



## **GRLGO: WOMEN'S SMART RIDE SERVICE**

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## **EXECUTIVE SUMMARY**

This report addresses the persistent safety, accessibility, and trust issues faced by women when using conventional ride-hailing services. Many women experience fear and discomfort when travelling alone, particularly at night, due to risks of harassment, inappropriate behaviour, unfamiliar routes, and inadequate emergency support. Recent cases in Malaysia involving investigations and arrests of e-hailing drivers for harassment further highlight the seriousness of these concerns. In addition, women in semi-urban and rural areas face limited access to safe transportation, while economic constraints restrict affordable commuting options for students, working mothers, and low-income women. These challenges demonstrate the urgent need for a women-focused transportation solution. The objective of this project is to develop GRLGO – Women’s Smart Ride Service, a women-only ride-hailing mobile application that prioritizes safety, trust, and inclusivity. GRLGO refines the existing ride-hailing model through incremental innovation by integrating verified female drivers and advanced smart safety technologies. Key features of the application include real-time ride tracking, SOS emergency functions, AI-based route deviation monitoring, student verification, and ride sharing with trusted contacts. These features are designed to address both the functional and emotional safety needs of women while ensuring ease of use and affordability. To support the development of GRLGO, a market survey was conducted using Google Forms to better understand women’s ride-hailing experiences and safety concerns. A total of 25 female respondents participated in the survey, with the majority aged between 18 and 24 years old and primarily consisting of students. Survey findings revealed that all respondents had experienced uncomfortable or unsafe situations while using existing ride-hailing services, with common concerns including fear of harassment, travelling alone at night, unfamiliar routes, and being matched with male drivers. An overwhelming majority expressed strong interest in a women-only ride-hailing service and rated safety-related features such as female drivers, real-time tracking, SOS buttons, route monitoring, and student verification as very important.

## **1.0 INTRODUCTION**

### **1.1 PROBLEM STATEMENT AND ISSUES**

Women across many regions continue to face serious challenges in accessing safe and reliable transportation with conventional ride-hailing services often failing to address gender-specific concerns. Many women reports feeling unsafe when travelling alone, particularly at night, due to risks of harassment, exploitation or inadequate emergency support. Global reports highlight sexual harassment as a persistent problem in the ride-hailing industry (Astro Awani, 2021). Recent cases in Malaysia such as investigations and arrest of e-hailing drivers for alleged harassment of teenage passengers in Kuching and Ampang underscore the severity of the issue (Free Malaysia Today, 2025; The Vibes, 2025). Legal proceedings have also been documented in official portal reflecting the seriousness of such offenses (Baga, 2024).

Furthermore, organizations like the Women's Aid Organization, in collaboration with law enforcement and ride-hailing companies, have emphasized that safety in the e-hailing sector remains a critical concern (Malay Mail, 2024). Accessibility is further limited for women in semi-urban or rural areas and cultural barriers in more conservative societies restrict mobility when travelling with male drivers. Economic constraints add another layer of difficulty, as high ride costs can exclude students, working mother and low-income women form safe commuting options. These issues collectively highlight the urgent need for a dedicated solution. GRLGO – Women's Smart Ride Service seeks to bridge this gap by offering a women-centric platform that prioritizes safety, trust and inclusivity through verified female drivers, smart technology and community-based support systems, ultimately empowering women to travel freely and confidently.

### **1.2 OBJECTIVES**

- i. To identify and analyse the key safety and accessibility issues faced by women when using conventional ride-hailing services.
- ii. To evaluate women's perceptions, experiences and safety needs in ride-hailing services through market survey and concept testing.
- iii. To design safety focused product features that enhance trust, protection and usability for female passengers using smart technology solutions.

### **1.3 METHODOLOGY**

To better understand the safety concerns experienced by women when using ride-hailing services, a survey was conducted using Google Form to collect the data. The survey was designed to gather insights from female respondents who frequently rely on services such as Grab and Maxim for their daily or occasional transportation needs. The target respondents included university students, working adults and women who often commute alone. These respondents were selected because they represent the primary group affected by safety related issues that the GRLGO application aims to address.

The survey was distributed online through various social media platforms including WhatsApp, Telegram, Instagram and Threads. These platforms were chosen as they allow the survey to reach a wide range of female users across different locations efficiently. The data collection was conducted for 4 days from 25 December 2025 to 28 December 2025 allowing sufficient time for participant to respond based on their personal experiences. Conducting the survey online ensured that the data collection process was convenient, accessible and time efficient for respondents. This approach also helped ensure that the data collected reflected recent and relevant safety concerns encountered during ride hailing journeys.

The survey consisted of questions related to the frequency of ride hailing usage, respondents perceived level of safety, previous negative experiences and expectations toward a woman only ride hailing service. In addition, respondents were asked to identify features they believed would enhance their sense of security such as female drivers, real time ride tracking, SOS emergency functions and route monitoring. These responses provided valuable insights into the common challenges faced by female passengers particularly during nighttime travel or situations involving uncomfortable interactions with drivers.

Overall, Google Forms served as an effective and reliable method for collecting meaningful data for this study. The survey findings indicated that many women continue to feel unsafe when using existing ride hailing services, highlighting the need for a specialized platform such as GRLGO. The collected data directly informed us of the proposed features and design of the application, ensuring that the solution aligns with the real needs and expectations of the target users.

## **1.4 LIMITATIONS**

GRLGO – Women’s Smart Ride Service is a new way to make transportation safer for women, but it may not be able to be fully developed and used at first because of some limitations. A major difficulty is the lack of female drivers, which might reduce service coverage and result in longer wait times, particularly in rural or high demand locations. The platform also requires significant investment to provide advanced safety features like SOS connectivity with local authorities, AI route deviation alarms and real time tracking systems, which makes initial setup and upkeep expensive. Its stability is primarily reliant on strong internet and GPS connectivity; hence the app’s functionalities may perform badly in areas with poor network coverage. User uptake may also be steady as passengers shift from traditional ride-hailing platforms to a women-only service model. Additionally, regulatory permits, data protection regulations, and coordination with law enforcement organizations may cause delays or operating limits. Despite its improved safety tools, the system cannot completely remove dangers, and cultural or societal barriers in conservative groups could limit both driver recruitment and user involvement.

## **2.0 NEW PRODUCT DEVELOPMENT**

### **2.1 INTRODUCTION**

New Product Development (NPD) is a crucial process that helps businesses turn creative ideas into marketable products that satisfy consumer demands and give them a competitive edge. Businesses must constantly innovate their products in order to stay relevant in a time of rapid technological advancement, changing consumer expectations and growing concerns about personal safety. The NPD process offers an organized method for identifying market gaps, coming up with concepts, creating prototypes and enhancing solutions that eventually benefit the business and its user.

The creation of GRLGO, the Women’s Smart Ride Service, is a prime example of the significance of NPD in meeting an expanding social need, which is transportation that is dependable, safe and focused on women. There is an apparent opportunity to present a solution created especially for women given the growing awareness of women’s safety in public areas and the problems of current ride-hailing services. GRLGO creates a safe and empowering

mobility experience by using advanced digital technology, user-friendly mobile features and a driver-and-passengers ecosystem exclusively for women. Through the NPD process, the idea for GRLGO develops into a fully functional service offering with safety-enhancing features like real-time tracking, emergency alerts, identity verification and a reliable community of certified female drivers.

By using a structured NPD approach, GRLGO is a purposeful innovation with significant social impact rather than simply a new service. It illustrates how businesses can use technology and customer-centric thinking to develop solutions that address practical problems. Thus, GRLGO's successful development and implementation will give women more mobility independence, boost their sense of security and support a more diverse transportation ecosystem.

## **2.2 CLASSIFICATION OF NPD**

In New Product Development (NDP), products and services are generally classified into two categories which were radical innovations and incremental innovations. Radical innovations refer to completely new products or services that create new markets or significantly change consumer behaviors. They often “new-to-the-world” inventions such as the first smartphone or the introduction of ride hailing apps themselves. Radical innovations carry higher risks but can also deliver transformative impact by reshaping industries.

On the other hand, incremental innovations involve improvements, modifications or repositioning of existing products and services. These changes may include functional enhancements, cost reductions or targeting new market segments. Incremental innovation does not reinvent the product entirely but adds value by making it safer, more efficient or more appealing to specific consumer groups. This approach is often less risky and allows businesses to remain competitive by continuously adapting to consumer expectations and market trends.

For GRLGO – Women's Smart Ride Service, the classification falls under incremental innovation. The service already exists as a woman ride-hailing platform, but innovation is achieved by refining and enhancing its current features. Examples include strengthening safety mechanisms, introducing smarter verification systems and repositioning the service to cater to different segments of women riders such as students, professionals or mothers. These



improvements build upon the established ride hailing model without creating an entirely new market, but they add significant value by addressing the unique needs of women passengers.

In conclusion, GRLGO's innovation strategy is best described as incremental as it enhances an existing service model with targeted improvements that prioritize safety, trust and inclusivity. This ensures the platform remains competitive and relevant while empowering women to travel freely and confidently.

## 2.3 CUSTOMER TREND CANVAS (CTC)

### CONSUMER TREND CANVAS

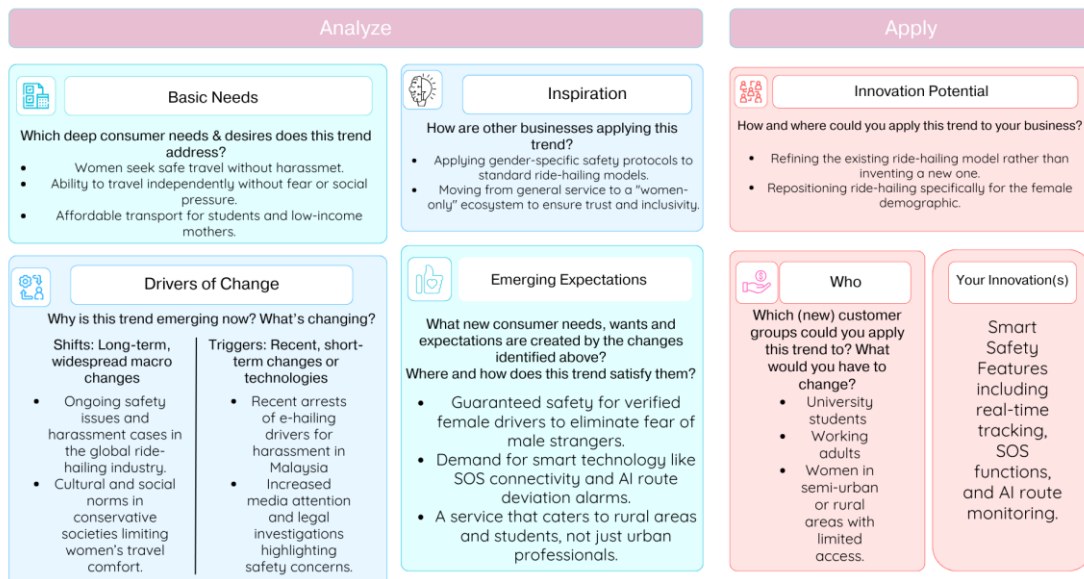


Figure 2.1 Consumer Trend Canvas

Based on the Customer Trend Canvas (CTC), the development of GRLGO – Women's Smart Ride Service is driven by a clear understanding of women's basic transportation needs, particularly the need for safety, independence, and affordability. The analysis shows that many women desire the freedom to travel independently without fear of harassment, exploitation, or social discomfort. In the current social environment, where safety concerns in conventional ride-hailing services remain prominent, GRLGO emerges as a relevant and suitable solution. The service is designed to be empowering, secure, and

inclusive, directly addressing deep consumer needs through a user-friendly platform that prioritizes protection, trust, and peace of mind.

The CTC also highlights key drivers of change, including recent harassment cases and arrests involving e-hailing drivers in Malaysia, increasing media attention, and growing awareness of women's safety issues. These shifts, combined with rapid technological advancement, have shaped emerging customer expectations for smarter and more reliable safety solutions. Consumers now expect guaranteed protection, transparent ride monitoring, and seamless integration of smart technologies. In response, GRLGO incorporates verified female drivers, real-time tracking, SOS functions, and AI-based route monitoring to eliminate fear associated with unfamiliar male drivers and unexpected route deviations.

Furthermore, the target users identified in the CTC include university students, working women, and women in semi-urban or rural areas who face limited access to safe transportation. To meet the needs of these groups, GRLGO focuses on accessibility, affordability, and coverage while maintaining strong safety standards. From an innovation perspective, GRLGO represents an incremental innovation, refining and repositioning the existing ride-hailing model rather than creating an entirely new one. By applying smart safety features within a women-only ecosystem, GRLGO delivers a secure and trustworthy mobility experience that aligns with evolving consumer trends and expectations.

