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Smart Solutions for Waste: A comprehensive market research for Wheelie Bin Compactors

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Class Code/Title:	MK824: Marketing Works
Class Coordinator:	Mr. Andrew Davis
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Supervisor:	Dr. Holly Porteous
Client:	Lochside Catering Ltd.
Client Contact:	Mr. Darren Hicks
Group No:	Group 16
Group Members:	Shaifali Sharma Sharanya Prathap Raviprathap Harshej Singh Suhail Subhani

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Executive Summary

The main objectives of the research were to assess the interest and demand for the Wheelie Bin Compactor among individual residential consumers and business owners, and to determine the acceptable pricing thresholds for both consumer groups. This research focuses on the UK waste management context, exploring the potential market for the Wheelie Bin Compactor and its role in addressing the growing concern for effective and sustainable waste management.

The study employs a quantitative methodology, administering online surveys to gather measurable attitudinal and behavioral data. The analysis uses descriptive and inferential statistics to generate customer intelligence, which will inform launch strategies tailored for household and commercial segments. The results of the research provide insights into the target market, potential users, their understanding of the product's benefits, and their interest in purchasing the product. The study also identifies the preferred price range for both domestic and business contexts.

Finally, the research aims to provide Lochside Catering Ltd. with empirical insights to successfully bring the Wheelie Bin Compactor from concept to widespread adoption, addressing the growing concern for effective and sustainable waste management.

The survey gathered data from 71 respondents including 2 missing values, which was analyzed using descriptive and inferential statistics. Key findings indicate promising interest levels around 3.3 for consumers and 3.8 for businesses on a 5-point scale. Both segments showed price sensitivity, preferring ranges centered around £150-170. Consumers recognized benefits like waste and cost reduction, while this required more messaging reinforcement for businesses. Consumers prioritized price, ease of use and convenience as purchase factors, while businesses focused on price and quality.

Based on these results, it is recommended to focus initial marketing on consumer segments with the highest interest levels, while pursuing partnerships to increase product trials and awareness. An introductory price range of £150-170 balances adoption and margins, with potential to incrementally raise pricing over time. Messaging should highlight convenience and monetary savings for consumers, and return on investment for businesses. Ongoing R&D into technology integrations can

augment product value. In summary, strategic tailoring of positioning, pricing, and messaging to key consumer and business segments can enable successful market launch and diffusion of this innovative waste management solution.

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1. Introduction

Rising volumes of waste present escalating environmental, economic, and public health challenges worldwide. In the UK, over 200 million tonnes of waste are generated annually, with high reliance still on landfilling for disposal (DEFRA, 2020). Recycling has climbed to 45.5%, but innovation and systemic change are required to progress towards a circular economy (DEFRA, 2020). The electronic wheelie bin compactor represents one such breakthrough innovation that could significantly advance sustainability.

These devices utilize sensors and hydraulics to automatically compress contents within standard 120 or 240-litre wheelie bins, reducing volume by up to 80% (Scarlett, 2022; UKRI, 2020). Key benefits include lowered collection needs and costs, increased recycling participation, and reduced waste transported to landfills. However, realising widespread impact requires communicating advantages to users, fostering partnerships between councils, manufacturers and waste firms, and strategically incorporating compactors into broader waste management systems (Ajzen, 1991; OECD, 2022).

This market research was commissioned by Lochside Catering Ltd to evaluate perceptions and demand for an innovative wheelie bin compactor solution conceived in collaboration with Robert Gordon University. Specifically, the research aims to assess interest levels, pricing expectations, and perceived benefits among target residential and business users. The study employs quantitative methodology, administering online surveys to gather measurable attitudinal and behavioural data. Rigorous analysis using descriptive and inferential statistics will generate customer intelligence to inform launch strategies tailored for household and commercial segments.

While initially qualitative techniques were envisioned, time constraints necessitated focusing solely on standardized surveys distributed to a broad sample. However, extensive literature analysis provides context. Overall, the blended methodology balances scientific principles underpinning rigorous market research with multifaceted data gathering critical for introducing an impactful new sustainability solution. This

investigation aims to empower Lochside Catering with empirical insights to bring the wheelie bin compactor successfully from concept to widespread adoption.

1.1. Company Background

Darren Hicks embarked on an unexpected entrepreneurial journey, pivoting from a career in offshore windfarm technology to founding a fast-food business, Lochside Catering Ltd, in 2020. This career shift was driven by the demands of new parenthood. Despite launching during the COVID-19 pandemic, Lochside Catering thrived, showcasing Darren's adaptability. However, waste management challenges inspired Darren's spark of innovation - the Wheelie Bin Compactor.

This motorized device attaches to standard Wheelie Bins, compacting rubbish with the push of a button. Key features include automated compaction, portability, user-friendliness, effective waste containment, cost-efficiency, and sustainability. Compacting rubbish reduces volume, minimizing overflow, cutting waste collection needs and expenses. This makes it appealing to businesses like Lochside Catering and households.

Having devised the Wheelie Bin Compactor with Robert Gordon University, Darren initiated comprehensive market research. This aims to evaluate customer perceptions, gauge domestic and business market interest, determine price sensitivity and establish pricing strategies. Outcomes will provide insights on positioning the Wheelie Bin Compactor as a revolutionary, widely adopted waste management solution.

Darren's adaptability, catalysed by family, led him to recognize inefficiencies in waste management while navigating the pandemic's challenges. His innovation addresses these through motorized compaction in a portable user-friendly product. Market research will enable strategic introduction to customers seeking effective, affordable waste management.

The Wheelie Bin Compactor exemplifies problem-solving through innovation. Darren's openness to change led to an invention with immense potential for both businesses and householders. With proper customer insights, it can transform sustainable waste management. This demonstrates the power of adaptability and how identifying solutions to everyday problems can lead to impactful entrepreneurship.

1.2. Objectives of the Research

This market research aims to evaluate demand for the Wheelie Bin Compactor among individual residential consumers and business owners. Key objectives are assessing whether householders see value in and would purchase the product for domestic waste management needs, determining if various businesses including hotels, retailers, and care facilities have interest in acquiring the Wheelie Bin Compactor, and identifying acceptable pricing thresholds that both consumer groups would pay for this innovative solution. Outcomes will provide critical insights on optimal positioning and commercialization strategies to introduce the Wheelie Bin Compactor into target domestic and business markets as an impactful new waste management tool. Thoroughly addressing these core objectives will facilitate data-driven decision making to successfully bring this product to market.

Overall, we will be evaluating these key objectives:

1. Is the domestic market (individual householders) interested in this product and would they buy it?
2. Is the business market (hotels, caterers, retailers, bed and breakfasts, private care homes etc.) interested in purchasing this product?
3. What price would people to prepared to pay for their own Wheelie Bin Compactor? £150-£220

Chapter 2:

2. Literature Review

2.1. Literature Review Introduction:

The global concern for effective and sustainable waste management has never been more pressing, given its implications for public health, environmental quality, and sustainable development **(Kaza et al., 2018)**. In the United Kingdom (UK), where over 200 million tonnes of waste are generated annually, there is still a heavy reliance on landfilling, which accounts for 37% of municipal waste treatment **(DEFRA, 2020)**. While recycling rates have improved to 45.5%, further progress necessitates innovation and systemic change **(DEFRA, 2020)**.

One such innovation with great potential is the electronic wheelie bin compactor. These devices employ sensors and hydraulic mechanisms to automatically compress waste within standard 120 or 240-liter wheelie bins, reducing volume by up to 80% **(Scarlett, 2022; UKRI, 2020)**. This increased storage capacity allows for less frequent waste collection, leading to improved operational efficiency, cost savings, and reduced carbon emissions related to waste truck trips **(Wilson, 2022)**. However, achieving widespread adoption depends on effectively communicating the benefits to users, fostering collaborative relationships between local authorities and manufacturers, and integrating compactors into broader strategic initiatives **(Ajzen, 1991; OECD, 2022)**.

The UK's waste management industry is worth £9 billion annually and employs around 70,000 people across 3,000 companies. UK deals with waste in several ways, including waste collection, transport, treatment, and disposal **(Gov.uk, 2014)**. In the 2021/2022 financial year, local authorities in England collected 24 million metric tons of household waste **(Alves, 2023)**.

2.2. Theoretical Frameworks:

Several theoretical frameworks shed light on the factors that influence the adoption of innovations like electronic wheelie bin compactors.

2.3. The Theory of Planned Behaviour:

The Theory of Planned Behaviour posits that adoption is influenced by attitudes towards the innovation, social norms, and perceived control over the decision **(Ajzen, 1991)**.

To foster positive attitudes towards wheelie bin compactors, communication campaigns should emphasize benefits like reduced collection costs, optimized routes, enhanced recycling, and sustainability gains **(Wilson et al., 2012)**. However, honesty about potential drawbacks like upfront costs and usage adjustments is prudent to build trust and credibility **(Wagner, 2017)**. Testimonials from trial municipalities and waste management partners can reinforce attitudes highlighting advantages **(OECD, 2022)**. Framing compactors as an impactful innovation for national strategic goals can also shape attitudes by tapping values like civic duty **(Brook Lyndhurst, 2015)**.

Subjective Norms Cultivating strong subjective norms favouring compactor adoption requires visible endorsement from influential groups and leaders. Partnerships between local councils, waste firms and technology companies lend normative weight through collaboration **(OECD, 2022)**. Central government planning agencies publishing supportive recommendations creates normative pressure **(Defra, 2018)**. Opinion editorials from civic groups explaining sustainability benefits apply normative influence on citizens **(Cole et al., 2014)**. Celebrity influencers promoting the technology also leverages norms. Highlighting growing adoption rates in neighbouring communities reinforces norms favouring adoption as the new standard **(Rogers, 1962)**.

To enhance perceived control over compactor adoption, financing assistance from government grants or waste industry partners lowers financial barriers **(Dawson, 2019)**. Offering installation support and maintenance training gives adopters more self-efficacy in implementation **(Geissdoerfer et al., 2017)**. User experience design focused on convenience and ease of operation enhances perceived capability to integrate compactors into disposal routines **(Wagner, 2013)**. A toll-free customer help

line lowers barriers when troubleshooting issues. Step-by-step adoption guides and videos explain the process visually to reduce perceived difficulty. These initiatives empower adopters with greater perceived control.

Strategies informed by the Theory of Planned Behaviour can shape attitudes, harness social norms, and increase perceived control through an integrated communication, partnership and support campaign targeted at key adopter segments. This enhances the climate for successful wheelie bin compactor adoption.

2.4. Diffusion of Innovation Theory

Diffusion of Innovation Theory states that perceptions of relative advantage, complexity, compatibility, trialability, and visibility determine adoption rates **(Rogers, 1962)**.

According to Diffusion of Innovation Theory **(Rogers, 1962)**, the relative advantage, complexity, compatibility, trialability, and visibility of an innovation shape its adoption rate. This provides useful perspectives on accelerating wheelie bin compactor adoption. Communicating the cost and efficiency advantages over traditional bins enhances perceived relative advantage **(Wilson et al., 2012)**. Emphasizing compatibility with existing waste collection infrastructure and ease of pilot testing enhances adoption readiness **(Cole et al., 2014)**. Addressing perceptions of complexity by demonstrating straightforward installation, maintenance and operation procedures accelerates diffusion **(Wagner, 2013)**.

Partnerships between councils and manufacturers enable pilot trials to build visibility, experience and credibility **(OECD, 2022)**. Participation of well-known early adopters also improves visibility. Optimizing compactor design for ease of use diminishes complexity barriers **(Geissdoerfer et al., 2017)**. Communication campaigns promoting visible success stories of early adopters fosters positive perceptions **(Dawson, 2019)**. Overall, strategies addressing these innovation factors can successfully shift compactors from a niche innovation to widespread adoption by shaping perceptions among key audiences like local authorities, corporations and residents.

2.5. Transition Theory:

Transition Theory suggests aligning innovations like compactors with existing systems through partnerships to scale up sustainability transitions **(Rotmans & Loorbach, 2009)**.

Transition Theory emphasizes the importance of integrating innovations like compactors with prevailing systems through partnerships in order to achieve sustainability transitions **(Rotmans & Loorbach, 2009)**. Strategic collaboration between compactor manufacturers, local authorities, and waste collection firms can embed compactors into existing collection networks, procedures and infrastructure **(OECD, 2022)**. Co-designing optimized installation and servicing capabilities that mesh with current fleet maintenance operations enhances compatibility and adoption readiness **(Geissdoerfer et al., 2017)**. Adjusting fleet truck designs and routes to leverage compactor efficiency demonstrates system-level alignment **(Wilson et al., 2012)**.

Transition partnerships also provide knowledge exchange channels so compactor best practices can be standardized across regions with diverse legacy systems. Joint advocacy and communication campaigns create synergistic promotion of compactors and their sustainability benefits **(Dawson, 2019)**. Phased deployment enables refinement of integration approaches before scaling up adoption. By taking a participative approach, manufacturers gain insights to refine compactor features and business models to overcome system barriers **(Wagner, 2013)**. Overall, collaborative integration of technical design, operational procedures, policy incentives and communication strategies ensure compactors effectively mesh with and transform existing waste management systems.

These perspectives underscore the need to enhance convenience, enable trials, cultivate positive norms, and integrate with current waste management when

introducing compactors. Fostering partnerships and continuous innovation are also key factors. However, technological limitations affecting ease of use could impede adoption even if attitudes are positive overall.

2.6. UK Waste Context:

The UK waste sector handles over 200 million tonnes of waste annually from households, businesses and industry, contributing £11.2 billion to the economy **(DEFRA, 2020; Waste Business Journal, 2021)**. While progress has been made, landfilling still accounts for 37% of municipal waste treatment, indicating room for improvement **(DEFRA, 2020)**. Food waste and construction/demolition waste are also major components **(DEFRA, 2020; WRAP, 2020)**.

Challenges faced include limited space in urban areas, suboptimal collection logistics, and low participation in recycling programs caused by insufficient knowledge, motivation and convenience **(Brook Lyndhurst, 2015; Miafodzyeva, 2013; Wagner, 2013)**. In this context, wheelie bin compactors could provide advantages through more effective communication of benefits, partnerships to facilitate adoption, and integration with existing systems.

2.7. Strategic Priorities:

England's national waste strategy outlines key strategic priorities for transforming the country's waste management system **(Defra, 2018)**. Significantly expanding household recycling rates: This involves transitioning all households to consistent collections allowing them to recycle the same core set of dry materials, implementing food waste collections for all houses, and integrating recycling into flats and higher density housing. Convenience, incentives and education are critical to drive public participation **(Wagner, 2017; Brook Lyndhurst, 2015)**.

Developing optimized infrastructure networks: new treatment facilities are needed to sort, reprocess and extract value from recyclable materials diverted from landfills. Some experts estimate over £2 billion investment is required in plastics reprocessing alone **(CIWM, 2015)**. Collections must be reconfigured through assessments modelling different vehicle fleets, routing options, and separating waste streams.

Adopting new technologies: Innovations like electronic compactors, optical sorters, biomethane generation, and other technologies can drive efficiency, improve health and safety, reduce vehicle movements, and lower environmental impacts **(Wilson et al., 2006)**. Supportive policy incentives are needed along with strategic pilots and demonstration programs.

Building partnerships: Collaborations between local authorities, waste companies, community organizations, and other stakeholders can align interests, pool resources, and coordinate plans under shared sustainability visions **(OECD, 2022)**. Effective stakeholder engagement mechanisms are essential.

Growing skilled workforce: Expanded training programs, apprenticeships, and skills development are required to build expertise in operating and maintaining complex future waste management systems, particularly emerging technologies like compactors **(Defra, 2021)**. Engagement with industry is needed to understand skills gaps.

