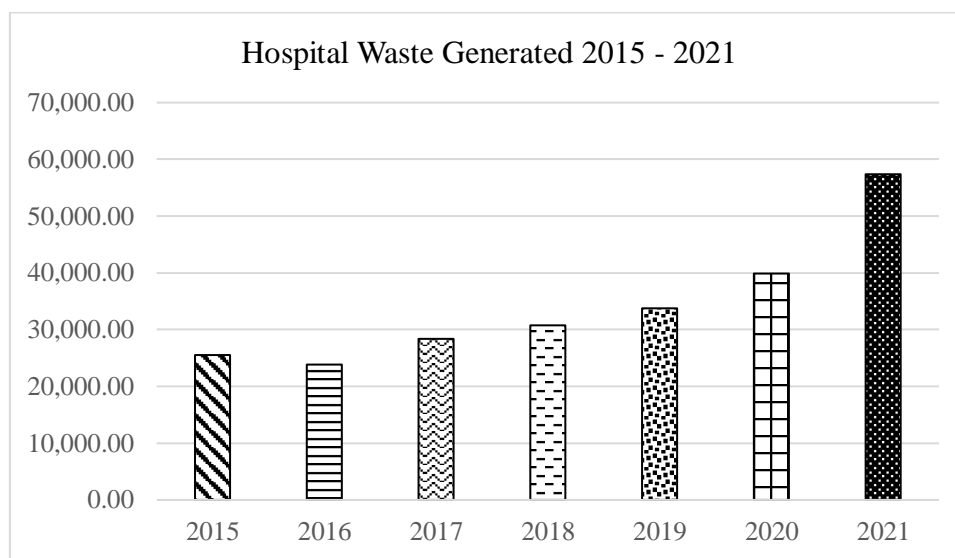


Figure 1: Waste Generated from 2015 to 2021

Increasing hospital waste has a big impact on a company's performance, specifically financial, economic, and environmental performance (Yusof & Osmadi, 2019). It is often most effective to employ a combination of waste reduction strategies to achieve the most significant impact (Budiarani et al., 2021). The healthcare industry can reduce its environmental impact by recycling waste and contributing to a more sustainable future (Ghosh et al., 2022). Most of the studies investigate hospital waste management that focused on practices, assessment, hospital waste generation, and environmental impact (Adu et al., 2020; Musa et al., 2020; Rajan et al., 2018; Susi et al., 2020; Tfaily & Moussa, 2020; Ugwu et al., 2019). Based on literature review analysis on recycling industrial wastes found no study conducted on hospital waste recycling on managers' intention in Malaysia's healthcare industry.

A recent study has revealed that hospital waste recycling in Malaysia still lags the level achieved in developed countries. This is despite the continuous efforts of the government since 1993. There is a need for further progress in this regard. (Tiew et al., 2019). Developed countries such as Japan, Germany, and Iran found that the low of implementation of hospital waste recycling is due to cultural considerations of waste management strategies. Referring to Japan's government initiative plays a critical role in achieving the success of hospital waste recycling (Zhuo & Yan, 2022). This is considering the effect of the facilities will increase the intention of recycling hospital waste.

Therefore, the rule of Malaysia’s government is crucial in increasing the intention to recycle hospital waste must pay attention to the improvement and provision of facilities to increase waste recycling to be part of life in developed countries (Abdul Latif et al., 2018). In addition, the budget allocation from the Malaysian government and the project timeline remain challenging aspects in achieving enhanced hospital waste recycling (Abubakar et al., 2022; Chatri et al., 2018).

3. An Overview of Literature Review

Hospital waste is defined as any waste generated from medical activities such as immunization, treatment, and diagnosis of humans and animals, as well as the testing of a biological specimen, including those for scientific purposes (Ansari et al., 2019). According to WHO (2021), Healthcare waste contains potentially harmful microorganisms that can infect hospital patients, health workers, and the public. The hospital waste primarily comprises wound dressings and swabs, infusion and irrigation equipment, catheters, blades, syringes, and needles. In addition, the waste also includes tissue and postmortem waste, waste from clinical laboratories, sanitary waste that includes incontinence pads and nappies, and waste from pharmaceutical activities (Blenkharn, 2005).