### **2.3.1 IDEA GENERATION**

The most challenging aspect of idea generation is identifying a solution that is both innovative and practical while addressing real customer problems. Rather than creating an entirely new service model, improving and refining an existing ride-hailing platform was considered a more feasible and effective approach. This strategy allows the product to build upon a familiar system while introducing targeted improvements that directly respond to users' unmet needs. In recent years, increasing reports of harassment, safety concerns, and lack of trust in conventional ride-hailing services have raised awareness of women's vulnerability during travel, particularly when travelling alone or at night.

These concerns have become more prominent in Malaysia following several reported cases involving e-hailing drivers. As a result, women are increasingly seeking transportation options that prioritize safety, comfort, and gender sensitivity. Based on these observations, the idea of GRLGO – Women's Smart Ride Service was developed. GRLGO is designed as a women-only ride-hailing application that integrates verified female drivers and smart safety technologies such as real-time ride tracking, SOS emergency functions, and route deviation alerts. The key focus of this idea is to provide women with a safer, more reliable, and empowering travel experience without the fear and anxiety commonly associated with existing platforms.

### **2.3.2 IDEA SCREENING**

Based on the idea generation stage, the decision to develop GRLGO was made after evaluating its suitability in meeting market demand and customer expectations.

#### **i. New experience**

GRLGO offers a new and differentiated experience by providing a women-only ride-hailing ecosystem. Unlike conventional platforms, GRLGO focuses specifically on women's safety and comfort. Survey findings indicate strong interest in a female only driver model, particularly among students and working women, suggesting that GRLGO delivers a unique and relevant user experience in the Malaysia market.

#### **ii. Safety and Convenient**

The service is designed to offer both safety and convenience. Key features such as verified female drivers, SOS emergency buttons, real-time tracking, and route monitoring are embedded directly into the application. These features reduce fear during travel and provide users with greater control and reassurance throughout their journey.

#### **iii. Easy to use**

Although GRLGO introduces advanced safety technologies, the application is designed to be simple and intuitive. The interface is user-friendly and suitable for users to

different age groups and digital literacy levels. From ride booking to emergency access, all functions are easily accessible, ensuring smooth and stress-free usage.

#### iv. Time-saving and Reliable

GRLGO allows users to request rides quickly while minimizing delays caused by safety-related uncertainties. The use of verified profiles and smart monitoring reduces the need for manual checks and follow-ups, resulting in a more efficient and reliable ride-hailing experience, particularly during urgent or late-night travel.

### **2.3.3 MARKET SURVEY**

A market survey was conducted to analyze user needs, safety concerns, and acceptance of a women-only ride-hailing service. The purpose of this survey was to understand women's travel behaviour, perceived safety when using existing platforms, and expectations for a safer alternative. The survey also helped evaluate the market potential and feasibility of GRLGO. The survey was conducted using Google Forms and distributed online through social media platforms such as WhatsApp and Telegram. A total of 25 female respondents participated in the survey, the majority of whom were aged between 18 and 24 years old. Most respondents were students, followed by working women. This group was selected as the primary users of ride-hailing services and are most affected by safety-related concerns.

Based on the survey results, many respondents indicated that they had experienced uncomfortable or unsafe situations when using conventional ride-hailing services. Common concerns included fear of harassment, travelling alone at night, unfamiliar routes, and being matched with male drivers. A significant majority expressed strong interest in using a women-only ride-hailing service such as GRLGO. Other than that, respondents rated safety-related features such as female drivers, real-time ride tracking, SOS emergency buttons, route monitoring, and a student verification as very important. These findings confirm that there is a strong demand for a ride-hailing service that prioritizes women's safety while remaining affordable and easy to use. The survey results were used to refine the design and features of GRLGO to better align with user expectations.

## **2.4 NEW PRODUCT DEVELOPMENT PROCESS**

### **2.4.1 RESEARCH & DEVELOPMENT**

During the Research and Development stage for GRLGO, current technologies in ride-hailing and women's ability services were examined to identify areas where improvement could be made. Both discontinued and existing platforms were discussed during R&D stage. Mainstream services such as Uber and Grab were analyzed to understand their strengths and limitations. In addition, women-focused initiatives like SheTaxi and Riding Pink were reviewed for their unique approaches to safety and inclusivity. The goal was to understand the factors that led some ride-hailing services to succeed or fail. This analysis helped identify the strengths and weaknesses of both mainstream and women-focused platforms. From these insights, GRLGO aimed to apply the most effective aspects to create a simple, affordable and reliable women's smart ride service that could be used with confidence everyday.

The use of SheTaxi was benchmarked by GRLGO's team, which emphasized verified female drivers and community trust. While SheTaxi offered strong safety assurances, its limited scalability and regional focus restricted widespread adoption. As a result, GRLGO was designed to retain the core practical functions such as verified drivers, SOS alerts and live GPS tracking while ensuring affordability and broader accessibility. Moreover, Grab's integration of real-time tracking and Uber's AI-based risk detection systems were considered for enhancing hazard prevention and rapid response. Recording passenger movement and location through GPS proved to be an informative way to evaluate user behavior and safety technology adoption.

In the past, ride-hailing platforms were designed mainly for convenience and cost efficiency, focusing on navigation and driver ratings rather than safety. These traditional systems did not include specialized features to detect or respond to danger, leaving women vulnerable to harassment and exploitation (Hu & Yang, 2024).

Recent developments in smart mobility technology have improved the design of ride-hailing services. New models now include sensors, AI-based alerts and IoT-enabled monitoring that can track driver's behavior, passenger location and risk factor in real time. According to Sheilah et al. (2023), women's perception of safety strongly influences their

willingness to use ride-hailing particularly in high-risk urban environments. Similarly, Adilah Shamsul Harumain et al. (2024) found that inadequate safety measures in public transport limit women's mobility in Malaysia, highlighting the need for platforms that integrate stronger protections. Compared to other applications, GRLGO not only provides mobility. It also acts as an intelligent safety system to prevent harassment and respond quickly to danger. Through these features, GRLGO empowers women to travel freely with greater confidence.

#### **2.4.2 PRODUCT DESIGN AND FEATURES**

The GRLGO application is designed as a mobile based woman only ride hailing platform with a strong emphasis on safety, usability and visual appeal. The product is delivered in the form of a smartphone application, making it easily accessible to users who rely on mobile devices for daily transportation needs. The design of GRLGO focuses on both functional efficiency and user comfort, ensuring that the application not only performs its intended tasks effectively but also provides a sense of trust and reassurance to its users.

From a physical design and system architecture perspective, GLRGO is structured around a clear and logical screen flow that guides users seamlessly from registration to ride completion. The application consists of key functional modules such as user authentication, identity verification, student verification, ride request, ride tracking, safety monitoring, payment handling and user profile management. Each module is interconnected to ensure smooth data flow and continuity throughout the user journey. For example, once a user completes phone number or email verification, the system directs them to identify verification before allowing access to ride booking features. This layered architecture ensures that safety checks are embedded within the core functionality of the application rather than treated as optional features.

In terms of artistic design and aesthetics, GRLGO adopts a modern, clean and feminine visual style that reflects its target market. The application uses a pink and peach gradient color scheme to create a warm, friendly and approachable interface while maintaining a professional appearance. Rounded cards, soft shadows and smooth spacing are applied consistently across all screens to enhance readability and visual harmony. The use of a minimal bottom navigation bar with clearly labelled icons such as Home, Finance,

Activity and Profile allows users to navigate the application intuitively without confusion. This aesthetic approach is intentionally chosen to make users feel safe, comfortable and confident when interacting with the app, especially during situations that may already feel stressful such as traveling alone at night.

The design of GRLGO also incorporates user-centered parameters to meet market needs and expectations. Key safety features such as female only driver matching, real time ride tracking, SOS emergency buttons, ride sharing with trusted contacts and in ride support are integrated directly into the interface for quick access. The inclusion of student verification further enhances safety by enabling additional monitoring and protection for student users. These parameters address common safety concerns expressed by female ride hailing users including fear of harassment, lack of transparency during rides and delayed emergency responses.

Additionally, GRLGO is designed to be simple and efficient to accommodate users with varying levels of digital literacy. Buttons are large and clearly labelled, input fields are easy to understand, and each screen includes clear continuation actions to guide users through the process step by step. This reduces user errors and enhances overall satisfaction. By combining a structured system design, visually appealing aesthetics and safety focused features, GRLGO successfully aligns its product design with the practical and emotional needs of its target market.

### **2.4.3 CONCEPT TESTING**

Concept testing is a type of research method to identify the idea, services, opinion and the potential success for the new service before it is launched. The objective of concept testing is to collect feedback from target customers to know their references, ideas and reactions to the new product. This feedback would help to improve the idea based on the real feedback before development. It will also increase the product market to achieve customer satisfaction. In concept testing, the concept typically refers to an early product, service or marketing concept design, perhaps in the form of a visual representation, written description or actual prototype. The procedure is defining the concept, creating a clear and concise presentation of the product or idea to be tested. This procedure will show the services' features, advantages and overall positioning in the market. After clarifying the concept, we need to identify the target market which is the customer who will choose the services.

We have conducted a survey in the form of a questionnaire through a google form. There are many kinds of responses from the 25 respondents. The feedback will be explained from the figure below.



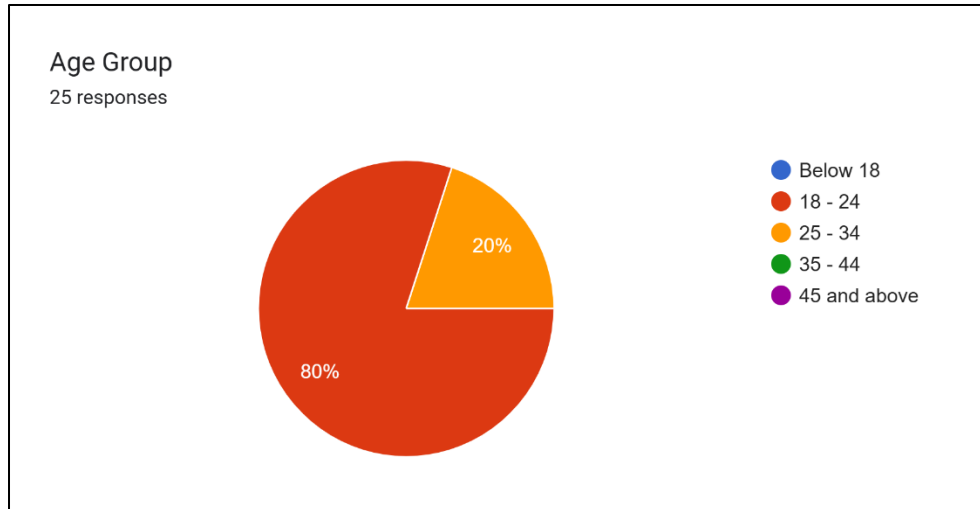


Figure 2.2 Respondents' Age

Based on Figure 2.2, the respondents are mostly in the age between 18 to 24 years old which are 20 respondents (80%) and the fewest respondents aged between 25 to 34 years old are 5 respondents (20%).

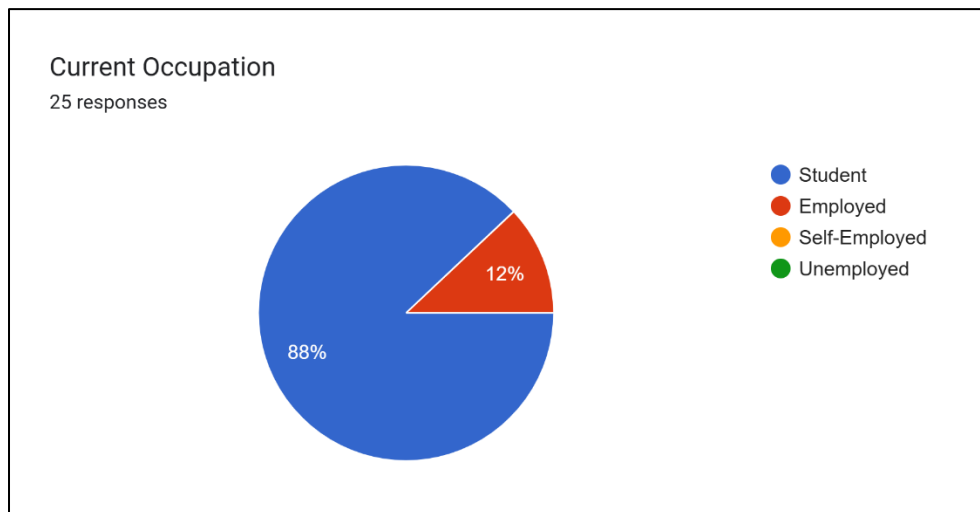


Figure 2.3 Respondents' Occupation

In the questionnaire, the occupation will be divided into four options which are student, employed, self-employed and unemployed. The most respondents are students, which are 22 respondents (88%) and followed by employed is only 3 respondents (12%).

