

MOVING TOWARDS GREEN ENTREPRENEURSHIP: AN EMPIRICAL INVESTIGATION ON WILLINGNESS TO RECYCLING WASTE AMONG MICRO AND SMALL BUSINESS OWNERS IN THE CITY OF KOTA BHARU, KELANTAN, MALAYSIA

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ABSTRACT

The rise of green entrepreneurship among micro-enterprises reflects a growing commitment to balancing economic activities with environmental sustainability. The significance of green entrepreneurship is underscored by the pressing need to address environmental degradation and resource depletion caused by entrepreneurial business operations. This study investigates the factors influencing the willingness to recycle general waste among micro and small business owners in Kota Bharu, Kelantan—a city renowned for its bustling local markets and entrepreneurial spirit. Data were collected from 341 respondents using stratified and convenience sampling through self-administered questionnaires. Descriptive analysis was employed to understand demographic characteristics, while multiple linear regression, performed using the latest SPSS software, examined the effects of attitude, subjective norms, and perceived behavioral control on willingness to recycle on waste. The results revealed that all three factors significantly influence the willingness of micro and small entrepreneurs to implement recycling practices at their business premises. This research underscores the pivotal role of micro and small entrepreneurs in advancing sustainable waste management and offers actionable insights to encourage recycling behaviors within local business communities.

Keywords: Theory Planned Behaviour, Willingness to Recycle, General Waste, Micro and Small Business Owners, Entrepreneurs, Green Entrepreneurship

INTRODUCTION

Green entrepreneurship, which integrates environmental considerations into business operations, has gained significant attention as a vital component of sustainable development. This approach not only addresses the growing environmental challenges but also opens new avenues for innovation and competitiveness in the business sector. Green entrepreneurs are characterized by their commitment to minimizing environmental impact through sustainable practices, such as waste recycling, energy efficiency, and the use of renewable resources (Schaltegger & Wagner, 2011). The significance of green entrepreneurship is underscored by the pressing need to address environmental degradation and resource depletion. Recent studies highlight that businesses adopting green practices not only contribute to environmental conservation but also achieve economic benefits through cost savings and improved brand image (Klewitz & Hansen, 2014). Recycling is described as the process of transforming previously used materials and items into new forms that hold economic value (Chao et al., 2023). The European Commission emphasizes that recycling is a pivotal component of the circular economy, significantly contributing to environmental sustainability and climate change mitigation. By reducing the need for new primary materials, recycling helps lower greenhouse gas emissions associated with material extraction and processing. The European Environment Agency (EEA, 2024) further supports this by highlighting that waste and circular economy actions, including recycling, play a crucial role in reducing resource consumption and associated emissions. These insights underscore the high impact of recycling practices in advancing environmental sustainability and combating global climate change. Recycling serves as a powerful tool for sustainable urban development, transforming waste into valuable resources (Rhodes et al., 2015). It has emerged as a critical component of sustainable waste management, especially in the face of escalating environmental degradation and resource depletion (Feng et al., 2024). Waste recycling is a crucial domain where green entrepreneurs can significantly contribute, given that entrepreneurial activities are reportedly responsible for approximately 70% of pollution and 60% of total carbon dioxide emissions (Parker et al., 2009). Furthermore, Cohen and Winn (2007) highlight that environmental degradation often stems from entrepreneurial business operations, largely due to market inefficiencies. As businesses face increasing pressure to adopt sustainable practices, the role of recycling in green entrepreneurship becomes even more pronounced. For instance, micro-entrepreneurs, who form the backbone of many economies, are increasingly incorporating recycling into their business models to enhance sustainability and comply with environmental regulations (Ghisellini, Cialani, & Ulgiati, 2016). The adoption of waste recycling among entrepreneurs is driven by various factors, including regulatory pressures, market demand for green products, and the personal environmental values of business owners. As noted by Lu and Wang (2022), regulatory frameworks and incentives play a crucial role in encouraging businesses to adopt recycling practices. Additionally, consumers are increasingly favoring companies that demonstrate a commitment to sustainability, further motivating entrepreneurs to incorporate recycling into their business strategies (Leonidou et al., 2013).

