

**ASSIGNMENT 3: NEW PRODUCT DEVELOPMENT for  
I-VALUE KIT BAG**



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# TABLE OF CONTENTS

<b>CONTENTS</b>	<b>PAGE NUMBER</b>
<b>EXECUTIVE SUMMARY</b>	2
<b>1.0 INTRODUCTION</b>	3
<b>2.0 NABC APPROACH</b>	4-9
<b>3.0 NEW PRODUCT DEVELOPMENT</b>	
3.1 Definition	10-14
3.2 Classification of New Product Development	14-15
3.3 New Product Development Process	16
3.3.1. Research and Development	16-20
3.3.2. Product Design/Features & Technology Description	21-26
3.3.3. Concept Testing	26-36
3.3.4. Build Prototype (2D or 3D)	37-39
3.3.5. Test Marketing	40-49
<b>4.0 CONCLUSION</b>	50
<b>5.0 REFERENCES</b>	51-52
<b>6.0 APPENDICES</b>	53-55

## **EXECUTIVE SUMMARY**

This report introduces the i-Value Kit Bag, a new innovation that is an inspection multipocket bag designed specifically for real estate professionals. The i-Value Kit Bag is a minimalist, lightweight, multifunctional bag designed to help users efficiently organise, secure, and transport essential inspection tools during site inspections. The i-Value Kit Bag's primary purpose is to address common challenges encountered during property inspections, such as misplaced tools, items falling out of bags, exposure to rain, heavy materials, and unattractive or impractical bag designs. By incorporating multiple secure pockets, waterproof material, anti slip compartments, and an ergonomic design, the i-Value Kit Bag improves convenience, professionalism, and efficiency during inspection activities. The target market for this innovation includes students and the general public involved in the real estate sector, particularly valuation students, trainee valuers, professional valuers, and individuals undergoing internships. Additionally, the product has potential secondary markets, as it can be adapted for use by electricians and mechanics due to its versatile design and storage capacity. The idea for the i-Value Kit Bag came from observations and experiences during real estate inspections, where existing bags were found to be inefficient, uncomfortable, and unsuitable for safely transporting inspection tools. The i-Value Kit Bag was designed as a practical, affordable, and user-friendly alternative that promotes a professional image while improving inspection efficiency after conducting needs analysis and competitor comparisons.

## 1.0 INTRODUCTION

Property inspection is a critical component of the real estate and valuation process, requiring practitioners to carry various tools such as notebooks, pens, inspection lasers, measuring devices, and personal protective items. However, a recurring issue faced by students and professionals in the real estate sector is the lack of a suitable bag that is specifically designed for inspection purposes. Common problems include items being left behind, tools falling out due to unsecured compartments, damage caused by rain exposure, and discomfort resulting from heavy or poorly designed bags. This issue initiated the development of a new product known as the i-Value Kit Bag, an inspection multipocket bag designed to provide a practical and efficient solution for organising and carrying inspection tools. Existing bags in the market are often bulky, made from heavy materials, or designed with complicated and unattractive layouts, causing users to avoid using them during inspections. As a result, inspection activities become less efficient and may affect the professional image presented to clients. To refine the i-Value Kit Bag concept, data were collected through observation, informal discussions, and needs analysis involving students, trainee valuers, and individuals engaged in real estate inspection activities. The data collection focused on identifying common inspection challenges, preferred bag features, and design expectations. Market comparison analysis was also conducted to evaluate existing products in terms of design, capacity, material, price, and usability, allowing gaps in the current market to be identified. The methodology used in developing this innovation was primarily qualitative, relying on real life inspection experiences and user feedback within the real estate field. However, the study is subject to limitations such as a relatively small sample size and time constraints, which may limit the generalisability of the findings. Despite these limitations, the insights gathered were sufficient to support the development of the i-Value Kit Bag as a functional, affordable, and innovative solution tailored to the needs of the real estate sector

## 2.0 NABC APPROACH

<p><b>Need</b></p> <ul style="list-style-type: none"> <li>❖ Real estate professionals such as property valuers, estate agents, and property managers lack a practical, ergonomic bag for carrying documents, tablets, and inspection tools during site inspection, especially in Malaysia's tropical climate.</li> </ul>	<p><b>Approach</b></p> <ul style="list-style-type: none"> <li>❖ Ergonomic inspection backpack</li> <li>❖ Industrial-grade YKK zippers with oversized metal pulls</li> <li>❖ Modular storage system</li> <li>❖ Material using 600D polyester with polyurethane (PU) coating and sealed seams</li> </ul>
<p><b>Benefit</b></p> <ul style="list-style-type: none"> <li>❖ Reduce fatigue during site inspection</li> <li>❖ Increase work efficiency</li> <li>❖ Provide protection for important equipment</li> </ul>	<p><b>Competitors</b></p> <ul style="list-style-type: none"> <li>❖ DeWalt Tool Backpack</li> <li>❖ Stanley FATMAX Tool Bag</li> <li>❖ Veto Pro Pac Backpack</li>   <li>❖ The closest competitor is DeWalt Tool Backpack.</li> </ul>

Table 2.1. NABC Analysis

### 2.1 Need

This bag is specifically for use by property valuers, property managers, estate agents and other professionals related to the real estate industry. This is because there are various things that happen due to the lack of a suitable bag for them to carry during the inspection. For example, valuers have problems carrying items, which results in items being dropped at the site inspection site and not bringing the right items to do the site inspection because they do not have enough hands to carry them.

In addition, there are also problems such as documents that are crumpled or wet as a result of only being held without being stored in a proper place and so on. This causes them to need a practical and ergonomic bag to carry all the necessary documents, tablets and other electronic devices, cameras, measuring tools and other tools used during the inspection.

However, the majority of bags that are already on the market are heavy tool bags and are not suitable for use to place documents and other items. Other bags that are already on the market also have high prices, but the quality is not comparable to the price given because they are not affordable to use every day for a long period of time.

The weather in Malaysia, which has a tropical climate which is hot, humid and unpredictable rain can have an impact on the items placed in the bag, such as all paperwork, documents, electronic equipment and so on. This is because the bags available on the market are not waterproof and do not have various compartments that have a suitable zipper to place the items. The price of the bags offered is also high because of their quality, which is not suitable to be bought and owned by students, intern students or those who are working in the real estate industry. Therefore, these people need a suitable bag that has an affordable price with premium quality and durability.

## **2.2 Approach**

The proposed product is an inspection bag whose specific target market is people who are in the real estate industry, whether property valuers, estate agents, property managers, students, or internship students. Firstly, this bag is an ergonomic inspection backpack that was developed as a result of extension innovation from the existing tool bag, and it is specifically for the real estate industry. An ergonomic bag is a bag designed to distribute weight evenly to the shoulders and back of the people who wear it. This bag is able to help avoid physical pain, such as back and shoulder pain, for the user (Everki, 2025). This makes the user comfortable to wear for a long period of time, especially to be carried during a site inspection, which takes several hours.

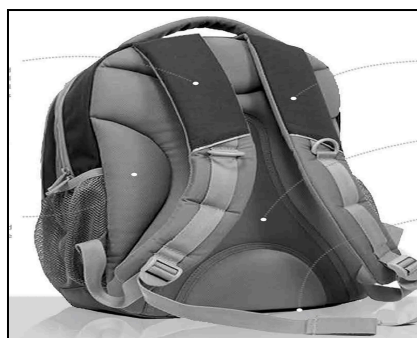


Figure 2.1. The ergonomic backpack

Besides that, this bag uses industrial-grade YKK zippers with oversized metal pulls. YKK zippers have high quality, durability, and reliability. It is also very smooth to use without having to worry about the teeth of the zipper separating when zipping up or unzipping the bag. So, the lifespan of the bag will be longer and suitable for use in site environments (Jerry, 2025). In addition, it also has oversized metal zipper pulls that allow the user to open and close the compartments easily. It also uses a metal zipper that is stronger than a plastic zipper, which can reduce the risk of the zipper being damaged and is smoother to use.



Figure 2.2. Industrial-grade YKK zippers with oversized metal pulls

Next, this backpack also has a modular storage system that provides flexibility to users. This modular storage system can help users organize their items, such as documents, tablets, cameras, and inspection equipment, in an organized manner according to the type of item. It can also reduce the user's time to find items because it has an organized storage space and can reduce lost or damaged items (Polstore, 2025).



Figure 2.3. Modular storage system in the backpack

Lastly, this backpack uses 600D polyester material, which is lightweight and it also has the strength that is suitable for use as a backpack because it has high

durability. This 600D polyester material is also water-resistant, which can help prevent water from soaking into the fabric when it is coated with polyurethane (PU) to improve the water repellent abilities (Kintex, 2024). So, it is suitable for use when it rains. The cost of this material is also more affordable compared to the quality and performance provided, making this material a popular choice among manufacturers (Eric, 2024).



Figure 2.4. The material using for the backpack, which is 600D polyester

### 2.3 Benefit

The first benefit of using this bag is that this backpack can reduce user fatigue while conducting site inspections. This is due to the use of an ergonomic inspection backpack that helps distribute the weight evenly on both shoulders and the back of the user, compared to using a single-strap bag that puts pressure on only one part. This makes it more comfortable for users to carry the bag for a long period of time without experiencing any pain. For example, a valuer who needs to walk from one house unit to another and needs to carry all the tablets, cameras, measuring tools, and other equipment can use this backpack comfortably without experiencing shoulder pain or back pain later on.

Secondly, the use of this backpack can increase work efficiency because it has a modular storage system. This system allows all the equipment and documents placed in the bag to be arranged in an orderly manner and are easier to reach. Users do not need to spend more time looking for the items needed in the bag because they have been separated according to their parts. For example, when wanting to take out a laser measuring tool to use during a site inspection, users can take out this tool directly without taking out other tools because it has a special space in the bag.

Thirdly, this bag is able to provide protection to all important equipment placed in the bag. This is because the material used is durable and has waterproof and UV-resistant characteristics that are able to protect all equipment and documents from rain, humidity, and heat. This means that it can reduce the risk of damage to important equipment and documents during the site inspection. For example, when it suddenly rains during the site inspection, all electronic equipment and documents placed in the bag are still safe without being damaged or wet due to the weather.

## 2.4 Competition





Brand	 <p><b>DeWalt Tool Backpack</b></p>	 <p><b>Stanley FATMAX Tool Bag</b></p>	 <p><b>Veto Pro Pac Backpack</b></p>	 <p><b>i-Value Kit (Proposed inspection bag)</b></p>
Type of bag	Backpack	Shoulder bag	Backpack	Backpack
Strengths	Durable	Large capacity and has a strong brand	Premium quality	Has a modular system storage, ergonomic bag, water & UV resistant, and specific for real estate industry for inspection
Weaknesses	Tool-focused and has limited document space	Heavy, non-ergonomic bag and limited weather protection	Extremely high price	New product with low brand awareness
Price	RM350-RM500	RM250-RM350	RM1,000-RM1,500	RM100-RM129

Table 2.2. Analysis of the competitors

Table 2.2 shows a list of competitors for bags that are already on the market, along with information about the type of bag, strengths, weaknesses, and price of the bag. Based on the analysis above, a competitor that has similar characteristics to the proposed backpack is the DeWalt Tool Backpack. The DeWalt Tool Backpack also offers a backpack design, but it focuses on storing heavy tools and is sold at a high price compared to the proposed backpack, which is specially designed for users in the real estate industry and is used specifically for inspection and storing all documents and electronic devices. The proposed backpack also has a special modular storage system for storing inspection equipment and documents, and it has an affordable price that can be owned by all groups.

## **3.0 NEW PRODUCT DEVELOPMENT**

### **3.1 Definition**

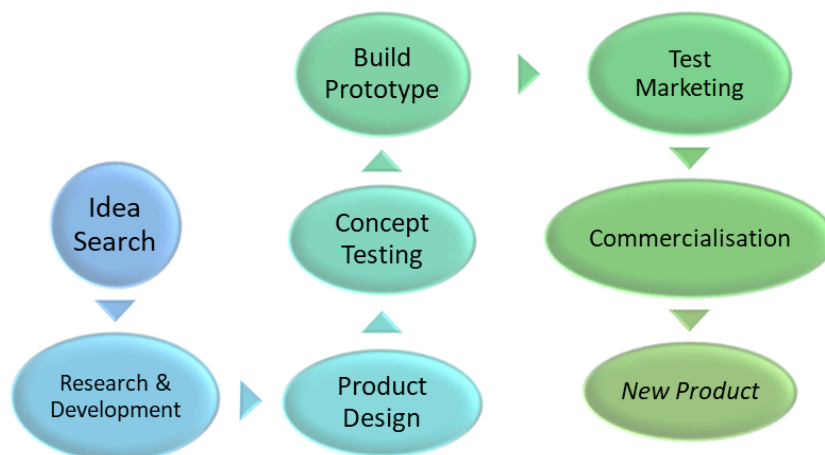
Product development is our engine for innovation in a world that is always changing, transforming ambitious concepts into real effects through technological developments and rising consumer purchasing power. Companies ought to be sufficiently proactive to develop innovative products and services in response to fast-changing needs, effectively competing for customers in the market (Mohammad Falahat et al). Certainly, the possibility that novel products may not be favourably received by the intended consumer base would exist. There are several risks associated with creating and launching new items into the market, as creating new products necessitates research and development, which entails a time and resource commitment. Hence, understanding the meaning of the new product development concept and following the common process are able to mitigate risks for new product failure (Ismail Ab. Wahab., et al., 2023).