It is very important to consider the future implementation of an effective treatment for hospital waste generated by the healthcare industry. A study by Baaki et al. (2018) suggested that there are challenges in finding the middle ground between ensuring the safety of patients and staff and establishing sustainable waste management protocols that include proper waste documentation and segregation, which can be achieved via various approaches such as minimization, recycling, and other sustainable treatments and disposal initiatives. Table 1 shows alternative treatment methods as suggested in previous research regarding the disposal of hospital waste. Based on the table, minimizing and recycling of hospital waste have been proposed in all previous research as the most feasible method in managing hospital waste as compared with other methods such as incineration, SFE, reusable containers, autoclaving, and microwave treatment.

Table 1: Alternative treatment method

Alternative Treatment Methods	Sources							Total
Waste minimizing and recycling	3	4	5	6	7	8	6	
Incineration process		4					4	
SF CO2 Sterilization				3			3	
Reusable Container	1						1	
Stim Autoclaving	1						1	
Microwave	1						1	

Note: 1. (Wei et al., 2017), 2. (Ghasemi & Yusuff, 2016), 3. (Razali et al., 2010), 4. (Marinković, Vitale, Afrić, & Janev Holcer, 2005), 5. (Blenkharn, 2007), 6. (Razali et al., 2010), 7. (Chul Jang, Lee, Yoon, & Kim, 2006) and 8. (Lee et al., 2002)

4. Justification of Selected Theories

Many theories have been proposed by researchers, each with its own set of justifications. Many researchers have used TPB as a foundational model to examine recycling intention (Arli et al., 2020; Dunn et al., 2018; Guerin & Toland, 2020; Hossain Parash et al., 2020; Jain et al., 2020; Sulaiman et al., 2019), and further extended the TPB. TPB, which was introduced by Ajzen (1991), has been applied in a range of studies on environmentally friendly behavior, including

those related to waste reduction (Li et al., 2018). Therefore, researchers chose The Theory of Planned Behavior (TPB) because offers a comprehensive framework to understand and predict individuals' intentions and behaviors in various contexts, including recycling hospital waste. The TPB emphasizes three main determinants: attitudes towards behavior, subjective norms, and perceived behavioral control. In the context of hospital waste recycling, attitudes reflect healthcare professionals' perceptions about the environmental benefits and the importance of waste management for public health. Subjective norms consider the influence of colleagues, superiors, or regulatory bodies, which can motivate or discourage recycling behaviors based on prevailing norms within the healthcare setting. Lastly, perceived behavioral control addresses the perceived ease or difficulty of engaging in recycling practices, considering factors like infrastructure availability, training, and time constraints. By integrating these components, TPB provides a robust theoretical foundation to develop interventions that promote sustainable practices in hospital waste management, considering both individual motivations and external influences.

4.1 Hypotheses Development

Attitude to recycle and Intention to Recycle Hospital Waste.

The relationship between attitude and intention is essential in examining managers' intentions toward hospital waste recycling. Psychology research Bromley, (1995) found that attitude comprises three components: affect, cognition, and conduct, subject to people's preferences, knowledge of the attitudinal object, and reactions and intentions toward the object. In the recycling context, attitude is the primary predictor in determining recycling intention, according to a study on the role of social media on recycling behavior (Sujata et al., 2019). According to a study by Mak et al. (2019), improving people's recycling attitudes and actions is paramount to sustainable waste management. For example, it has consistently underachieved in promoting construction waste recycling in Hong Kong the study showed that the recycling attitude influences environmentally conscious behaviour (Xu et al., 2019). Other study revealed environmental attitude positively impacts purchasing intention. However, attitude toward recycling does not predict recycling intention (Arli et al., 2019). Due to this, the reasons for recycling hospital waste are likely to be associated with a positive attitude and intention toward recycling. Based on these considerations, this study formulated the following hypothesis:

Hypothesis 1 (H1). There is a positive relationship between Attitude and Intentions to Recycle hospital waste.