The selection of Kota Bharu, Kelantan, as the focus of this research is well-founded due to its distinctive socio-economic and environmental landscape. Kota Bharu, the capital city of Kelantan, is a rapidly expanding urban center on Malaysia's East Coast, with a significant presence of micro-entrepreneurs contributing substantially to the local economy (Yaacob, 2010). These

entrepreneurs are integral to the economic fabric of the region, engaging in various sectors including agriculture, cottage industries, and small-scale trading. Despite their economic significance, the city faces considerable challenges in waste management. Research indicates that solid waste management in Kota Bharu faces significant challenges, including insufficient infrastructure, limited financial resources, and low public awareness about proper waste handling and segregation (Yaacob, 2010). This situation hampers the progress towards integrated solid waste management and poses environmental concerns for the densely populated city. Furthermore, the recycling initiatives in Kota Bharu are often hindered by insufficient infrastructure and public awareness, making it difficult to implement effective recycling programs. This recycling dilemma is common in developing countries, where challenges such as limited resources and lack of proper waste management systems impede the success of recycling efforts (Fadhullah, et al., 2022). These challenges highlight the importance of studying the factors that influence the willingness to recycle among micro and small business owners in the region can inform targeted strategies to enhance sustainable practices, thereby contributing to both economic development and environmental sustainability in the region (Nor Rahima, et al., 2012). By focusing on Kota Bharu, this study aims to investigate on the three key factors; attitudes, perceived behavioral control, and subjective norms and how they shape the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan.

THEORY PLANNED BEHAVIOR

In this study, the Theory of Planned Behaviour (TPB) is utilized due to its significance in understanding psychological factors influencing behaviour. TPB, a socio-psychological framework, explains specifically on social behaviour (Ajzen, 1991; Ajzen & Fishbein, 2000). It encompasses various environmental behaviours such as recycling, alternative transportation, energy consumption, water conservation, food choices, and ethical investing (Stern, 2000; Staats, 2003). TPB is widely recognized as the ideal framework for measuring influences on recycling behaviour (Tonglet et al., 2004; Lu & Wang, 2022). The Theory of Planned Behavior suggests that an individual's intention to engage in a behavior is influenced by their attitude toward the behavior, the subjective norms surrounding it, and their perceived behavioral control. In this theory, attitude reflects an individual's evaluative stance toward a specific behaviour, while subjective norms denote the influence of social pressures on an individual's decision to engage in or abstain from a particular activity. Perceived behavioural control encompasses perceived barriers derived from past experiences and anticipations. To summarize, empirical evidence suggests a positive connection between behavioural intention and the components of attitude, subjective norms, and perceived behavioural control (Lu & Wang (2022).

WILLINGNESS TO RECYCLE ON WASTE

Based on the theory, there is usually a positive relationship between the strength of behavioural intention as a motivator for adopting a behaviour and the likelihood of performing that behaviour (Ajzen, 1991). Thus, it is applied that willingness to recycle on waste are determine by three variables; attitude, subjective norms and perceived behavioral control.

Li et al. (2023) describe attitude as a psychological concept reflecting how an individual thinks, feels, or behaves toward a specific object, person, group, idea, or situation. Mamun et al. (2019) found that attitude positively and significantly influences the desire to recycle. Similarly, Latip and Sharkawi (2021) confirmed that attitude plays a critical role in shaping micro-entrepreneurs' decisions to adopt recycling or eco-friendly management practices. Khan et al. (2020) highlighted that environmentally conscious decision-makers were able to successfully implement recycling initiatives in their businesses, emphasizing the importance of a positive attitude. Wan et al. (2021) identified attitude as the most reliable predictor of waste recycling intention, further supported by Eremionkhale et al. (2021), who established a positive relationship between attitudes and recycling intentions. Moreover, Russell (2018) noted that a positive attitude can drive sustainable business practices, contributing significantly to environmental conservation efforts. In summary, attitudes are a pivotal factor influencing behavioral intentions, particularly in the context of waste recycling.