New product development is the process of introducing a new product to the market. It entails the actions required to design and develop something new or undergo significant improvements that will be supplied to clients in order to address the problems or meet the requirements, or aspirations (Ismail Ab. Wahab., et al., 2023). Precisely, the process is often organized into stages, beginning with ideation and concept creation and progressing to market research, product launch, and post-launch review. New product development is an important product development strategy for every company that wishes to remain competitive and grow its business. A proper plan and execution of a new product development strategy can result in numerous rewards associated with successfully bringing a new product to market (SafetyCulture, 2025). Therefore, the new product development process usually consists of multiple stages that assist in turning a concept into a commercial product, which involves cross-functional collaboration among marketing, engineering, design, manufacturing, and stakeholders such as investors and regulators.



Figure 3.1.1. The eight stages of a new product development process

Source: Kotler, P., Armstrong, G.



Flowchart 3.1.1. New Product Development Process

Source: Ismail Ab. Wahab et al (2023)

Based on the figure and flowchart that demonstrated the flow of the new product development process, to effectively discover consumers for a new product or service and earn consumers' trust, the marketing department must be involved in each of these stages of the process. When a business has a successful product and gains profits, it is always forced to pay attention to the market since many other businesses are willing to imitate it at a cheaper cost (Zdenka, D., et al, n.d).

In a consumer market that is evolving quickly, many technology-intensive businesses take advantage of technological innovation (Trott, P., 2012). A product may be an intangible or a tangible asset; meanwhile, user experiences and services

are intangible. Services and other procedures are sometimes separated from products in legal terminology. New product development necessitates knowledge of the market's characteristics, the competitive surroundings, and consumer demands and needs (Wikipedia, 2025). In addition, well-known corporations in Malaysia, such as Proton Holding Berhad and Sime Darby Berhad, have research and development (R&D) facilities to concentrate on creating new products. For instance, Sime Darby Plantation has seven R&D facilities in Malaysia and more locations abroad, including two innovation centres specialized in the creation of new product development (Ismail Ab. Wahab., et al., 2023). Simultaneously, in terms of services, the company of Grab Malaysia established a R&D facility in Kuala Lumpur to directly innovate its core services by developing real-time communication, such as VOIP calls via *GrabChat*, online products, and safety features such as Driver Fatigue that focuses on driver's condition during driving on the road, and utilizing Artificial Intelligence and Machine Learning for the company's O2O platform (Grab News, 2018). This is the part of the market where businesses can get ahead of each other.

The company's future growth and competitive advantage in the market are determined by the things it produces today. As a matter of fact, new products represent the means of corporate development, open new revenue streams, and reach new consumer segments. It keeps businesses ahead in a congested market by helping the company to stand out from the competitors, increase market share, and fight off pressure from the competition (Owen, J. D., 2004). Additionally, customers will choose items that provide more value for the money that customers spend. New products are necessary to keep present consumers buying or to boost client sales, and this can help the company grow through existing customers if it can continue to encourage the customers to purchase more (Ismail Ab. Wahab., et al 2023). As an instance, Petronas Dagangan Berhad, while the primary business is fuel, the company is expanding its convenience retail to include additional food, beverage, and vital products for the same market. In addition to its retail station network, Petronas has a loyalty program in which users can accrue points and exchange them for gasoline or certain merchandise. The company's other activities include a commercial unit, a liquefied petroleum gas unit, and a lubricants division. Petronas' commercial business sells petroleum products in bulk to the manufacturing, aviation, power, energy, agricultural, and transportation sectors (iFast Research Team, 2021). All these ideas can bring forward the brand of Petronas and compete with other competitors while staying relevant in the industry. Thus, by inspiring from the business journey of Petronas, the product of the i-Value

Kit Bag will be introduced and expanded into the market to create various good products for the consumers.

From a fleeting idea to market reality, product development is a collaborative process of research, iteration, and refinement, with each function playing a significant part in bringing the vision of the product to reality. Furthermore, many companies take full use of the product dimensions to produce newness in the company's products. New items are launched into the market to entice buyers to start buying, repeatedly purchase, and buy more. Product novelty may be achieved by adjustments, modifications, or improvements to the product dimensions (Ismail Ab. Wahab., et al., 2023). Therefore, in new product development, establishing these dimensions assists teams in aligning on the product's scope, functionality, market competitive edge, and operational feasibility from idea to launch, ensuring that it fits both user demands and corporate objectives. The examples of product improvements by changing the product dimensions are consisting of packaging, price, brand name, technology, features, and quality specifications on the product. The company has to determine the suitable elements of product dimensions for improvements, depending on the market research, to ensure that the risk of failures can be avoided.

Subsequently, the proposed product development of this company, which is an inspection bag named the i-Value Kit Bag, offers various new features that could enhance the efficiency and increase the user's comfort while using the product. The innovations were idealised by focusing on the product's dimensions to create a better item, where the price, design, capacity, material, and size are being expanded into the preferences of the target market and the market's demand. The inspection bag will provide spaces for essential tools and safety gear that the user should carry during the activities in the field, and will be able to perform an efficient, thorough, and safe inspection. On top of that, the user who carries an inspection bag while carrying out duties needs a good quality, multi-useful, and affordable bag to invest in, as it needs to be used for a long lifespan. The i-Value Kit Bag is a bag that can secure and arrange all the tools neatly inside the bag due to the various compartments of various sizes to fit in every item, protect the user's body proportion, as it is an ergonomic bag that provides comfort and safety even with long-term use, and good quality material that offers water resistance. Although the product has a lot of good features, the production will be well-planned to ensure the inspection bag is affordable for the target market. Therefore, the user who carries an efficient

inspection bag while on site can be professional and well-prepared because ready with various equipment and documents that need to be presented. Hence, with the appropriate tools accessible, the users may find and fix problems early in the project lifecycle, avoiding minor faults from growing into costly delays. The new product development, named as i-Value Kit Bag, was chosen to be developed to provide benefits to people who need to carry out inspections.

### **3.2 Classification of New Product Development**

The methodical process of introducing new offerings, such as products, services, or concepts, by proposing a completely new product or improvements on existing products to the market, is the fundamental component of New Product Development. Classifying these innovations is a basic step before proceeding to phases like ideation or launch. This process is critical for defining strategic decisions, evaluating risk, and allocating essential time, money, and creative energy for long-term competitive advantage. A technique known as “product classification” organizes products according to attributes such as cost, brand resemblance, and customer behaviour. It assists companies in arranging products for distribution, pricing, and marketing. The classification aids companies in increasing customer satisfaction, streamlining processes, and encouraging expansion. Businesses may improve inventory management, maximize marketing efforts, and provide customers with a more user-friendly purchasing experience by classifying products into relevant categories (Experts, D., 2025). Initially, the classifications of new products are divided into two types which are completely new products and improvements on existing products. There are some basic types of innovation and elements of improvement to be considered to introduce products or services that can meet customers' needs in the market.

Firstly, the classification of new product development proposes a completely new product that focuses on new-to-the-world and new to the firm. A new-to-the-world product, often referred to as discontinuous innovations, is a brand-new product that has never been on the market and uses new technologies to address unmet customer demands (Ismail Ab. Wahab., et al., 2023). It is genuinely unique and has never been created or released before; the market creation creates entirely new customer categories or industries. Not only that, but it is also very inventive, which frequently results from important scientific discoveries or ground-breaking ideas. It has a high-risk risk high-reward ratio where many

difficulties can be presented and have a big potential to gain rewards. Moreover, there are four types of innovation in introducing a completely new product, which are invention, extension, duplication, and synthesis. The invention's type of innovation is aiming to create a totally new product, service, or process, such as aeroplanes, light bulbs, and more. Next, extension is focusing on introducing different applications or new uses of existing products, services, or processes, such as laptops, upgrading software, and others. Then, a duplication of the product, whereas a creative replication of an existing concept appears in the market, like a franchise business in food and beverages, and fashion items. The last basic type of innovation is synthesis, which will combine existing concepts or factors into a new formulation or use, such as combining the functions of a telephone, video, and camera into one product, which is a smartphone. The new product development of this business, the i-Value Kit Bag will be introduced by implementing an extension to produce a new product, which is the best to describe the new features that have been imposed.

Following this, the other classification for new product development is improvements on existing products, which is the i-Value kit bag and it will focus on four elements. It entails adding incremental improvements to the product dimensions of existing satisfactory products rather than creating new ones from a blank slate in order to increase user satisfaction, maintain competitiveness, lower declines in sales, and satisfy changing consumer demand. By concentrating on improving what works, resolving problems, and adding features based on customer input, data, and new technology, this method maintains the product's usability and value. The new products, which frequently have some aesthetic appearance and functional improvements, are purposefully released into the market to replace the current products. Consequently, examples of adjusted dimensions include the product's lifespan, new features, enhanced performance, and the size, shape, or colour of the package (Ismail Ab. Wahab et al., 2023). It is important to consider the reduction in cost to produce the product and improve the efficiency of the product's performance. For example, Apple producers adopt a strategy of making improvements on the company's existing products, such as iPhones, iMac, iPad, AirPods, and more, to create various models to provide alternatives to consumers and become a strategy for creative destruction. Thus, the marketing of products on the market is dependent upon the implementation of changes that should enhance and revitalize manufacturing. Due to the favourable effects of the digital economy, the market is extremely competitive, and big companies have a robust marketing campaign to sell the new products in the market.

### 3.3 New Product Development Process

#### 3.3.1 Research and Development (R&D)

Research and Development (R&D) refers to the product development process aimed at creating new products, often in response to recurring functional issues in existing products. Through this process, we gather detailed preliminary information from previous products before developing new ones. The research and development process has been carried out as follows:

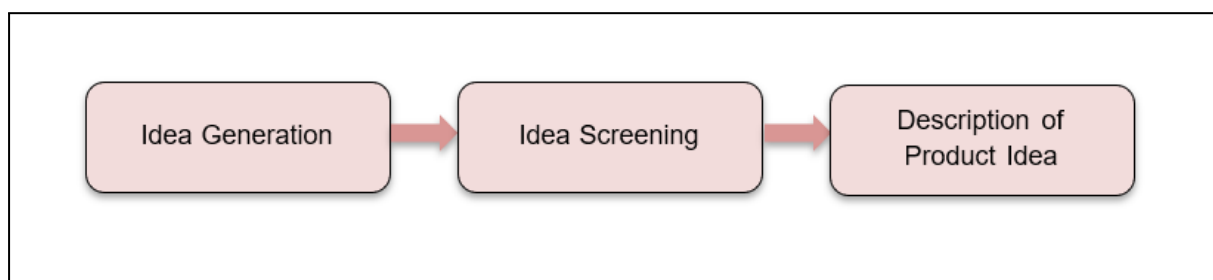


Figure 3.3.1.1. The process of research and development

##### i) Idea Generation

At this stage, we proposed three pitching ideas before selecting one for new product development. The first pitching idea, MagicPlan, is a digital floor plan application designed for use in the valuation inspection process. This digital measurement tool assists professionals such as property valuers, estate agents, and building inspectors. Traditional methods can sometimes yield inaccurate measurements due to human error, whereas MagicPlan utilizes Artificial Intelligence (AI) to ensure precise room detection and automatic measurement. Furthermore, MagicPlan can enhance valuers' productivity by reducing inspection time, allowing them to complete more site inspections at multiple locations. In summary, the first pitching idea provides a ready-made template that supports professional work, helping users increase efficiency when preparing written reports for their clients.

The second pitching idea is MySewaScore, which introduces a tenant scoring system to replace the traditional manual tenant screening process. This system addresses common rental issues, such as tenants who fail to pay rent consistently, disappear without notice, or cause property damage.