Subjective Norms and Intention to recycle hospital waste.

Subjective norms refer to the perceived social pressure to engage or disengage in a specific action, often described as the influence of subjective rules (Bosnjak et al., 2020). It encompasses the collective set of normative beliefs about the perceptions of influential referents (Hage, 2012). The concept of subjective norms reflects an individual's perception of the social pressure surrounding the performance or non-performance of a particular behavior (Ajzen, 1991). It is influenced by the views, opinions, emotions, and judgments of reference groups or systems such as family, peers, friends, and the community (Hasnan Baber 2019). Venkatesh and Davis (2000) highlighted the importance of individuals' willingness to meet the expectations of reference groups in predicting their intention to adopt a new system. However, for e-waste recycling intention, the effect of subjective norms did not receive sufficient support (Aboelimged, 2021). Due to the inconsistent relationship between subjective norms and intentions found in various research studies, the researcher must consider alternative variables and measurements to obtain consistent findings (Alam et al., 2019). Therefore, social norms

refer to the perception of other people’s opinions on how the individual should behave. Based on these considerations, this study formulated the following hypothesis:

Hypothesis 2 (H2): There is a positive relationship between subjective norms and intentions to recycle hospital waste.

Moderating Effect of Perceived Behavioral Control on Attitude Towards Recycling Intention, Subjective Norm and Intention to Recycle Hospital Waste

Perceived behavioral control is a variable that moderates the relationship between attitude and subjective norms and their impact on intention (Ajzen, 2020). When individuals have a high level of perceived behavioral control, the link between their attitude and intention to recycle becomes stronger (Dhir et al., 2021). This means that their attitude towards recycling is more likely to predict their intention to recycle when they believe they can do so. When an individual has a high level of perceived behavioral control, the relationship between attitude and intentions to recycle hospital waste is stronger (Barbera & Ajzen, 2021).

Based on the findings of previous scholars, our study states that perceived behavioral control also plays an important moderating role. Japutra and Loureiro (2020) and Tian et al. (2019) have established that perceived behavioral control can moderate the relationship between attitude and intention. Furthermore, the scholars of Barbera and Ajzen (2021) support this study hypothesis by showing that perceived behavioral control moderates’ subjective norms, influencing the strength of the association between behavioral intentions and subsequent actions.

Hypothesis 3 (H3): A moderating effect of perceived behavior in the relationship between attitudes and intentions to recycle hospital waste.

Hypothesis 4 (H4). A moderating effect of perceived behavioral control in the relationship between Subjective Norm and Intentions to Recycle hospital waste.

Previous studies examining recycling intention behaviour have generally overlooked the study on recycling hospital waste. In this study, a comprehensive analysis was conducted, identifying a total of 3 constructs and providing detailed explanations of their relationships in subsequent subsections. To visually represent the research framework, Figure 2 was developed.