Subjective norms refer to the perceived social pressures from various stakeholders on to perform or not perform a behaviour (Ang et al., 2021). These stakeholders include the government, residents, news media, consumers, competing peers, and nongovernmental environmental organizations (Fauk et al., 2022; Li, 2023). People are more likely to engage in the community environment when they believe it to be of high quality, which fosters an environment that is favourable to surrounding conservation (Krettenauer & Lefebvre 2021). In the context of recycling, this means that micro-entrepreneurs are likely to be influenced by the expectations of stakeholders such as customers, suppliers, peers, and regulatory bodies. When these stakeholders value and prioritize recycling, micro-entrepreneurs are more likely to adopt recycling practices to meet these expectations and maintain their social standing and reputation. Recent studies support this notion. For instance, Lu & Wang (2022), found that enterprises often respond to external social pressures by integrating environmental practices into their operations to align with the values and expectations of their stakeholders. Moreover, Zhang and Chen (2022) highlight that subjective norms significantly influence pro-environmental behaviours in small and medium-sized enterprises (SMEs). The research shows that when business owners perceive a high level of social support and encouragement for recycling, they are more motivated to engage in such activities. This underscores the importance of fostering a supportive social environment to enhance recycling behaviours among micro-entrepreneurs. Additionally, the influence of subjective norms is particularly strong in collectivist cultures, where community and social cohesion are highly valued. In such settings, the actions of individuals and businesses are closely tied to the expectations and behaviours of their social networks. Studies in Asian contexts, including Malaysia, have found that subjective norms are a powerful predictor of environmental behaviour, reflecting the collective influence of social groups on individual actions (Li et al., 2020). In conclusion, the positive relationship between subjective norms and willingness to recycle waste among micro and small entrepreneurs highlights the critical role of social influences in shaping environmental behaviours. By understanding and leveraging these social pressures, policymakers and community leaders can design more effective interventions to promote recycling and other sustainable practices among micro and small entrepreneurs. This approach can help build a culture of sustainability that supports both environmental conservation and business success.

Perceived behavioural control, as posited by the Theory of Planned Behaviour (TPB), includes factors such as the availability of resources (infrastructure), opportunities, and the individual's confidence in their ability to manage and execute the recycling process (Ajzen, 1991). When micro-entrepreneurs believe that they have sufficient resources, knowledge, and control over the recycling process, they are more likely to develop a strong intention to engage in recycling activities. Recent research supports the significant role of perceived behavioural control in fostering recycling intentions. Park and Ha (2021) found that businesses that perceive higher control over their recycling activities, due to factors like availability of recycling facilities and support from local authorities, are more inclined to engage in recycling. This suggests that enhancing perceived behavioural control can effectively increase the willingness to recycle among businesses. Additionally, Wang et al. (2016) emphasized the importance of providing adequate infrastructure and resources to facilitate recycling in small and medium-sized enterprises (SMEs). The research showed that SMEs with access to comprehensive recycling programs and sufficient information about waste management are more likely to perceive recycling as a manageable and feasible activity. This increased perceived control directly boosts their willingness to recycle. The positive relationship between perceived behavioural control and willingness to recycle can also be attributed to the experiences and competencies of the entrepreneurs. According to Li et al., (2022), entrepreneurs with prior experience in environmental management or those who have received relevant training are more confident in their ability to implement recycling practices, thus exhibiting higher intentions to recycle. Regulatory support and incentives can enhance perceived behavioural control among micro and small entrepreneurs. Government policies that provide clear guidelines and support mechanisms for recycling can reduce perceived barriers and enhance the sense of control. Studies have shown that when entrepreneurs feel supported by regulatory frameworks, their perceived behavioural control increases, leading to higher engagement in recycling activities (Zhou & Yang, 2021). In conclusion, perceived behavioural control is a significant predictor of willingness to recycle among micro and small business owners. By improving access to resources, providing relevant information and training, and creating supportive regulatory environments, stakeholders can enhance the perceived behavioural control of micro and small entrepreneurs. This, in turn, can lead to a stronger intention to engage in recycling practices, contributing to overall environmental sustainability.