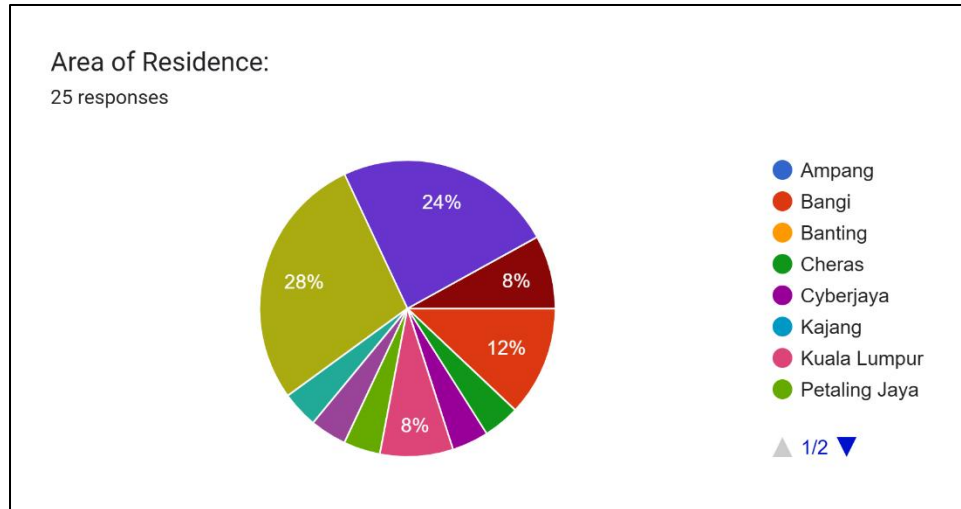


Figure 2.4 Respondents' Residence

Based on figure above, 7 respondents (28%) reside in Serdang followed by 6 respondents (24%) from Shah Alam. 3 respondents (12%) are from Bangi meanwhile 2 respondents (8%) from Seremban and Kuala Lumpur. The fewest respondents are from Seri Kembangan, Putrajaya, Petaling Jaya, Cyberjaya and Cheras with only one respondent (4%) each.

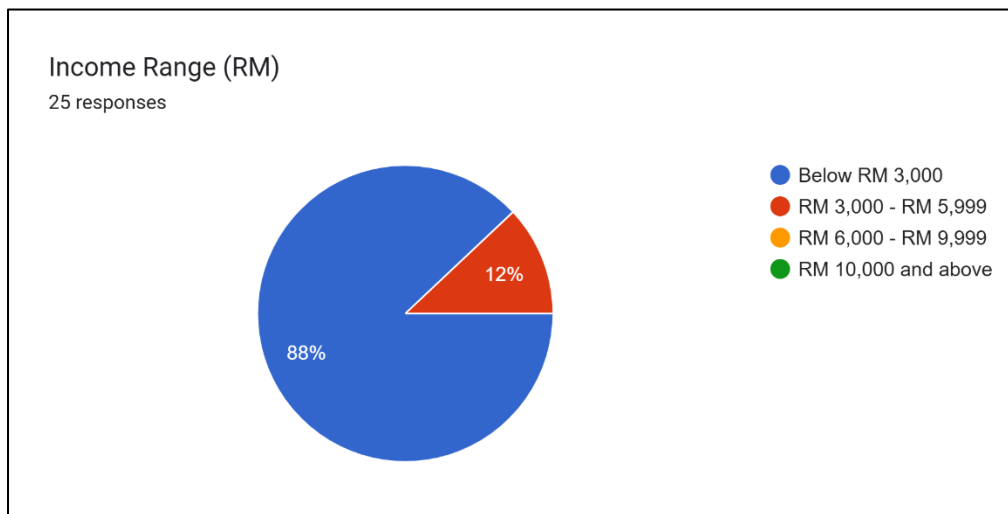


Figure 2.5 Respondents' Income

Figure 2.5 illustrates the respondents' income among 25 respondents. The majority, comprising 22 respondents (88%), indicate that their earnings are below RM3,000 followed by 3 respondents (12%) that have income between RM3,000 and RM5,999.

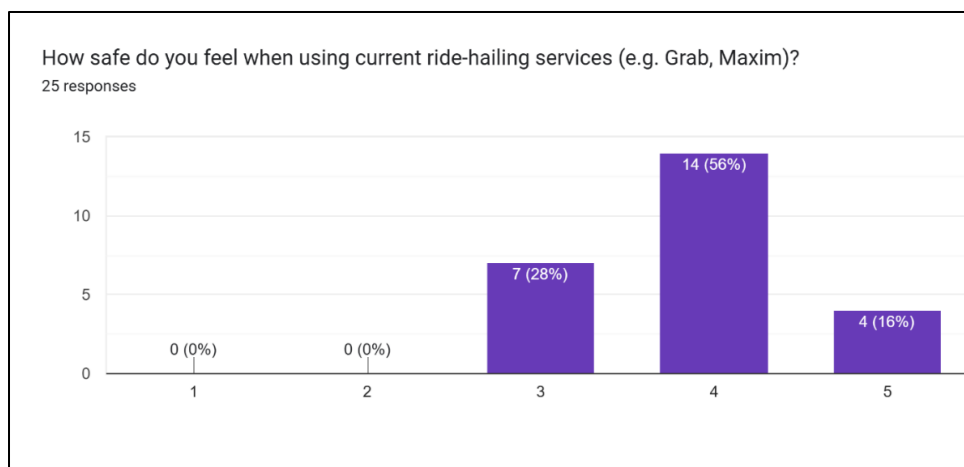


Figure 2.6 Respondent' Perceived Safety When Using Current Ride-Hailing Services

Figure 2.6 presents the perceived safety levels of respondents when using current ride-hailing services. Most respondents (56%) rated their experience as a 4, indicating a generally positive sense of safety. Additionally, 19% selected the highest rating, reflecting strong confidence in the safety of these services. Meanwhile, 28% chose a neutral rating of 3, suggesting moderate.

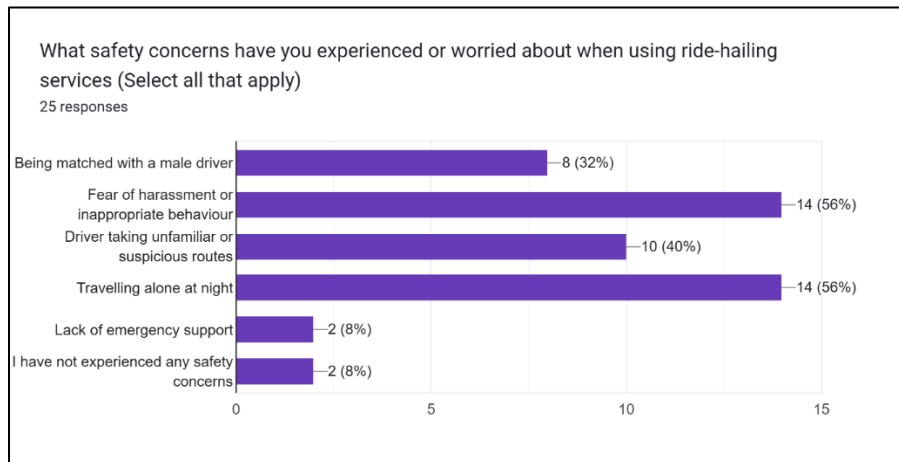


Figure 2.7 Safety Concerns Experienced by Ride-Hailing Users

Figure 2.7 highlights the safety concerns reported by 25 respondents when using ride-hailing services. The most frequently cited issues were fear of harassment or inappropriate behavior and travelling alone at night, each selected by 14 respondents (56%). These concerns reflect heightened vulnerability during solo travel and interactions with drivers. Additionally, 40% of respondents expressed worry about drivers taking unfamiliar

or suspicious routes, while 32% were concerned about being matched with a male driver, suggesting gender-based apprehensions. Less commonly reported were lack of emergency support and no safety concerns, each noted by only 2 respondents (8%).

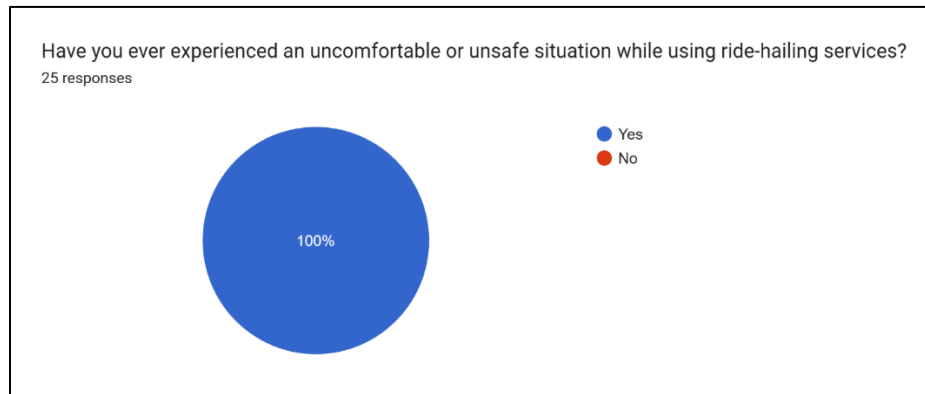


Figure 2.8 Respondents' Experience of Uncomfortable or Unsafe Situations During Ride-Hailing Use

Figure 2.8 reveals that 25 respondents (100%) indicate that they have experienced an uncomfortable or unsafe situation while using ride-hailing services. This complete agreement underscores a critical concern regarding user safety and comfort within current platforms. The absence of any “No” responses suggests that such experiences are not isolated incidents but rather a shared reality among users.

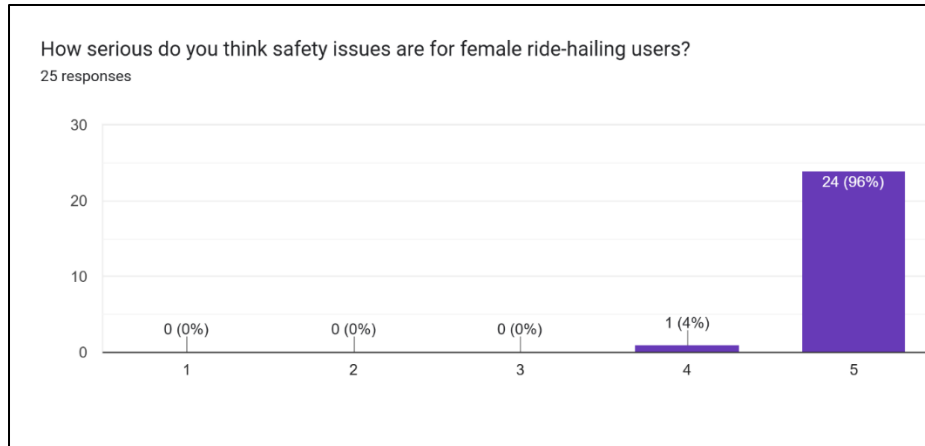


Figure 2.9 Perceived Seriousness of Safety Issues for Female Ride-Hailing Users

Based on Figure 2.9, an overwhelming 96% rated the issue at the highest level of seriousness (5), while only 4% selected level 4. No respondents rated the issue as neutral or less serious (levels 1 to 3), indicating that safety for women in ride-hailing contexts is widely recognized as a critical concern.

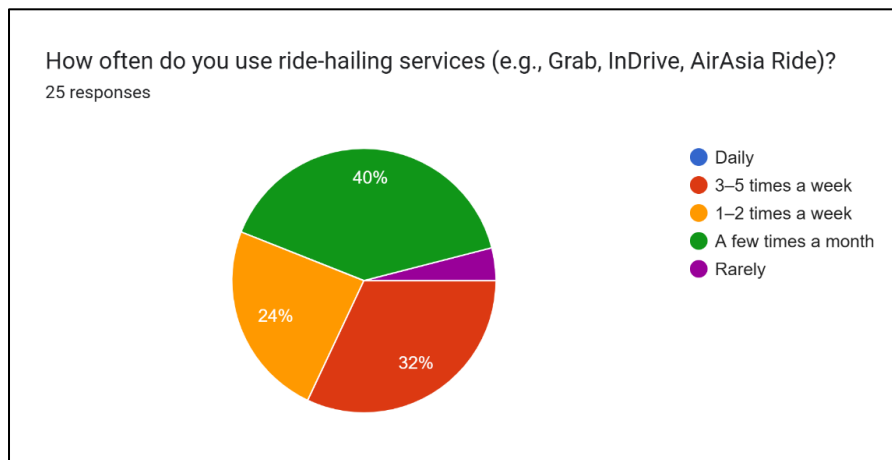


Figure 2.10 Frequency of Ride-Hailing Service Usage Among Respondents

Based on Figure 2.10, the most common usage pattern is “a few times a month,” reported by 40% of respondents, followed by 1–2 times a week (32%) and 3–5 times a week (24%). Only 4% indicated that they rarely use these services, and none reported daily usage. These findings suggest that while ride-hailing is a regular part of mobility for many, it is not yet a daily necessity for this group.