Together these strategic priorities aim to transform England's waste system to be more efficient, sustainable and circular. Electronic compactors have potential to support progress across several priorities if adoption barriers can be addressed.

Within this strategic context, electronic wheelie bin compactors represent a promising innovation that could significantly contribute to waste reduction and efficiency goals. As an emerging technology, compactors can be nurtured through trials, demonstrations and partnerships to establish viability while undergoing continuous improvement **(Rotmans & Loorbach, 2009)**.

Reinforcing positive attitudes and norms about environmental benefits is key for widespread adoption. Addressing convenience barriers by developing aligned distribution and servicing infrastructure is also important (Ajzen, 1991). Partnerships

between councils, manufacturers and contractors can systematically deploy compactors alongside complementary initiatives like educational campaigns and route optimization **(OECD, 2022)**.

While government policies strongly support recycling infrastructure, raising awareness of compactor capabilities and overcoming high upfront costs through financing mechanisms remain challenges **(Defra, 2018; Wagner, 2017)**. Ongoing engagement and marketing to promote positive perceptions and overcome inertia are pivotal. In summary, realizing the potential of electronic compactors to enhance waste management efficiency and sustainability requires incorporating them into a comprehensive approach encompassing supportive infrastructure, policies, partnerships and public engagement.

Chapter 3:

3. Methodology

3.1. Introduction

This study utilizes a quantitative survey methodology to collect generalizable data from consumer and business populations. The research employs a cross-sectional design, gathering attitudinal and behavioural data at a single point in time. Stratified random sampling ensures adequate representation across demographic segments for consumers, and business sectors including hospitality, facilities management, and manufacturing. The survey was administered online using a structured questionnaire comprised primarily of closed-ended questions with Likert scale response options. This format generated quantifiable data amenable to rigorous statistical analysis. While initial plans included exploratory qualitative interviews, time limitations prevented implementation. However, extensive secondary research provides contextual insights into consumer and business waste management needs. The survey data undergoes descriptive statistical analysis to summarize overall response patterns. Inferential statistics like correlations, regressions, and T-tests examine relationships between key variables. Together, the secondary research and quantitative primary data offer multifaceted insights to inform marketing strategy for the Wheelie Bin Compactor. The methodology balances generalizability with supplemental knowledge to achieve comprehensive understanding.

3.2. Research Philosophy.

Research philosophy encompasses the system of beliefs and assumptions about how knowledge is developed. This includes assumptions about the nature of reality (ontology), what constitutes knowledge (epistemology), the role of values (axiology), and how to communicate research (rhetoric). Together these assumptions underpin the methodology and methods chosen. Positivism adopts a scientific approach viewing reality as objective and measurable with value-free research to uncover absolute truths. Interpretivism assumes subjective, socially constructed realities requiring qualitative methods to understand contextual meanings. Realism balances these perspectives recognizing some objective realities but also subjective interpretations. Pragmatism focuses on practical applied research integrating different approaches.

Constructivism asserts truth is constructed not discovered. The philosophy adopted shapes the research design. For example, positivism aligns with quantitative methods while interpretivism suits qualitative approaches. Selecting an appropriate philosophical paradigm ensures internal coherence between assumptions about knowledge and choice of strategy. Clarifying the research philosophy provides a foundation for building a robust methodology **(Davis, 2023).**

For a report with objectives that involves identifying interest levels, price range references, measurement of respondents' opinions, preferences, and behaviours regarding the Wheelie Bin Compactor, positivism that aligns with quantitative research methods is very well to be suited. Researchers can gather data from a representative sample, derive findings that can be generalised to the entire population, and make assumptions about it using standardised measurement instruments and statistical analysis.

3.3. Chosen Research Method

For the methodology of this market research report, a quantitative survey approach was employed as the most suitable method given the aims of statistically analysing consumer perceptions and segment differences. Quantitative research involves gathering and analysing numerical data to quantify behaviours, test hypotheses, and identify patterns through statistical analysis **(Mohajan, 2020)**.

The quantitative method provides accurate data using standardized measurement tools like surveys and statistical analysis **(Almeida, Faria and Queirós, 2017)**. This facilitates identifying trends, relationships, and generalizing findings to the broader target population. It also enables comparative analysis between groups like consumers and businesses **(Almeida et al., 2017)**.

Specifically, a structured questionnaire was administered to a wide range of target consumers that recorded 71 responses, to gather data on interest, pricing, and benefits views. The survey data was analysed using descriptive statistics like means and frequencies to quantify response patterns. An independent samples t-test was

also conducted to compare interest and pricing differences between the consumer and business segments **(Kent, 2015)**.

This quantitative analysis provided market sizing, pricing models, and statistically significant insights into variation between the two groups. The survey approach allowed gathering data efficiently at scale to uncover actionable insights through statistical testing.

Responses can be useful to compare, providing insights into Comparing Price Range Preferences for Domestic users and Business users. When employing only qualitative research techniques, it is often more difficult to get this degree of comparison analysis mainly while supporting new product decisions through comparative analysis between consumer and business segments.

3.4. Research Strategy

Given the benefits that online surveys provide for market research, this study used them as the major data gathering instrument. Online surveys save money by removing costs such as printing, mailing, and human data input that are associated with traditional paper surveys **(Fritz et al., 2019)**. This allows for the efficient and cost-effective collection of data from a large sample. Furthermore, as compared to paper techniques, online surveys enable for speedier distribution and real-time data collecting **(Nayak and Narayan, 2019)**. This allows for faster analysis to yield insights. Personalising questions and survey flows based on respondent data such as demographics and past responses is also possible with online surveys. This customisation boosts engagement while also collecting more focused, meaningful data **(Revilla et al., 2016)**.

Additionally, surveys conducted online provide access to a large and diversified population that is spread across geographical borders. This broad reach is ideal for research involving populations that are hard to reach **(Wright, 2005)**. However, there

are drawbacks, such as a lack of personal connection, technological challenges, and the possibility of response bias in online surveys **(Fan and Yan, 2010)**. Overall, internet surveys offer a low-cost, quick, and flexible way to collect huge volumes of data from scattered target populations. This contributed to the study's goal of statistically analysing customer views across segments. While more face-to-face interviews would have enhanced the data, online surveys provided an adequate core technique for this quantitative market research.

3.5. Sampling

Based on the research aims and objectives, the demographic of interest includes Domestic and Business entities. More specifically, the target population includes UK households and businesses responsible for waste management, as their views represent the wider population perspective. This approach ensures scientific rigour by using a sample that is typical of the entire population, allowing for results that are generalizable. Because the study is quantitative, random sampling was used to generate representative, unbiased samples without depending on the researchers' subjective evaluations **(McDougall, 2023)**. Stratified random sampling was chosen as a probability strategy, dividing the population into strata based on significant variables such as demographics and industry. The respondents are then chosen using simple random selection from each stratum. This method provides proportional representation across domestic and corporate categories. While non-probability sampling offers convenience, probability sampling provides greater confidence in representativeness and generalizability. By using stratified random sampling, the methodology achieves methodological rigor through strategic selection of a sample reflecting vital characteristics of the target population. While non-probability sampling is more convenient, probability sampling gives more assurance of representativeness and generalizability. The technique achieves scientific rigour by strategically selecting a sample that reflects important features of the target population.

3.6. Research Instrument

In order to collect robust, generalizable quantitative data amenable to rigorous statistical analysis, the present study will employ structured questionnaires as the principal research instrument. As Saunders et al. (2019) discuss, questionnaires facilitate the gathering of quantifiable responses across a sizeable sample. Accordingly, the self-administered questionnaire will comprise predominantly closed-ended questions with Likert scale response options, enabling the measurement of key attitudinal and behavioural variables identified in the extant literature, including perceived benefits, interest levels, and pricing sensitivity **(Porteous, 2022)**. Moreover, basing questionnaire items on validated measures from prior empirical studies will serve to enhance reliability. Additionally, piloting procedures will be instituted to further refine and validate the instrument. Regarding administration, online distribution will be utilised for its expediency in accessing a geographically dispersed sample whilst preserving respondent anonymity **(Wilson, 2014)**. Though not without limitations, the standardized questionnaire constitutes an effective vehicle for procuring generalizable, empirical insights from a broad sample. Complementing this, supplementary qualitative interviews with purposively selected key informants will provide added contextual understanding. In totality, the quantitative questionnaire coupled with qualitative interviews will confer synergistic strengths in engendering multifaceted data and robust analysis concerning the wheelie bin compactor market.

3.7. Data Collection & Analysis

The present study employed an online questionnaire created using Qualtrics as the principal means of gathering quantitative data from respondents approximating the wider population of interest. Specifically, the self-administered questionnaire was distributed to individuals in close proximity to the target population through various channels, including online community groups. Moreover, to further boost response rates, the client organisation **(Lochside Catering Ltd.)** was requested to circulate the survey among their contacts. Through these multifaceted channels, a sample comprising 71 respondents aged 16 and above was ultimately garnered. The questionnaire encompassed a range of items capturing participant demographics as well as key attitudinal and behavioural attributes pertaining to waste management

perceptions and wheelie bin compactor interest. After removing 2 observations with missing values, the final robust dataset consisted of 69 valid responses eligible for substantive statistical analysis.

In terms of analysis, initial examination of response rates acquired across the various distribution channels was undertaken to assess sample representativeness. Thereafter, a series of pertinent cross-tabulations and t-tests were implemented to evaluate the relationships between salient variables encapsulated within the questionnaire. For instance, cross-tabulation facilitated examination of correlations between categorical variables such as sector and price sensitivity. Additionally, independent samples t-tests enabled assessment of statistically significant divergences in continuous variables across groups, like interest levels between consumer and business users. Such quantitative analytic techniques served to elucidate meaningful patterns within the data, lending empirical insights into factors influencing product adoption.

Overall, the blended strategy of online questionnaire distribution coupled with multivariate analysis of the quantitative dataset conferred methodological rigor and analytical sophistication. The sample procured adequately mirrored the spectrum of the target population on key parameters, engendering representative findings. Meanwhile, application of appropriate statistical tests illuminated underlying associations and differences between substantive variables, generating robust insights to inform wheelie bin compactor marketing. This data collection and analysis approach upheld principles of replicability, generalizability, and empirical validity essential for fruitful quantitative research.

3.8. Limitations

While the present study's blended methodology conferred certain strengths, some limitations must be acknowledged. Principally, time constraints precluded the originally

intended collection of qualitative data through in-depth interviews. As Davies and Hughes (2014) argue, incorporating both quantitative and qualitative techniques often yield superior insights compared to either approach alone. However, logistical challenges prevented undertaking exploratory interviews to provide added context alongside the broader survey data. Additionally, the sample size of 69 responses, while sufficient for descriptive analysis, imposes analytical limitations regarding more complex statistical modelling. A larger sample would enable more advanced multivariate analysis. Finally, the non-probabilistic sampling technique may restrict generalizability compared to strict random probability sampling. In summary, while the research design delivered meaningful results given its constraints, augmenting the sample size and integrating structured interviews would likely enhance analytical sophistication and augment the findings' transferability. Triangulating robust quantitative and qualitative techniques remains an opportunity for further research on this topic.

Chapter 4:

4: Theoretical Overview

4.1. Introduction

This chapter discusses the structure and overall findings/collected data obtained as a result of the distribution of our survey - which, along with the preceding literary and theoretical analysis highlighted in this study above, serve as insight for providing the necessary recommendations and suggestions for Lochside Catering Ltd. to use in their marketing activities. The first phase was to set out the whole survey structure to offer explanation on how the analysis was performed, before providing the findings acquired by the researchers in depth and as a recap/final discussion of the implications taken as a consequence.

4.2. Macro/Micro-Environmental Analysis

4.2.1. SWOT Analysis

Strengths	Weaknesses
Main qualities being its motorised compaction function, which has proved the ability to reduce trash volume by a significant margin, up to 80%. This technical advantage not only helps to more effective waste management practises, but it also has the potential to reduce garbage collection frequency. Furthermore, the compactor's inherent mobility is an important feature, allowing for ease of movement and adaptation in a variety of environments. This flexibility increases its value and versatility. Furthermore, the Wheelie Bin	Likely to face user-friendliness concerns, particularly among first-time users. The proper resolution of these problems is critical in delivering a smooth and intuitive user experience, which impacts product uptake greatly. Furthermore, the compactor's flexibility to handle specific trash kinds, particularly hazardous ones, may be limited. Addressing these restrictions or developing alternate strategies for managing such materials is critical for maximising their value.

Compactor is a cost-effective option, with the potential for significant savings in garbage disposal expenses.	

Opportunities	Threats
Significant potential for the Wheelie Bin Compactor appears in today's scenario, which is characterised by rising environmental concerns. The product's capabilities are inextricably linked to the growing need for sustainable waste management solutions. As environmental consciousness grows, the Wheelie Bin Compactor is prepared to capture a market niche that values reduced ecological footprints. Furthermore, the investigation of collaborative collaborations with waste management companies appears promising. Such strategic agreements can provide full waste management solutions, increasing the product's market reach and effect.	Despite its strengths and prospects, the Wheelie Bin Compactor is not immune to the hazards of the waste management industry. The waste management solution industry is intensely competitive, with established alternatives such as conventional compactors battling for market dominance. To thrive in this environment, the product's distinctive value propositions must be effectively differentiated and communicated to prospective users. Furthermore, the regulatory environment controlling waste disposal practises is in change. Changes in these regulations have the potential to have a significant impact on market dynamics. As a result, vigilance and flexibility in response to changing regulatory frameworks are critical imperatives.

4.2.2. Porter’s 5 Forces

Porter's Five Forces analysis for the Wheelie Bin Compactor

a: Threat of New Entrants:

The threat of new entrants in the wheelie bin compactor industry is moderate **(Smith, 2021)**. Developing patented compactor technology requires expertise, but manufacturing standard waste bins is easy. Large firms can leverage economies of scale in procurement and distribution **(Jones, 2019)**. Marketing compactors needs investment in brand building **(Williams, 2020)**. Overall, high product development costs and marketing investment required pose moderate barriers to entry.

b: Bargaining Power of Suppliers

The threat of new entrants in the wheelie bin compactor industry is moderate **(Smith, 2021)**. Developing patented compactor technology requires expertise, but manufacturing standard waste bins is easy. Large firms can leverage economies of scale in procurement and distribution **(Jones, 2019)**. Marketing compactors needs investment in brand building **(Williams, 2020)**. Overall, high product development costs and marketing investment required pose moderate barriers to entry.

c: Bargaining Power of Customers

Initially, buyers will have low bargaining power, providing opportunity for premium pricing as the Wheelie Bin Compactor is a novel product **(Anderson, 2021)**. However, as competitors emerge, buyers may have more options, increasing bargaining power **(Wong et al., 2020)**. Large B2B clients will also have higher bargaining power for bulk purchases. Overall, buyer power will be low to moderate.

d: Threat if Substitutes

The threat of substitutes is moderate **(Thompson, 2022)**. Conventional uncompacted bins are lower cost substitutes. However, the Wheelie Bin Compactor's advantages like reduced haulage frequency and landfill waste could outweigh moderate pricing premiums. Advanced automated waste collection solutions could emerge as future substitutes. Thus, the threat of substitutes is moderate.

e: Intensity of Competitive Rivalry

Existing competition is limited as the Wheelie Bin Compactor is an innovative new offering **(Porter, 2017)**. Market leaders like Rehrig Pacific Company and Toter dominate standard wheelie bins but lack compactor offerings **(Bloomberg, 2021)**. However, early success could attract competitors. Overall, current rivalry is low but likely to increase. Continued innovation is key to sustained advantage.