CONCEPTUAL FRAMEWORK

Figure 1 depicts the conceptual framework adopted from Theory of Planned Behaviour (Ajzen, 1991). The independent variables consist of attitude, subjective norm, and perceived behavioural control that is believe plays an important role influencing the micro and small entrepreneur’s willingness to recycle on general waste at their premises. In the study, attitude is defined as an entrepreneur's general assessment, sentiments, or beliefs on environmental behaviour, specifically waste recycling. It encompasses a range of emotions, beliefs, and behavioral tendencies that shape how entrepreneurs perceive and respond to a given object (Li et al., 2023). Meanwhile, subjective norm is the influence from family, friends or among market traders on the micro and small entrepreneurs about environmental behaviours particularly waste recycling (Hameed et al., 2022). As for perceive behavioural control, it is defined as possible obstacles to recycle waste at their premises (Ajzen, 1991; Ajzen & Fishbein, 2000). Apart from this, there are three hypothesises were constructed based on this study:

- H1: There is a significant influence between attitude and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan.
- H2: There is a significant influence between subjective and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan.
- H3: There is a significant influence between perceive behavioural control and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan.

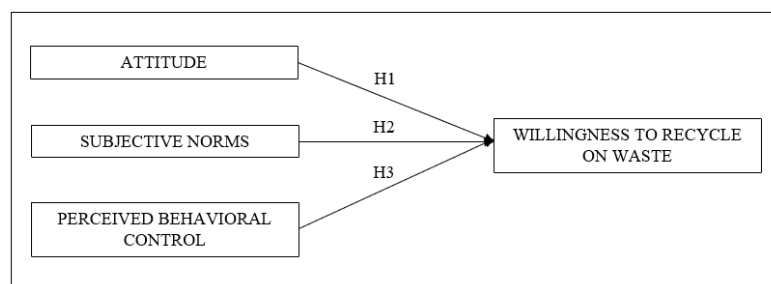


Figure 1: Conceptual Framework, adopting from Theory Planned Behavior Model (Ajzen, 1991)

To summarize, this research aims to investigate the influence between those independent variables towards willingness to waste recycling among the micro and small business owners in Kota Bharu, Kelantan. Also, to unravel which among attitude, subjective norms and perceive behavioural controls has the most influential towards willingness to recycle on waste among the samples. By providing insights into the determinants shaping entrepreneurial willingness in sustainable practices, this study intend to inform policymakers, business educators, and entrepreneurs themselves, fostering a more profound understanding of the pathways to successful green entrepreneurship. Ultimately, this research contributes to the ongoing discourse on sustainable business practices and offers practical implications for fostering a greener and more sustainable entrepreneurial ecosystem.

METHODOLOGY

The study area was in the city of Kota Bharu, Kelantan. The rationale is the entrepreneurial landscape in Kelantan has been characterized by the unique traits and competencies of its micro-entrepreneurs (Al Mamun et al., 2021). While this research employs a quantitative approach to examine the willingness to recycle among micro and small entrepreneurs in Kota Bharu, Kelantan, it utilizes a cross-sectional survey design to provide a snapshot of the current state of willingness to recycle on waste within this group. Table 1 explains the total population of the prime markets selected and proportion of samples for this study. For data collection, stratified sampling method was applied, where the respondents were selected based on a prime markets area located in Kota Bharu. The identification of prime markets in Kota Bharu was done through verification with the Kota Bharu Municipal Council. The determination of the total sample size follows Krejcie and Morgan's (1970) table, indicating a need for 341 samples. The proportion for each market is then computed based on the total population and sample size. As a result, among the 341 sample was break down into; 266 market traders (78%) respondent will be selected from Pasar Besar Siti Khadijah, 31 market traders (9%) from Bazar Tok Guru, 27 market traders (8%) from Pasar Wakaf Che Yeh, and 17 market traders (5%) from Pasar Berek 12.