4.2 Research Framework

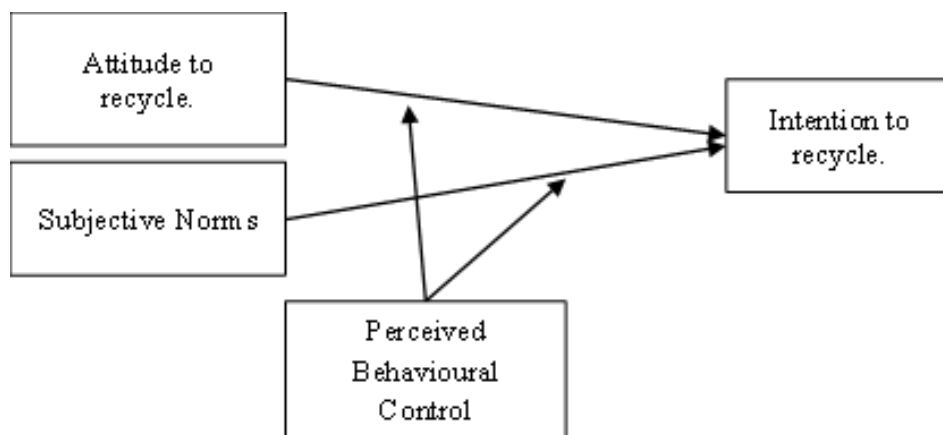


Figure 2: The Conceptual Framework

5. Research Method

5.1 Quantitative Method

This study begins by employing a quantitative approach utilizing a questionnaire to investigate the proposed research hypotheses. A cross-sectional design was selected for its ability to ensure sample representativeness and minimize response bias among respondents (Malhotra, 2012). The survey method, employing a structured questionnaire, was employed to gather specific information from a sample of the population (Malhotra, 2012). This approach has been widely used by researchers to collect data for quantitative analysis in behavioral studies.

5.2 Population and Sample Size

The population is a set that considers a comprehensive group of individuals, certain events, or interests that need further examination based on a particular problem (Sekaran, 2003). Malaysia has a total of 183 government hospitals and 146 private hospitals. A sample size is enough individuals in the population for data to be gathered and results to be presented by the entire population (Shalabh, 2014). The sample size is determined based on several factors, including the study's objective, confidence interval, time and cost limitations, and population size (Bryman & Bell, 2015; Sekaran, 2003). There are several ways to calculate sample size, but according to (Sekaran & Bougie, 2016), a sample size of more than 30 and less than 500 is reasonable for most research. In this study, with ten predictors, the sample size used for this study was 160, calculated using G*Power.

5.3 Unit of analysis

unit of analysis of this study is organization. The managers are medical personnel from various positions, such doctor, nurse managers, unit managers, and pharmacists, and those who are involved in the hospital's daily operations. The manager is a person who manages the working level group and works closely with the process flow in detail and comprehensive. Managers responsible for that task with 3 years of working experience were selected as the target population due to their expertise and practical knowledge relevant to the study's focus. Their extensive experience ensures a valuable perspective that can contribute to a more informed and insightful analysis of the research problem.

5.4 Instrument development

A questionnaire was developed and divided into four parts. Section A consisted of the company information/profile. Sections B and C explained the construct and the dependent variables. 22 questions were developed and adapted from previous literature in Table 2

Section A: Demographic Profile

Section A contained demographic questions about the company profile, such as the type of hospital, certification, number of beds, country, state, and years of organization inception. This information is essential for descriptive analysis. Other questions regarding the respondent's background, such as gender, age, education background, position, and years of experience, were also included. This question aimed to identify the data input's reliability in this study.

Section B: Variables

Section B of the instrument was constructed with questions to measure the information of six independent constructs: Attitude to Recycling (ATR), Subjective Norms (SN), Perceived behavioural Control (PBC), All questions in section B were constructed based on the five-point Likert scale, with ratings ranging from one to seven, with one being strongly disagreed and seven being strongly agreed.

Section C: Dependent Variable

Section C of the instrument was constructed with questions to measure the information of dependent constructs in determining the intention to recycle. Questions in Section C were constructed based on the five-point Likert scale, with ratings ranging from one to seven, with one being strongly disagreed and seven being strongly agreed.

Table 2: Instrument development

Name of Variables	Number of items	Sources	Scale
1. Attitude to Recycle (ATR)	Six items	Benda & Attili (2017) (Shen, Si, Yu, & Si, 2019) (Halder & Singh, 2018)	5-point Likert Scale
2. Perceived Behavioral Control (PBC)	Five items	(Al Mamun et al., 2018) (Shen et al., 2019)	5-point Likert Scale
3. Subjective Norms (SN)	Six items	(Shen et al., 2019)	5-point Likert Scale
4. Intention to Recycle (IR)	Five items	Weng et al. (2018) (Halder & Singh, 2018) (Shen et al., 2019)	5-point Likert Scale