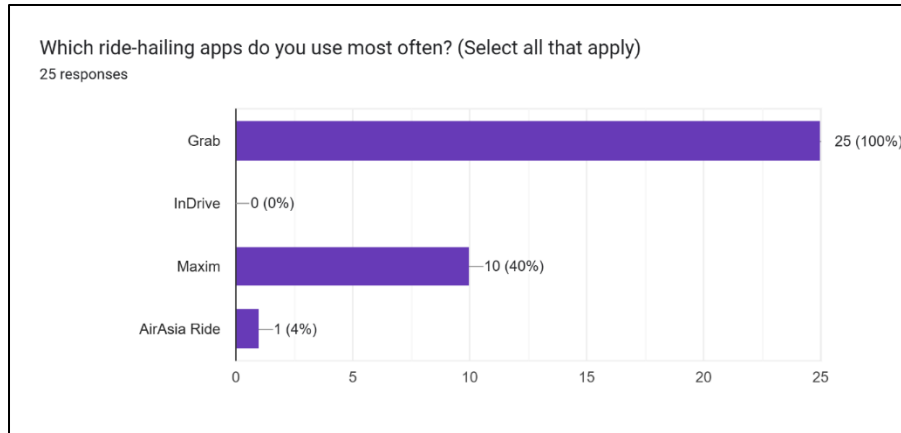


Figure 2.11 Most Frequently Used Ride-Hailing Apps Among Respondents

Figure 2.11 shows that Grab is the dominant ride-hailing app among respondents, with 100% indicating regular use. Maxim follows at 40%, while AirAsia Ride is used by only 4. This pattern suggests that Grab holds a strong market presence and user trust, likely due to its established brand, service coverage, and user familiarity.

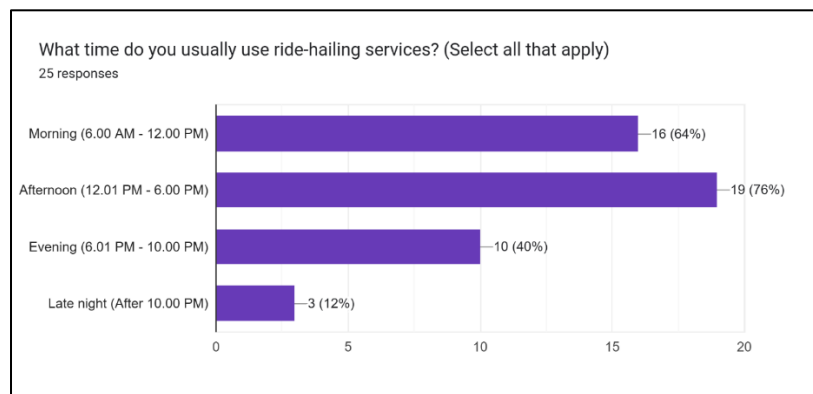


Figure 2.12 Preferred Time of Day for Using Ride-Hailing Services

Figure 2.12 illustrates the time periods during which respondents most commonly use ride-hailing services. The afternoon period (12.01 PM – 6.00 PM) is the most preferred, selected by 76% of respondents, followed by morning (6.00 AM – 12.00 PM) at 64%. Usage drops in the evening (6.01 PM – 10.00 PM) with 40% and is least common during late night hours (after 10.00 PM), chosen by only 12%. These patterns suggest that ride-hailing services are primarily used during daytime hours, likely for commuting, errands, or academic and work-related travel. The lower usage at night may reflect safety concerns,

limited-service availability, or personal preferences for alternative transport methods during those hours.

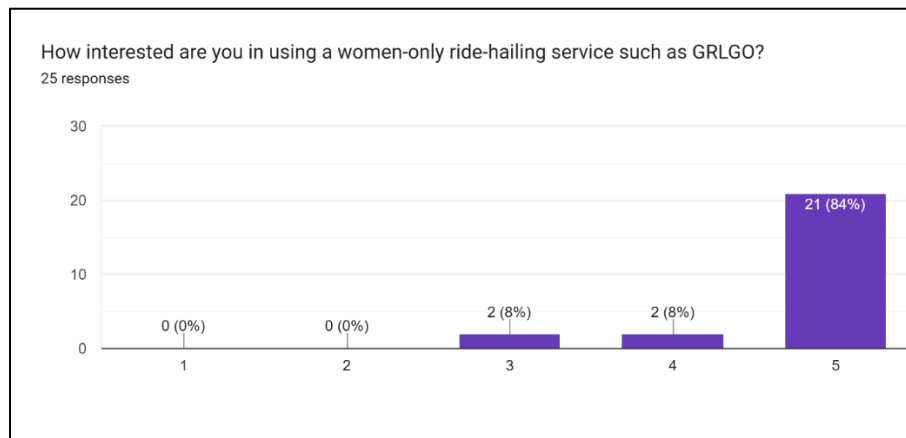


Figure 2.13 Respondents' Interest in Using a Women-Only Ride-Hailing Service

Figure 2.13 demonstrates a strong interest among respondents in using a women-only ride-hailing service such as GRLGO. A significant 84% rated their interest at the highest level (5), while an additional 16% selected moderate interest levels (3 and 4). This result reflects a clear demand for safer, more comfortable transport options tailored to women's needs.

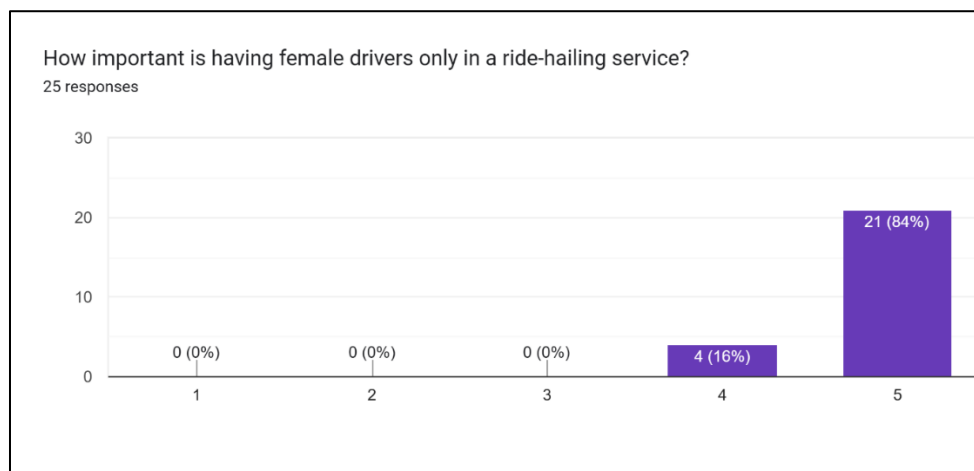


Figure 2.14 Importance of Having Female Drivers in Ride-Hailing Services

Based on Figure 2.14, dominant 84% rated this feature as very important (5), while 16% selected level 4, indicating moderate importance. No respondents rated it as neutral or unimportant (levels 1 to 3), reflecting a strong collective preference for gender-specific

driver options. This result underscores the perceived value of female-only driver models in enhancing comfort, trust, and safety particularly for women passengers.

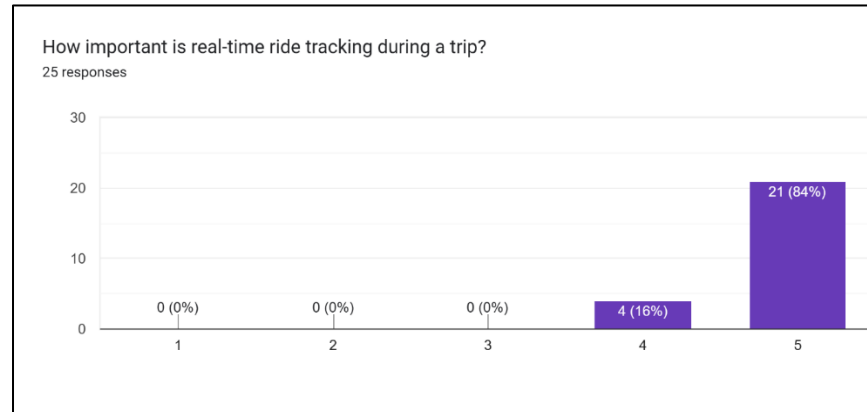


Figure 2.15 Importance of Real-Time Ride Tracking During Trips

Based on Figure 2.15, a significant 84% rated this feature as very important (5), while 16% selected level 4, indicating moderate importance. This result reinforces the need for ride-hailing platforms to prioritize live location sharing, route monitoring to enhance user confidence and security throughout the journey.

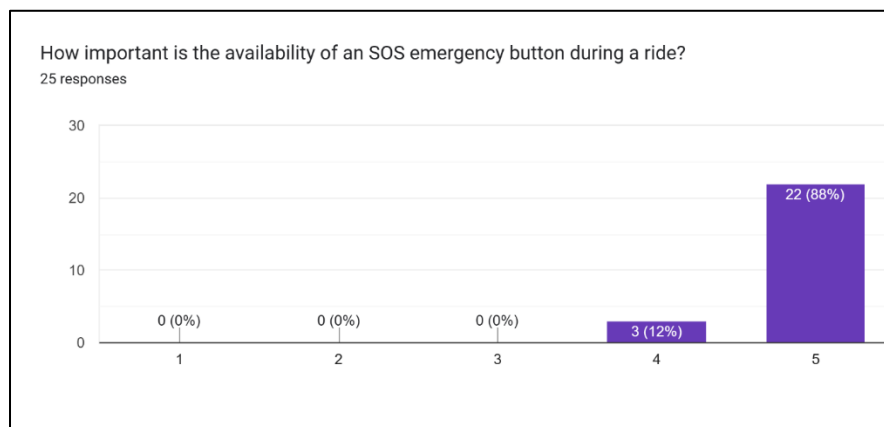


Figure 2.16 Importance of SOS Emergency Button Availability During Ride-Hailing Trips

Figure 2.16 reveals a strong consensus among respondents regarding the importance of having an SOS emergency button available during ride-hailing trips. A significant 88% rated this feature as very important (5), while 12% selected level 4,



indicating moderate importance. This overwhelming support highlights the critical role of emergency response features in enhancing user safety and trust.

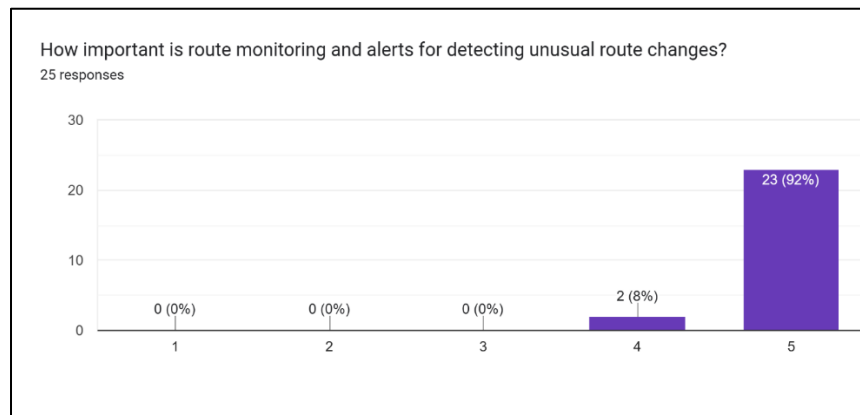


Figure 2.17 Importance of Route Monitoring and Alerts for Detecting Unusual Route Changes

Figure 2.17 highlights that a striking 92% rated this feature as very important (5), while the remaining 8% selected level 4, indicating moderate importance. These results suggest that users highly value proactive systems that can detect and respond to suspicious route deviations in ride-hailing platforms.