Table 1: Population and Sample Size of the Prime Markets in Kota Bharu, Kelantan

Market	Population (total traders)	Sample Collected	
		Total (traders)	Percentage (%)
Pasar Besar Siti Kadijah	2,720	266	78
Bazar Tok Guru	300	31	9
Pasar Wakaf Che Yeh	276	27	8
Pasar Berek 12	179	17	5
TOTAL	3,475	341	100

Source: Kota Bharu Municipal Council (2023)

Data collection was conducted using a self-administered questionnaire, employing a convenience sampling approach to gather information from selected micro and small entrepreneurs in Kota Bharu, Kelantan. The questionnaire was divided into five sections: the entrepreneurs' profiling, knowledge and experience on recycling waste, attitude, subjective norms, perceived behavioral control, and willingness to recycle waste. All sections, except for demographic and knowledge-related questions, were measured using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The Likert scale was chosen because it allows for the effective measurement of subjective attitudes, beliefs, and perceptions, which are key to understanding behavioral intentions. According to Allen and Seaman (2007), Likert scales provide an intuitive, easy-to-interpret format for respondents while yielding reliable and valid data for statistical analysis. Moreover, Nemoto and Beglar (2014) highlighted that Likert scales are particularly suitable for assessing constructs such as attitudes and perceived behavioral control in social and behavioral research. For data analysis, the latest version of the Statistical Package for the Social Sciences (SPSS) was utilized. Descriptive analysis was employed to summarize the demographic characteristics and profiling of the respondents, providing a clear overview of their background. Regression analysis was then conducted to determine the influence of attitude, subjective norms, and perceived behavioral control on recycling intentions, addressing the core objectives of the study. This systematic methodology ensures a thorough understanding of willingness to recycle waste among micro and small entrepreneurs in the region.

DEMOGRAPHIC BACKGROUND

This section provides an overview of the respondents' demographic and business profiles. Table 2 presents a summary of 341 micro and small entrepreneurs from selected prime markets in Kota Bharu. The majority of the businesses are owned by Malays (75.1%), with most owners aged between 31 and 41 years (44%). A significant portion of these businesses has been operating for 3 to 5 years (44.3%) and reports monthly profits ranging from RM4,000 to RM5,999 (40.8%). Additionally, the majority of businesses are registered as sole proprietorships (67.4%) and primarily sell food products, including fresh produce, baked goods, and ready-to-eat items (46.4%).

Table 2: Demographic Background of the Micro and Small Entrepreneurs in Kota Bharu, Kelantan

Entrepreneurs's Profile	Classification	Frequency	Percentage (%)
Age	20-30 years	60	17.6
	31-50 years	150	44
	41-50 years	98	28.7
	50 years and above	33	9.7
Ethnicity	Malay	256	75.1
	Chinese	57	16.7
	Indian	25	7.3
	Pakistan	3	0.9
Business Profit (Monthly)	Below RM2000	55	16.1
	RM2000- RM3999	95	27.9
	RM4000- RM5999	139	40.8
	RM6000- RM7999	50	14.7
	Above RM8000	2	0.6
Business Operational Period	Less than one years	10	2.9
	1-3 years	108	31.7
	3-5 years	151	44.3
	More than 5 years	72	21.1
Type of Ownership	Sole proprietors	230	67.4
	Partnership	98	28.7
	Cooperative	13	3.8
Types of Goods/ Services Provided	Food and Confectionery	88	22.2
	Wet Goods	96	24.2
	Clothing and Apparel	84	21.2
	Daily Product	65	16.4
	Home and Kitchen Items	55	13.9
	Toys	8	2.0