Currently, no similar application exists in Malaysia that can automatically generate reports evaluating tenant credibility through a scoring system. Through this system, estate agents can access tenant scores based on their rental history, credit status in CTOS or CCRIS, blacklist databases, and tenant behavior. This enables estate agents to avoid problematic tenants and protect landowners' interests. At the same time, the tenant scoring system enhances the professional credibility of real estate practitioners.

As for the final business pitching idea, we proposed the i-Value Kit Bag as a new development product, featuring an inspection multipocket bag as a primary tool. This inspection bag is designed as an ergonomic backpack with padded straps to ease the user's load when carrying inspection kits, documents, and electronic devices such as laptops or tablets. The target users of this product are property valuers, students, and intern trainees. Their work productivity may improve, as the bag allows them to carry equipment for extended periods during site inspections without experiencing fatigue. Additionally, the manufacturer uses water-resistant materials for the bag to protect important tools and documents from damage due to rain during open-site inspections. The i-Value Kit Bag is positioned to be sold at an affordable price by combining cost-effective materials with high-quality construction.

## **ii) Idea Screening**

From the three pitching ideas discussed above, we have selected the third idea, the i-Value Kit Bag, as our new product development. The decision was based on factors such as product viability, material cost, selling price, target users, and unique features. Existing inspection backpacks have shown limited product viability due to their heavy weight and insufficient space for storing essential items required for site inspections. The i-Value Kit Bag addresses this market gap by using a lighter material, allowing valuers to carry multiple inspection tools and important documents with ease. Furthermore, this new product is designed to be affordable while made from durable materials suitable for long-term use. This is important because our target consumers include professional valuers, as well as students and practical trainees in real estate management. The product is particularly valuable to these users, as they frequently visit sites to conduct inspections and incorporate the gathered evidence into clients' valuation reports. Therefore, we have carefully

considered the functionality of this inspection backpack to ensure it meets the standard requirements of valuers' daily use.

Apart from that, the i-Value Kit Bag is designed to minimize damage to inspection tools such as laser measurement devices, tablets, and documents related to site inspections stored inside the bag. Electronic devices and laser measurement tools are protected and can have a longer lifespan due to the use of durable materials. This new product incorporates special features and design elements intended to attract potential consumers. For example, the bag addresses common issues found in inspection bags including the design, organized storage space, and the use of rugged materials for each component to ensure durability for daily use. These features benefit our business by creating a professional image for valuers, students, and trainees conducting inspections which allows them to serve their clients efficiently. As a result, we are able to reach the maximum target audience within the real estate sector with the newly developed i-Value Kit Bag.

Before the official release, the company will test the prototype to ensure it meets target audience expectations and the current assessments indicate that the i-Value Kit Bag is structurally sound and requires no modifications to its materials or appearance. The inspection backpack is scheduled for commercialization in the market within six months to capture existing demand for high-quality inspection bags. With the new extension on the product features, it may solve common issues faced by previous users featuring industrial-grade zippers, modular storage and backpack design with padded straps. This product is claimed as an all weather bag which can be the company's main selling point to cater the demand from users in the real estate sector. Therefore, the new development product of the inspection bag, i-Value Kit Bag is fully equipped in both function and design to meet market expectations. This product is also ready to be positioned as a strong competitor in the real estate market industry.

The main reason for rejecting the first pitching idea, the MagicPlan and second pitching idea, MySewaScore has highest competition in the global market and we have to hire highly skilled software engineers to develop web-based applications. These applications are also required to be upgraded regularly to tighten the app security with built-in Artificial Intelligent (AI). So, it must serve the professional consumer needs for daily use in the real estate

field in handling their client trust by protecting with high credibility comes a bigger budget to implement the applications. For the beginning stage of MagicPlan it may lack a lot of features and the measurement may not be accurate for the first time use which creates a high technical barrier in applying Artificial Intelligence (AI). While for the MySewaScore implementation stage may lack of tenant details due to low apps security Data Privacy & Compliance (PDPA). Tenant past tenant history data and behaviour may not be recorded properly by the estate agent and property as they want to maintain a good tenant record for a long term. Thus, we choose i-Value Kit Bag as the new development product because we already have potential consumers from real estate background.

### **iii) Description of product idea**

Based on the selected third pitching idea, we are highlighting the special features of the inspection backpack, i-Value Kit Bag as follows:

#### **a) Zipper made of YKK zippers with oversized metal pulls**

For the development of our i-Value Kit Bag, the inspection bag features industrial-grade YKK zippers equipped with oversized stainless steel pulls. These zippers are engineered to withstand harsh weather conditions and resist breakage caused by rough handling or aggressive tugging when closing the bag. By utilizing premium, industrial-grade components that are resistant to malfunctions and corrosion, we effectively resolve common zipper-related issues faced by consumers.

#### **b) Modular storage system**

The modular storage system's removable compartment of inspection tools is flexible for valuer as they can remove unnecessary items in the bag that protect the electrical devices and inspection tools when exposing it to the environment. This system may reduce the capacity of the bag if the valuer wants to put a lot of file documents of site inspection in the bag. So, this feature organized the daily routine for valuers in representing their professional image to serve the clients' trust.

#### **c) Ergonomic backpack design**

The i-Value Kit Bag enhances user comfort through an ergonomic design incorporated into the inspection backpack and padded straps. The

breathable mesh fabric and specialized foam padding help reduce pressure points when wearing the backpack during long shifts on-site. Additionally, this design aims to improve comfort and boost work productivity, as the ergonomic features help minimize physical fatigue for users.

**d) Main material made of 600D Polyester**

The main material of the i-Value Kit Bag is 600D Polyester, which is cost-effective for large-scale production. This material is lighter compared to nylon, it helps reduce the weight that users need to carry. Polyester also has more water-repellent properties, providing better baseline protection against weather. The lower manufacturing cost allows us to offer the product at a more affordable price making it accessible for students and practical trainees who are conducting valuation inspections in real estate management.

**e) Apply polyurethane (PU) coating**

The 600D Polyester inspection backpack will feature a polyurethane (PU) coating on the interior fabric with fully sealed seams. This coating helps protect inspection tools such as laser measurement devices, tablets, laptops, and physical documents from water ingress through needle holes. The key selling point of this product is its “all-weather” capability as it remains dry even under rain or direct sunlight on the outer layer of the bag. Considering Malaysia’s tropical climate and year-round monsoon seasons, we designed a durable backpack suitable for demanding activities, particularly for on-site inspections in open spaces.

### 3.3.2 Product Design/Features & Technology Used

In this product design section, detailed information about the i-Value Kit Bag is presented. This inspection backpack is designed to serve as a daily-use bag for valuers which enables them to conveniently carry inspection tools and important documents during site visits. The following sketch and table presents the specifications and key information of the proposed new product, the i-Value Kit Bag.

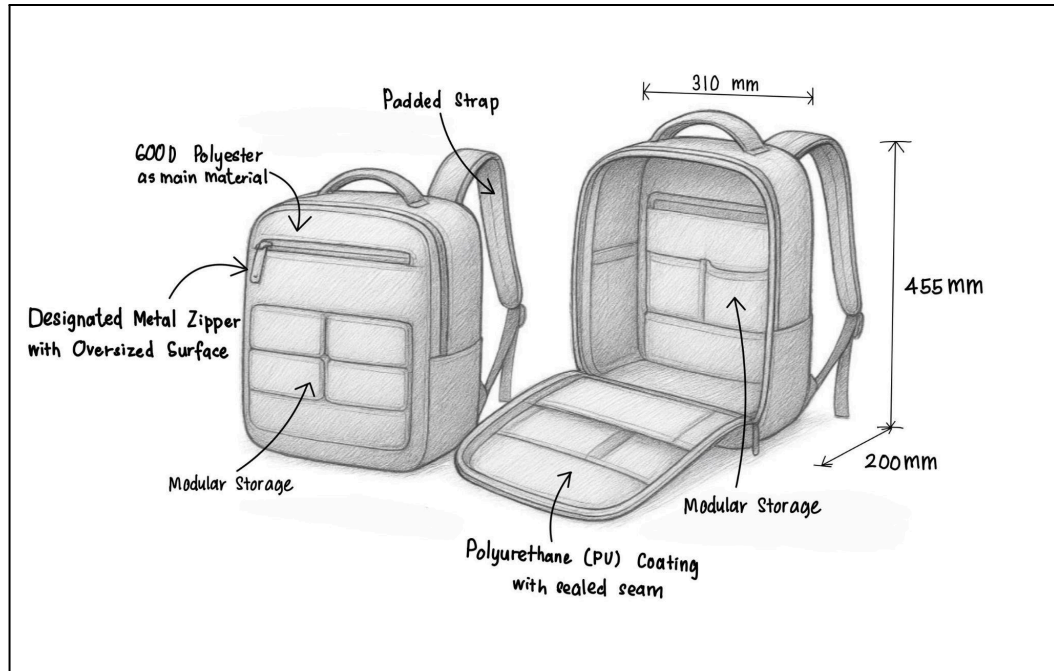


Figure 3.3.2. The sketch of i-Value Kit Bag, inspection backpack.

<b>Size</b>	455mm x 310mm x 120mm
<b>Capacity</b>	17 liters
<b>Weight</b>	700g

The proposed new product has been designed with a strong emphasis on the practicality of an inspection backpack, ensuring efficient utilisation of all compartments while adhering to ergonomic design standards may enhance user convenience. The i-Value Kit Bag features a slim rectangular form with a capacity of 17 litres and overall dimensions of 455 mm × 310 mm × 120 mm. This backpack is suitable for daily use and is capable of storing essential items such as a 15.6-inch laptop, tablet, A4 documents and various inspection tools. The modular storage system is designed to accommodate equipment including a laser measurement device, pen, smartphone, and

personal belongings in an organised manner. The backpack weighs approximately 700 g, as it is constructed from lightweight 600D polyester fabric, while overall weight balance is enhanced through the use of industrial-grade YKK metal zippers. In addition, the inclusion of foam-padded shoulder straps helps to reduce user fatigue, making the backpack suitable for prolonged daily use by valuers, students, and real estate practical trainees.

In product design, aesthetics is just as important as usefulness. A product's aesthetic appeal may draw clients and set a company apart from its rivals. Therefore, to ensure the product aligns with the brand's identity and appeals to the target market, good design considers the product's shape, colour, texture, and overall visual appeal. In addition, to ensure the product remains competitive and relevant in the market for a long time, it is essential to conduct in-depth research to identify trends, assess the competition, and understand end-user expectations. By all things considered, designing solutions that genuinely connect with a human-centred approach requires a thorough grasp of user needs, habits, and frustrations.

a) The Style of the i-Value Kit Bag

A backpack is a lightweight, compact, portable multi-compartment bag that distributes weight equally over the shoulders, making it perfect for carrying laptops, documents, essential tools, outdoor gear, and other necessities. Backpacks have expanded in relevance due to lifestyle changes, the need for accessible, organized storage, and increased mobility in fast-paced environments. The growing acceptance of tech-friendly and ergonomic backpacks is being fuelled by the increased use of laptops among workers and students. Furthermore, customer expectations for long-lasting and sustainable materials have grown, with eco-conscious businesses introducing organic cotton and recycled polyester. These factors contribute to an increase in consumer demand for useful, multifunctional, and visually appealing backpacks to be used in daily life. The popular backpack models on the market are characterized by a combination of minimalist aesthetics, multifunctionality, and a strong emphasis on sustainable materials. The consumers desired bags that are adaptable, long-lasting, and pleasant to use in both professional and leisure contexts. In short, the i-Value Kit bag design applied these kinds of aesthetics to attract buyers.

b) The Colour of the i-Value Kit Bag

The market trend for positive backpack colours in the years 2025 and 2026 is a combination of timeless neutral and vibrant, expressive shades, with a focus on adaptability and sustainability, which is not exaggerated in the public. Neutral shades such as black, grey, and navy blue remain popular due to the colour's adaptability and ability to complement any outfit or situation. Other than that, several colours that are trending in the market are pastel shades, two-tone colours, and metallic finishes. However, for the i-Value Kit bag, the implemented colour choices are neutrals that will provide a timeless design and appearance. Black is a conventional and versatile shade that may be used in both professional and casual situations, which is suitable for this inspection bag. Meanwhile, grey has a refined, balanced, and subtle elegance that works well in both professional and casual settings, as well as brown, which is an earthy and warm tone that has a traditional, natural look and works well with other colours. Also, navy blue is a utilitarian colour that is very flexible and a style alternative to a black shade.