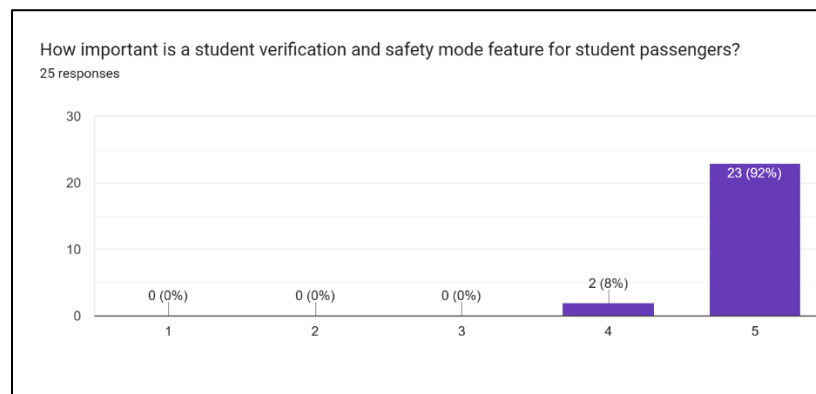


Figure 2.18 Importance of Student Verification and Safety Mode Features in Ride-Hailing Services

Figure 2.18 reveals a strong consensus among respondents regarding the importance of student-focused safety features in ride-hailing platforms. A dominant 92% rated the inclusion of student verification and safety mode as very important (5), while the remaining 8% selected level 4, indicating moderate importance. This result underscores the

need for ride-hailing services to incorporate identity verification, trusted driver assignment, and context-sensitive safety protocols to better protect student users, particularly when commuting alone.

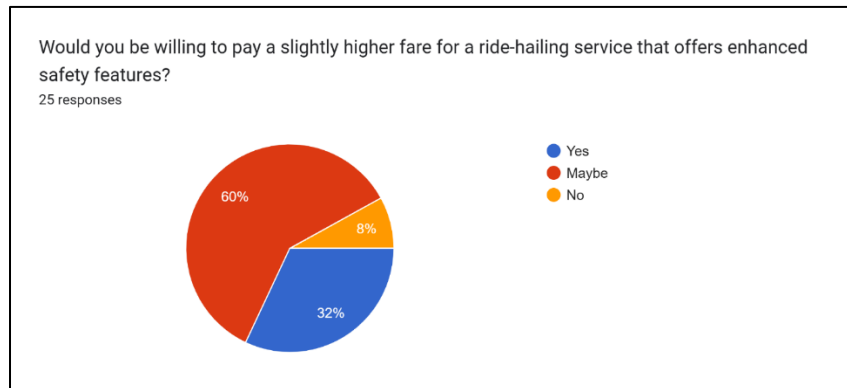


Figure 2.19 Willingness to Pay Higher Fare for Enhanced Safety Features in Ride-Hailing Services

Based on Figure 2.19 explored the majority (60%) selected “Maybe,” indicating uncertainty or conditional openness depending on the nature or effectiveness of the safety enhancements. Meanwhile, 32% responded “Yes,” showing clear willingness to invest in safer mobility options. Only 8% declined the idea entirely. These findings suggest that there is interest in safety-focused upgrades, user acceptance may hinge on transparent communication of benefits, affordability and trust in the platform’s safety commitments.

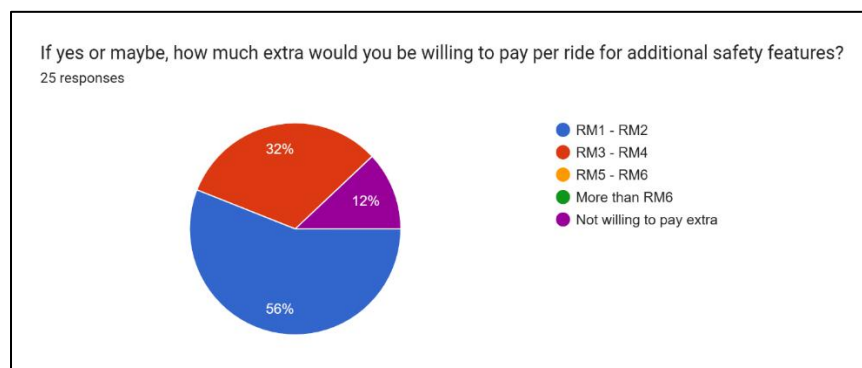


Figure 2.20 Willingness to Pay Extra for Safety Features in Ride-Hailing Services

Figure 2.20 highlights how much respondents are willing to pay per ride for enhanced safety features in ride-hailing services. The majority, 56% indicated a willingness to pay RM1–RM2, suggesting a preference for affordable safety upgrades. Another 32%

were open to paying RM3–RM4, while 12% stated they were not willing to pay extra. These insights suggest that safety enhancements should be priced modestly to encourage broader adoption and accessibility.

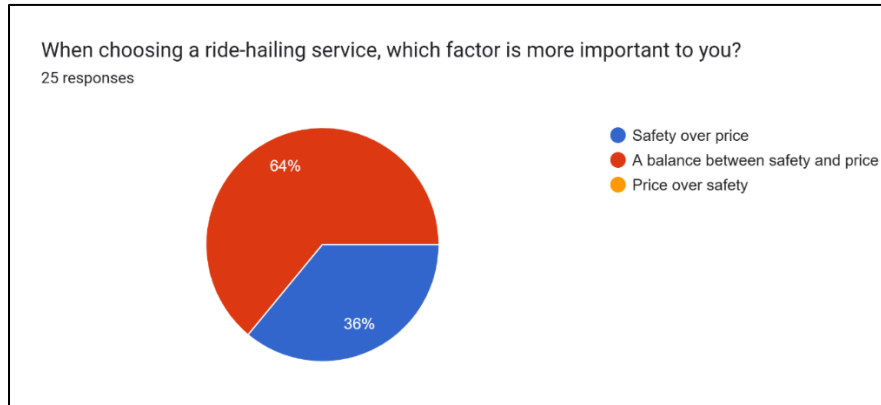


Figure 2.21 Key Decision Factor When Choosing a Ride-Hailing Service

Figure 2.21 reveals that most respondents (64%) prioritize a balance between safety and price when selecting a ride-hailing service. Meanwhile, 36% place safety above price, indicating a strong concern for personal security. These insights emphasize the importance of designing ride-hailing platforms that offer both affordability and safety features.

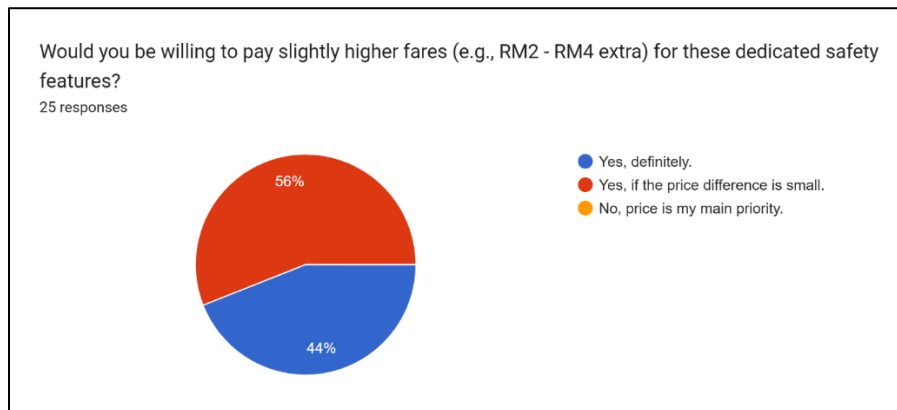


Figure 2.22 Willingness to Pay Slightly Higher Fares for Dedicated Safety Features in Ride-Hailing Services

Figure 2.22 shows a majority of 56% expressed conditional willingness, stating they would pay more if the price difference is small, while 44% responded “Yes, definitely,” showing firm support for safety-focused fare adjustments. Importantly, none of the respondents prioritized price over safety. These findings suggest that while cost still

matters to users, many are open to paying a little more especially when safety features are clearly explained and genuinely make them feel more secure.

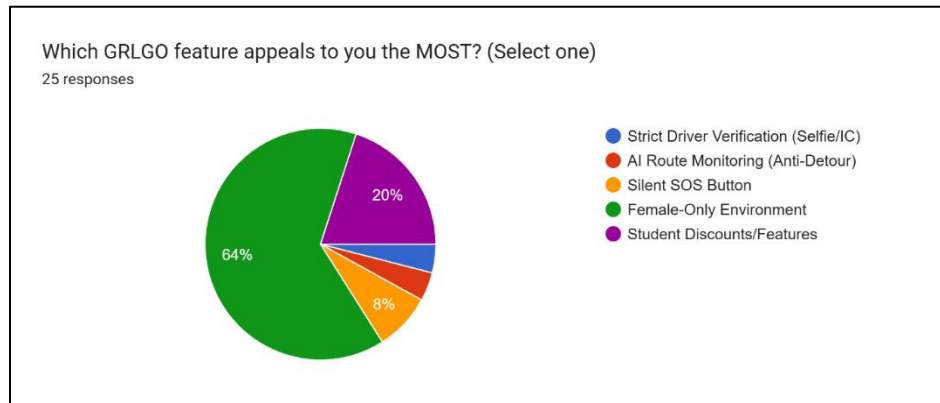


Figure 2.23 Most Appealing GRLGO Feature According to Respondents

Based on Figure 2.23, majority of the respondent 64%, selected the Female-Only Environment, indicating a strong preference for gender-exclusive spaces that promote comfort and safety. Student Discounts/Features followed with 20%, reflecting interest in affordability and student-friendly options. Smaller portions of respondents were drawn to the Silent SOS Button (8%), AI Route Monitoring, and Strict Driver Verification, though these latter two received minimal attention. These results suggest that while technical safety features are valued, the emotional assurance of a women-only environment remains the most compelling factor for potential users.

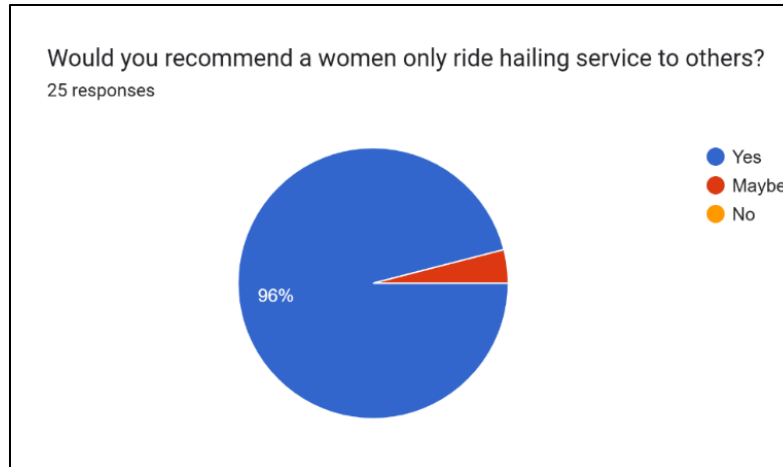


Figure 2.24 Willingness to Recommend a Women-Only Ride-Hailing Service

Figure 2.24 reveals overwhelming support for women-only ride-hailing services among respondents. A striking 96% indicated they would recommend such a service to others, while only a small fraction responded with “Maybe” or “No.” This overwhelming support shows that the idea truly connects with users, not just for their own peace of mind, but because they believe it could make a real difference for others too. It reflects a deep trust in the model’s ability to create safer, more comfortable, and more supportive travel experiences for women navigating city life.