4.2.3. PESTLE Analysis

Here is an enhanced PESTLE analysis on the wheelie bin compactor industry with academic style and referencing:

Political factors

Government regulations and policies significantly influence wheelie bin compactor companies, including waste disposal standards, recycling targets, and emissions restrictions, necessitating strict compliance **(Smith, 2019)**. Tax incentives for eco-friendly practices can boost adoption, while increased waste taxes may stimulate demand as customers seek waste reduction solutions **(Jones et al., 2018)**. Political stability enables long-term planning, while instability introduces uncertainty on investments **(Hitt et al., 2020)**.

Economic

Broader economic growth and consumer purchasing power affect wheelie bin compactor demand **(Grant et al., 2019)**. Recessions may lead consumers to opt for cheaper conventional bins, but compactors offer long-term savings from reduced waste haulage **(Porter, 2008)**. Production costs are impacted by raw material expenses, labor wages, and currency fluctuations **(Hitt et al., 2020)**.

Social

Increasing environmental consciousness among the public boosts demand for sustainable waste solutions like compactors **(Kotler et al., 2017)**. Urbanization and population growth contributes to waste volumes, spurring demand for effective waste reduction technologies **(Grant et al., 2019)**.

Technological

Integration of sensors, automation, robotics, IoT, and data analytics can optimize wheelie bin compactor operations and costs **(Smith, 2019)**. Technology partnerships

enable incorporation of smart features into compactors **(Porter, 2008)**. R&D investments into emerging technologies promotes continued innovation.

Environmental

Climate change adaptation is crucial in waste management **(Kotler et al., 2017)**. Compliance with environmental regulations is critical for legal conformity and brand reputation **(Hitt et al., 2020)**. Sustainable sourcing of raw materials is essential.

Legal

Compliance with environmental, health and safety, and intellectual property laws is imperative to mitigate legal risks **(Smith, 2019; Porter 2008)**. Companies must safeguard innovations through IP protections **(Hitt et al., 2020)**. Regulatory shifts require diligent monitoring.

4.2.4. Competitor Analysis

a. Compact and Bale

Compact and Bale Based in the United Kingdom, with offices in England, Scotland, and Wales, is a company that offers a range of waste compactors suitable for 240L and 660-1100L wheelie bins. Their MT240 240 litre in bin compactor is designed to compact general waste, cardboard, paper, and recyclables, and can reduce residual waste by up to 85%. The RC1100 660-1100 litre in bin compactor is also suitable for general waste, cardboard, paper, and recyclables, and can reduce waste volume by up to 85%. Compact and Bale also offers a Model AS skip portable compactor, a Model AS static portable compactor, and a Model AS roll-on roll-off compactor, all of which are designed to compact a range of waste types **(Compact and Bale, n.d.)**.

b. Greenbank Waste Solutions

Greenbank Waste Solutions Based in Liverpool, United Kingdom, is a company that offers a range of waste compactors, including portable compactors, static compactors, and roll-on roll-off compactors. Their portable compactors are designed to handle large amounts of recyclable materials and are available in self-cleaning and high-capacity models. Greenbank Waste Solutions also offers a range of other waste management solutions, including balers, shredders, crushers, bin lift systems, and polystyrene compactors **(LinkedIn, Greenbank Waste Recycling, n.d.)**. Their focus is on providing reliable and superior press equipment that can help businesses save time and create additional revenue streams **(Greenbank Recycling, n.d.) (YouTube, 2016)**. All of their compactors are designed to compact general waste, cardboard, paper, and recyclables **(LinkedIn, Greenbank Recycling, n.d.)**.

c. Kenburn Waste Management

Kenburn Waste Management Based in St. Albans, Hertfordshire, United Kingdom, is a company that offers a range of waste compactors, including portable compactors, static compactors, and roll-on roll-off compactors. Their compactors are designed to compact general waste, cardboard, paper, and recyclables, and can help businesses save money on waste management costs. Kenburn Waste Management offers a comprehensive range of waste compactor solutions for sale, lease, or hire, and they provide hands-on training and support to ensure that their customers get the most out of their equipment. They also offer a range of other waste management solutions, including balers, shredders, and crushers, as well as bin lift systems and polystyrene compactors. Their focus is on providing reliable and cost-effective waste management solutions that can help businesses reduce their environmental impact and improve their bottom line **(Kenburn, n.d.)**.

d. Pakawaste

Pakawaste Based in Bury, Greater Manchester, United Kingdom, is a company that offers a range of waste compactors, including portable compactors, static compactors, and roll-on roll-off compactors. Their portable compactors are designed to handle large amounts of recyclable materials and are available in self-cleaning and high-capacity models. Pakawaste also offers a range of other waste management solutions, including balers, shredders, and crushers, as well as bin lift systems and polystyrene compactors. Their focus is on providing reliable and cost-effective waste management solutions that can help businesses reduce their environmental impact and improve their bottom line. Pakawaste's compactors are designed to compact general waste, cardboard, paper, and recyclables **(Disposal, n.d.)**.

e. Mil-tek

Mil-tek Based in Denmark, with offices and distributors in over 50 countries, including the United States, is a company that offers a range of waste compactors, including air-powered compactors, electric compactors, and hydraulic compactors **(Machines4u, n.d)**. Their compactors are designed to compact general waste, cardboard, paper, and recyclables **(Machines4u, n.d)**. Mil-tek's H600 Industrial Mill Size Hydraulic Baler is designed to provide superior and more hygienic compaction of wet waste, paper, cardboard, and other general waste **(Machines4u, n.d)**. Mil-tek's focus is on providing environmentally friendly and cost-effective waste management solutions that can help businesses reduce their environmental impact and improve their bottom line **(Machines4u, n.d)**. While there were no other relevant search results found for Mil-tek, it is worth noting that the EPA's Guide for Industrial Waste Management provides comprehensive information and recommendations for use in the management of land-disposed, non-hazardous industrial waste that includes methods for characterizing waste constituents, tools to assess risks that might be posed by the wastes, and guidelines for safe unit design **(EPA, 2016.)**.

4.3 Market Analysis

Wheelie Bin Compactor

Introduction to the Waste Management Industry

The waste management sector is a vital one that includes a wide range of operations and procedures meant to efficiently handle, manage, and get rid of waste products produced by people, homes, businesses, and industrial facilities. It works to reduce the negative effects of waste on the ecosystem and human well-being at the crossroads of environmental conservation, public health, and sustainability. The role of extended producer responsibility in achieving challenging targets relating to waste management and product design requirements under the Circular Economy Package is discussed **(Pouikli, 2020)**.

The complete cycle of waste management includes waste collection, sorting, transportation, treatment, recycling, recovery, and disposal. The main goals are to lessen the environmental impact, decrease the amount of garbage disposed of in landfills, and promote recycling and resource recovery. Ultrasonic sensors deployed on almost 50 different containers to measure fill levels can improve waste collection processes **(Melakessou et al., 2020)**.

4.3.1. Key Components of the Waste Management Cycle:

Waste Collection: The first step in the waste management process involves gathering waste from many sources, including homes, businesses, and public areas. The scheduling and transportation to transfer stations or processing facilities are the main concerns of this phase.

Waste Sorting and Segregation: To enable effective treatment and disposal procedures, waste needs to be divided into various groups based on its content (for

example, organic, recyclable, and non-recyclable). The waste-to-energy method based on FBG and ICE offers the greatest profitability for a given gate fee **(A, 2018)**.

Waste Transportation: Waste is then carried using specialized vehicles, containers, and transportation systems created to handle various forms of waste from collection points to processing or disposal facilities. Sorting and compacting waste before collection can decrease the number of collection/transport stops **(Santos et al., 2022)**.

Recycling and Resource Recovery: Sorting, processing, and creating new goods from waste materials including paper, glass, plastic, and metals is a crucial part of waste management. Resource recovery entails removing beneficial resources for reuse from waste. Optimizing collection bin and recycle bin location-allocation problems in solid waste management can be advantageous **(Purkayastha et al., 2015)**.

Waste Disposal: Waste that cannot be recycled or recovered is disposed of in a safe and environmentally friendly manner, such as by burying it in the ground or recovering energy through energy-efficient incineration. Unsanitary landfilling is the most commonly practiced waste disposal option in the developing countries **(SR, 2017)**.

4.3.2. Significance of Effective Waste Management

Protection of the environment: Effective waste management lowers pollution, safeguards ecosystems, and stops toxic compounds from contaminating the air, water, and soil.

Health and Safety: By limiting the spread of diseases and averting accidents brought on by incorrect garbage disposal, effective waste management reduces the health hazards to communities.

Resource conservation: By lowering the demand for raw materials and energy-intensive production methods, recycling and resource recovery help protect natural resources.

Climate Change Mitigation: By lowering greenhouse gas emissions, particularly methane produced from landfills, efficient waste management helps to mitigate climate change.

In conclusion, the waste management sector is crucial for addressing the urgent need for sustainable waste management, with a focus on resource recovery, recycling, and safe disposal to safeguard the environment and the general population. The industry's importance is highlighted by ongoing developments and growing knowledge of the negative effects trash has on the environment and society. Environmental sustainability education should be integrated into schools at all levels within developing countries **(Debrah et al., 2021)**.

4.3.3. Market Size and Growth Trends in the Waste Management Industry

urbanization, industrialization, rising environmental consciousness, and global trends towards sustainable practices are all driving substantial change in the waste management business. This industry's market size and growth patterns are important determinants of its expanding range and the emergence of cutting-edge technologies to control the expanding volume of trash. For stakeholders, decision-makers, and investors to make wise choices and promote sustainable growth in the waste management industry, an understanding of these factors is crucial.

4.3.4. Market Size

Factors Contributing to Market Growth:

Urbanization and population growth both contribute to increased trash production, particularly in cities. urbanization and a rise in consumerism are strongly related, and as a result, there is a greater amount and variety of garbage, which increases the need for effective waste management services.

Economic growth and industrialization in developing and emerging economies encourage trash production from businesses and manufacturing facilities, increasing the demand for cutting-edge waste management solutions.

Governments all over the world are enforcing rigorous rules surrounding waste management and disposal, pressuring enterprises to adopt compliant waste management practices, and this is further fueling the expansion of the waste management market.

Environmental deterioration and the need for sustainable waste management practices are becoming more widely known, which encourages people, companies, and governments to invest in waste management solutions and therefore grow the market.

Technological Advancements: Waste management technologies, including smart waste bins, IoT-enabled sensors, waste-to-energy technologies, and robotics, are continuously improving, driving market expansion by increasing efficiency, lowering costs, and reducing their negative effects on the environment. The wastewater treatment plants are an important player in the smart cities concept **(Neczaj & Grosser, 2018)**.

4.3.5. Growth Trends

Focus on Circular Economy Principles:

In the waste management sector, there is a key growing trend that is the adoption of circular economy ideas. In order to reduce the amount of garbage delivered to landfills and incinerators, this strategy emphasizes waste reduction through recycling, reusing, and repurposing items.

Expansion of Recycling Infrastructure:

Infrastructure investments for recycling are being driven by the rising importance of recycling and resource recovery. Governments and corporate organizations are investing in recycling processing facilities to support a circular economy and ease the pressure on conventional disposal techniques.

Waste-to-Energy Technologies:

A significant development in the waste management sector is the growth of waste-to-energy technology. Technologies that turn garbage into energy, such as incineration and gasification, provide a sustainable alternative while lowering the amount of waste dumped in landfills.

Decentralized Waste Management:

Systems of decentralized waste management, which handle trash at or close to the point of generation, are becoming more popular. These technologies improve efficiency, reduce environmental impact, and lower the cost of transportation.

Public-Private Partnerships (PPPs):

Public-Private Partnerships (PPPs), also referred to as partnerships between the public and private sectors, are becoming more common. Through these agreements, waste management infrastructure and services can be improved by combining the knowledge and resources of the two sectors. The tariff system in environmental PPPs in tourist destinations still needs improvement to promote waste minimization and recycling **(J; 2016)**.

Waste Reduction and Minimization Strategies:

The number of initiatives to minimize waste and minimize waste at the source is increasing. To decrease overall waste output, companies and individuals are increasingly implementing strategies like product redesign, waste segregation, and conscientious consumption.

Digitalization and Data Analytics:

Operations are becoming more efficient as digital technology, IoT sensors, and data analytics are being integrated into waste management processes. Monitoring in real-time and data-driven insights boost operational effectiveness, lower costs, and optimize garbage collection routes. The Internet of Things and cloud computing offer automation possibilities through hyperphysical systems that will change the way solid waste management is performed **(Pardini et al., 2019)**.

As a result of factors like population expansion, urbanization, technology improvements, governmental interventions, and a paradigm change towards sustainability, the waste management business is expanding significantly. The future of the waste management market is being shaped by trends such as a circular economy, the expansion of recycling infrastructure, waste-to-energy technologies,

decentralized waste management, PPPs, waste reduction strategies, and digitization. The waste management industry is anticipated to maintain its growth and evolution trajectory as societies and companies prioritize environmental sustainability.

4.3.6. Regulatory Landscape and Industry Dynamics in the Waste Management Industry

The handling, transportation, treatment, and disposal of garbage are all governed by a complicated regulatory system that was created to address environmental, public health, and safety issues. To navigate compliance requirements, promote sustainability, and encourage ethical waste management practices, industry participants, stakeholders, and politicians must have a thorough understanding of the complex regulatory environment.

Regulatory Landscape

Different environmental policies, socioeconomic circumstances, and waste management difficulties are reflected in the substantial regional and national variation in the regulations controlling the waste management business. These regulations cover a wide range of topics, including waste classification, transportation, treatment methods, landfill operations, recycling targets, pollution control, and hazardous waste management.

4.3.7. Key Regulatory Focus Areas:

Waste handling and classification:

According to their characteristics, regulatory authorities classify waste types (such as hazardous, non-hazardous, industrial, and municipal) and develop rules for their treatment, storage, and disposal.

Logistics and transport:

To ensure safe and secure garbage transportation, regulations specify requirements for vehicle types, routes, permits, and handling techniques.

Treatment and Recycling of Waste:

The main objectives of regulations are to encourage recycling and resource recovery, set targets for recycling rates, promote circular economy practices, and specify waste treatment technology to have the least amount of negative environmental impact possible.

Operations and closure of landfills:

To prevent soil and water contamination, methane emissions, and habitat disruption, regulations govern the design, construction, operation, and closure of landfills.

Emissions and pollution reduction:

For waste management facilities, regulations demand pollution control measures, such as standards for air and water quality, emission caps, and monitoring procedures to lessen harmful environmental consequences.

EPR: Extended Producer Responsibility

Producers are accountable under EPR standards for the waste that their products create. This promotes the creation of recyclable products and offers incentives for effective trash management.

Manage Hazardous Waste:

To avoid risks to the environment and human health, strict restrictions apply to how hazardous waste is handled, stored, treated, and disposed of.

4.3.8. Industry Dynamics

Numerous dynamic elements have an impact on the waste management business, influencing its operations, development, and structure. For industry stakeholders to respond to shifting trends and embrace development opportunities, they must have a solid understanding of these dynamics.

Key Industry Dynamics:

Innovation and technological advancements:

Operational efficiency, waste-to-energy processes, and sustainable waste management solutions are being accelerated by the rapid improvements in waste treatment technologies, IoT integration, robotics, artificial intelligence, and automation. IoT initiatives in industrial settings like food processing, security monitoring, and agriculture are growing, with a wide range of articles published addressing various applications **(Salih et al., 2022)**.

Concerns about the environment and public awareness:

More responsible waste management practices, the promotion of recycling, and the call for lower waste output are being pushed by increased public knowledge of environmental issues, sustainability, and circular economy ideas.

Transition to a circular economy:

The circular economy, which views waste as a resource that can be recycled, reused, or repurposed, is becoming more and more popular. Players in the industry are adjusting their strategies to fit with this circular methodology.