 <p>Figure 3.3.2.1 Black Colour</p>	 <p>Figure 3.3.2.2 Grey Colour</p>
 <p>Figure 3.3.2.3 Brown Colour</p>	 <p>Figure 3.3.2.4 Navy Blue Colour</p>

Table 3.3.2.1 The Colour Choices for the i-Value Kit Bag

c) The Visual Appeal of the i-Value Kit Bag

The element of visual appeal in new product development refers to the strategic use of aesthetic features to attract customers, stir pleasant emotions, establish brand trust, and ultimately influence purchase choices. It is a vital, non-functional design element that frequently creates the initial impression on a buyer and helps a product stand out in a competitive market. As for the new product development, which is the i-Value Kit Bag, it concentrates on a combination of style, utility, and sustainability for the users that is also including sleek simplicity, bold expression, eco-friendly materials, and high-tech appearances are among the most appealing visuals that would be applied to the product. Moreover, high-quality design and professional appearance can persuade buyers to view a product to be of greater quality, and the visual signals may avoid substantial thought processes, resulting in emotional responses and, eventually, deciding to buy the product. In summary, visual appeal is a potent strategic asset that conveys value, generates demand, and promotes the i-Value Kit Bag to success by matching its look to the psychological and functional needs of the target audience in the market.

Product development parameters may be roughly divided into two categories, which are project-level considerations for effective execution and individual product design needs. These factors are vital for controlling the process and assuring the product's economic viability and alignment with company objectives. The product of the i-Value kit bag requires product design parameters to meet the desired requirements to achieve positive feedback. It focuses on the safety design, the cost, usability, and durability of the product to ensure the consumers receive a good product and create a good credibility profile as a brand.

d) The Safety Design of the i-Value Kit Bag

The market trend for safety design backpacks is defined by a high demand for integrated technology, better security measures, and ergonomic, long-lasting materials. This is motivated by increased urban mobility, corporate travel, and the desire to safeguard costly digital gadgets, especially for the valuers. The safety designs are in high demand because the design will provide an assurance of safety by stacking security features, making the

backpack a less tempting and challenging target for opportunistic thieves. Additionally, anti-theft capability is non-negotiable for many modern consumers, particularly urban commuters and travellers. As in the case of the product's target market, which is valuers and other practitioners who need to carry out inspections, it is essential to get a bag with designs that include concealed compartments and lockable zippers, making it impossible for thieves to access valuables.

e) The Usability Design of the i-Value Kit Bag

Modern backpacks' usage and design elements emphasize ergonomics, smart technology, and modularity while maintaining a minimalist and ecological style. Consequently, quality cushioning on straps and the compartment for laptops, tablets, and other gadgets is an essential customer need to prevent harm to the belongings. Ergonomic design on the i-Value kit bag incorporates contoured shoulder straps, cushioned lumbar support, and five-point balancing strap systems with a wide surface to distribute weight and prevent strain. In addition, water-resistant materials are durable, and the fabrics are increasingly being used to shield goods from the environment. The consumers demand a bag for several purposes that can shift easily between activities such as work, vacation, and outdoor experiences, which has resulted in designs including a modular storage system and extendable capacity.

f) The Durability Design of the i-Value Kit Bag

The market of durable backpacks is rising, pushed by active movements, digital globalization, and eco-consciousness, with a focus on high-performance materials. Consumers seek robust, functional, stylish, and long-lasting products and prefer companies that innovate with comfort, resistance, and anti-theft features, resulting in a competitive and rising segment. Backpacks are made to be versatile and meet a variety of demands. This basic flexibility supports prolonged usage and the various features on the product, such as a modular storage system have detachable pockets, many sizes of storage, or organizers, allowing users to tailor the bag's utility, eliminating the need for additional or specialized bags. The high-quality zipper, such as YKK, which is noted for producing dependable, smooth-operating, long-lasting zippers, is used to ensure the product's

durability. Hence, the i-Value Kit Bag implemented these features into the product to attract potential buyers and offer the best quality that could ensure a long product lifespan at an affordable price.

g) The Cost of the i-Value Kit Bag

The market for ergonomic backpacks is expanding rapidly, fuelled by health awareness, remote work, and tech integration, boosting the costs for advanced features, such as smart technology and good materials, while also seeing price competition from affordable, standard ergonomic models, though trade tensions may raise prices for some imported compartments. However, the production of this new product development will consider the key factors that affect the price of the product and ensure it does not rise with complexity. The cost drivers will be affected by the product difficulty, prototyping, testing and certifications, designing, software, and creating a development team to produce a new product development.

### 3.3.3 Concept Testing

Concept testing is the second process to determine customer acceptance regarding newly introduced items. It can be seen that before a new product is launched to the public or target consumer, this process exists to evaluate customer response to the product idea. The usual methodologies in conducting these responses are quantitative and qualitative methods, which can identify the issues and solutions from the item. This process also enhances in assessing purchaser's interest and their intentions to purchase the products.

#### Purpose of the test

The objective of this test is to inform consumers regarding the function and the benefits of newly generated products for their application in the future. The product known as the i-Value Kit Bag is an inspection bag with multiple pockets for the professional workforce, such as valuers and other related fields. This process is to collect the data on consumer reactions towards the i-Value Kit Bag and the intention to purchase the introduced product.

### Survey Population

This process is focused on students of valuer internship, beginner and professional valuer that have problems in organising expensive and valuable items. Other than that, the consumer who wants to ensure the items are not missing out carelessly or broken from any possibilities, such as rainwater or others. This is highly useful when emphasizing the suitable market to introduce a product.

### Survey format

The chosen platform that has been used during this data collection is Google Forms because it is easier and more conducive than the face-to-face method. Next, this stage is to let respondents get informed regarding the i-Value Kit Bag and the details related to it. This is to ensure that the owner of the product that the initiated product can fulfil the consumer need or is just aesthetically designed to a new unimportant product to them.

### Product concept

This part defined the concept description by using a verbal description to acknowledge the purchaser clearly regarding the product they would buy later. There are several methods to apply, such as verbal description, product sketching, rendering, illustrated storyboard and mock up or prototypes as visuals. The purpose is to create a concrete vision to bring an appeal in a personal way and enhance the intention to buy the specific product. The selected approach is being applied to bring knowledge to the target consumer of the inspection multipocketed bag's benefits and features.

The product, i-Value Kit Bag, is a modified item with several characteristics and functions as listed below:

- ❖ Can put various items such as a tablet, a laptop, and stationery
- ❖ Valuer materials such as laser and value tape
- ❖ A multiple-pocket design inside and outside
- ❖ Waterproof bag
- ❖ UV-resistance bag
- ❖ Ergonomic bag pack design
- ❖ Spacious space and oversized surface
- ❖ Durable and strong zipper
- ❖ Comfortable for long-term wear

- ❖ Friendly and affordable price
- ❖ Slim design, as not very bulky when putting many items

a) The i-Value Kit Bag is designated with a waterproof design as it can protect valuable and important items, allowing the items to stay in good and well condition if the user has to face unexpected situations such as sudden rain or accidentally placing them in wet places.

b) This bag is medium sized as it is not very bulky and too big for consumer use in their daily activity. Other than that, as we focus on the trends in 2020 and recent years, user preferences keep changing aligned with the modernization, as we conclude this design will be stylish and unisex, and can be used by everyone.

### Measure the customer response

After a survey was conducted, the measurement of the responses was taken by following several parts in concept testing and relevance explanations as qualification, product description, purchase intent, and the comments towards the products.

### **Part 1: Qualification**

a) Demographic data

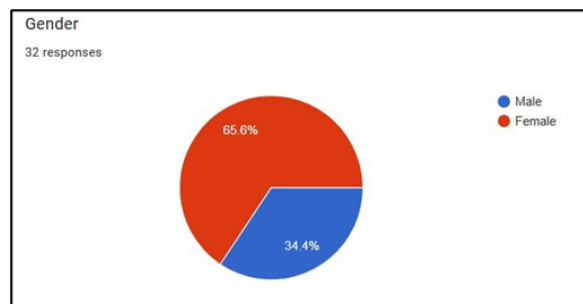


Figure 3.3.3.1. Gender of the respondents

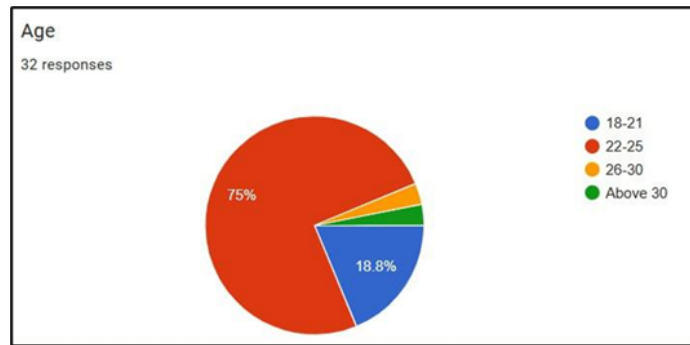


Figure 3.3.3.2. Age of the respondents

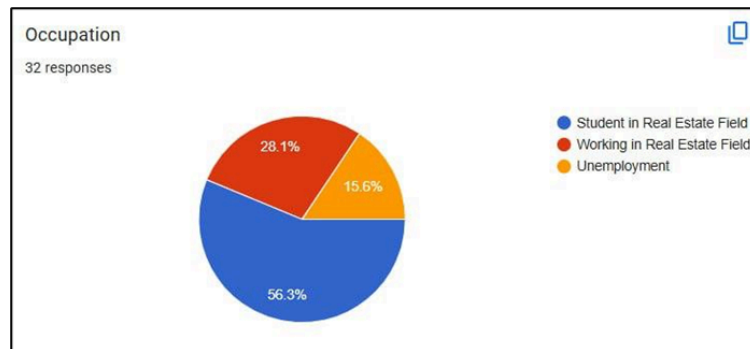


Figure 3.3.3.3. Occupations of the respondents

The first part involves identifying the qualifications of the 32 selected respondents. Based on figures 3.3.3.1, 3.3.3.2, and 3.3.3.3 above, the demographics of respondents from each category consists of gender, age, and occupation. It can be seen 65.6% is female respondents and the majority of each gender age group taking part in this survey are around 22-25 years old, as shown in Figures 3.3.3.1 and 3.3.3.2. Next, as we focus on boosting our market for related fields, it shows from Figure 3.3.3.3 56.3% are students in the real estate field and 28.1% from respondents who are working.

b) Personal lifestyle

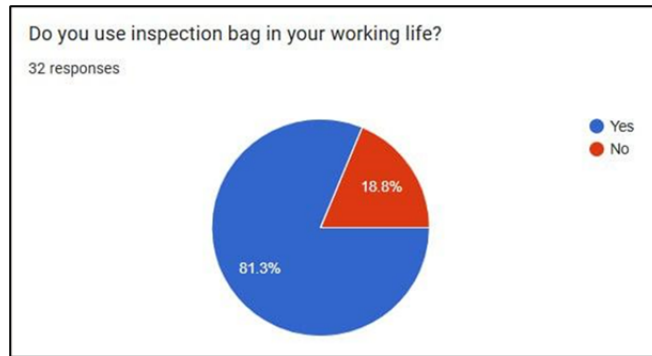


Figure 3.3.3.4. Do the respondents use an inspection bag in working life

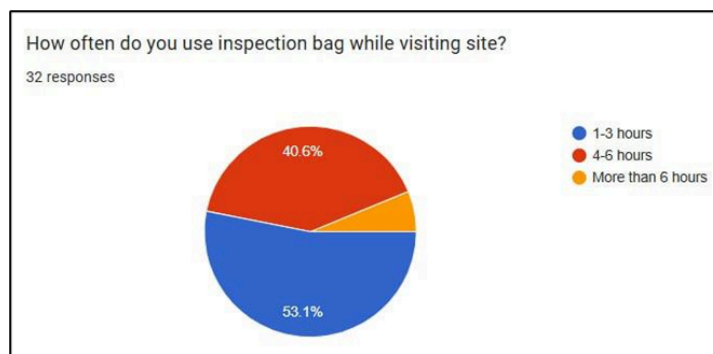


Figure 3.3.3.5. How often to use the inspection bag during the site visit

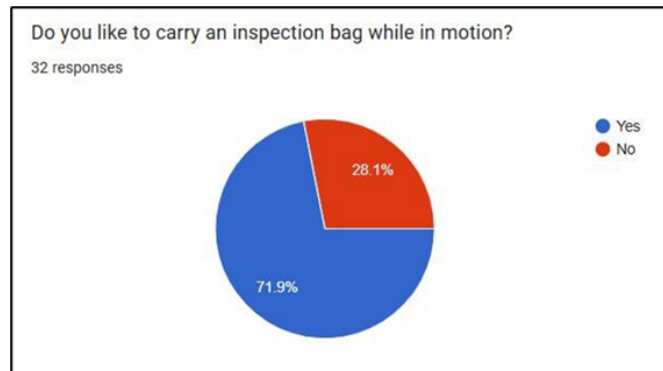


Figure 3.3.3.6. Likely to carry an inspection bag while in motion

Next, it can be seen in Figure 3.3.3.4 that 81.1% respondents do use an inspection bag in working life, as it is assumed will make their movements with multiple items more organised. In Figure 3.3.3.5, the majority of respondents using the bag likely spend around 1-3 hours, at 53.1%, as it is assumed there are several factors, such as their inspection not taking longer times, or they are not used to wearing a backpack in the long term. While it

can be seen that only 6.3% use more than 6 hours, it is good to approach them with the i-Value Kit Bag, as the bag has comfortable features for the user. Next, Figure 3.3.3.6 showed that the majority of respondents, at 71.9%, agreed they like to carry a bag during inspection while in motion.