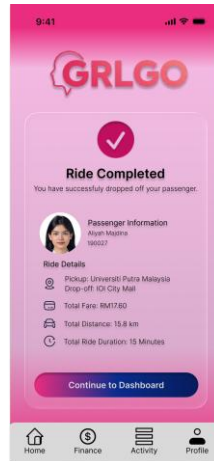
## 2.4.4 BUILD PROTOTYPE

### 2.4.4.1 DRIVER PROTOTYPE





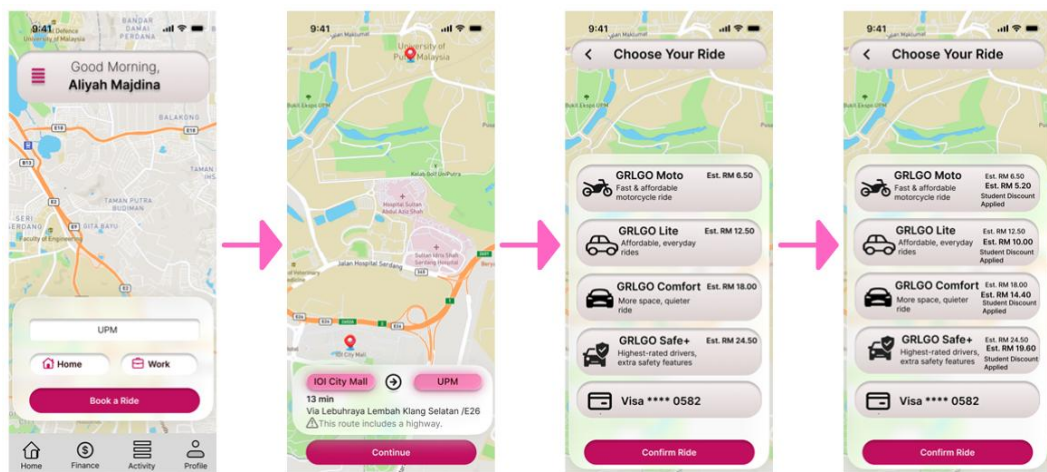
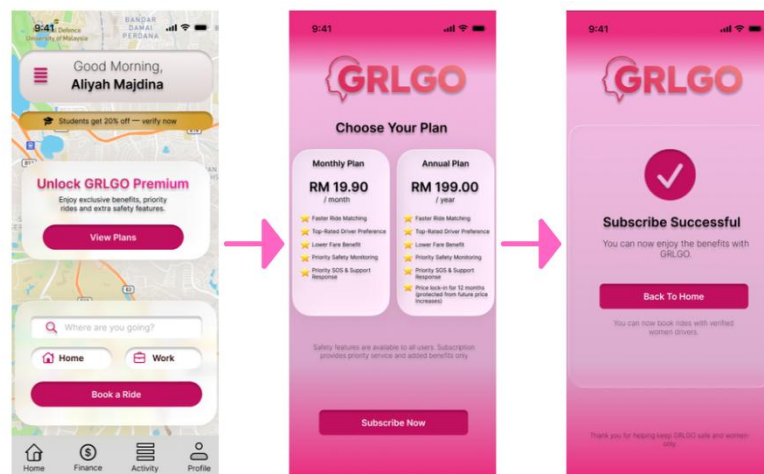
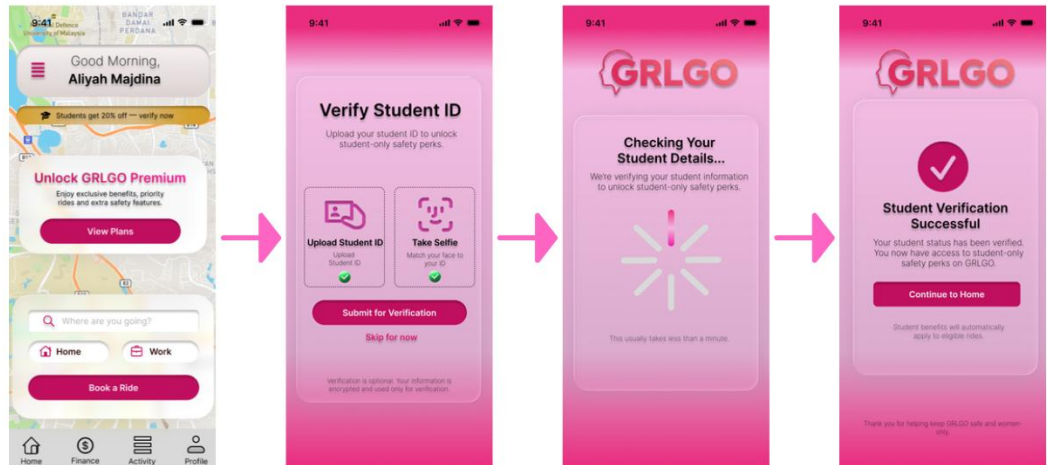




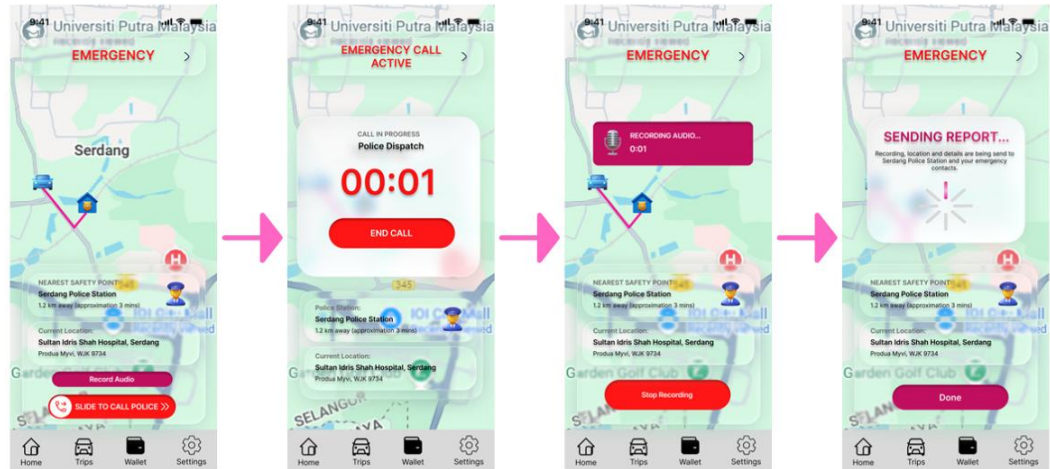
## 2.4.4.2 PASSENGER PROTOTYPE











## 2.4.5 TEST MARKETING

Table 2. 1 Test Marketing

Target Market		Female Ride-Hailing Users and Female Drivers								
Location		Klang Valley, Malaysia								
Timeline		January 2025 – June 2025								
Total cost		RM 26,000								
Objectives		<div>1. Assess market interest and acceptance of a women only ride hailing service.</div> <div>2. Validate the importance of safety features and willingness to pay for enhanced protection.</div>								
No	Strategy	Description	Key partners	Cost (RM)	Timeline					
					Jan	Feb	Mar	Apr	May	Jun
1	Female-Only Driver Verification System	Requires drivers to verify their identity and gender.	Jabatan Pendaftaran Negara (JPN)	5K						
2	Real-time Ride Tracking	Displays live GPS location and	Google Maps							

		allows location sharing with trusted contacts.	HERE Technologies	8K						
3	SOS Emergency Button	SOS button that will send the user's location and alert during emergency situations.	Polis Diraja Malaysia	3K						
4	AI Route Deviation Monitoring	Monitors the planned route.	Google Maps API	10K						

### 3.0 CONCLUSION

According to the findings in this study, there is evident that many women continue to face significant safety and comfort challenges when using conventional ride-hailing services. The survey results indicate that respondents frequently experience fear, anxiety, and discomfort, particularly when travelling alone at night, or when interacting with unfamiliar drivers. Common concerns include the risk of harassment, lack of emergency support, unfamiliar routes, and being matched with male drivers. These challenges make existing ride-hailing services less reassuring and limit women's mobility and confidence. To address these issues, this project proposed the development of GRLGO – Women's Smart Ride Service, a women-only ride-hailing application that prioritizes safety, trust, and inclusivity. By refining the existing ride-hailing model through incremental innovation, GRLGO integrates verified female drivers and smart safety features such as real-time tracking, SOS emergency buttons, AI-based route monitoring, and student verification. These features are designed to reduce safety risks, enhance user confidence, and improve the overall travel experience for women.

The positive feedback obtained from the survey and concept testing reinforces the potential of GRLGO to succeed in the market. A strong interest in women-only ride-hailing services and high importance placed on safety-related features indicate that GRLGO effectively addresses real user needs. Although certain limitations exist, such as driver availability and infrastructure requirements, the overall response demonstrates confidence in the service's value and practicality. In conclusion, GRLGO represents a meaningful and socially impactful innovation that enhances women's mobility and safety. With further development, technological improvements, and strategic expansion, GRLGO has strong potential to become a reliable and trusted transportation solution. The service not only simplifies daily commuting but also empowers women to travel more freely and confidently in their everyday lives.

#### 4.0 REFERENCES

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## 5.0 APPENDICES

### Survey Questionnaire

Section A: Demographic Profile

Age Group \*

☐ Below 18

☐ 18 - 24

☐ 25 - 34

☐ 35 - 44

☐ 45 and above

Current Occupation \*

☐ Student

☐ Employed

☐ Self-Employed

☐ Unemployed

Area of Residence: \*

- ☐ Ampang
- ☐ Bangi
- ☐ Banting
- ☐ Cheras
- ☐ Cyberjaya
- ☐ Kajang
- ☐ Kuala Lumpur
- ☐ Petaling Jaya
- ☐ Port Klang
- ☐ Puchong
- ☐ Putrajaya
- ☐ Seri Kembangan
- ☐ Serdang
- ☐ Shah Alam
- ☐ Subang Jaya
- ☐ Other: \_\_\_\_\_

Income Range (RM) \*

- ☐ Below RM 3,000
- ☐ RM 3,000 - RM 5,999
- ☐ RM 6,000 - RM 9,999
- ☐ RM 10,000 and above



## Section B: Safety Issues in Ride-Hailing

How safe do you feel when using current ride-hailing services (e.g. Grab, Maxim)? \*

	1	2	3	4	5	
Very unsafe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Safe

What safety concerns have you experienced or worried about when using ride-hailing services \*  
(Select all that apply)

- ☐ Being matched with a male driver
- ☐ Fear of harassment or inappropriate behaviour
- ☐ Driver taking unfamiliar or suspicious routes
- ☐ Travelling alone at night
- ☐ Lack of emergency support
- ☐ I have not experienced any safety concerns

Have you ever experienced an uncomfortable or unsafe situation while using ride-hailing services? \*

- ☐ Yes
- ☐ No

How serious do you think safety issues are for female ride-hailing users? \*

	1	2	3	4	5	
Not serious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Serious



### Section C: Ride-Hailing Usage & Experience

How often do you use ride-hailing services (e.g., Grab, InDrive, AirAsia Ride)? \*

- ☐ Daily
- ☐ 3–5 times a week
- ☐ 1–2 times a week
- ☐ A few times a month
- ☐ Rarely

Which ride-hailing apps do you use most often? (Select all that apply) \*

- ☐ Grab
- ☐ InDrive
- ☐ Maxim
- ☐ AirAsia Ride
- ☐ Other: \_\_\_\_\_

What time do you usually use ride-hailing services? (Select all that apply) \*

- ☐ Morning (6.00 AM - 12.00 PM)
- ☐ Afternoon (12.01 PM - 6.00 PM)
- ☐ Evening (6.01 PM - 10.00 PM)
- ☐ Late night (After 10.00 PM)

#### SECTION D: Perception Towards Women-Only Ride-Hailing Services

How interested are you in using a women-only ride-hailing service such as GRLGO? \*

	1	2	3	4	5	
Very uninterested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested

How important is having female drivers only in a ride-hailing service? \*

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

How important is real-time ride tracking during a trip? \*

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

How important is the availability of an SOS emergency button during a ride? \*

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

How important is route monitoring and alerts for detecting unusual route changes? \*

	1	2	3	4	5	
Not important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

How important is a student verification and safety mode feature for student passengers? \*

1 2 3 4 5

Not important ☐ ☐ ☐ ☐ ☐ Very important

#### Section E: Pricing Considerations and Willingness to Pay

Would you be willing to pay a slightly higher fare for a ride-hailing service that offers enhanced safety features? \*

- ☐ Yes
- ☐ Maybe
- ☐ No

If yes or maybe, how much extra would you be willing to pay per ride for additional safety features?

- ☐ RM1 - RM2
- ☐ RM3 - RM4
- ☐ RM5 - RM6
- ☐ More than RM6
- ☐ Not willing to pay extra

When choosing a ride-hailing service, which factor is more important to you? \*

- ☐ Safety over price
- ☐ A balance between safety and price
- ☐ Price over safety

Would you be willing to pay slightly higher fares (e.g., RM2 - RM4 extra) for these dedicated safety features? \*

- ☐ Yes, definitely.
- ☐ Yes, if the price difference is small.
- ☐ No, price is my main priority.

Which GRLGO feature appeals to you the MOST? (Select one) \*

- ☐ Strict Driver Verification (Selfie/IC)
- ☐ AI Route Monitoring (Anti-Detour)
- ☐ Silent SOS Button
- ☐ Female-Only Environment
- ☐ Student Discounts/Features

## Section F: Feedback & Suggestions

Would you recommend a women only ride hailing service to others? \*

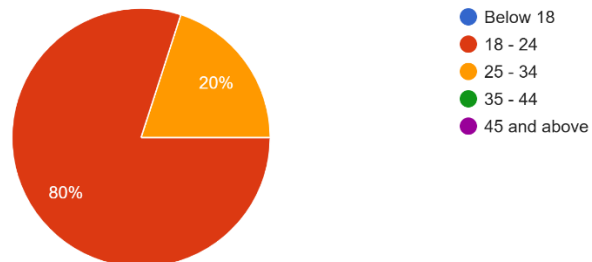
- ☐ Yes
- ☐ Maybe
- ☐ No

Do you have any other suggestions to improve women's safety in ride-hailing services?