REGRESSION RESULTS

This section presents the findings from the multiple linear regression analysis. Table 3 provides a summary of the model's goodness of fit. The coefficient of determination, denoted as R², represents the proportion of variance in the dependent variable explained by the independent variables. Expressed as a percentage, the R² value for this model is 0.545, indicating that 54.5% of the variation in the willingness to recycle waste is accounted for by attitudes, subjective norms, and perceived behavioral control. This result suggests that the model demonstrates a strong fit, effectively capturing the variability observed in the data.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.738 ^a	.545	.541	.47313	.545	134.409	3	337	.000

a. Predictors: (Constant), PBC, ATT, SN

Based on Table 4, the regression equation can be written as follows; $\gamma = \alpha + \beta_1 \text{ ATT} + \beta_2 \text{ SN} + \beta_3 \text{ PBC}$ (Equation 1), where; γ = Willingness to recycle waste, ATT = Attitude, SN = Subjective norms, PBC = Perceived behavioural control. Hence, the equation becomes; $\gamma = 1.322 + 0.251\text{ATT} + 0.284\text{SN} + 0.154\text{PBC}$ (Equation 2)

Table 4: Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.322	.140		9.457	.000	1.047	1.597
	ATT	.251	.057	.271	4.426	.000	.140	.363
	SN	.284	.074	.324	3.839	.000	.139	.430
	PBC	.154	.071	.193	2.172	.031	.015	.294

Based on equation (2), the coefficient of attitude (ATT) at 0.251 indicates that for every 1 percent increase in having a positive attitude towards recycling waste, the willingness to recycle increases by 25.1 percent, ceteris paribus. This finding underscores the pivotal role of attitudes in shaping behavioral intentions. This result aligns with recent studies which have demonstrated that

attitudes significantly influence the willingness to recycle among micro and small entrepreneurs. Among all, Slavec and Stritar (2022), who emphasized that positive attitudes significantly influence pro-environmental behaviors, particularly in contexts where entrepreneurs perceive recycling as beneficial to both the environment and their business operations. Similarly, Mamun et al., (2019) found that a positive attitude towards recycling substantially increased the intention to engage in recycling behaviors. Additionally, Li et al., (2023) examined the green development behavioral intentions of construction enterprises reported that attitude significantly and positively influences these intentions, highlighting the broader applicability of this relationship across different sectors. These findings underscore the pivotal role of fostering positive attitudes to enhance the willingness to recycling among micro and small entrepreneurs. H1: There is a significant influence between attitude and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan, is accepted.

Regarding subjective norms, the regression results revealed that a 1 percent positive influence from family members, peers, neighbors in the market, or environmental campaigns leads to a 28.4% increase in the willingness to recycle waste at their premises, *ceteris paribus*. This finding underscores the significant role of social influence in shaping recycling behaviors among micro-entrepreneurs. Recent studies support this notion. For instance, Wang et al. (2016) highlight that businesses are more likely to adopt sustainable practices, including recycling, when there is normative pressure from key stakeholders such as customers, suppliers, and community members. These external pressures often motivate enterprises to align their operations with the values and expectations of their stakeholders, thereby enhancing their social credibility. Similarly, Zhang and Chen (2022) found that subjective norms exert a substantial influence on pro-environmental behaviors in small and medium-sized enterprises (SMEs). Their study demonstrated that when business owners perceive strong social support and encouragement for recycling, they are more inclined to incorporate such practices into their daily operations. This highlights the importance of creating a supportive social environment to foster positive behavioral changes. For micro-entrepreneurs, particularly in markets such as Kota Bharu, fostering community-driven initiatives and leveraging the influence of social networks can significantly enhance the adoption of recycling practices. These findings underscore the need for targeted awareness campaigns and collaborative efforts that emphasize the collective benefits of waste recycling. Thus, H2: There is a significant influence between subjective and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan, is accepted.