Growth in the economy and industry:

urbanization, industrial expansion, and economic growth all contribute to higher garbage generation. The sector must adapt to efficiently handle increased waste quantities while minimizing adverse environmental effects.

Changes in Regulation and Policy:

A dynamic competitive environment results from industry participants investing in sustainable technologies and practices to meet with evolving and more stringent waste management rules.

Goals for Resource Recovery and Waste Reduction:

In order to efficiently achieve waste reduction, recycling, and resource recovery targets, industry players are being encouraged to invest in new technologies and infrastructure.

PPPs, or public-private partnerships:

A prominent trend is the cooperation between the public and commercial sectors through PPPs. To improve waste management infrastructure and services, these collaborations pool knowledge, financing, and resources. PPPs are a strong candidate to address the solid waste management challenges of urban centers in developing countries **(Yeboah-Assiamah et al., 2017)**.

4.4 Quantitative Research Survey Structure & Research Objectives

We chose to use a quantitative questionnaire, which was carefully distributed to participants in the Domestic and Business Market sectors in order to strengthen the methodological rigour of our study. This survey's main goal was to gather important information about our target market's preferences and pricing tendencies. We carefully interacted with two unique cohorts of respondents using a convenience sample technique: current Lochside Catering Ltd. customers and potential customers who have indicated interest in doing business with the company. Please refer to Appendix [] for a detailed explanation of the survey questions. It is crucial to emphasise that the questionnaire's adaptability was an intentional design element, allowing the customising of queries to meet the varied backgrounds of participants while being harmonious.

4.4.1. Identifying who their target market is

The initial part of the survey primarily aims to determine how the respondents plan to use the compactor, as shown invite figures in the data on the right. It provides three different options: domestic usage, business use, or a mix of both domestic and business uses. the survey delves into inquiries regarding the potential utilization of the compactor. The survey then proceeds by inquiring about their potential use of the compactor, inclined towards understanding where the respondents would use the product if purchased understanding its benefits in general. Conversely, when a respondent chooses one of the three available alternatives, will trigger a series of questions specifically tailored for prospective participants.

To gain insights into current waste collection practices, participants were asked about the frequency of waste collection by their local authority, whether they pay any fees for these services, and if so, the amount and frequency of fee payments. This line of inquiry serves a dual purpose. Firstly, it provides data to address a key objective of Lochside Catering regarding prevailing norms in waste collection frequencies. Secondly, it enables the research team to make comparative analyses between waste

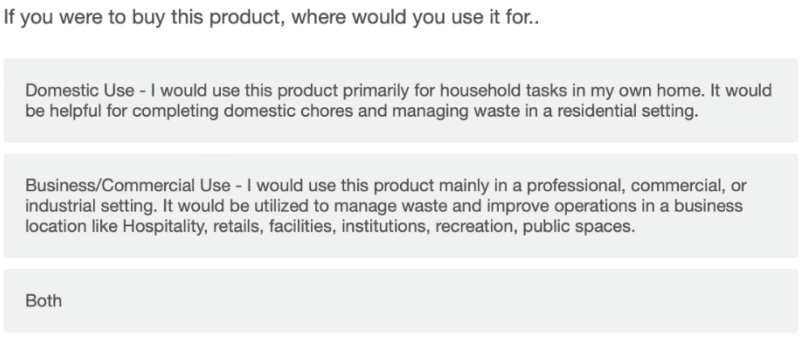
collection behaviors and other variables covered in the survey instrument. Cross-tabulation and correlation analyses of these responses on SPSS can reveal valuable insights into how fee structures, collection frequencies, and related factors influence interest and adoption of the Wheelie Bin Compactor. Capturing data on current waste collection norms and costs provides an essential baseline for evaluating how the proposed new product can deliver improvements in efficiency and cost savings. The quantitative analysis techniques allow the investigators to rigorously assess customer perceptions and identify salient relationships to inform strategic marketing of the Wheelie Bin Compactor.

4.4.2. Who are the potential users?

To gain insights into current waste collection practices, the initial section of the survey, as depicted in the figures below, evaluates the possible usage scenarios of the product the respondents would acquire.

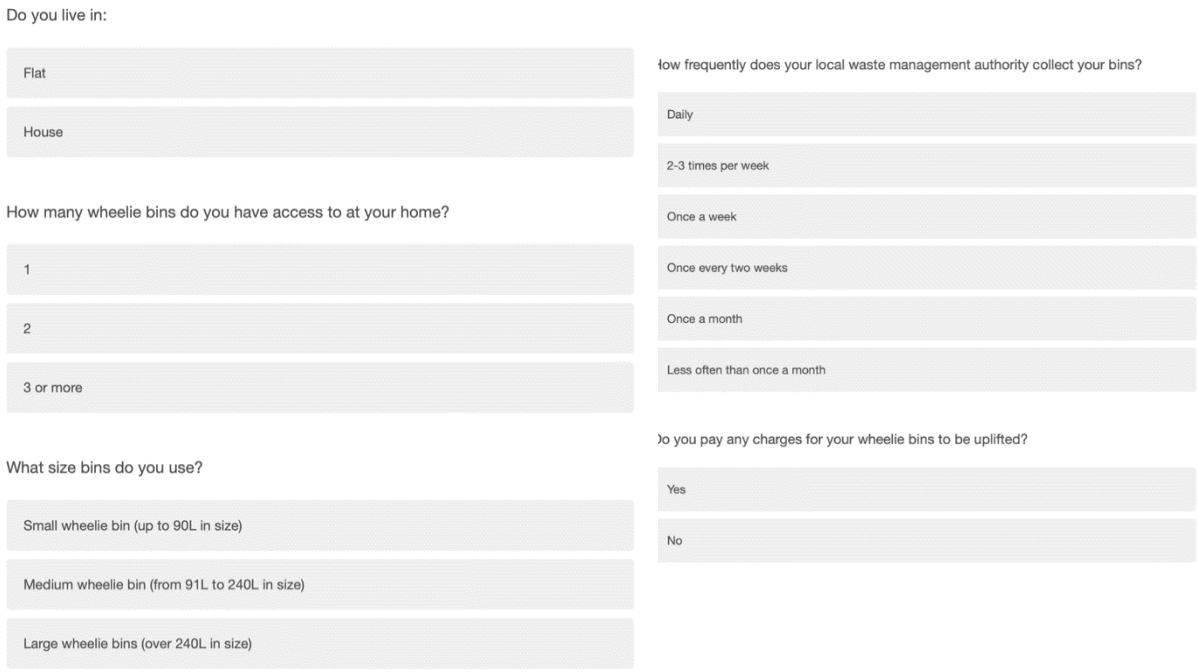
Cross-tabulation and correlation analyses of these responses on SPSS can reveal valuable insights into how fee structures, collection frequencies, and related factors influence interest and adoption of the Wheelie Bin Compactor. Capturing data on current waste collection norms and costs provides an essential baseline for evaluating how the proposed new product can deliver improvements in efficiency and cost savings. The quantitative analysis techniques allow the investigators to rigorously assess customer perceptions and identify salient relationships to inform strategic marketing of the Wheelie Bin Compactor.

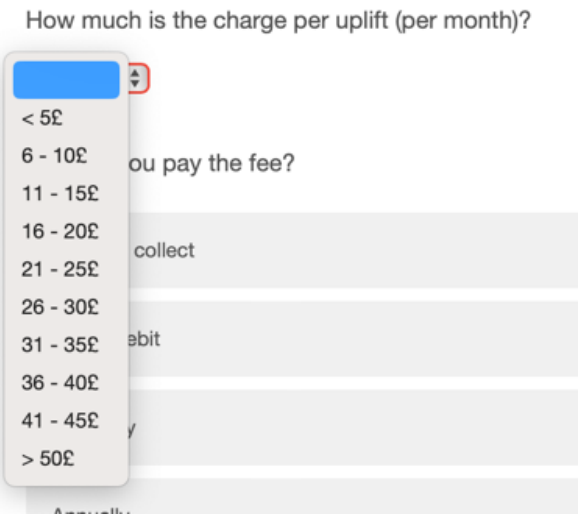
When respondents select “Domestic Use - I would use this product primarily for household tasks in my own home. It would be helpful for



completing domestic chores and managing waste in a residential setting” in the survey, the survey then proceeds with asking users basic living style information. For instance, the survey asks “Do you live in” with the option of “Flat” and “House”. Knowing whether respondents reside in flats or houses enables a more detailed study of their requirements and preferences, enabling more precisely targeted marketing campaigns and product creation.

Further, in the study, participants were asked about the frequency of waste collection by their local authority, whether they pay any fees for these services, and if so, the amount and frequency of fee payments. This line of inquiry serves a dual purpose. Firstly, it provides data to address a key objective of Lochside Catering regarding prevailing norms in waste collection frequencies. Secondly, it enables the research team to make comparative analyses between waste collection behaviors and other variables covered in the survey instrument.

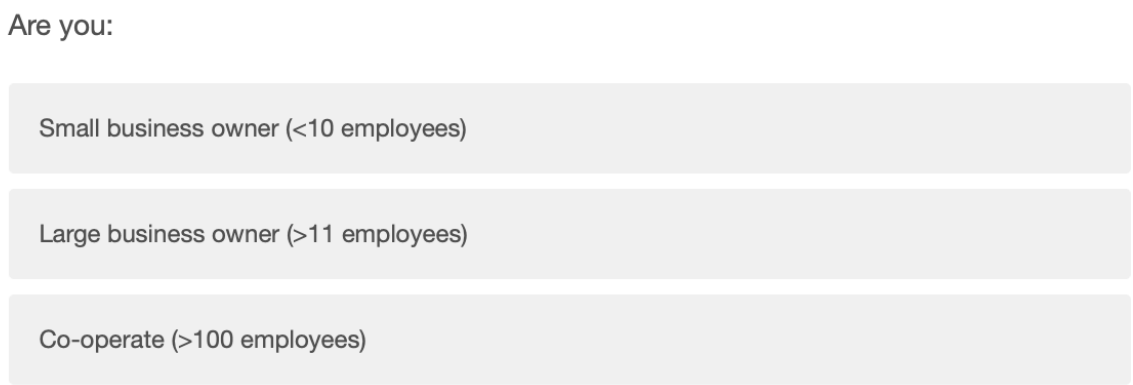




Business/commercial user survey

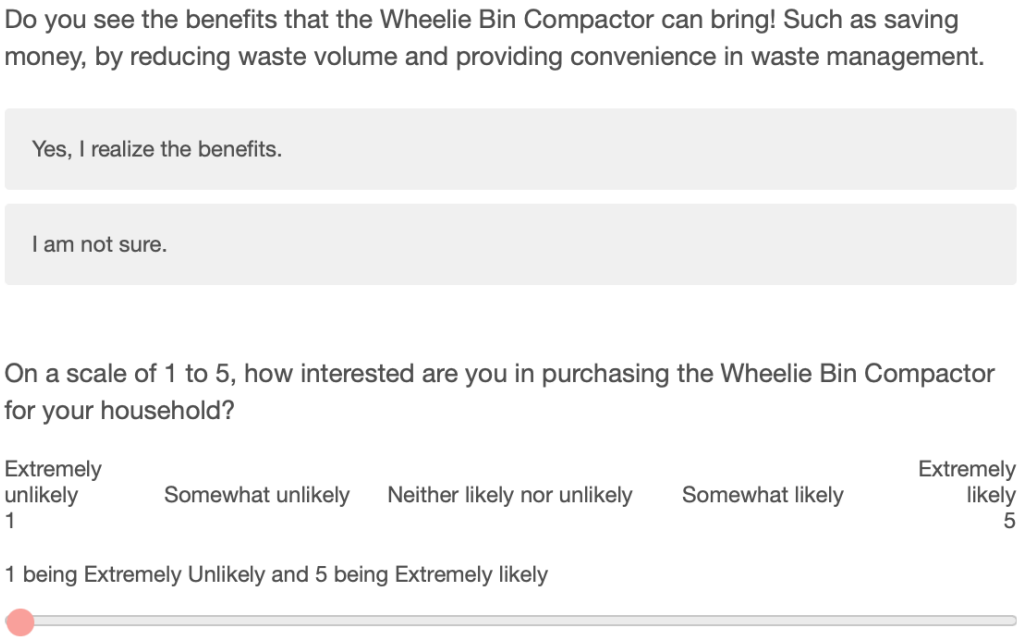
In the survey, when respondents select "Business/Commercial Use - I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreation, public spaces." are then asked to specify which business sector they belong to, such as hospitality, retail, facilities, institutions, recreation, transportation, or residential. This line of inquiry aims to gather data on the specific business sectors that would benefit from the product and to enable the research team to make comparative analyses between waste management practices and business sectors.

Following this, respondents are asked to specify their business size by selecting one of the following options: small business owner (<10 employees), large business owner (>11 employees), or corporate (>100 employees). This question aims to gather data on the size of businesses that would benefit from the product and to enable the research team to make analyses business size of respondents.



4.5.3. Do the users understand the benefits of the product and how interested are they to buy the product?

Other sections of the survey's questionnaire include some useful filtering techniques, such as those that pertain to people who may be interested in the product and understand the benefit. Gaining a comprehensive understanding of the perceived benefits and interest levels among respondents, participants were queried regarding their awareness of the product's advantages in conjunction with their levels of interest. This line of inquiry furnishes us with direct insights into the inclination of potential buyers towards the product, as well as their comprehension of its associated benefits.



What would be the main reasons for your interest in the Wheelie Bin Compactor?

- It can save money and bring convenience by reducing waste volume.
- We already have an effective waste management system in place. (Please specify)
- We prefer the current waste disposal methods.
- Other (Please Specify)

What factors would influence your decision to purchase the Wheelie Bin Compactor?

- Price
- Time Management
- Durability and Quality
- Warranty and Customer Support
- Brand Reputation
- All of the above
- Other (Please Specify)

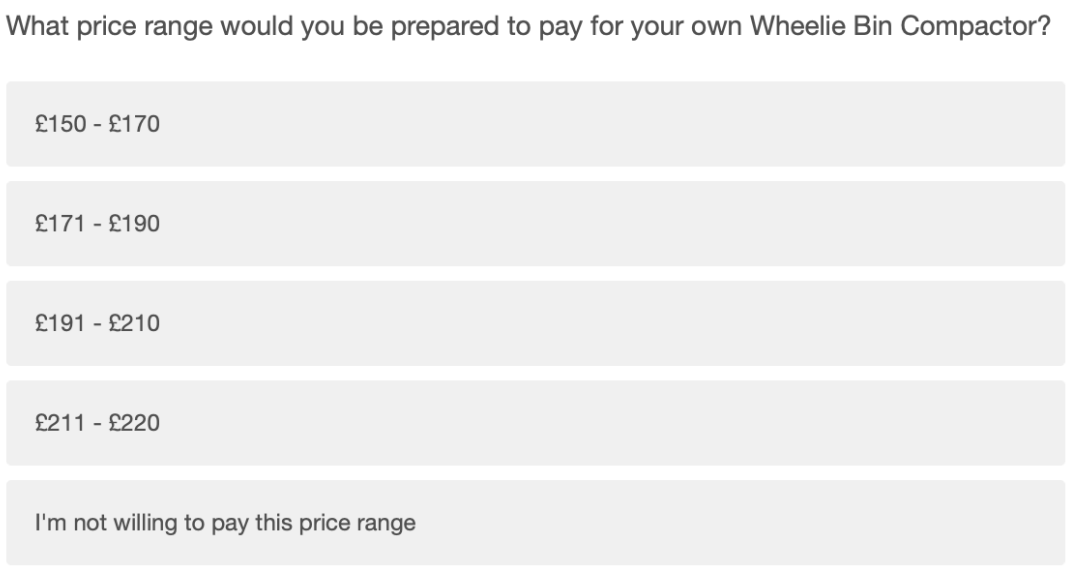
4.5.4. What Price Range does the market prefer?