## Part 2: Product Description

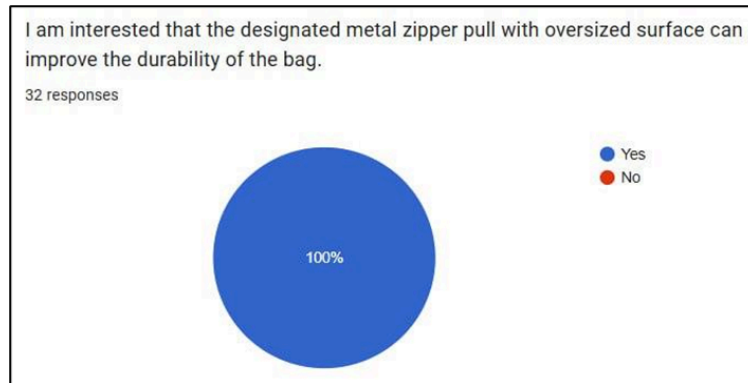


Figure 3.3.3.7. Interested in the metal zipper with oversized surface, improving the durability of the bag

The second part explains the product description that the respondents would like to have or expect in the bag. Figure 3.3.3.7 shows 100% of respondents agreed they are interested in the metal zipper with an oversized surface that can improve the durability of the bag. From a previous case study, we acknowledged that consumers are likely not to use a small zipper that has a problem with it and keeps tearing out from the zip chain. We could analyse that consumers prefer the zip to have better grip and has sufficient space to hold onto it.

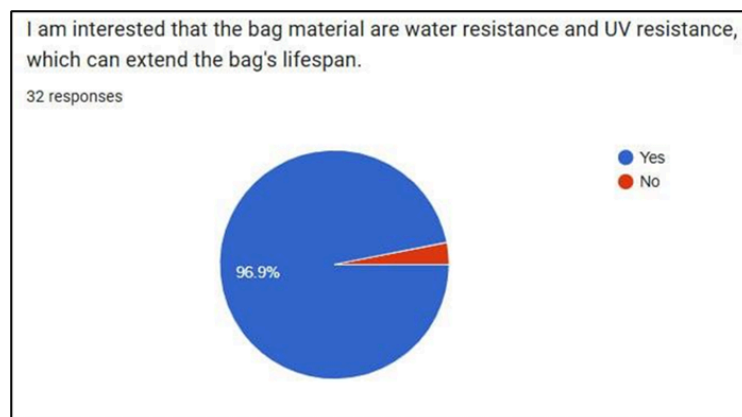


Figure 3.3.3.8. Interested in the bag that has water and UV-resistant material, improving the lifespan of the bag

Figure 3.3.3.8 shows that respondents are interested in the bag with water and UV-resistant which 96.9% voted that this material can extend the bag's lifespan. As it is known, Malaysia has unexpected weather, and it can be a precaution for the consumer to always be ready and cautious if there is bad weather later. They also acknowledge that even though they are wearing an umbrella to prevent any water coming to the product, it is still a good step to at least invest in a bag with water-resistant materials. Other than that, it is known that enhancing the bag's features by adding UV-resistant material can protect the bag from colour fading too fast and resist damage such as cracking and brittleness. It is crucial material as the main purpose of this bag is for outdoor activities, such as inspection.

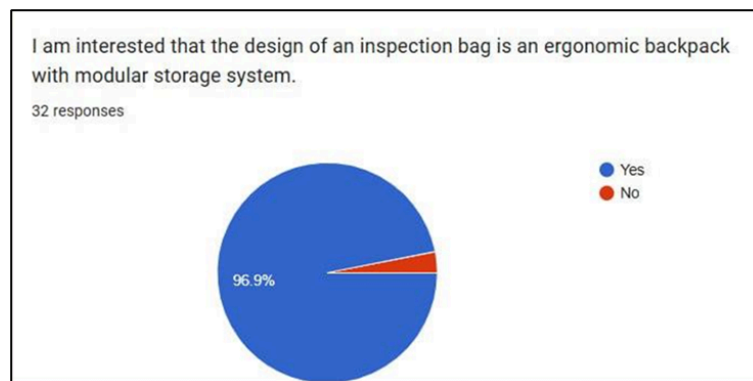


Figure 3.3.3.9. Interested in the design of an ergonomic backpack with a modular storage system

Other than that, Figure 3.3.3.9 above showed that the respondents are interested in the bag with an ergonomic design, such as a backpack with a modular storage system. The respondents, with 96.9%, agreed that this design will be more convenient to use as it can prevent any discomfort if worn in the long term. The type of bag, such as a sling and messenger, may be easy to grab, but it can cause pain if used too much and for a long time in the same place with a heavy weight in the bag. Other than that, respondents also like the idea of the bag having a modular storage system because it can make the bag look classy, put various items, and be more organized.

### Part 3: Purchase Intent

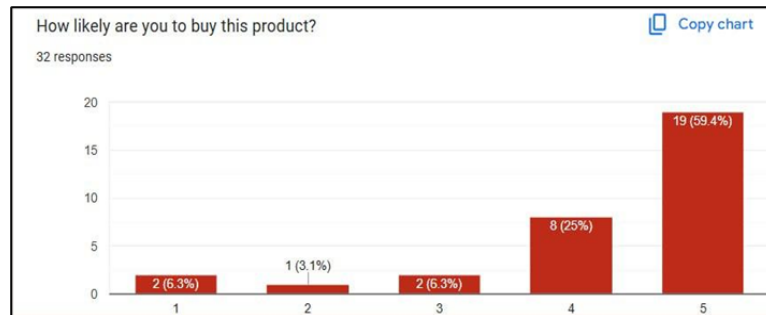


Figure 3.3.3.10. Likely to purchase this product

Figure 3.3.3.10 showed that 59.4% were likely to buy this product and were interested in investing in it. However, there are a minority of respondents, at 6.3% not interested in the product, as it is assumed that the product is not suitable or still does not meet their specifications when deciding whether to purchase the bag. Next can be seen that there are other 6.3% who are not really confident, as the respondents voted in the middle, whether they want to buy or not.

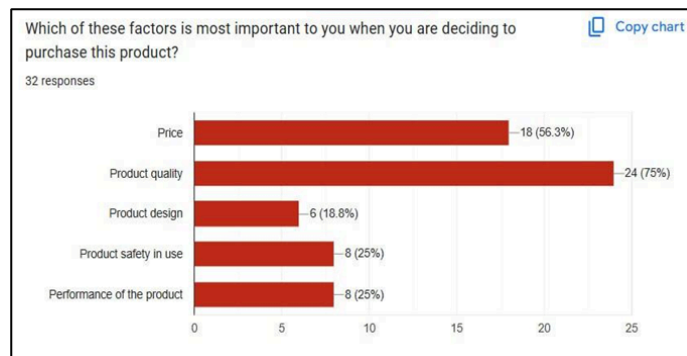


Figure 3.3.3.11. Important factors to be considered when deciding to purchase this product

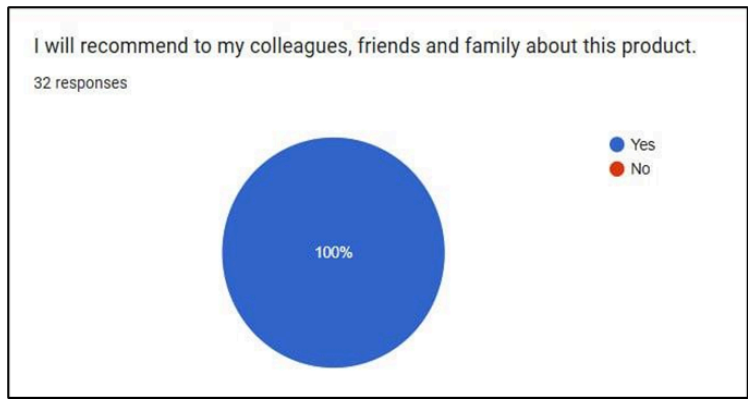


Figure 3.3.3.12. Recommendation to colleagues, friend and family about this product

Figure 3.3.3.11 above showed there are several important factors for the respondents when deciding to purchase the product. The majority choose to buy because the product quality of the bag itself as 75% agreed, which is the reason they decide to buy. Another reason to buy this item is shown from the pie chart, which 56.3% agreed that the price is pocket-friendly and pleased that the high-quality product can be used without burning a hole in the pocket. However, the product design is the lowest as it gets 18.8% due to the design being really simple and classy. As Figure 3.3.3.12 showed, 100% respondents agreed to recommend this product to their relatives and friends.

**Part 4: Feedback**

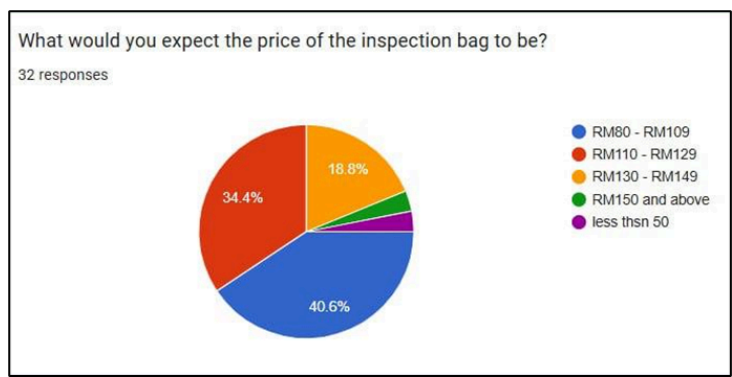


Figure 3.3.3.13. Expectation of the product price



Figure 3.3.3.14. The price availability given the features available

Figure 3.3.3.13 above showed there are several expectations regarding the product prices to be from RM 50 to RM 150 and above. The majority of the respondents voted that this category was the expectation of the price for the product, which was from RM 80 to RM 109, with 40.6%. The least voted is the price category that is less than RM 50 for the bag. The second most voted category is the price of RM 110 – RM 129, as it recorded 34.4%. From Figure 3.3.3.14, all respondents with 100% percentages think that each price is affordable given the features available for the bag.

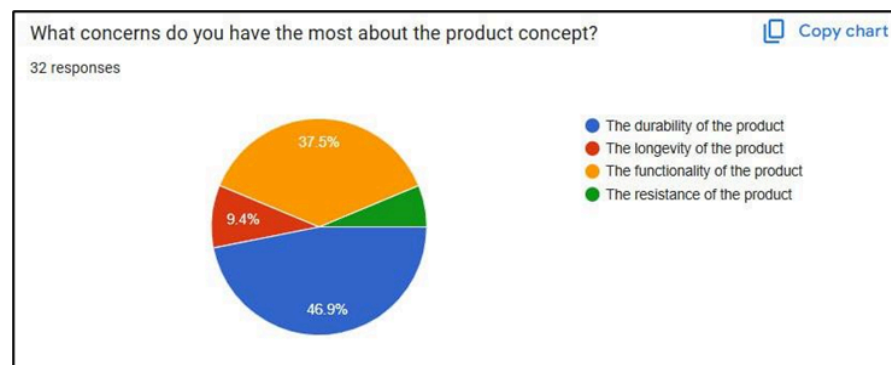


Figure 3.3.3.15. Most concerns about the product concept

Next, Figure 3.3.3.15 above shows that most concerns arise from respondents regarding the product concept. The most voted, which is 46.9%, described the durability of the product. The product which is not durable enough may give uncertain feelings for customers because the price is being paid for the quality as it should be. The second most voted is the functionality of the product, as it gets 37.5%, thus the respondents expect the products can 100% function well as advertised.