As for perceived behavioral control, when entrepreneurs perceive recycling activities as convenient and easy to implement at their premises, the willingness to recycle waste increases by 15.4%, *ceteris paribus*. Recent studies further substantiate this relationship. Park and Ha (2021) found that businesses with greater perceived control over their recycling activities facilitated by factors such as the availability of recycling facilities and local authority support are more likely to engage in recycling. This indicates that reducing barriers and enhancing accessibility to recycling infrastructure can effectively encourage businesses to adopt sustainable practices. Moreover, the influence of perceived behavioral control can be linked to the skills and experiences of entrepreneurs. Li et al. (2022) noted that entrepreneurs with prior experience in environmental management or relevant training demonstrate greater confidence in their ability to carry out recycling practices, thereby exhibiting stronger intentions to recycle. Thus, H3: There is a significant influence between perceived behavioural control and the willingness to recycle among micro and small business owners in Kota Bharu, Kelantan, is accepted.

In summary, the regression analysis revealed that the influence of external party's accounts for the greatest variance in the willingness to recycle waste among micro and small entrepreneurs' premises in Kota Bharu, Kelantan, as evidenced by the highest β value of 0.284. Furthermore, as shown in Table 5, the statistical significance of the coefficients was determined by examining their associated p-values, all of which were below the conventional threshold of $p < 0.05$. The findings indicate that attitudes, subjective norms, and perceived behavioral control significantly influence micro and small entrepreneurs' willingness to engage in waste recycling. This confirms a significant relationship between these constructs and the willingness to recycle waste among micro and small entrepreneurs in Kota Bharu, Kelantan, leading to the acceptance of all hypotheses.

CONCLUSION

This study employed the Theory of Planned Behavior (TPB), a widely recognized framework for understanding factors that drive behavioral intentions, waste recycling among micro-entrepreneurs in Kota Bharu, Kelantan. The regression analysis revealed that attitudes, subjective norms, and perceived behavioral control significantly influence the willingness to recycle waste. Among these factors, the influence of people in the micro and small entrepreneurs' social surroundings was the most prominent, underscoring the role of social norms and community expectations in shaping sustainable behaviors. The findings successfully address the research objectives by demonstrating the relationship between attitudes, subjective norms, and perceived behavioral control with recycling willingness. This study highlights the vital role micro-entrepreneurs, deeply rooted in local communities, play in fostering sustainable waste management practices.

By adopting a green business mindset, these entrepreneurs can align with the growing demand for environmentally conscious business practices, strengthen their connections with eco-conscious consumers, and create a robust foundation for long-term success (Leonidou et al., 2013; Ghisellini et al., 2016). The implications of this research extend beyond the local context of Kota Bharu. Policymakers, environmental authorities, and business development agencies in Malaysia and other developing countries facing similar waste management challenges can leverage these insights to design targeted interventions. For instance, the respective authorities in Malaysia and globally can develop community-based recycling programs tailored to micro-entrepreneurs, emphasizing the role of social influence and peer networks (Wang et al., 2016). Community leaders and stakeholders can foster collective action by emphasizing the role of social norms and community-driven recycling efforts. Moreover, the entrepreneurial support organizations might find an opportunity to integrating sustainability into entrepreneurial training and support programs in order to empower micro-entrepreneurs to adopt greener practices (Klewitz & Hansen, 2014). Aligning with the United Nations Sustainable Development Goals (SDGs), particularly Goal 12 (Responsible Consumption and Production) and Goal 13 (Climate Action), countries striving to meet sustainability targets can use this study as a reference to engage small business owners in waste recycling initiatives (United Nations, 2015). Ultimately, this research contributes to the global discourse on sustainable business practices and offers actionable strategies for promoting a greener, more resilient entrepreneurial ecosystem.

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