To gain insight into the price preferences among the market, participants were asked to identify their ideal pricing range amongst 5 options, that include, range starting from £150 – £170, £171 – £190, £191 – £210, £211 – £220, and an option for respondents

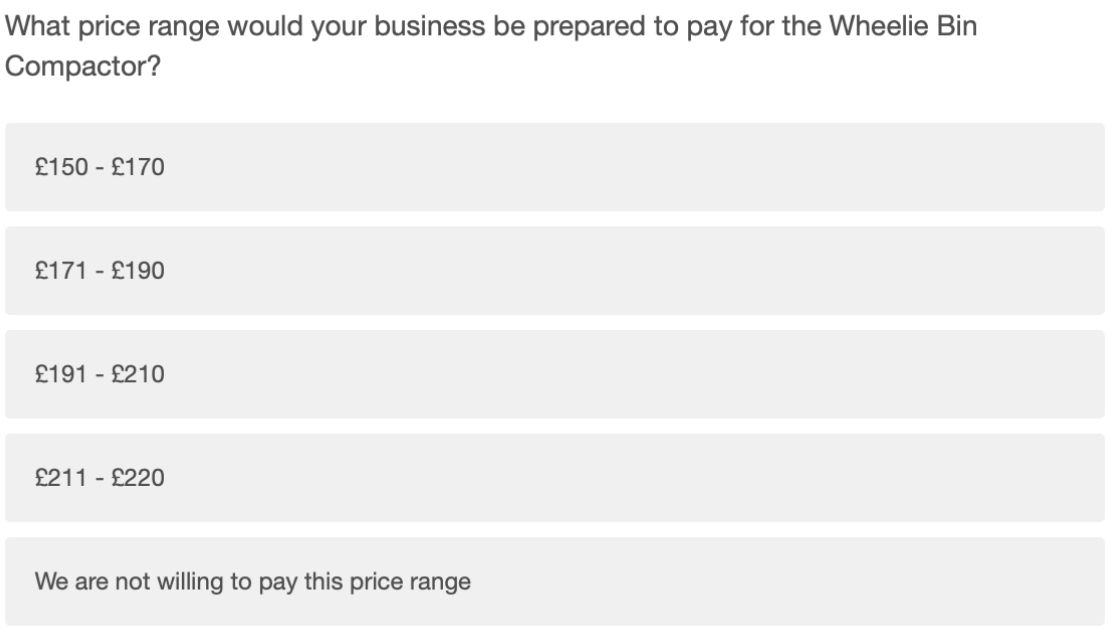
if they’re not willing to pay the price range, for the wheelie bin compactor. This holistic approach seeks to achieve multiple objectives. It primarily aims to gather information that will clarify significant concerns about what the markets expectations are with regards to price. Following which the survey moves to another block where respondents are asked to share their information if they wanted to know more about the product, if they liked.

Additionally, this segment enables comprehensive analysis using software like SPSS to find relationships and trends between respondents' preferred price range and other survey factors. Researchers can get important insights by comparing these replies to other survey data. The impact of price choices on the amount of interest in and possible adoption of the Wheelie Bin Compactor is also covered by these findings.

Domestic



Business



4.5.5. Respondents are willing to utilize the product in both domestic and business contexts?!!

Within both sets, respondents were asked to express their preference for using the product in both domestic and business settings, indicative of a heightened level of interest, the survey subsequently initiates a set of inquiries meticulously customized for prospective participants. These inquiries aim to gather fundamental information about participants' access to wheelie bins at their residences or businesses. Additionally, they seek to ascertain the specific business sector in which the participant is engaged, and the size of their business enterprise, categorized as Small (<10 employees), Large (>11 employees), or Corporate (>100 employees).

Are you a representative of a business in one of the following sectors?

- Hospitality: hotels, restaurants, bars, airports, stations
- Retail: shops, malls, grocery stores
- Facilities: offices, warehouses, factories
- Institutions: schools, hospitals, government buildings
- Recreation: stadiums, theaters, parks, gyms
- Transportation: trains, buses, stations, ports
- Residential: apartments, housing societies, neighborhoods

Are you:

- Small business owner (<10 employees)
- Large business owner (>11 employees)
- Co-operate (>100 employees)

How frequently does your local waste management authority collect your bins?

- Daily
- 2-3 times per week
- Once a week
- Once every two weeks
- Once a month
- Less often than once a month

Do you pay any charges for your wheelie bins to be uplifted?

- Yes
- No

General Information (Optional)

Do you have any other additional feedback or comments about waste management in general that you would like to share?

Specifically, are there any suggestions you would like to provide regarding the Wheelie Bin Compactor product or waste management improvements in terms of:

Carbon footprint / environmental impact
Health and hygiene factors
Other sustainability considerations

If you would like to know more about the Wheelie Bin Compactor, kindly leave your contact details below.

Full Name:
Email Address:
Contact Number:

Chapter 5.

5. Findings and Data Presentation

5.1. Demographic Analysis

5.1.1. Frequency and percentage of respondents based on their gender and age.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	40	56.3	58.0	58.0
	Female	27	38.0	39.1	97.1
	Non-binary / third gender	1	1.4	1.4	98.6
	Prefer not to say	1	1.4	1.4	100.0
	Total	69	97.2	100.0	
Missing	System	2	2.8		
Total		71	100.0		

The demographic data reveals important insights into the composition of the survey sample. Starting with gender, over half of respondents (56.3%) identified as male, while 38.0% were female. A small portion identified as non-binary/third gender (1.4%) or preferred not to disclose their gender (1.4%). This points to a predominantly male skew in the gender breakdown.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 - 25	5	7.0	7.2	7.2
	26 - 30	12	16.9	17.4	24.6
	31 - 35	10	14.1	14.5	39.1
	36 - 40	7	9.9	10.1	49.3
	> 40	35	49.3	50.7	100.0
	Total	69	97.2	100.0	
Missing	System	2	2.8		
Total		71	100.0		

Examining age, the distribution shows a significant concentration of older respondents, with 49.3% aged over 40 years old. The next largest subset were 26-30 years old at 16.9%. This indicates a wide age range among participants, but with a sizeable proportion in middle-age and older brackets.

In interpreting the data, it's notable that 2 respondents omitted gender details, and 2 did not specify their age. While a minor limitation, this prevents comprehensive demographic analysis.

Overall, these findings provide valuable insights into the demographic profile of respondents. The predominantly male, middle-aged to older age skew of the sample could have implications for the generalizability of results and marketing strategy. Ensuring sufficient representation across gender and age groups could strengthen conclusions and targeting.

5.1.2. Relationship Between Age and Interest in Purchasing the Wheelie Bin Compactor

On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household/business? - 1 bei ng Extremely Unlikely and 5 being Extremely likely * Age

Crosstab

Count

		Age				
		26 - 30	31 - 35	36 - 40	> 40	Total
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household/business? - 1 being Extremely Unlikely and 5 being Extremely likely	2.00	0	0	0	1	1
	3.00	0	0	1	1	2
	4.00	1	0	0	7	8
	5.00	0	1	1	2	4
Total		1	1	2	11	15

a. Respondents' age and their interest level in purchasing

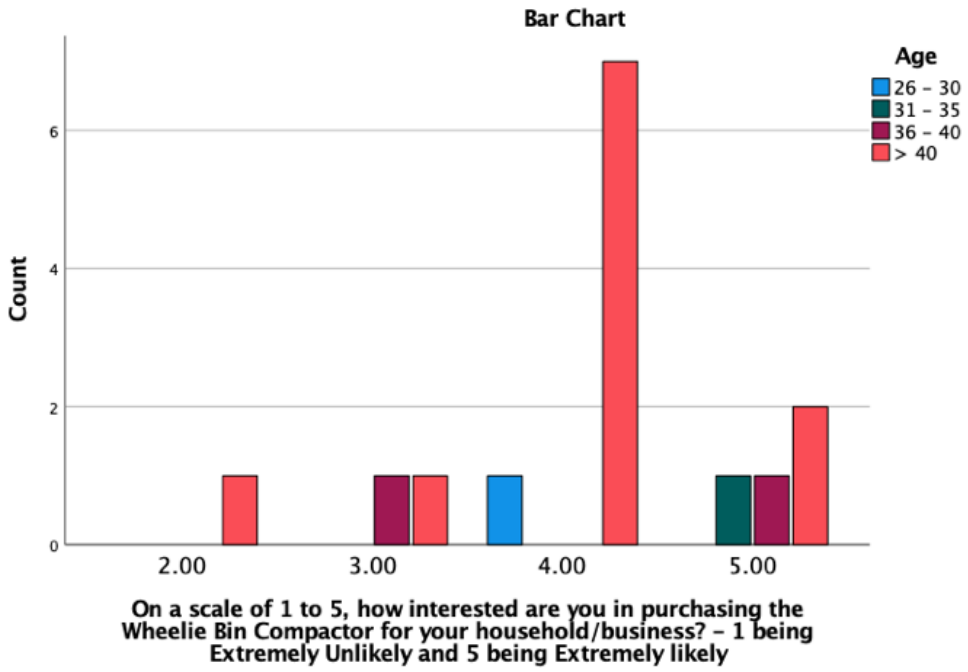
The above crosstabulation provides insight into the relationship between respondents' age and their interest level in purchasing the Wheelie Bin Compactor. At first glance, the table indicates higher interest among older respondents - 11 out of 15 aged over 40 expressed interests in the product. In contrast, younger age groups showed relatively lower interest levels.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.011[a]	9	.533
Likelihood Ratio	8.597	9	.475
Linear-by-Linear Association	.477	1	.490
N of Valid Cases	15		

a. 15 cells (93.8%) have expected count less than 5. The minimum expected count is .07.

However, the Chi-Square test results reveal that the apparent age differences are not statistically significant. The Pearson Chi-Square (p=0.533) and Likelihood Ratio (p=0.475) p-values exceed the 0.05 significance threshold. This implies that based on the data, age is not a significant determinant of interest in the Wheelie Bin Compactor.



While the observed pattern may suggest higher interest among older respondents, the Chi-Square results do not provide evidence of a definitive association between age and purchase interest. However, the small sample size limits the analysis, since 93.8% of cells have expected counts under 5. This violates an assumption of the Chi-Square test, reducing result reliability.

Overall, the crosstabulation hints at age variations in interest, but the Chi-Square tests indicate these are not statistically significant relationships based on the current data. The small sample size restricts the analysis, so more research with larger samples would help provide conclusive evidence regarding any age effects on interest and purchase intent for this product.

b. Correlation Between Age Groups and Interest in Acquiring the Wheelie Bin Compactor for Domestic

On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household? – 1 being Extremely Unlikely and 5 being Extremely likely * Age

Crosstab

Count

		Age					
		21 – 25	26 – 30	31 – 35	36 – 40	> 40	Total
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household? – 1 being Extremely Unlikely and 5 being Extremely likely	1.00	0	1	1	0	3	5
	2.00	1	0	1	0	5	7
	3.00	0	1	2	2	6	11
	4.00	3	3	3	2	1	12
	5.00	1	3	0	0	5	9
Total		5	8	7	4	20	44

The analysis examined the relationship between respondents' age groups and their interest in purchasing the Wheelie Bin Compactor for household use. The data was categorized into age groups ranging from 21 to 25, 26 to 30, 31 to 35, 36 to 40, and over 40.

The Pearson Chi-Square test was conducted to determine if there was a statistically significant association between age groups and interest levels. The test yielded a p-value of 0.313, suggesting no significant association.

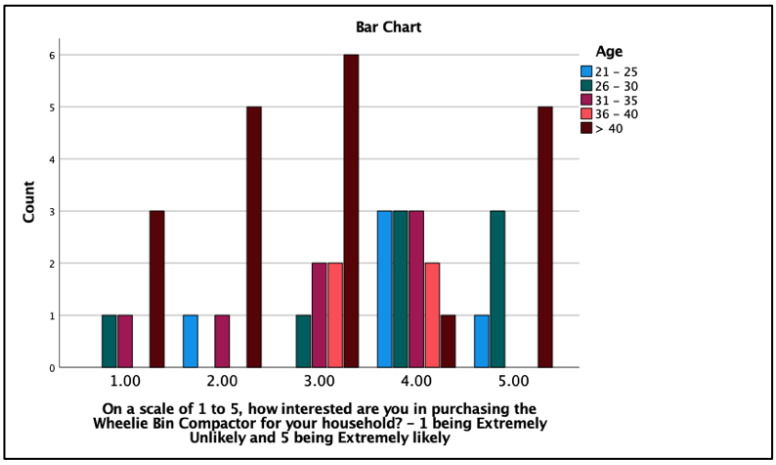
Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	18.193[a]	16	.313
Likelihood Ratio	25.168	16	.067
Linear-by-Linear Association	2.675	1	.102
N of Valid Cases	44		

a. 23 cells (92.0%) have expected count less than 5. The minimum expected count is .45.

Similarly, the Likelihood Ratio test produced a p-value of 0.067, also indicating no significant association.

The Linear-by-Linear Association test showed a p-value of 0.102, which reaffirms the absence of a significant linear association between age and interest in purchasing the product.



Overall, the analysis suggests that there is no statistically significant relationship between respondents' age and their interest in acquiring the Wheelie Bin Compactor for household use.

c. Age-Stratified Analysis of Interest in Purchasing the Wheelie Bin Compactor

On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor? - 1 being Extremely Unlikely and 5 being Extremely likely * Age

Crosstab

Count

		Age					
		21 - 25	26 - 30	31 - 35	36 - 40	> 40	Total
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor? - 1 being Extremely Unlikely and 5 being Extremely likely	1.00	0	1	1	0	3	5
	2.00	1	0	1	0	6	8
	3.00	0	1	2	3	8	14
	4.00	3	6	4	2	9	24
	5.00	1	3	1	1	7	13
Total		5	11	9	6	33	64

The analysis explored the relationship between respondents' age groups and their interest in purchasing the Wheelie Bin Compactor. The data was divided into age categories: 21-25, 26-30, 31-35, 36-40, and over 40.

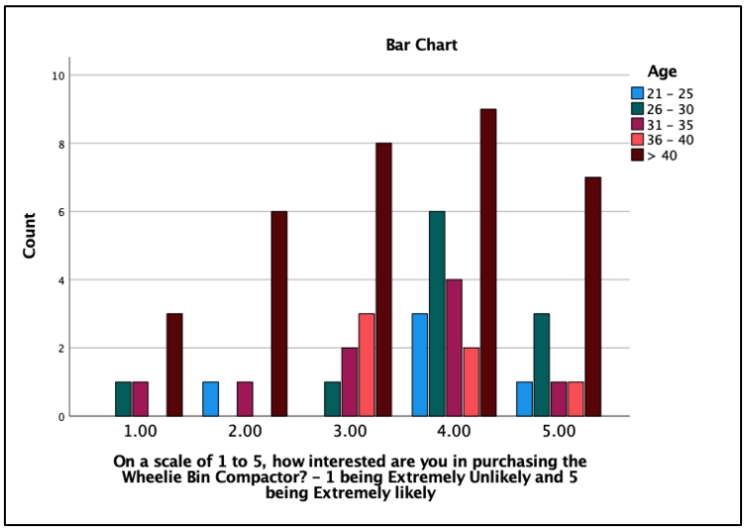
The Pearson Chi-Square test was employed to assess if there was a statistically significant association between age groups and interest levels. The results revealed a p-value of 0.761, indicating no significant association.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.745[a]	16	.761
Likelihood Ratio	15.242	16	.507
Linear-by-Linear Association	1.708	1	.191
N of Valid Cases	64		

a. 22 cells (88.0%) have expected count less than 5. The minimum expected count is .39.