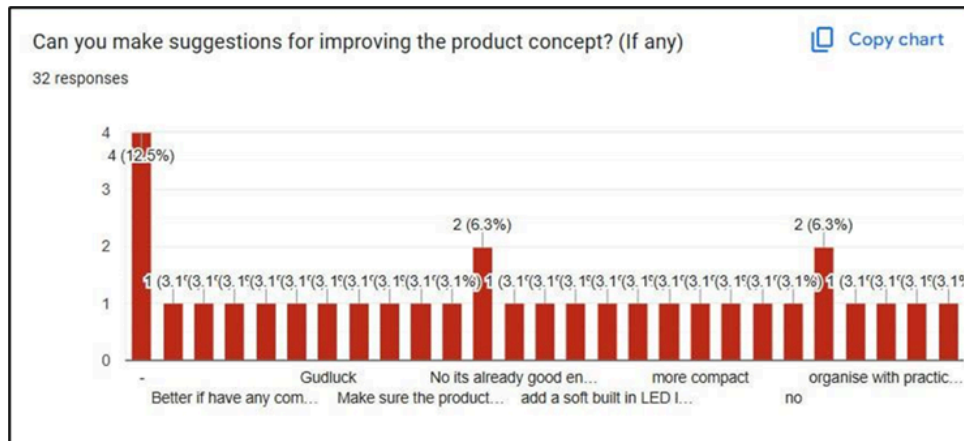


Figure 3.3.3.16. Suggestion for improving the product concept

Figure 3.3.3.16 above, a few suggestions have been made as real user input helps the product concept to undergo several processes to achieve a quality product in the end. Some of the respondents suggest that instead of providing only one way to carry the bag, can provide a 4-in-1 carrying system, such as a backpack, shoulder-strap, stripped handle, and wheeled trolley option. The users can easily switch between carry modes, especially when they feel tired during inspections. Other than that, some of the respondents focused more on other elements, such as making the bag more compact, an attractive design, and providing more color. Next, the respondents suggest enhancing the valuer inspect bag concept by integrating modular compartments, smart tracking, durable eco-materials, and quick-access audit features to streamline professional valuation workflows. Another suggestion is to add a soft, built-in LED light inside the main compartment. It helps users see clearly during inspections without needing a separate flashlight. Last but not least, it is important to make sure the product is comfortable to carry with padded straps or handles and lightweight to improve efficiency during inspection.

In conclusion, the findings of the survey indicated that the i-Value Kit Bag is likely to get positive feedback from customers and is easy to accept by the purchaser. Next, based on the survey results, there are certain insights that can produce input about the i-Value Kit Bag product concept, which can be one of the new initiatives to enhance the content detected during the survey. This is to lessen any faults when developing finalized products, so the product may skyrocket to the specific target market.

### 3.3.4 Build Prototype (2D)

#### Definition

A prototype is the next process after gathering data and starting to prepare materials, such as sketching up a suitable design that respondents wanted from the survey. A prototype, also known as an early product or sample to test the elements such as durability and functionality of the product. This process is usually where entrepreneurs will check in detail if the materials chosen are suitable or need to be changed so that they are safe and comfortable to wear as a final design. Figure 3.3.4.1 below shows the details and sketching of the 2D design i-Value Kit Bag to visualize the image of the product.

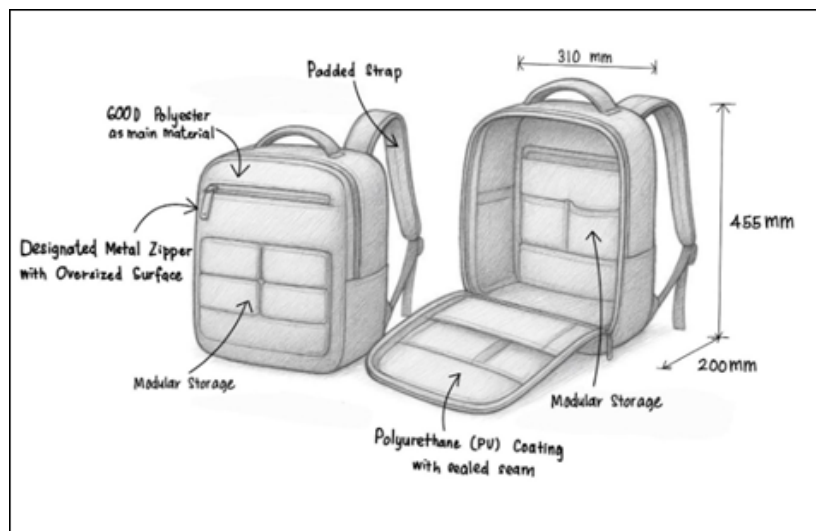


Figure 3.3.4.1. Details and 2D design of i-Value Kit Bag

#### Application

The i-Value Kit Bag is designated as an ergonomic backpack with multiple pockets placed inside and outside of the bag. The bag can be unzipped to the bottom of the bag to show the spacious and large space inside. This bag provides a width of 200mm and can fit bulky or variously shaped items and still have space left in it. The height of the bag can fit a 15-inch laptop and a file-sized A4 paper without wrinkling it. Other than that, this bag can be a travel bag due to the size, which can fit clothes for a 3 days trip.

The front zip has a pouch that can hold other items that need to be fetched quickly without having to open the main zip. The front compartment is designed with modular storage, which can hold items such as a valuer laser, tape, or even a mini compact camera. Furthermore, the inside compartments are designed to put important items such as a handphone, a powerbank, a laptop, and important documents that need to be carefully taken care of. The compartments are made to ensure the materials and items are getting organized without creating hassle for the user. Moreover, this design is a modification of a tool bag and a laptop bag that brings a friendly user look, and also can be used on different occasions. The example and image placement of material can be referred from Figure 3.3.4.2 below.



Figure 3.3.4.2. The material placement of inside and outside compartments

### Characteristics

The bag is designed with smart organization, as it provides compartments for technology and stationery. The interior features are made with a structured layout to secure devices such as tablets and laptops. It can prevent items from shifting and keep them in one place because of the existence of multiple pockets. The stationery, such as pens and notebooks, has a specialised slot to keep the tools accessible. Next, the modular storage is designed for inspection activity. It includes pockets sized for laser distance meters, measuring tapes, and other instruments to ensure the items do not get missing out or lost at the bottom of the bag.

The multi-pocket system is divided by its functions: the exterior pocket for quick access and always uses keys or laser distance meters, while the interior is designated for keeping sensitive data and expensive instruments organized. The bag maintains a slim design rather than bulging outward, ensuring the user does not look bulky even when the bag is fully loaded with files and gear. Fieldwork often exposes the user to unexpected elements; thus, this bag is built as a shield for the user's equipment. The main body uses 600D Polyester with a Polyurethane (PU) coating, as Figure 3.3.4.3. This makes the bag waterproof and helps in protecting electronics from sudden rain showers. The UV-resistant fabric prevents the fabric from fading or degrading after long hours of exposure to direct sunlight during site visits. The bag also utilized a metal zipper with an oversized surface. This design can prevent a common issue when bags are overpacked and ensures smooth operation even when wearing gloves.

Designed for professionals who are on their feet for hours, the bag prioritizes physical health. This structure follows the natural curvature of the spine. It sits high and close to the back to minimize leverage and strain on the lower back. With padded straps and a balanced weight system, the bag remains comfortable for long-term wear. It allows the user to focus on their inspection work rather than on back pain. This bag offers a friendly and affordable price without sacrificing professional aesthetics. It provides a high-value alternative and affordable price of bags, making it accessible for valuers, firms, and students alike.



Figure 3.3.4.3. Details of materials used

### 3.3.5 Test Marketing

Test Marketing is essential in the New Product Development process. It is a stage in the new product development where the new product will be introduced to a market segment before launching the product officially in the market. This process will be done by the company itself, and it will help the company to evaluate the consumer response towards the performance of the product. According to Bhat (2025), test marketing is a tool that is used by people to collect feedback directly from the target audience. Thus, it will help to understand the target market expectations, requirements, and characteristics.

According to Coville (2025), the purpose of doing test marketing is to help in making an estimation of the sales amount and profits gained from the small launch of the product. In addition, test marketing acts as a trial run to see how the product will perform on a larger scale. Therefore, at the same time, it will help the company to learn customers' preferences and give important and valuable insights into how end users actually experience the product performance. Thus, the team has created a questionnaire survey to be asked of the target market via Google Form from Part A to Part D, and this questionnaire serves as an incentive to view respondents' opinions and thoughts on the product. Therefore, it is vital to do this survey to evaluate the product before it can be launched, as test marketing is the final stage in the new product development process. Hence, improvement can be done to make the product more beneficial and easier for the purchaser.

In addition, the survey has been distributed to many ranges of ages and student workers in the real estate field. Besides, these surveys are open for several days to be filled in by the respondents and distributed from 5<sup>th</sup> December 2025 to 13<sup>th</sup> December 2025, and this duration for test marketing is enough to help identify the market factors based on the respondents' opinions on the i-Value Kit Bag.

a) Market Size Estimation

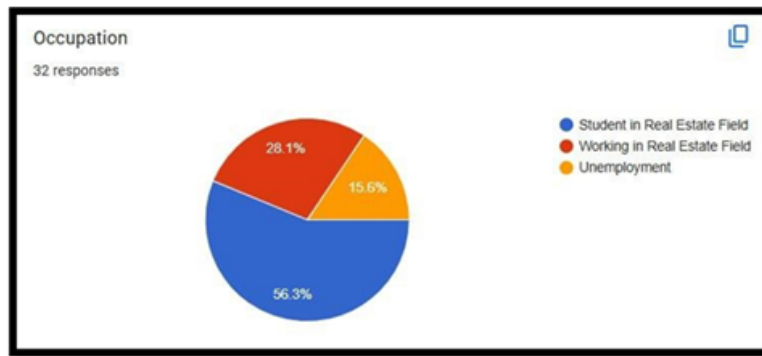


Figure 3.3.5.1 Respondent's occupation

To determine the market size of i-Value Kit Bag it is necessary first to identify the occupation of the respondents, whether they are students in the real estate field, working in the real estate field, or unemployed. Hence, based on Figure 3.3.5.1, the majority of the respondents are students in the real estate field, at 56.3%. Respondents working in the real estate field comprise 28.1%, and those who are unemployed make up 15.6%.

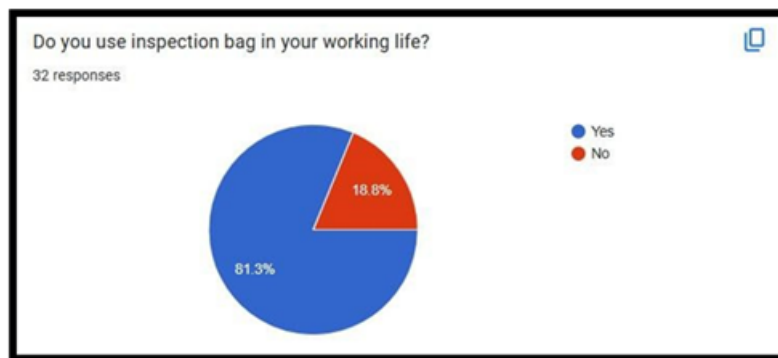


Figure 3.3.5.2 Percentage of inspection bags used by respondent

Figure 3.3.5.2, it shows whether respondents use an inspection bag in their working life. A large majority of respondents agreed that they are using an inspection bag in their working life, with 81.3%. Meanwhile, 18.8% of respondents reported that they do not use an inspection bag when going to work during site inspections.

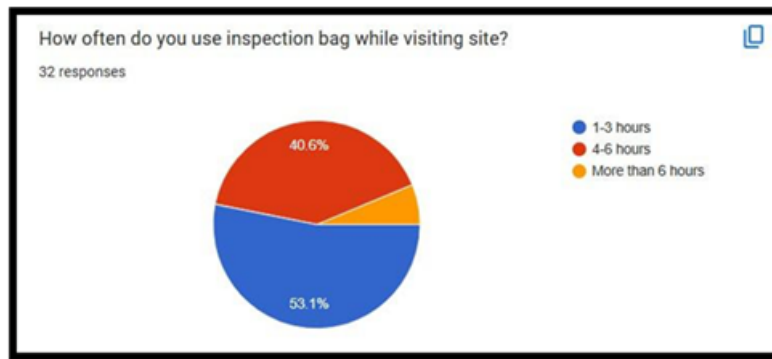


Figure 3.3.5.3 Frequency of inspection usage during site visits

Based on the chart above, it illustrates how frequently respondents use an inspection bag while visiting the site. Out of the 32 respondents, the majority reported using the inspection bag for 1-3 hours. Next, it is followed by 40.6% respondents who use it for 4-6 hours. Lastly, only a small proportion of respondents use the inspection bag for more than 6 hours.