6. Result

6.1 Descriptive Analysis of Respondents

Table 3 presented, in terms of age, there are 26 years old and above 23 respondents (12.6%), 26-30 years old, 31-40 years old 62 respondents (34.3%), which is the highest respondent, 41-50 years old 40 respondents (22.10%) and 51-60 years 55 respondent (30.40%). Most respondents are unit manager with special backgrounds such as quality, infection control, and nurse instructor 38.20% while others are Nurse Managers 22.10%, Pharmacists 18.78%, Doctor 21%. In terms of years of experience, most respondents have work experience between 11-20 years, 40.88%, followed by the experience of 20 years and above 33.7% - and 4-10-years' experience 25.41%. Based on the responding hospital, the highest responses received from private hospitals was 46%, and the rest came from public hospitals, 53.6%.

Table 3: Respondents' Demographic Profile

Demographic	Characteristic	Frequency	Percent
Respondent's age	26-30 Years old	23	12.6
	31-40 Years old	62	34.3
	41-50 Years old	41	22.7
	51-60 Years old and above	55	30.4
Position	Doctor	38	21.00
	Pharmacist	34	18.78
	Nurse Manager	40	22.10
	Unit Manager	69	38.12
Years of Experiences	4-10 years	46	25.41
	11-20 years	74	40.88
	21 years and above	61	33.70
Type of Hospital	Public Hospital	84	46.4
	Private Hospital	97	53.6

Assessment of measurement model

The software, SmartPLS4.0 is used to perform data analysis. Hair et.al (2019) suggested several criteria to assess the constructs validity and reliability of the measurement model. Specifically, Convergent Validity refers to the extent to which individual indicators reflect the constructs in

comparison to indicators measuring other constructs (Schwarz & Black, 2014). To access Convergent Validity, the Average Variance Extracted (AVE) is measured. The value of AVE should be higher than 0.5, which explains at least 50 per cent of the assigned indicators ‘variance (Hair et al., 2021). The results shown in table 3 constructs recorded AVE values higher than 0.5 for each group of data. The AVE value reported is for Attitude to Recycle 0.765, Intention to Recycle (0.778), Subjective Norm (0.746) and perceived behavioral control (0.700)

Table 3: Convergent Validity

Constructs	Items	Indicator Reliability	Convergent Validity	Internal Consistency Reliability
		Outer Loadings	AVE	Composite Reliability
		>0.700	>0.500	>0.700
Attitude to Recycle	ATR1	0.8100	0.765	0.942
	ATR2	0.893		
	ATR3	0.907		
	ATR4	0.860		
	ATR5	0.899		
Intention to Recycle	IR1	0.838	0.778	0.933
	IR2	0.928		
	IR3	0.878		
	IR4	0.882		
Subjective Norms	SN1	0.838	0.746	0.913
	SN2	0.919		
	SN3	0.886		
	SN4	0.892		
Perceived Behavioral Control	PBC1	0.786	0.700	0.921
	PBC2	0.800		
	PBC3	0.881		
	PBC4	0.911		

The discriminant validity of the model is assessed. This study measured discriminant validity based on the HTMT technique introduced by Henseler et al. (2015). HTMT is the “ratio of the between-trait correlations to the 177 within-trait correlation (Hair et al., 2017). This study opts for two techniques for assessing discriminant validity. Using the PLS Algorithm, as seen in Table 4.6, none of the respective constructs violates HTMT. The acceptable levels of discriminant validity (< 0.90) as suggested by Henseler et al. (2015). This result concludes that construct validity is established in the measurement model, as seen in Table 4 shows none of the upper bound of the 95% confidence interval of HTMT is higher than 0.9. To conclude, since the conservative HTMT threshold of 0.9 already supports discriminant validity, the bootstrap confidence interval results of the HTMT strengthen the evidence indicating that discriminant validity has been ascertained in this study. It can, therefore, be concluded that both reliability and validity requirements are met for this study. Next, the data can be further analysed for structural measurement.