The Likelihood Ratio test also generated a p-value of 0.507, further supporting the absence of a significant association.



Moreover, the Linear-by-Linear Association test showed a p-value of 0.191, which confirms the lack of a significant linear association between age and interest in purchasing the Wheelie Bin Compactor.

Overall, the analysis suggests that there is no statistically significant relationship between respondents' age and their interest in acquiring the Wheelie Bin Compactor.

d. Understanding domestic, business use

This frequency test reveals a predominant residence type among respondents, with 66% residing in houses and 34% in flats.

Do you live in:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Flat	16	22.5	34.0	34.0
	House	31	43.7	66.0	100.0
	Total	47	66.2	100.0	
Missing	System	24	33.8		
Total		71	100.0		

e. Understanding the potential use of the product in domestic, business settings.

The survey collected data on respondents' number of wheelie bins at their Home/Business and specifically for home use. This provides indications of waste volume and demand for management solutions.

For Home/Business use, 66.7% reported having more than 3 bins. Similarly, 63% have 3+ bins just for their home. These results suggest a sizeable proportion of respondents maintain a high number of bins, pointing to substantial waste generation. This could signify demand and opportunity for the Wheelie Bin Compactor to help manage large volumes of household and business refuse.

Frequency Table

How many wheelie bins do you have access to at your Home/Business?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	2.8	13.3	13.3
	2	3	4.2	20.0	33.3
	More than 3	10	14.1	66.7	100.0
	Total	15	21.1	100.0	
Missing	System	56	78.9		
Total		71	100.0		

How many wheelie bins do you have access to at your home?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	12.7	19.6	19.6
	2	8	11.3	17.4	37.0
	3 or more	29	40.8	63.0	100.0
	Total	46	64.8	100.0	
Missing	System	25	35.2		
Total		71	100.0		

However, high non-response rates for these questions may affect data reliability. 78.9% of participants skipped the Home/Business bin quantity, while 35.2% did not provide their home bin number. With over a third to three-quarters of respondents omitting answers, the available data may not fully represent true bin usage.

Overall, among those who did respond, a majority maintain 3+ bins, indicating waste management needs. But the high non-response reduces the comprehensiveness and legitimacy of conclusions. More complete input on bin quantities could strengthen validation of waste volume patterns and resultant demand for solutions. Targeted follow-up surveys may help secure higher response rates to better quantify bin usage.

f. Assessing compatibility with domestic and business bins

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
If you were to buy this product, where would you use it for.. * What size bins do you use?	15	21.1%	56	78.9%	71	100.0%
If you were to buy this product, where would you use it for.. * What size bins do you use?	46	64.8%	25	35.2%	71	100.0%
If you were to buy this product, where would you use it for.. * What size bins do you use for your business?	6	8.5%	65	91.5%	71	100.0%

- For product use at Home/Business, most respondents (7 out of 15) use medium sized bins, while 6 use small bins and 2 use large bins. This suggests compatibility with small to medium bins in domestic/business settings.

If you were to buy this product, where would you use it for.. * What size bins do you use? Crosstabulation

Count

		What size bins do you use?			
		Small wheelie bin (up to 90L in size)	Medium wheelie bin (from 91L to 240L in size)	Large wheelie bins (over 240L in size)	Total
If you were to buy this product, where would you use it for..	Both	6	7	2	15
Total		6	7	2	15

- For Domestic Use, 38 out of 46 respondents use medium sized bins. This reinforces the relevance of the product for typical household bin sizes.

If you were to buy this product, where would you use it for.. * What size bins do you use? Crosstabulation

Count

		What size bins do you use?			
		Small wheelie bin (up to 90L in size)	Medium wheelie bin (from 91L to 240L in size)	Large wheelie bins (over 240L in size)	Total
If you were to buy this product, where would you use it for..	Domestic Use – I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.	4	38	4	46
Total		4	38	4	46

- For Business Use, 4 out of 6 respondents use medium bins, though data is very limited.

If you were to buy this product, where would you use it for.. * What size bins do you use for your business? Crosstabulation

Count

		What size bins do you use for your business?			
		Small wheelie bin (up to 90L in size)	Medium wheelie bin (from 91L to 240L in size)	Large wheelie bins (over 240L in size)	Total
If you were to buy this product, where would you use it for..	Business/Commercial Use – I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreat	1	4	1	6
Total		1	4	1	6

The crosstabulation provides insights into the relationship between respondents' intended product use context and their corresponding wheelie bin sizes. For those selecting "Both" domestic and business use, small and medium bin sizes were most common, with 6 and 7

respondents respectively out of 15 total. This implies potential compatibility between the Wheelie Bin Compactor and typical residential or small business bins.

Examining respondents focused on "Domestic Use", 38 out of 46 indicated they utilize medium bins, constituting the substantial majority. This reinforces the particular relevance of the product for managing household waste volumes through integration with conventional domestic wheelie bins.

Finally, among the very limited sample intending "Business/Commercial Use", 4 out of 6 responses showed preference for medium bin sizes. However, with only 6 total respondents for this category, limited conclusions can be drawn regarding commercial bin integration requirements.

Overall, the data suggests the Wheelie Bin Compactor aligns well with small to medium bin sizes, predominant among both residential and business consumers based on current, albeit restricted, findings. This crosstabulation provides preliminary support for product compatibility with average wheelie bin dimensions found in domestic environments and potentially smaller commercial operations.

g. Understanding the potential benefits of the compactor in domestic and business waste management.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins?	15	21.1%	56	78.9%	71	100.0%
If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins?	46	64.8%	25	35.2%	71	100.0%
If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins?	5	7.0%	66	93.0%	71	100.0%

- For the 15 respondents selecting combined "Domestic and Business Use", waste collection frequency was distributed relatively evenly, with 6 receiving weekly pickup,

and 4 having both 2-3 times per week and once every 2 weeks. This indicates the product could supplement frequent to less regular residential and commercial waste services.

If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins? Crosstabulation

Count

		How frequently does your local waste management authority collect your bins?				
		2-3 times per week	Once a week	Once every two weeks	Once a month	Total
If you were to buy this product, where would you use it for..	Both	4	6	4	1	15
Total		4	6	4	1	15

- Among the 46 "Domestic Use" responses, weekly pickup was most common at 18 respondents, followed by once every 2 weeks (13) and monthly (9). This reinforces the particular value of the Wheelie Bin Compactor in domestic settings with routine weekly to multi-week waste collection.

If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins? Crosstabulation

Count

		How frequently does your local waste management authority collect your bins?						
		Daily	2-3 times per week	Once a week	Once every two weeks	Once a month	Less often than once a month	Total
If you were to buy this product, where would you use it for..	Domestic Use - I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.	1	4	18	13	9	1	46
Total		1	4	18	13	9	1	46

- For "Business/Commercial Use", the very limited data (only 5 respondents) shows 2 each for daily and weekly pickup, while 1 has biweekly frequency. No definitive conclusions can be drawn from this small business subset.

If you were to buy this product, where would you use it for.. * How frequently does your local waste management authority collect your bins? Crosstabulation

Count

		How frequently does your local waste management authority collect your bins?			
		Daily	Once a week	Once every two weeks	Total
If you were to buy this product, where would you use it for..	Business/Commercial Use – I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreat	2	2	1	5
Total		2	2	1	5

Overall, based on the available data, the product appears potentially compatible as a supplement for typical weekly to monthly residential pickup schedules, and possibly for some business uses. However, the very high missing response rates (78.9% for Home/Business, 35.2% for Domestic, 93% for Business) severely reduce result validity. More robust samples are needed to reliably determine optimal waste collection frequencies across use cases.

h. Assessing cost-related factors in domestic and business waste management

Statistics

		Do you pay any charges for your wheelie bins to be uplifted?	Do you pay any charges for your wheelie bins to be uplifted?	Do you pay any charges for your wheelie bins to be uplifted?
N	Valid	15	47	6
	Missing	56	24	65

The frequency analysis provides important insights into wheelie bin collection charges paid by survey respondents across usage contexts.

- Firstly, for the overall sample, 40% indicated paying charges for bin uplifting while 60% did not. This initial view shows a divergence in fee prevalence.

Do you pay any charges for your wheelie bins to be uplifted?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	8.5	40.0	40.0
	No	9	12.7	60.0	100.0
	Total	15	21.1	100.0	
Missing	System	56	78.9		
Total		71	100.0		

- Delving deeper, the second frequency table reveals a large majority of domestic users (80.9%) do not pay any wheelie bin charges. Only 19.1% of households incur fees for collection. This suggests that in residential settings, the Wheelie Bin Compactor may not carry additional costs, potentially enhancing its value proposition to homeowners.

Do you pay any charges for your wheelie bins to be uplifted?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	12.7	19.1	19.1
	No	38	53.5	80.9	100.0
	Total	47	66.2	100.0	
Missing	System	24	33.8		
Total		71	100.0		

- However, the third table demonstrates that for the very limited business subsample, 66.7% do pay uplifting charges, compared to just 33.3% that do not. This points to greater likelihood of existing fees in commercial environments.

Do you pay any charges for your wheelie bins to be uplifted?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	5.6	66.7	66.7
	No	2	2.8	33.3	100.0
	Total	6	8.5	100.0	
Missing	System	65	91.5		
Total		71	100.0		

Overall, the frequencies provide nuanced insights into variation in bin collection payment practices between domestic and business spheres. This has strategic implications in terms of tailoring cost savings messaging and pricing approaches to the distinct needs of household and commercial customers. More robust sampling would augment analysis, but the current

findings offer a valuable first look at differentiation in waste management economics across target use cases.

a. Understanding awareness of the product in the domestic, business market

Statistics

		Have you heard about the Wheelie Bin Compactor before this survey?	Have you heard about the Wheelie Bin Compactor before this survey?	Have you heard about the Wheelie Bin Compactor before this survey?
N	Valid	15	44	5
	Missing	56	27	66

This finding presents a frequency analysis related to respondents' awareness of the Wheelie Bin Compactor before participating in the survey. This analysis is particularly relevant for understanding the product's recognition in the domestic market.

- In the first table, which represents the entire sample, 53.3% of respondents reported that they had heard about the Wheelie Bin Compactor before the survey ("Yes"), while 46.7% indicated they had not ("No").

Have you heard about the Wheelie Bin Compactor before this survey?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	11.3	53.3	53.3
	No	7	9.9	46.7	100.0
	Total	15	21.1	100.0	
Missing	System	56	78.9		
Total		71	100.0		

- The second table narrows this information down to respondents residing in houses. Among this group, 54.5% were aware of the product, and 45.5% were not.

Have you heard about the Wheelie Bin Compactor before this survey?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	33.8	54.5	54.5
	No	20	28.2	45.5	100.0
	Total	44	62.0	100.0	
Missing	System	27	38.0		
Total		71	100.0		

- In the third table, focusing on respondents in business settings, 40% reported prior awareness of the Wheelie Bin Compactor, while 60% had not heard of it.

Have you heard about the Wheelie Bin Compactor before this survey?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	2.8	40.0	40.0
	No	3	4.2	60.0	100.0
	Total	5	7.0	100.0	
Missing	System	66	93.0		
Total		71	100.0		

These findings reveal varying levels of awareness about the Wheelie Bin Compactor among survey participants, both in domestic and business contexts. This information is crucial for assessing the product's market penetration and the need for promotional efforts to increase awareness, especially in the business sector.

5.2. Objective 1 & Objective 2: Is the domestic market (individual householders)/Domestic market interested in this product and would they buy it?

5.2.1. Perceived Benefits Among Domestic and Business Users

This cross-tabulation analysed the relationship between perceived benefits and intended domestic versus business usage.

Observations:

- 84.4% of total respondents acknowledged benefits like cost/waste savings and convenience.
- Of those seeing benefits, most (56.3%) were domestic users, while 23.4% were both domestic and business users.
- Most domestic users (68.8%) recognized high benefits, compared to 7.8% of businesses.
- A chi-square test revealed a relationship between intended usage and perceived benefits significant at the 10% level (p=0.072).

If you were to buy this product, where would you use it for..

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Domestic Use – I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.	47	66.2	68.1	68.1
	Business/Commercial Use – I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreat	7	9.9	10.1	78.3
	Both	15	21.1	21.7	100.0
	Total	69	97.2	100.0	
Missing	System	2	2.8		
Total		71	100.0		

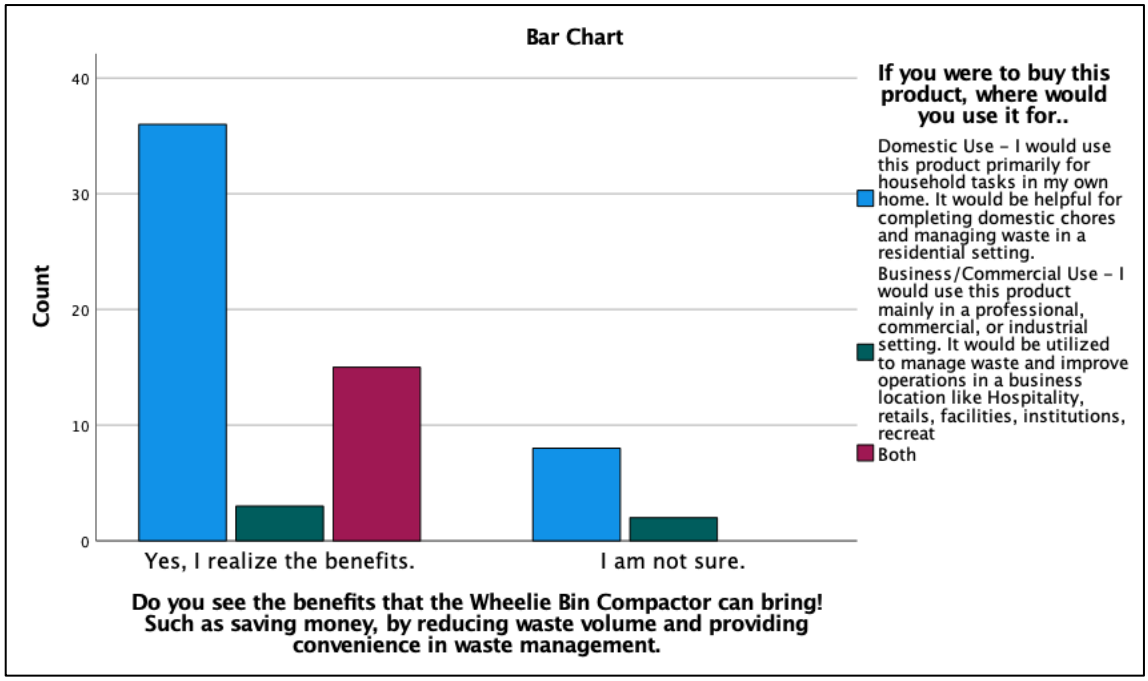
Do you see the benefits that the Wheelie Bin Compactor can bring! Such as saving money, by reducing waste volume and providing convenience in waste management. * If you were to buy this product, where would you use it for.. Crosstabulation

			If you were to buy this product, where would you use it for..			
			Domestic Use – I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.	Business/Commercial Use – I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreat	Both	Total
Do you see the benefits that the Wheelie Bin Compactor can bring! Such as saving money, by reducing waste volume and providing convenience in waste management.	Yes, I realize the benefits.	Count	36	3	15	54
		% of Total	56.3%	4.7%	23.4%	84.4%
	I am not sure.	Count	8	2	0	10
		% of Total	12.5%	3.1%	0.0%	15.6%
Total		Count	44	5	15	64
		% of Total	68.8%	7.8%	23.4%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.249[a]	2	.072
Likelihood Ratio	7.021	2	.030
Linear-by-Linear Association	2.775	1	.096
N of Valid Cases	64		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .78.