**Estimation:**

So, for the market size estimation based on the information above, it can be concluded that students in the real estate field, making up 56.3%, are the largest group that could potentially use the inspection bag. Hence, this shows that students from real estate fields such as valuation, surveying, property management, and architecture are important demographics as they frequently go for site inspections, which are compulsory in their course, and practical training in order to practice them earlier in the working industry. Therefore, there is a constant need for efficient and durable i-Value Kit bags for the transportation of necessary equipment and documents to be brought during the activity. As a result, this market segment is a crucial target for the test marketing stage.

Besides, another 28.1% of the respondents are people who already work in the real estate industry. Therefore, from this, we can conclude that the potential market is mainly from people who are still studying and working in real estate, with a total of 84.4%. So, these two groups are the main target users for the product, the i-Value Kit Bag, as they are the ones who depend on and regularly use the bag, especially when conducting site visits to multiple locations. They represent the core potential market that should be prioritized during test marketing. Therefore, in test marketing, the high

percentage of awareness on the importance of having inspection bags is an advantage because it helps to reduce the need for extensive customer education, as most potential users already understand why an inspection bag is necessary. Additionally, many existing bags in the market may not fully meet user expectations in terms of durability, organization, or comfort, which means the i-Value Kit Bag can sell itself as an improved, more practical alternative for the problems that occurred. Hence, this indicates a clear strategic direction for the test marketing process, which should primarily focus on real estate students and industry practitioners who frequently use inspection bags.

Next, 81.3% of respondents use inspection bags during their work or study activities, such as site inspections. This indicates that a large proportion of users are aware of the importance of having an inspection bag, particularly when conducting site inspections across multiple locations and areas. Meanwhile, 18.8% of respondents do not use inspection bags, suggesting the presence of a smaller but potential market segment. So, to make the i-Value Kit Bag to be marketable to this small group, an awareness campaign or product demonstrations can be held to show the advantages of the product in terms of convenience, safety, and professionalism.

In addition, most respondents reported using inspection bags for 1–3 hours during site visits. This demonstrates a consistent demand for a durable and functional product like the Field Inspection Bag, as inspection bags are not only frequently used but also required for extended periods during work or study activities. Therefore, testing in the real world with members of the target market would show whether the material can survive various site circumstances, whether the compartments are effective during frequent mobility, and whether the bag is comfortable to carry for extended periods of time. Before a full-scale launch, these observations are essential for improving the product to be better.

Overall, the results indicate that there is a large and relevant group of users who rely on inspection bags to support their daily and site inspection activities. As two-thirds of respondents fit the target user profile, the i-Value Kit Bag demonstrates strong potential to succeed and grow in the market. By conducting test marketing among students and professionals in the real

estate field, the product can be effectively evaluated, refined, and well prepared for a full market launch.

b) Selling Price Estimation

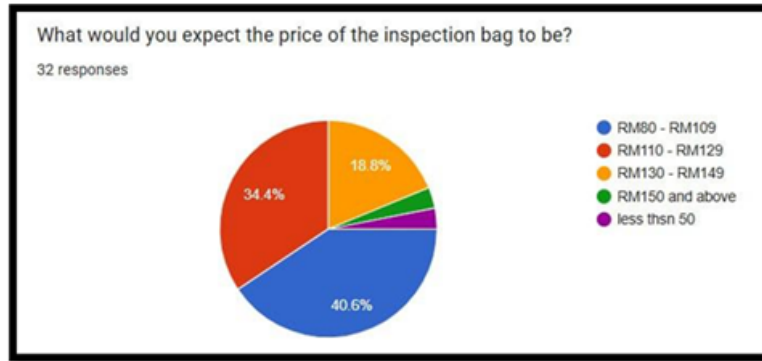


Figure 3.3.5.4. Price Expectations of Respondents for the Inspection Bag

The graph illustrates the respondents' expectations regarding the price of an inspection bag. Hence, 40.6% respondents expect the price to be between RM80 and RM109. This is followed by 34.4% who expect the price to range from RM110 to RM129. Next, a smaller percentage of the respondents, 18.8%, expect the inspection bag to cost between RM130 and RM149. Lastly, only a very small number of respondents expect the inspection bag to be priced between RM80 and RM129.



Figure 3.3.5.5 Respondents' Opinion on the Affordability of Features Available

The figure above illustrates the respondents' opinion on the affordability of features available on the inspection bag, such as having modular storage, 600D Polyester with Polyurethane (PU) Coating, and being

designated with a metal zipper with oversized surface. Hence, 100% of the respondents agreed that the price is affordable with the provided features.

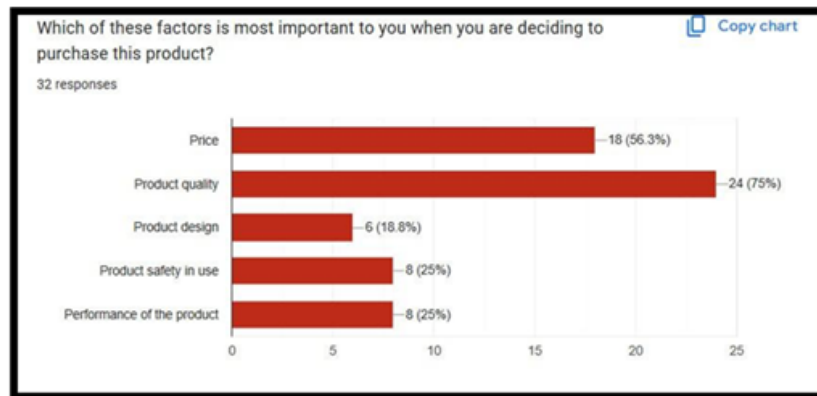


Figure 3.3.5.6. Factors Influencing Respondents' Purchase Decisions

This questionnaire survey also asked the respondents about the most important factors when deciding to purchase the inspection bag. Hence, the graph above reports that 75% of the respondents (24 respondents) select that the product quality is the most important factor. Next, price is the second most important factor when purchasing the inspection bag, chosen by 18 respondents, with 56.3%. Then, 25% of the 8 respondents selected product safety in use and performance of the product to be the most important factors. In contrast, product design was the least important factor selected by only 18.8% of the 6 respondents.

**Estimation:**

So, for the selling price estimation based on the information above, it can be concluded that the largest group expects the price to be between RM80 and RM109. Also, the second highest group thought that the price between RM110 and RM129, which is slightly higher, would be reasonable too. Hence, these findings indicate that the majority of respondents expect the selling price to remain below RM130. This reflects the target market's price sensitivity while still allowing room for perceived value. Therefore, pricing the i-Value Kit Bag within this range would align well with consumer expectations and purchasing power, making it a competitive and attractive option in the market. Setting the price within this range may also help maximize market acceptance, encourage purchase decisions, and support successful product penetration among the target users.

Next, all respondents agreed that the features provided in the inspection bag, such as modular storage compartments, a durable metal zipper, and 600D polyester material with polyurethane (PU) coating, are affordable and appropriately priced. This shows that buyers perceive the product as offering good value for money, as the features and materials meet their expectations in terms of quality and functionality. Even if the selling price is set within the range of RM110 to RM129, respondents believe the price is still reasonable as the product needs to deliver a high performance, durability, and long-term usability during inspection activities. Furthermore, the findings show that product quality is the most important factor influencing purchasing decisions, followed by price. This shows that the customers are willing to pay slightly higher for a product that has better materials, lasts longer, and is of high quality.

To conclude, the ideal price for the i-Value Kit Bag is RM100 to RM129, and this price range meets the customer expectations and affordability. So, this price will also attract the main target market, which is the students and professionals in the real estate industry. Therefore, since all the respondents agreed that the bag's features match its price, it shows that the suggested selling price is fair, reasonable, and meets what customers expect and fulfils the demand.

c) Sales Forecast Estimation

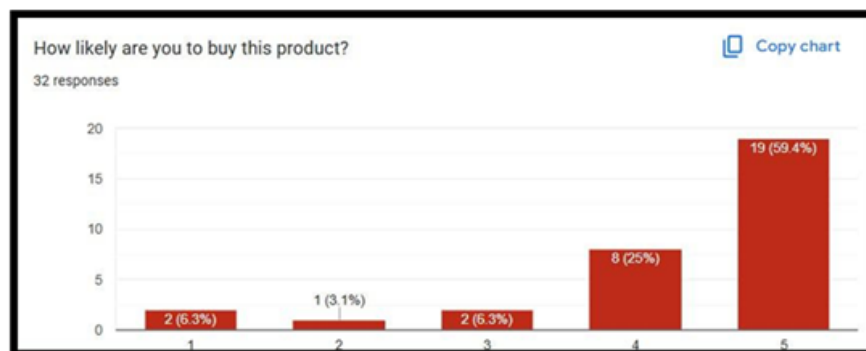


Figure 3.3.5.7 Purchase Intention of Respondents

The graph above shows how likely respondents are to buy the inspection bag based on the 32 respondents with a rating scale from 1 (very unlikely) to 5 (very likely). Hence, it can be seen that the majority of the respondents with 59.4% selected 5, which indicates that they are very likely to

purchase the product. Next, there are 25% of the respondents who chose 4, which shows they are likely to purchase the product. Then, only 6.3% of respondents selected the lower ratings, who chose 1, which indicates they are very unlikely to buy the product, while 3.1% of the respondents selected 2. Lastly, 6.3% chose 3, representing a neutral position.

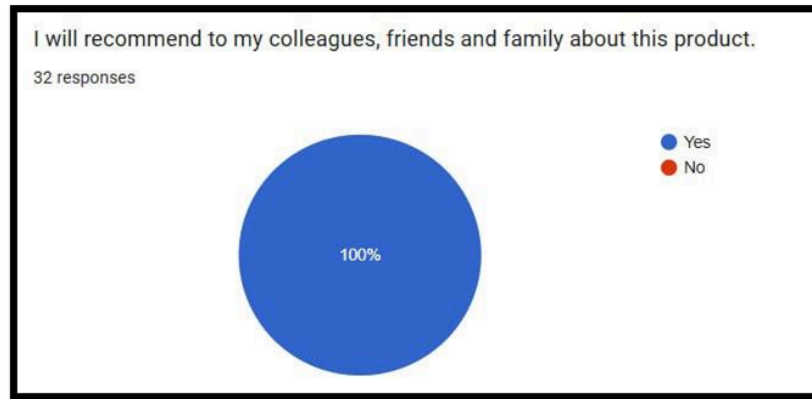


Figure 3.3.5.8 Respondents' Willingness to Recommend the Product

The graph above shows the respondents' willingness to recommend the product to their colleagues, friends, and family. Hence, it is illustrated that 100% of the respondents choose "Yes" which means that all the participants are willing to recommend the product.

**Estimation:**

So, for the sales forecasting estimation based on the information above, it can be concluded that 84.8% of the respondents expressed a clear intention to purchase the inspection bag (59.4% add with 25%). Hence, this indicates a strong market demand from the target market itself, and the majority of the potential customers have the intention to buy the product once it becomes available. Next, it shows 100% of respondents would recommend the i-Value Kit Bag to their colleagues, friends, and family members. So, this shows the customer has a strong level of satisfaction and confidence in the product's quality, usefulness, and effectiveness. This kind of positive feedback can help increase future sales because people often trust recommendations from others, and this can also make the product well-known in the market.

In conclusion, because of the strong buy intention and various positive customer opinions found in the survey, the i-Value Kit Bag will have better

sales potential, especially during the initial launch period of the product. Therefore, the product has shown a significant potential to sustain excellent sales growth, which has been encouraged by repeated purchasing and continuous recommendations from customers who are satisfied with the performance of the product. It will make the customer happy, hence strengthening their loyalty and long-term demand towards the product. Furthermore, by implementing effective marketing strategies for the product to be known by the market, such as raising awareness campaigns, trial usages of the product by the targeted market, either students or professionals, and combining with consistent product quality and performance, this will eventually result in a steady client base, increased market penetration, and successful sales results.