Table 4: Discriminant Validity:HTMT

	ATR	IR	PBC	SN
ATR				
IR	0.863			
PBC	0.167	0.220		
SN	0.582	0.655	0.220	

Assessment of structural model

Table 5 tabulate the R²value, coefficient of determination for each construct. The construct manager's recycling intention had R²value of 0.88, which indicated that exogenous constructs could explain 88% of the recycling intention. Furthermore. The R² value for personal norm was 0.740, which indicated the personal norm on the intention can explain 74%. This high R² value signifies a robust relationship and indicates that the included constructs have a substantial influence on affect managers' recycling intentions.

Table 5: R²value (coefficient of determination)

Construct	R Square	R Square Adjusted
ITR	0.882	0.876
PN	0.744	0.740

Path coefficient assessment

Path coefficient assessment analysis using bootstrap techniques with 5,000 resamples of bootstrap analysis for the assessment of coefficient and corresponding t-values. Investigation regarding path-coefficient analysis ATR -> IR is supported (t=9.060), and SN -> IR is not supported (t=0.565). This indicates that subjective norms might not have a notable direct influence on the outcome represented by intention to recycle as presented in Table 6.

Table 6: Result of Hypotheses Testing

H	Path	Std Beta (β)	Std error	t Values	P values	Bias	Confidence interval		Decisions
							5%	95%	
H1	ATR -> IR	0.669	0.074	9.060	0.000	0.001	0.513	0.802	Supported
H2	SN -> IR	0.036	0.058	0.565	0.572	0.003	0.033	0.285	Not Supported

Note *** $p < 0.010$, ** $p < 0.05$, * $p < 0.1$

Nine hypotheses are accepted based on their p-value

Assessment of Moderation Analysis

Therefore, to obtain the significant of the relationship, the bootstrapping procedure are conducted. The cutoff value for the test is 1.65 ($\alpha=0.10$). From Table 7 below, the interaction term of ATR* Perceived behavioral Control is significant (t=0.103), for the one-tailed test with a significant level 5%. Therefore, it can be concluded that the hypothesis H3 is not accepted. The second moderation result SN* Perceived Behavioral Control is found not significant (t=0.083) and can be concluded that hypothesis H4 is not accepted.

Table 7: Assessment of Moderation Analysis

H	Path	Std Beta (β)	Std error	t Values	P values	Bias	Confidence interval		Decisions
							5%	95%	
H3	PBC x ATR -> IR	-0.004	0.048	0.103	0.918	0.001	-0.098	0.092	Not Supported
H4	PBC x SN -> IR	-0.002	0.059	0.083	0.934	0.003	-0.134	0.104	Not Supported

Note t-values significant at 1.65 for 95% confident intervals, t-value 1.65 (* $p < 0.10$), 1.96 (** $p < 0.05$), 2.58 (***) $p < 0.01$)

7. Discussion and Conclusions

The finding that attitude and Intention to Recycle are supported in influencing the intention to recycle hospital waste is of great significance in the context of healthcare waste management. However, the finding that subjective norms are not supported in effecting the intention to recycle hospital waste holds significant implications for healthcare waste management practices. In this study also, indicates that healthcare professionals are not influenced by the perceptions of their colleagues, peers, or superiors when forming their intentions to participate in recycling efforts within healthcare facilities. The results of this study do not support the moderating impact of perceived behavioural control between attitude to recycle, subjective norm on intention to recycle hospital waste. Based on a comprehensive analysis finding, it is strong that all the factors investigated in this thesis, including, attitudes towards recycling have affecting on managers' intentions to recycle in hospitals in the context of health care in Malaysia. Therefore, the implementation of hospital waste recycling in health care facilities should not pose a significant challenge, considering that managers have expressed a positive tendency towards supporting this hospital waste recycling initiative for the sake of the environment, organization and fostering good values among hospital employees. To summarize, the factors such as attitude to recycle are most affecting managers emphasises the feasibility of implementing hospital waste recycling in healthcare industry and promising positive environmental benefits.

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