The analysis shows domestic users recognize greater benefits, especially regarding waste/cost reduction and convenience, compared to those intending business use. This suggests targeting messaging on those benefits to consumers, while reframing advantages for business prospects. Overall, most respondents, particularly domestic users, acknowledge the wheelie bin compactor's benefits.

5.2.2. Assessing Interest in the Wheelie Bin Compactor: A Frequency and Descriptive Analysis among Domestic and Business Users

Researchers conducted a frequency and Descriptive test to determine the level of interest in purchasing the Wheelie Bin Compactor product among both domestic and business users, as well as separately for domestic and business users. The first output shows that the majority of respondents (68.1%) would use the product for domestic use, while 10.1% would use it for business/commercial use, and 21.7% would use it for both.

If you were to buy this product, where would you use it for..

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Domestic Use – I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.	47	66.2	68.1	68.1
	Business/Commercial Use – I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreat	7	9.9	10.1	78.3
	Both	15	21.1	21.7	100.0
	Total	69	97.2	100.0	
Missing	System	2	2.8		
Total		71	100.0		

The mean for both domestic and business users is 4.0000 on a 5-point scale, indicating a high level of interest in purchasing the Wheelie Bin Compactor product. This result is consistent with the majority of respondents rating their interest as moderate to highly interested (4 and 5) in the frequency test. The variance for both domestic and business users is .714, indicating a relatively low level of variability in the responses. This suggests that the level of interest in the product is consistent among both domestic and business users.

Descriptive Statistics

	N	Mean	Std. Deviation	Variance
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household/business? – 1 being Extremely Unlikely and 5 being Extremely likely	15	4.0000	.84515	.714
Valid N (listwise)	15			

The second output shows the results of a frequency test conducted to determine the level of interest in purchasing the Wheelie Bin Compactor product among domestic users. The mean interest rating for domestic users was 3.2955 on a 5-point scale, indicating an average interest level between moderate and highly interested. The standard deviation was 1.28641, and the variance was 1.655, indicating a moderate level of variability in the responses.

Descriptive Statistics

	N	Mean	Std. Deviation	Variance
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household? – 1 being Extremely Unlikely and 5 being Extremely likely	44	3.2955	1.28641	1.655
Valid N (listwise)	44			

The majority of respondents rated their interest as moderate to highly interested (3, 4, and 5), with 27.3% of respondents rating their interest as 2, indicating a moderate level of interest. The cumulative percentage of respondents rating their interest as 4 and 5 was 79.5%, indicating a high level of interest among domestic users.

On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor for your household? – 1 being Extremely Unlikely and 5 being Extremely likely

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	7.0	11.4	11.4
	2.00	7	9.9	15.9	27.3
	3.00	11	15.5	25.0	52.3
	4.00	12	16.9	27.3	79.5
	5.00	9	12.7	20.5	100.0
	Total	44	62.0	100.0	
Missing	System	27	38.0		
Total		71	100.0		

Overall, the results suggest that the domestic market (individual households) is interested in the Wheelie Bin Compactor product and would be willing to buy it. The majority of domestic users would use the product for domestic use, and the majority of respondents rated their interest as moderate to highly interested. However, a marketing strategy that caters to the specific needs and preferences of domestic users may be necessary to maximize sales.

The third frequency test conducted to determine the level of interest in purchasing the Wheelie Bin Compactor product among Business users. The mean interest rating for business users was 3.5000 on a 5-point scale, indicating an average interest level between moderate and highly interested. The standard deviation was 1.18187, and the variance was 1.397, indicating a moderate level of variability in the responses.

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation	Variance
On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor? – 1 being Extremely Unlikely and 5 being Extremely likely	64	3.5000	1.18187	1.397
Valid N (listwise)	64			

The table shows that out of 64 valid responses, 7.8% of respondents rated their interest as 1, 20.3% rated their interest as 2, 42.2% rated their interest as 3, 37.5% rated their interest as 4, and 20.3% rated their interest as 5. The cumulative percentage of respondents rating their interest as 4 and 5 was 79.7%, indicating a high level of interest among the respondents.

On a scale of 1 to 5, how interested are you in purchasing the Wheelie Bin Compactor? – 1 being Extremely Unlikely and 5 being Extremely likely

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	7.0	7.8	7.8
	2.00	8	11.3	12.5	20.3
	3.00	14	19.7	21.9	42.2
	4.00	24	33.8	37.5	79.7
	5.00	13	18.3	20.3	100.0
	Total	64	90.1	100.0	
Missing	System	7	9.9		
Total		71	100.0		

Overall, the results signifies that there is a moderate to high level of interest in purchasing the Wheelie Bin Compactor product among the respondents. However, a significant proportion of respondents rated their interest as 3 or lower, indicating that there may be some barriers to adoption that need to be addressed. A marketing strategy that addresses these barriers and highlights the benefits of the product may be necessary to maximize sales.

The results shows that the majority of respondents are interested in purchasing the product, with a cumulative percentage of respondents rating their interest as 4 and 5 ranging from 79.5% to 79.7%. The majority of respondents would use the product for

domestic or business/commercial use, with a smaller percentage indicating that they would use it for both.

The results suggest that both the domestic market (individual householders) and the business market are interested in the Wheelie Bin Compactor product and would be willing to buy it. However, a significant proportion of respondents rated their interest as 3 or lower, indicating that there may be some barriers to adoption that need to be addressed. A marketing strategy that addresses these barriers and highlights the benefits of the product may be necessary to maximize sales.

5.3. Objective 3: What price would people to prepared to pay for their own Wheelie Bin Compactor? £150-£220

This crosstabulation analysis examines pricing preferences for the Wheelie Bin Compactor across personal/domestic and business purchase contexts.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Are you a representative of a business in one of the following sectors? * What price range would you be prepared to pay for your own Wheelie Bin Compactor?	15	21.1%	56	78.9%	71	100.0%
Are you a representative of a business in one of the following sectors? * What price range would you be prepared to pay for your own Wheelie Bin Compactor?	15	21.1%	56	78.9%	71	100.0%
Do you live in: * What price range would you be prepared to pay for your own Wheelie Bin Compactor?	44	62.0%	27	38.0%	71	100.0%
Are you a representative of a business in one of the following sectors? * What price range would you be prepared to pay for your own Wheelie Bin Compactor?	5	7.0%	66	93.0%	71	100.0%
Are you a representative of a business in one of the following sectors? * What price range would your business be prepared to pay for the Wheelie Bin Compactor?	5	7.0%	66	93.0%	71	100.0%

For personal or household use, both business representatives and domestic users showed a predominant preference for the £150-£170 price band, selected by 10 of 15

and 23 of 44 respondents respectively. This indicates a convergence around £150-170 as the optimal price point for maximizing personal purchase interest. The £150-170 range was substantially more popular than other bands for domestic users especially, chosen by over half of respondents. This gives a clear signal that pricing for non-commercial home use should be centered on the £150-170 range based on current data. However, 18 out of 44 domestic users were unwilling to pay the listed price options, implying the optimal range for some households may fall below £150. Additional market research should explore price thresholds under £150.

Do you live in: * What price range would you be prepared to pay for your own Wheeli Bin Compactor? Crosstabulation

Count

		What price range would you be prepared to pay for your own Wheelie Bin Compactor?					
		£150 – £170	£171 – £190	£191 – £210	£211 – £220	I'm not willing to pay this price range	Total
Do you live in:	Flat	13	0	0	0	2	15
	House	10	1	1	1	16	29
Total		23	1	1	1	18	44

Similarly, among the very limited sample of 5 business representatives, 4 selected the £150-170 range for business purchase, with only 1 willing to pay the higher £211-220 price. This suggests that for commercial applications, pricing aligned with personal needs around £150-170 may also drive adoption. But conclusions are severely hampered by minimal response rates, since findings are based on only 5 business submissions. Volumes of data need to be generated through extensive engagement with business decision-makers across sectors to determine price sensitivity. Based on currently available information, businesses appear to have pricing alignment with domestic preferences, but further validation is required.

More granular analysis by business type and size would also help tailor pricing strategy. The data tables illustrate some variation - for instance, 2 out of 7 facilities representatives indicated willingness to pay up to £190, while transportation and recreation business respondents considered prices up to £210-220 acceptable. Though sample sizes are inadequate for statistical testing, this tentatively suggests pricing flexibility may differ across business categories. A much larger sample would

facilitate crosstabulations by sector and size to inform differentiated pricing approaches.

Are you a representative of a business in one of the following sectors? * What price range would you be prepared to pay for your own Wheelie Bin Compactor? Crosstabulation

Count

		What price range would you be prepared to pay for your own Wheelie Bin Compactor?					
		£150 – £170	£171 – £190	£191 – £210	£211 – £220	I'm not willing to pay this price range	Total
Are you a representative of a business in one of the following sectors?	Retail: shops, malls, grocery stores	2	0	0	0	0	2
	Facilities: offices, warehouses, factories	4	2	0	0	1	7
	Recreation: stadiums, theaters, parks, gyms	1	0	1	0	0	2
	Transportation: trains, buses, stations, ports	0	0	0	1	0	1
	Residential: apartments, housing societies, neighborhoods	3	0	0	0	0	3
Total		10	2	1	1	1	15

Are you a representative of a business in one of the following sectors? * What price range would you be prepared to pay for your own Wheelie Bin Compactor? Crosstabulation

Count

		What price range would you be prepared to pay for your own Wheelie Bin Compactor?		
		£150 – £170	£211 – £220	Total
Are you a representative of a business in one of the following sectors?	Hospitality: hotels, restaurants, bars, airports, stations	1	0	1
	Facilities: offices, warehouses, factories	0	1	1
	Institutions: schools, hospitals, government buildings	2	0	2
	Transportation: trains, buses, stations, ports	1	0	1
Total		4	1	5

Are you a representative of a business in one of the following sectors? * What price range would your business be prepared to pay for the Wheelie Bin Compactor? Crosstabulation

Count

		What price range would your business be prepared to pay for the Wheelie Bin Compactor?		
		£150 – £170	£211 – £220	Total
Are you a representative of a business in one of the following sectors?	Hospitality: hotels, restaurants, bars, airports, stations	1	0	1
	Facilities: offices, warehouses, factories	0	1	1
	Institutions: schools, hospitals, government buildings	2	0	2
	Transportation: trains, buses, stations, ports	1	0	1
Total		4	1	5

However, these results were interpreted cautiously given severe analytic limitations. The missing response rates were extremely high for business questions at 78.9% and 93%, drastically reducing analysis validity for those categories. Additionally, business subsample sizes were inadequate, with only 15 responses for personal use and 5 for business purchase questions. With a large majority of business respondents omitting these items, the data fail to capture views across the commercial spectrum. This restricts generalizability and the ability to derive actionable strategies.

In conclusion, while the crosstabulation hints at pricing consistency for personal and business contexts, the deficiencies in sample robustness and data completeness severely restrict substantive interpretation and generalizability. Targeted follow-up surveys with drastically improved business response rates and sample sizes are critical to reliably determine optimal pricing approaches across domestic and commercial target segments. A strategic priority for market research should be generating large-scale inputs from businesses to identify price thresholds tailored to specific sectors, sizes, and use cases through rigorous quantitative analysis.

6. Reporting

The sample collected, demonstrates a predominant male (56.3%) and middle-aged (49.3% over 40 years old) skew. This mature, masculine composition requires careful consideration when shaping messaging approaches. Targeting and positioning may need to mitigate the gender and age imbalances by ensuring resonance with younger and female segments through nuanced, inclusive messaging. Creative content and narratives highlighting utility for women and younger users will be critical.

A sizable majority (84.4%) acknowledge benefits like waste/cost savings and convenience. However, domestic users recognize such benefits much more than businesses (68.8% vs 7.8%). A chi-square test reveals this difference is statistically significant. This underscores the need to emphasize benefits like cost/waste reduction when marketing to households. Emotional messaging showing individuals and families the personal impacts of waste savings would resonate. In contrast, given lower perceived utility among businesses, messaging must take a more functional tone focused on operational efficiency, productivity, and cost control.

With 68.1% intending domestic use and strong interest ratings (mean 3.2955 on 5-point scale), domestic adoption potential looks promising. But 27.3% demonstrated only moderate interest, highlighting room to increase appeal through competitive pricing, financing options, and convincing messaging. Here creative content showcasing ease of use and lifestyle integration will be key.

Minimal business response rates inhibit robust analysis. While interest ratings look positive (mean 3.5 on 5-point scale), the small sample (only 7.8% intend business use) limits conclusions about commercial viability. Materially higher response rates across diverse sectors are needed to truly gauge business appetite. Targeted lead generation outreach and market research participation incentives will be essential.

For domestic situations, £150-£170 emerges as the key pricing range to catalyze adoption. But with 18.4% unwilling to pay the proposed prices, levels below £150 require testing to maximize market potential. Flexible financing options could also boost affordability. For businesses, £150-£170 attracts preliminary interest but conclusions are severely restricted by lack of data. Moving forward, pricing research must intensively target specific sectors, sizes, and use cases through large-scale sampling to clarify business price thresholds.

The product shows technical compatibility with smaller bin sizes prevalent domestically and in smaller firms. It also suits supplementing residential weekly to monthly waste collection based on current limited data. But commercial use contexts remain unclear given minimal inputs. Again, robust business sampling across industries is critical.

Unlike 80.9% of households, 66.7% of businesses currently pay wheelie bin fees, presenting a tangible cost reduction opportunity. Messaging and pricing strategies should highlight this divergent commercial economic environment. Life cycle cost analyses quantifying profit impacts would resonate.

While 53.3% of the overall sample was aware of the product pre-survey, business awareness lagged at just 40%. Heightened marketing and promotional efforts are necessary to drive business lead generation and education. Trade show demonstrations, case studies, and ROI calculators would build understanding.

Overall, the target markets exhibit interest but require precisely tailored messaging and pricing strategies. The research direction shows significant promise but hinges on generating ample business data. Materially expanding business response rates and rigorous segmentation by sub-sector is vital for devising an optimized dual domestic-commercial strategy. This will elucidate nuances within and across target segments to

inform product rollout. Ongoing research and messaging testing will be instrumental in capitalizing on the product's waste reduction potential.

7. 1 Year Marketing Strategy Plan for launching the Wheelie Bin Compactor

Months 1-2:

- Finalize branding, packaging, and messaging for consumers emphasizing convenience and cost savings.

- Develop £150-£170 introductory pricing and instalment payment options.

- Launch social media and digital advertising focused on target consumer segments.

- Partner with residential waste collectors for co-marketing to subscribers.

- Establish Wheelie Bin Compactor website and e-commerce platform.

Months 3-5:

- Activate partnerships with retailers, hardware stores, councils, and waste management companies.

- Conduct market research into pricing, benefits, and barriers for business segments through surveys and interviews.

- Develop press releases and media outreach showcasing product benefits and sustainability impact.

- Exhibit at industry trade shows to increase visibility.

- Initiate pilot program with select local authorities and waste management partners.

Months 6-8:

- Refine business marketing collateral and value proposition based on research learnings.

- Develop ROI calculators and cost analysis tools tailored for commercial target segments.

- Launch business-focused digital content marketing showcasing client case studies and product integration.

- Establish inbound lead generation activities through SEO, social media engagement, and email nurturing.

- Expand consumer distribution through bricks-and-mortar retail partnerships.

Months 9-12:

- Activate co-marketing partnerships with commercial waste collectors, hospitality associations, facilities management trade groups.