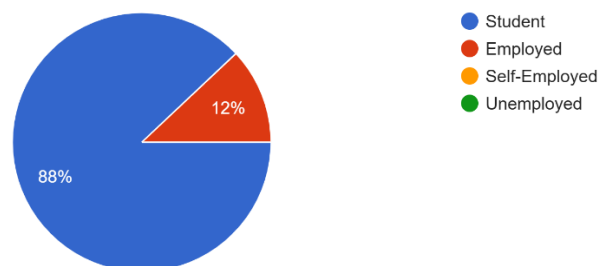
Your answer

## Survey Results

Age Group  
25 responses

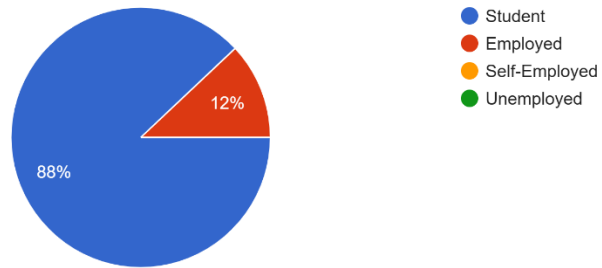


Current Occupation  
25 responses



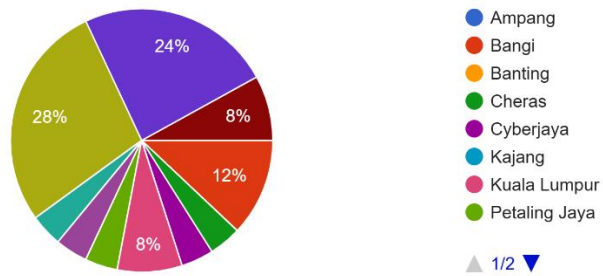
### Current Occupation

25 responses



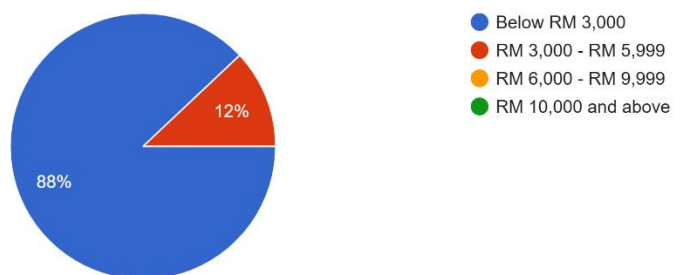
### Area of Residence:

25 responses



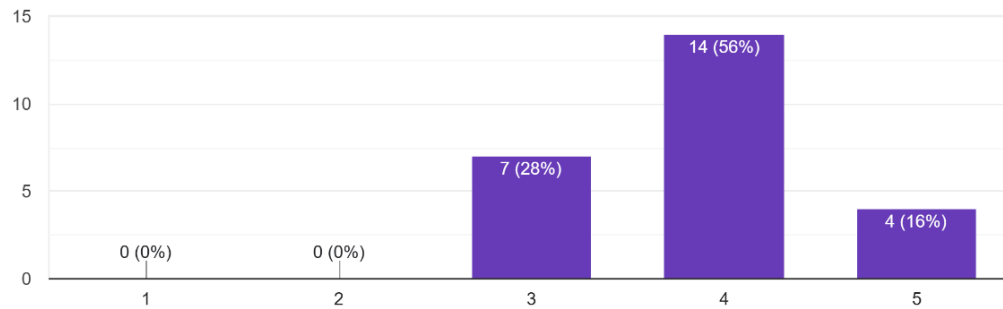
### Income Range (RM)

25 responses



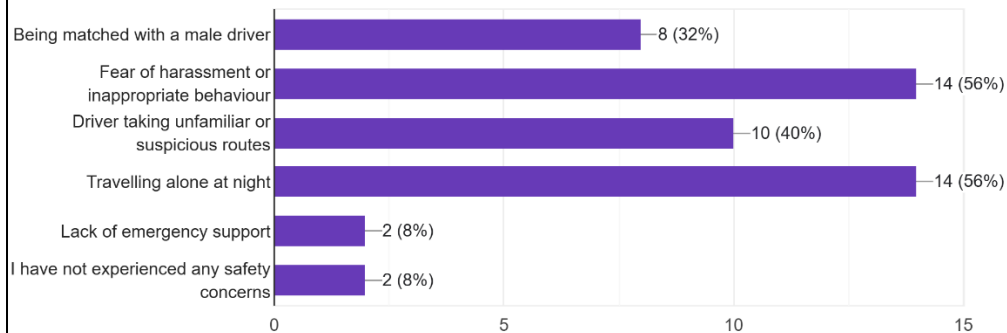
### How safe do you feel when using current ride-hailing services (e.g. Grab, Maxim)?

25 responses



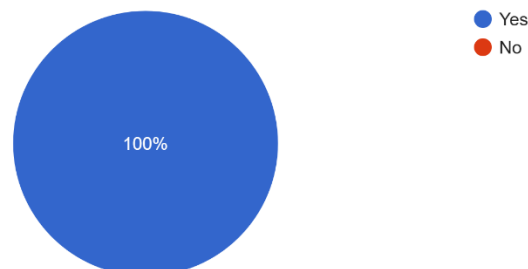
### What safety concerns have you experienced or worried about when using ride-hailing services (Select all that apply)

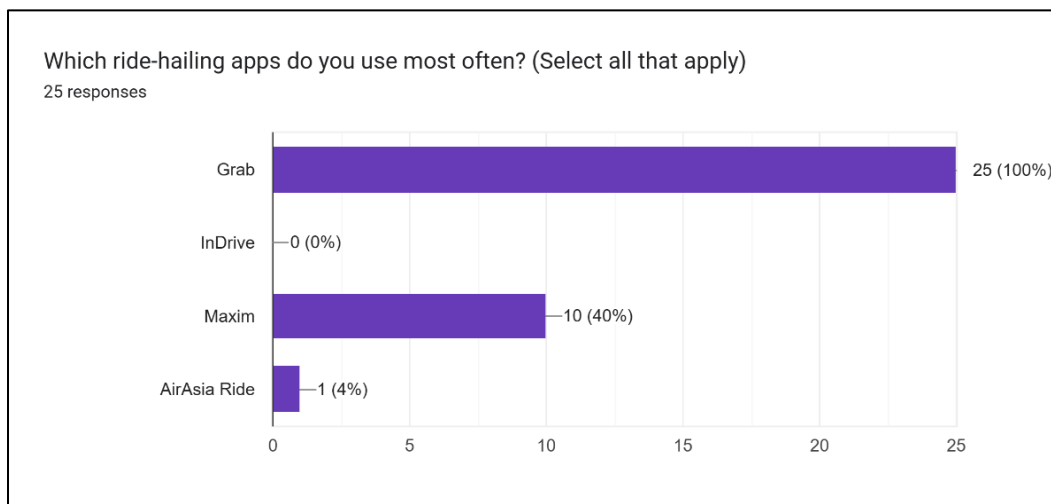
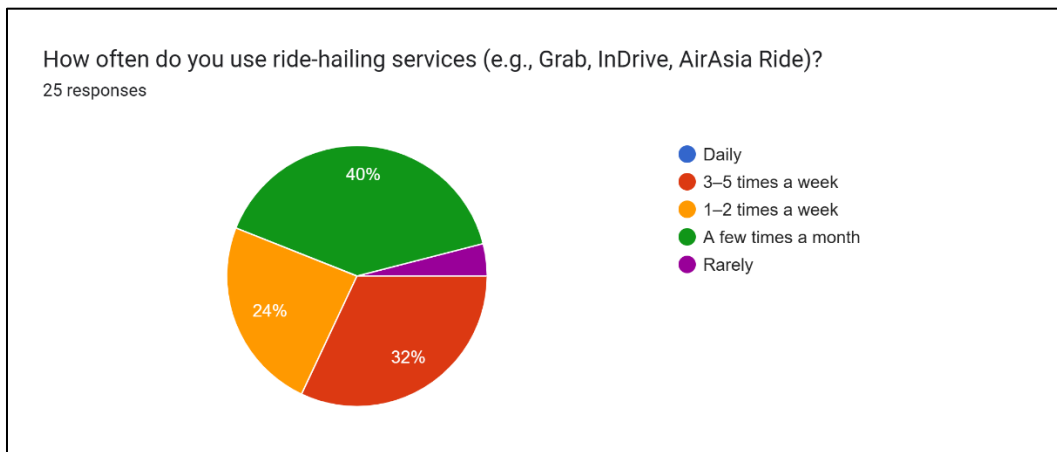
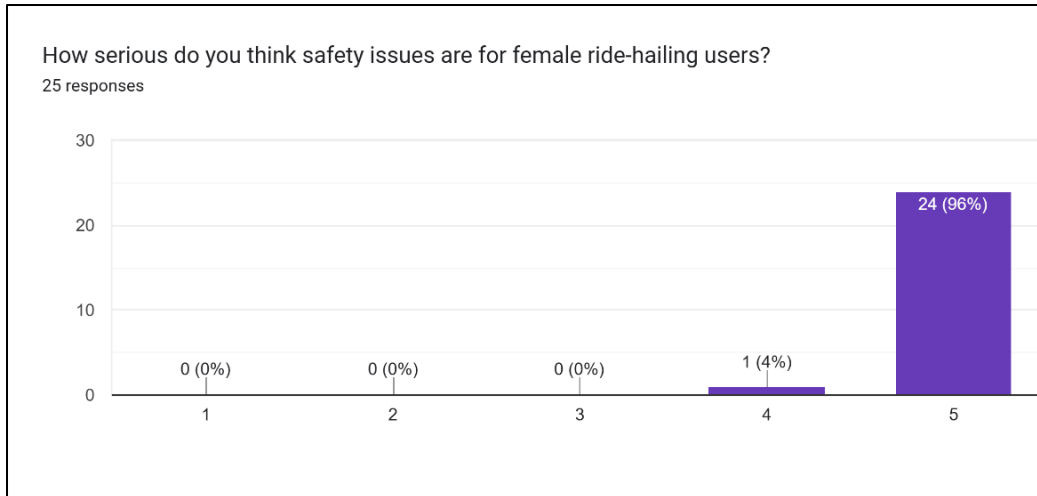
25 responses



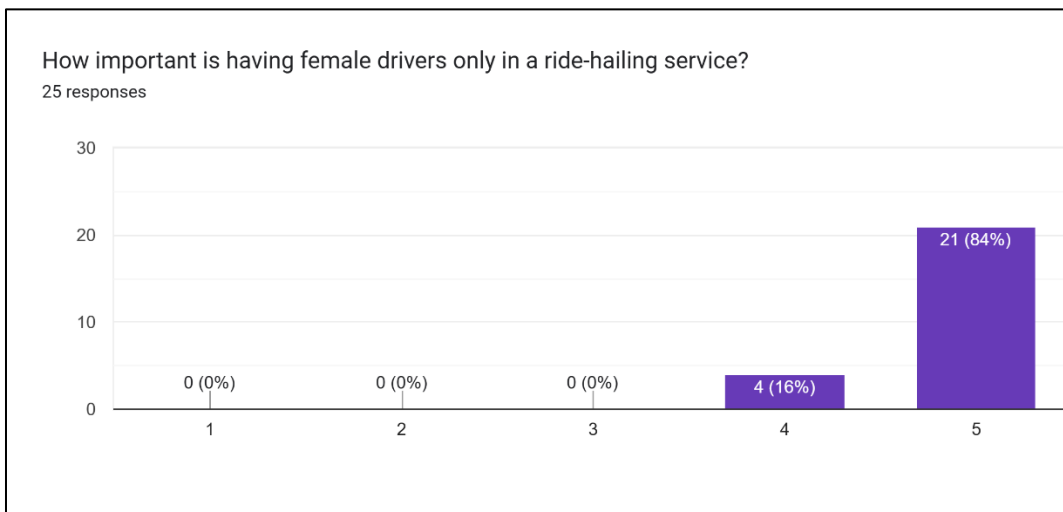
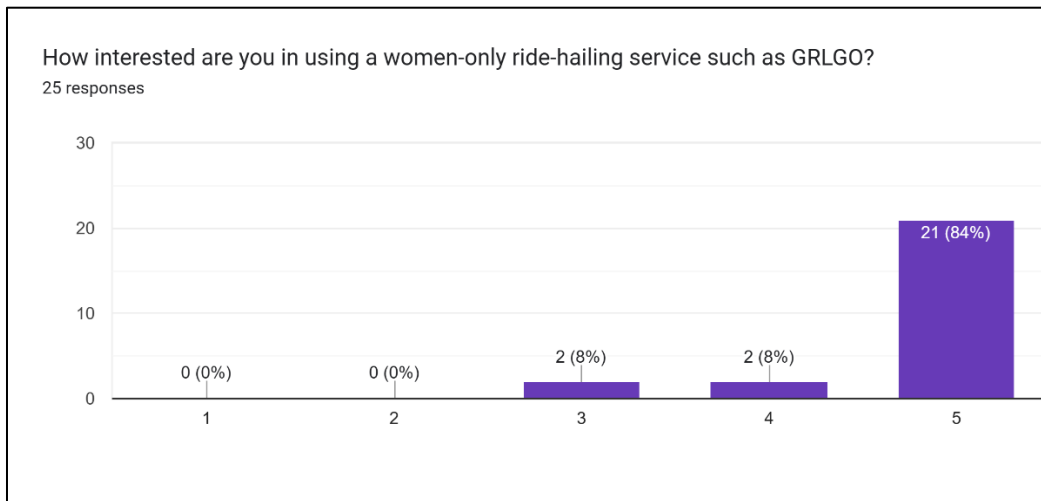
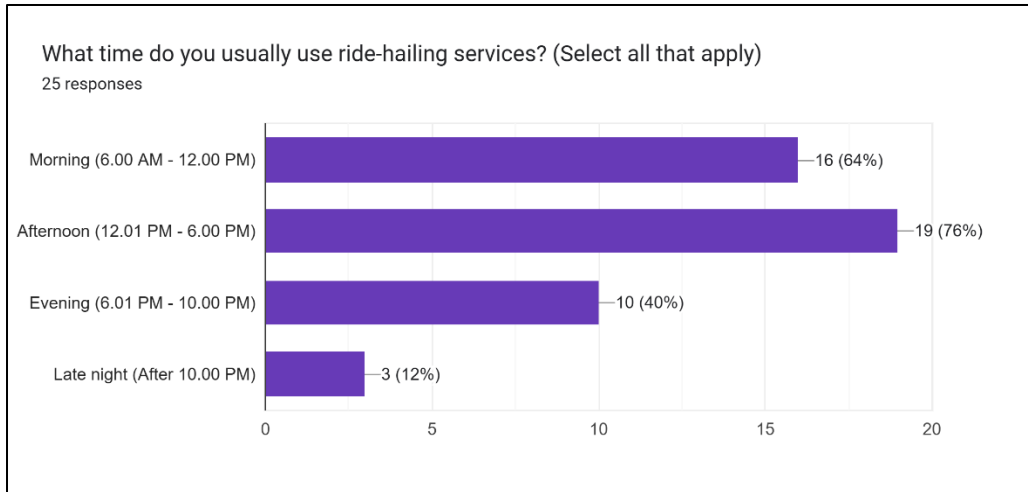
### Have you ever experienced an uncomfortable or unsafe situation while using ride-hailing services?