**Product Improvement Suggestions Based on Test Marketing**

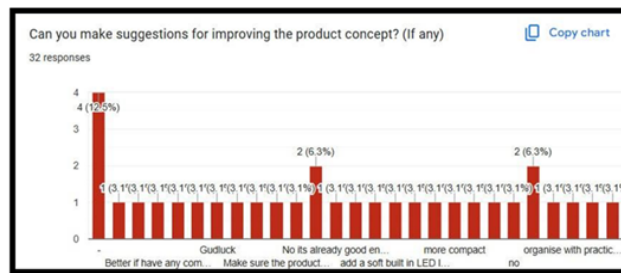


Figure 3.3.5.9. Respondents' Suggestions for Product Improvement

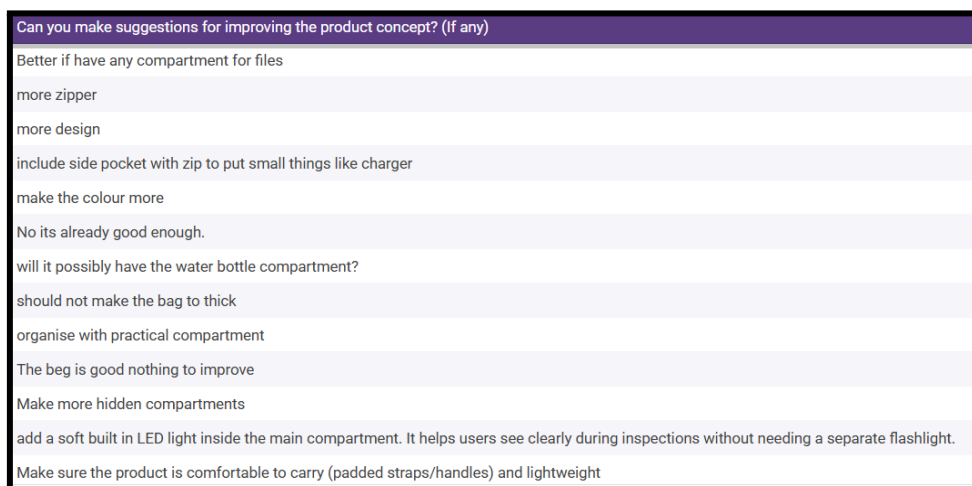


Figure 3.3.5.10 Respondent's recommendations for i-Value Kit Bag

Lastly, according to the questionnaire survey, there is a section that has been provided for respondents to give some recommendations and feedback on the i-Value Kit Bag, which helps the team to finalize the proper

and final design before launching it officially to the market. Therefore, based on the questionnaire survey, 32 respondents provided various suggestions to improve the product performance and quality. So, the above figure shows some feedback and suggestions from the respondents that can help the team to improve the i-Value Kit Bag. Finally, from this feedback, the team has high hopes and confidence that the i-Value Kit Bag product can be relevant and get high market interest from the public. This is because this product provides various benefits to the target market compared to other products from competitors in the market. To conclude, all the respondents have provided beneficial feedback, and this feedback will be filtered by the team again before the official launch in the market.

#### 4.0 CONCLUSION

Based on the New Product Development (NPD) analysis, it can be concluded that the i-Value Kit Bag is both feasible and viable to be commercialized in the market, as the product has shown strong potential to be successful in the market. This is because it has been supported by positive customer feedback, affordable production costs, and a unique and clear advantage over other competing products in the market. Therefore, the i-Value Kit Bag has proven to be able to meet the practical needs of its intended users, especially students, trainee valuers, and professional valuers in the real estate industry, throughout the NPD process, which included research and development, concept testing, prototype design, and test marketing. The concept testing survey's results show a high level of user acceptance as participants praised the product's usefulness, robustness, and ergonomic design. Notably, 84.8% of respondents have expressed their intention to purchase the i-Value Kit Bag while all respondents indicated to recommend the product to others willingly and these findings reflect strong consumer confidence and suggest that the product is well prepared to enter in the market.

From a feasibility perspective, the i-Value Kit Bag is made with affordable and durable materials, such as 600D polyester with polyurethane coating and industrial-grade YKK zippers, which are appropriate for regular usage and Malaysia's tropical climate. Besides, the ergonomic features and a modular storage system installed for the bag will help to improve user safety, comfort, and organisation while conducting inspections. These design factors support the product's suggested selling price of RM100–RM129, which respondents found to be reasonable and acceptable to them, and it will also enhance the product's total value. Nevertheless, in terms of market viability, the i-Value Kit Bag offers a well-balanced combination of usefulness, comfort, and professional appearance, in contrast to traditional tool bags that are frequently heavy, expensive, uncomfortable, or not made for professional inspection jobs. In addition to increasing productivity, this integrated approach helps users in the field project a more professional image.

To conclude, the findings from the NPD study confirm that the i-Value Kit Bag is a market-ready innovation that has a promising potential for long-term sustainability in the market. The practical design, affordable pricing, and features that focus on the user will make it both commercially viable and beneficial to the real estate profession. Because of this, the commercialization of the i-Value Kit Bag is not only achievable but also well aligned with market demand, production capability, and user expectations of the customers.

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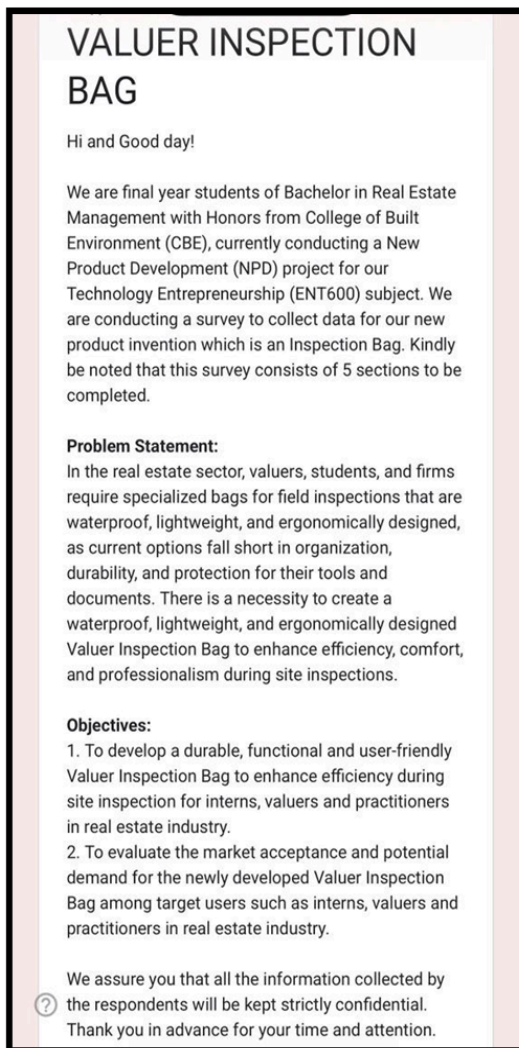
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## 6.0 APPENDICES



**VALUER INSPECTION BAG**

Hi and Good day!

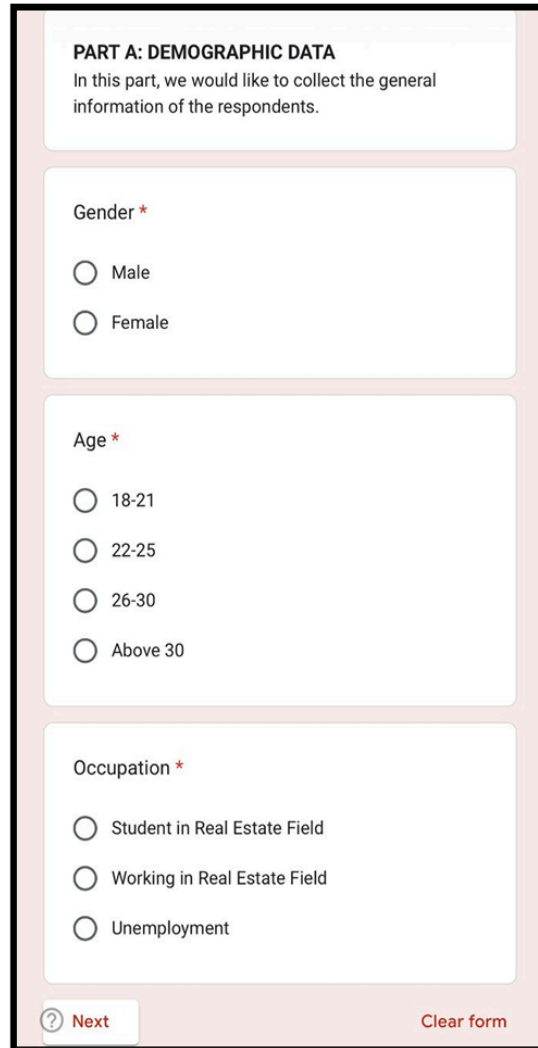
We are final year students of Bachelor in Real Estate Management with Honors from College of Built Environment (CBE), currently conducting a New Product Development (NPD) project for our Technology Entrepreneurship (ENT600) subject. We are conducting a survey to collect data for our new product invention which is an Inspection Bag. Kindly be noted that this survey consists of 5 sections to be completed.

**Problem Statement:**  
In the real estate sector, valuers, students, and firms require specialized bags for field inspections that are waterproof, lightweight, and ergonomically designed, as current options fall short in organization, durability, and protection for their tools and documents. There is a necessity to create a waterproof, lightweight, and ergonomically designed Valuer Inspection Bag to enhance efficiency, comfort, and professionalism during site inspections.

**Objectives:**

1. To develop a durable, functional and user-friendly Valuer Inspection Bag to enhance efficiency during site inspection for interns, valuers and practitioners in real estate industry.
2. To evaluate the market acceptance and potential demand for the newly developed Valuer Inspection Bag among target users such as interns, valuers and practitioners in real estate industry.

? We assure you that all the information collected by the respondents will be kept strictly confidential. Thank you in advance for your time and attention.



**PART A: DEMOGRAPHIC DATA**  
In this part, we would like to collect the general information of the respondents.

**Gender \***

Male  
 Female

**Age \***

18-21  
 22-25  
 26-30  
 Above 30

**Occupation \***

Student in Real Estate Field  
 Working in Real Estate Field  
 Unemployment

? [Next](#) [Clear form](#)

Figure 1. Questionnaire Introduction

Figure 2. Part A of the Demographic Profile

**PART B: PERSONAL LIFESTYLE**

In this part, we would like to know the information on personal lifestyle of the respondents.

Do you use inspection bag in your working life? \*

Yes

No

How often do you use inspection bag while visiting site? \*

1-3 hours

4-6 hours

More than 6 hours

Do you like to carry an inspection bag while in motion? \*

Yes

No

Figure 3. Part B of the Personal Lifestyle

**PART C: PRODUCT DESCRIPTION**

Our product is an extension innovation where we add several new features to the existing inspection bag.

1. The inspection bag has designated metal zipper pull with better quality and oversized surface to improve durability.
2. The design of inspection bag is ergonomic for posture support and applied modular storage system.
3. The material of the bag is 600D Polyester and coating with Polyurethane (PU) for water resistance and UV resistance, which is cost-effective and affordable.

The product design of our new product development:

**ERGONOMIC BAG DESIGN**

The diagram illustrates the ergonomic bag design with three key features highlighted: a designated metal zipper with an oversized surface for durability, modular storage compartments for organization, and a 600D polyester material with a polyurethane (PU) coating for water and UV resistance.

Figure 4. Part C of the Product Description

I am interested that the designated metal zipper pull with oversized surface can improve the durability of the bag. \*

Yes

No

I am interested that the design of an inspection bag is an ergonomic backpack with modular storage system. \*

Yes

No

I am interested that the bag material are water resistance and UV resistance, which can extend the bag's lifespan. \*

Yes

No

Figure 5. Part C of the Product Description

**PART D: PURCHASE INTENT**

In this part, we would like to know whether the respondents are interested in buying our product.

How likely are you to buy this product? \*

Definitely would not buy

1

2

3

4

5

Definitely would buy

Which of these factors is most important to you when you are deciding to purchase this product? \*

Price

Product quality

Product design

Product safety in use

Performance of the product

Figure 6. Part D of the Purchase Intention

Which of these factors is most important to you when you are deciding to purchase this product? \*

Price

Product quality

Product design

Product safety in use

Performance of the product

I will recommend to my colleagues, friends and family about this product. \*

Yes

No

Figure 7. Part D of the Purchase Intention

What would you expect the price of the inspection bag to be? \*

RM80 - RM109

RM110 - RM129

RM130 - RM149

RM150 and above

Other: \_\_\_\_\_

Do you think the price is affordable given the features available? \*

Yes

No

What concerns do you have the most about the product concept? \*

The durability of the product

The longevity of the product

The functionality of the product

The resistance of the product

Other: \_\_\_\_\_

Figure 8. Part E of the Feedback