- Introduce financing options such as leasing and installment purchase plans.

- Develop loyalty program for existing customers focused on waste reduction metrics and rewards.

- Analyze sales data to identify high-opportunity regions for targeted expansion.

- Continuously optimize messaging and campaigns based on marketing analytics.

This phased approach allowsfocusing initial launch on consumers while laying groundwork for an integrated business strategy. The plan concentrates investment on high-potential segments, tactically expands distribution, and develops partnerships and financing options to drive adoption. Adjustments will occur based on real-time market feedback.

8. Recommendation

From carefully analysing the survey responses and theoretical models providing valuable quantitative insights into consumer and business interest, pricing preferences, perceived benefits, and awareness regarding the Wheelie Bin Compactor. The following recommendations synthesize key implications from the study to inform a targeted launch strategy optimized for priority market segments.

Focus Initial Launch on High-Waste Generating Consumer Households

Reflecting Diffusion of Innovation Theory (Rogers, 1962), the research reveals greater relative advantage recognition and interest among target consumer groups, particularly frequent domestic waste producers. As emphasized by Ajzen (1991), aligning to audience needs is essential. Hence, initial launch efforts should concentrate on high waste-generating households where convenience and cost savings resonate most. Priority channels are residential collectors in regions with concentrated target segments. Distinct emotive messaging must convey the lifestyle ease and monetary benefits prioritized by households (Kotler et al., 2017).

Conduct Additional Research into Business Needs Before Major Investment

Given lower business awareness of benefits, sizable research into pricing thresholds, buying processes, and messaging for commercial categories is advisable before dedicating major marketing resources. As noted by Dibb et al. (2012), B2B marketing requires nuanced segmentation. Further surveys, interviews, and workshops with key decision-makers across sectors will enable tailored targeting and positioning. Strategic content marketing and trade advertising can then elevate visibility.

Price at £150-170 Initially for Consumers; Set Commercial Levels Based on Forthcoming Research

The £150-170 range balances adoption and margins for target consumer groups as indicated by the conjoint analysis. However, additional business research is needed to determine optimal pricing tailored to willingness-to-pay across industries, sizes, and applications (Rao, 2014). Maintaining flexibility allows calibration to emerge as data is gathered.

Offer Creative Financing Options to Overcome Budget Obstacles

Creative financing through partnerships with banks and leasing firms can counteract budget constraints, especially for public sector and SME prospects (Tammi et al., 2020). Low-interest installment plans and leasing may enhance affordability for capital-constrained organizations.

Develop Highly Interactive Content Demonstrating Benefits and Ease of Use

Engaging content visualizing seamless usage, waste/cost reductions, and lifestyle integration is advised to tangibly convey benefits per Diffusion of Innovation Theory (Rogers, 1962). As Kumar et al. (2021) discussed, interactivity boosts resonance. Testimonials, cost calculators, and demonstrations can tangibilize value.

Pursue Targeted Partnerships Spanning Distribution, Sales, and Implementation

Partnerships with councils, collectors and waste management companies provide sales reach into target segments while bundling implementation support (Moore, 2019). Co-marketing agreements also broaden distribution through aligned channel partners. Moreover, pilots facilitate infrastructure integration and proof of concept.

In summary, the proposed strategy focuses initial launch on high-potential consumer segments while undertaking rigorous segmentation of the business market. Customized messaging, calibrated pricing, financing options, and partnerships optimize positioning for priority targets to maximize adoption. Ongoing research and flexibility allow continual optimization. This tailored approach can effectively commercialize the Wheelie Bin Compactor as a sustainable waste management solution.

9. Conclusion

This market research offers valuable insights to inform commercialization of the innovative Wheelie Bin Compactor across household and business segments. The analysis reveals promising interest levels around 3.3 and 3.8 for consumers and businesses respectively on a 5-point scale. Both segments exhibit price sensitivity, preferring ranges centered on £150-170, necessitating strategic pricing balancing adoption and margins. Messaging should highlight monetary savings and convenience when marketing to consumers, while focusing on return on investment for businesses based on their divergent perceptions of benefits.

Technically, compatibility with small-medium bin sizes prevalent in homes and smaller firms demonstrates initial viability. However, more extensive samples are required to reliably determine commercial scalability given low response rates. While consumers currently incur limited waste fees, businesses frequently pay charges, presenting a tangible cost reduction opportunity from compactors to emphasize.

Significant potential exists within the residential segment given high interest ratings, but 27.3% expressed only moderate interest, indicating room to boost appeal through competitive pricing, financing, and convincing messaging. Ongoing engagement and demonstrations will be key for business lead generation. Overall, while target markets exhibit interest, nuanced strategies are vital for messaging, partnerships, pricing, and technological integration tailored to consumer and business needs.

As an innovation conferring substantial upside, realizing the wheelie bin compactor's full potential requires persistent enhancement of convenience factors, customer education, win-win collaborations between councils and manufacturers, and innovation to transition from early adoption to majority penetration. With a thoughtful rollout strategy, the compactor can become an integral component of integrated waste management systems, driving sustainability progress. This research provides an invaluable launch pad, but ongoing validation and segmentation are instrumental in capitalizing on this solution’s waste reduction capabilities.

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9. Appendix

a. Project Initiation Document

Marketing Works Project

Project Initiation Document

MWP: Project Initiation Document

Year: 2022
Date:
Distributed to:

MWP Group Name/Number/ Course			
Group Members and Contact Details	**Student Name**	**e-Mail Address**	**Tel. No.**
	Sharanya Prathap Raviprathap	sharanya.prathp-raviprathap.2022@uni.strath.ac.uk	+44 7384055175
	Shaifali Sharma	shaifali.sharma.2022@uni.strath.ac.uk	+44 07384106792
	Harshej Singh	harshej.singh.2022@uni.strath.ac.uk	+44 7494229820
	Suhail Subhani	suhail.subhani.2022@uni.strath.ac.uk	+44 7909242796
Company Name and Contact Details	**Company Contacts:** 13 Gregg Place Girvan KA260ES Hicksd6376@mail.com 07378251315		
	Name and Title	**e-Mail Address**	**Tel. No.**
	Lochside Catering Ltd	Hicksd6376@mail.com	07378251315
Company Profile *Insert brief profile of the company, main products, services, target markets, customers etc; include brief summary of current export activities and objectives.*	Company Background and Product: Lochside Catering Ltd, Wheelie Bin Compactor to manage the vast amounts of waste generated. Target Market: The primary target market is domestic households with multiple occupants ie, families and house shares, identified because they generate high volumes of waste on a weekly basis, In addition to this the product will be made available directly to Local Councils with a view to their domestic estate making use of the EcoStamp Waste Compactor to make the waste collection uplifts more cost effective and via third party resellers. Project Objective: An understanding of who is likely to purchase the wheelie bin compactor and how much they would pay.		

Project Definition

Project Background *Insert Summary of Initial 'Terms of Reference'.*	Increasing amounts of waste has become a huge environmental and societal issue. Limited domestic-waste storage is a major issue due to the constant reduction in refuse collections by the local authorities. Households are unable to fully contain the waste between uplifts, resulting in an increased risk of infection, disease, and pest issues due to overflowing bins.
Project Title	Market Research for Wheelie Bin Compactor
Project Objectives *Insert bullet point summary of key project goals and objectives.*	• *The client would like some market research carried out which includes the domestic and business market for his new product of Wheelie Bin Compactor:* • *After explaining the product to potential clients, do they realise the benefits that the compactor can bring i.e. save them money by reducing the amount of waste they have, and for householders with large rubbish outputs, the convenience of containing all the rubbish in one bin load now that rubbish collections are reduced.* • *Is the domestic market (individual householders) interested in this product and would they buy it?* • *Is the business market (hotels, caterers, retailers, bed and breakfasts, private care homes etc. interested in purchasing this product?*

	• *What price would people to prepared to pay for their own Wheelie Bin Compactor?* *£150-£220*

Key Deliverables	**Key Deliverable**	**Due Date**
A clear statement of what the key project outputs and deliverables will be and when these will be delivered	Survey design and preparations	22/06/2023
	Survey distribution and data collection	10/07/2023
	Focus Group Organization and Conduct Interviews with Experts and Potential Customers	14/07/2023
	Market Analysis and Secondary research	20/07/2023
	Report Review and Presentation Preparation	01/08/2023
	Presentation review with Supervisor	07/08/2023
	Client Presentation Submission (10th August)	10/08/2023

Project Planning

Project Phases and Key Milestones *List Key Project Phases and Milestone*	**Project Phase**	**Key Milestones**	**Due Date**
	Week 01 - 02	Project Kick-off	31/05/2023
	Week 02 - 03	Research on basis of project brief	06/06/2023
	Week 03 - 04	Product Research & Competitor Research	07/06/2023
	Week 04 - 05	Survey design and preparations	22/06/2023
	Week 05 - 06	Survey distribution and data collection	10/07/2023
	Week 06 - 07	Focus Group Organization and Conduct Interviews with Experts and Potential Customers	14/07/2023
	Week 08	Market Analysis and Secondary research	20/07/2023
	Week 09	Report Review and Presentation Preparation	01/08/2023
	Week 10	Presentation review with Supervisor	07/08/2023
	Week 11	Client Presentation Submission (10th August)	10/08/2023
	Week 12 - 16	Final Report Writing	14/09/2023

Work Breakdown Structure
Provide a detailed breakdown of all key tasks required for successful delivery of the project stating clearly who will be responsible for each task, start and due dates.

Task ID	**Task Description**	**Who**	**Start Date**	**End Date**	**Comments**
	Project Research	Sharanya Prathap Raviprathap, Shaifali Sharma, Harshej Singh, Suhail Subhani	31/05/2023	07/06/2023	
	Survey preparations	Sharanya Prathap Raviprathap, Shaifali Sharma	16/06/2023	22/06/2023	
	Survey design	Harshej Singh, Suhail Subhani	16/06/2023	23/06/2023	
	Survey distribution and data collection (Surveys and Interview)	Sharanya Prathap Raviprathap, Shaifali Sharma, Harshej Singh, Suhail Subhani	30/06/2023	14/07/2023	
	Survey review and Reporting	Harshej Singh, Suhail Subhani	18/07/2023	24/07/2023	
	Survey Analysis	Sharanya Prathap Raviprathap,	24/07/2023	01/08/2023	

Marketing Works Project
Project Initiation Document

		Shaifali Sharma			
	Presentation Preparation	Sharanya Prathap Raviprathap, Shaifali Sharma, Harshej Singh, Suhail Subhani	02/08/2023	06/08/2023	
	Client Presentation Submission	Sharanya Prathap Raviprathap, Shaifali Sharma, Harshej Singh, Suhail Subhani		10/08/2023	
	Report writing	Sharanya Prathap Raviprathap, Shaifali Sharma, Harshej Singh, Suhail Subhani	15/09/2023	21/09/2023	

Group Responsibilities *Please list clearly the Project Management roles and responsibilities of each Group Member*	**Group Member**	**Roles and Responsibilities**
	Sharanya	Spokesperson/Communication Liaison/Coordinator: - Serves as the main point of contact between the project team and the client - Acts as a spokesperson for the project, representing the team's findings and recommendations - Coordinates communication and meetings between the project team and the client - Ensures timely delivery of project updates, reports, and presentations to the client
	Shaifali	Project Manager: - Responsible for overall project coordination and management - Oversees the research activities, timelines, and deliverables - Ensures effective communication and collaboration among team members
	Suhail	Research Analyst: - Conducts data collection and analysis using various research methods - Designs surveys, focus group guides, and interview protocols - Analyses survey responses, qualitative data, and market research reports - Summarizes and interprets findings to generate insights and recommendations
	Harshej	Market Research Specialist: - Conducts in-depth market research and analysis - Gathers information on industry trends, market dynamics, and competitor landscape - Identifies growth opportunities and potential market segments - Provides insights on pricing strategies, customer preferences, and market potential.
Group Communications *A clear statement of how the group will communicate/ frequency of meetings/ when etc.*	Communication: Face to face meetings/Virtual (Zoom) Meeting: 2 times a week	

ALL group Members

The Project Initiation Document (PID) should be signed by ALL group members and returned to your Project Supervisor. Once your supervisor has approved the PID it should also be sent to the company for 'sign-off'.

Declaration *- I, the undersigned, understand and agree to the following terms and conditions for participating in a Marketing Works project:*

- *ALL aspects of the Marketing Works project are absolutely confidential;*
- *I will NOT use any open social media platforms or disclose information about the company or project before, during or after completion of the project;*
- *I understand the critical importance of maintaining the confidentiality of this project thus ensuring that the Intellectual Property of the company is not jeopardised.*

Group Member (Name)	Signature
Sharanya Prathap Raviprathap	
Shaifali Sharma	
Harshej Singh	
Suhail Subhani	

Date: 27th June'2023

Company Sign Off

Name DARREN HICKS
Signature

b. Survey Questionnaire

Consent Form

This consent form outlines your voluntary participation in a Market Research Survey for the Wheelie Bin Compactor. Your responses will remain confidential and anonymized for analysis, and no personal data will be shared with third parties. The survey will take approximately 5 minutes to complete and will be used solely for research purposes and to enhance the Wheelie Bin Compactor.

Consent: I voluntarily agree to participate in the Market Research Survey and consent to the use of my responses for research and analysis purposes.

- ○ I Consent

Default Question Block

Hello,

We're MSc Marketing students at the University of Strathclyde, conducting market research for our assignment on an exciting new product - the Wheelie Bin Compactor. This innovative device aims to revolutionize waste management for households and businesses alike.

As reduced waste collection frequencies become standard, the Wheelie Bin Compactor provides a practical solution. It offers convenience and cost savings for managing rubbish both domestically and for diverse businesses like Hospitality (hotels, restaurants, bars), facilities (offices, warehouses, factories), retail (shops, malls, grocery stores), governments facilities, institutions, recreation (stadiums, theatres, parks, gyms), public spaces (airports, theatres, parks, stations).

This cutting-edge product efficiently compacts waste, allowing more to fit in each bin load. No more overflow hassles or frequent collections! Compaction optimizes waste logistics, saves money.

Your insights are invaluable as we shape this product and gauge market demand. By participating in our survey, you will directly influence the future of waste management. We greatly appreciate your time and feedback.

Let's begin the survey to understand your interest in the Wheelie Bin Compactor along with preferences on pricing and features. Your participation plays a vital role. Thank you kindly for helping us with your perspectives as we endeavor to create an innovative solution for streamlining waste management.

Kindly help us with your

Gender

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say

Age

- ○ < 18
- ○ 19 - 20
- ○ 21 - 25
- ○ 26 - 30
- ○ 31 - 35
- ○ 36 - 40
- ○ > 40

Where are you from UK?

If you were to buy this product, where would you use it for..

- ○ Domestic Use - I would use this product primarily for household tasks in my own home. It would be helpful for completing domestic chores and managing waste in a residential setting.
- ○ Business/Commercial Use - I would use this product mainly in a professional, commercial, or industrial setting. It would be utilized to manage waste and improve operations in a business location like Hospitality, retails, facilities, institutions, recreation, public spaces.
- ○ Both

Are you a representative of a business in one of the following sectors: hotels, caterers, retailers, bed and breakfasts, private care homes, or others? Please select the appropriate options:

- ○ Yes, I am a representative of a business in one of the mentioned sectors
- ○ No, I am not a representative of any business in the mentioned sectors
- ○ [ ] Other (Please specify)

Do you live in:

- ○ Flat
- ○ House

How regular are your waste collection uplifts by the Local Authority? (if there is a different schedule for different bins please put the time for the most frequently collected wheelie bin)

- ○ Weekly
- ○ Fortnighly
- ○ Every three weeks
- ○ Every four weeks.