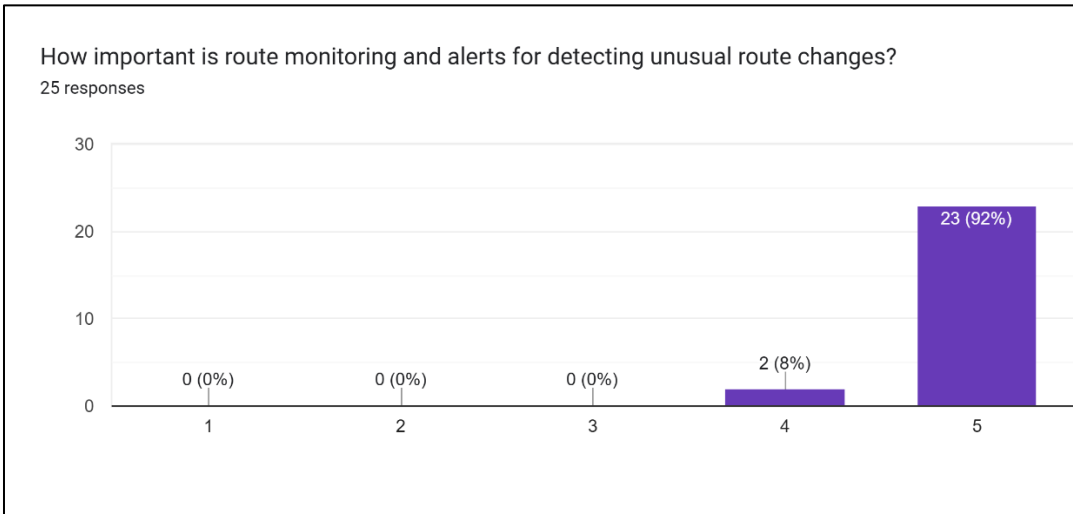
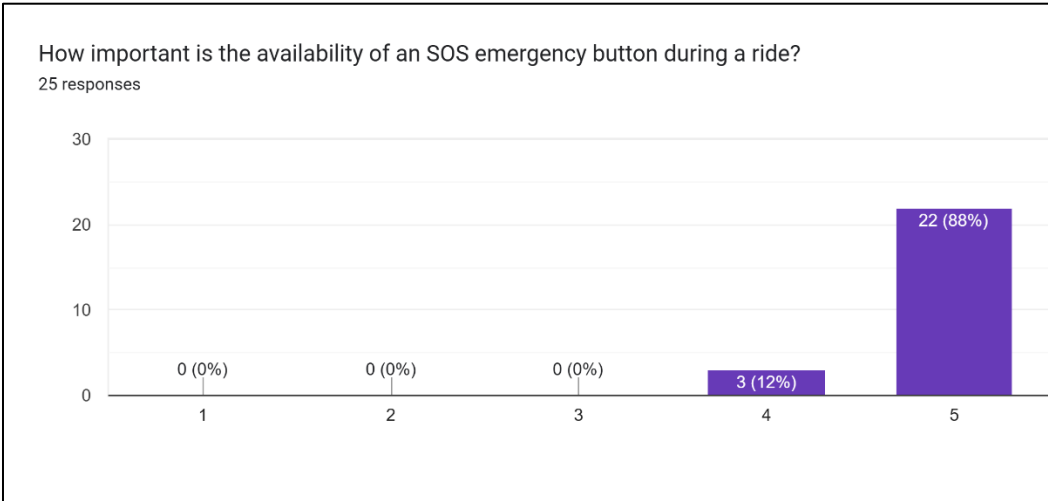
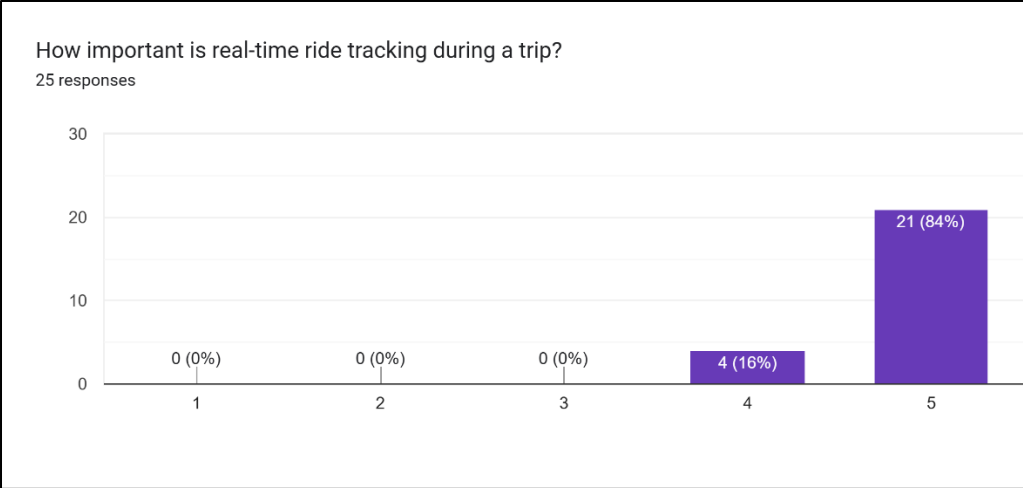
25 responses

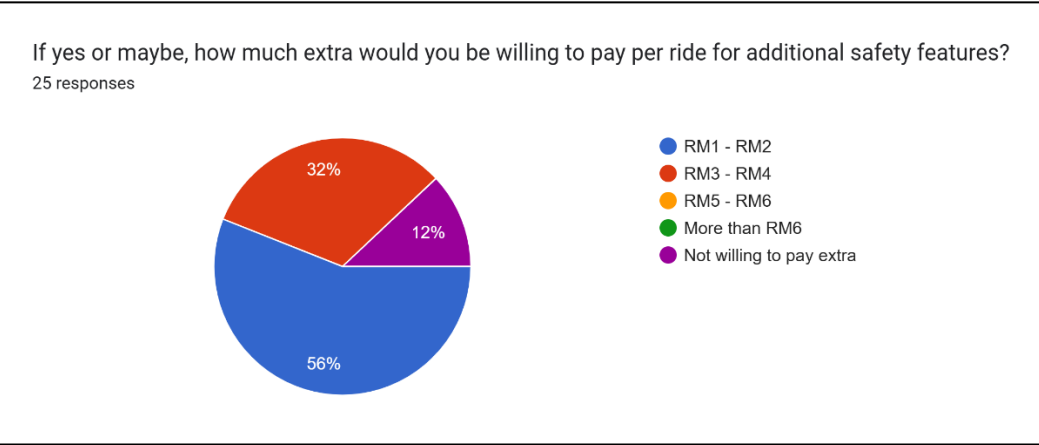
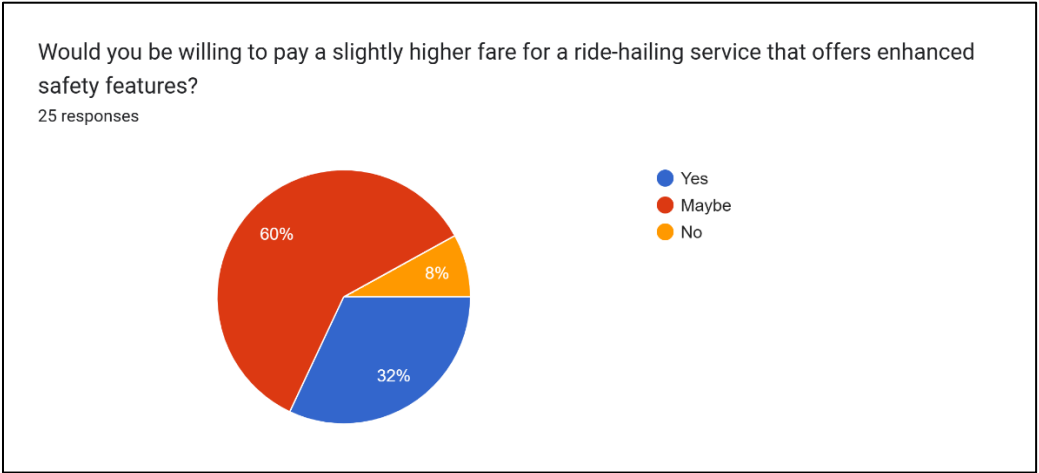
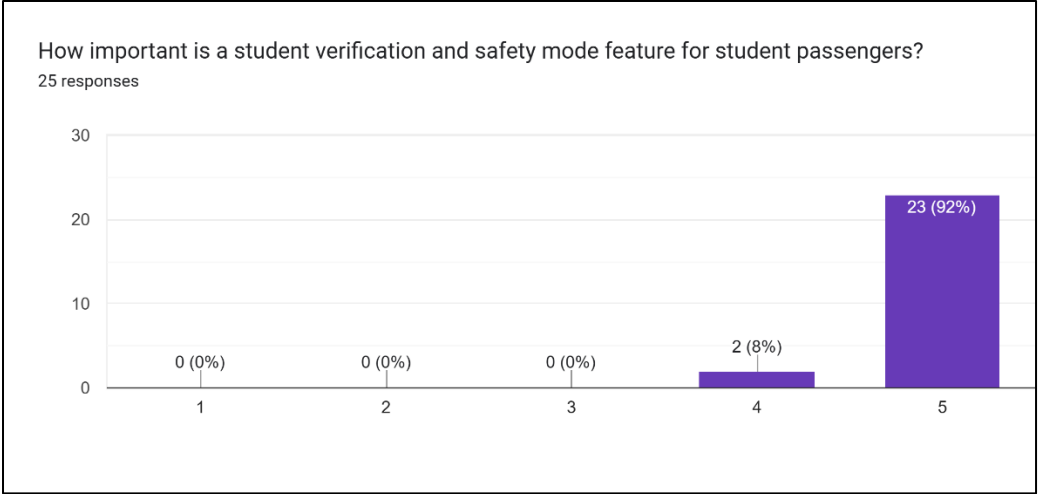






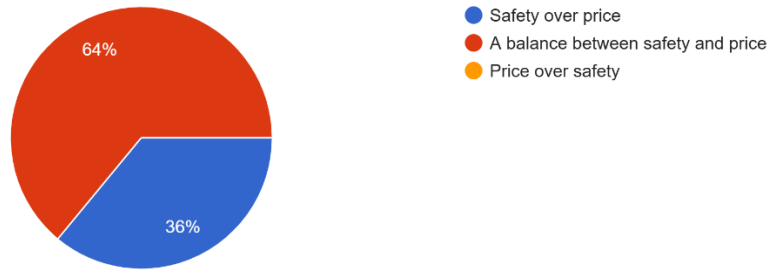






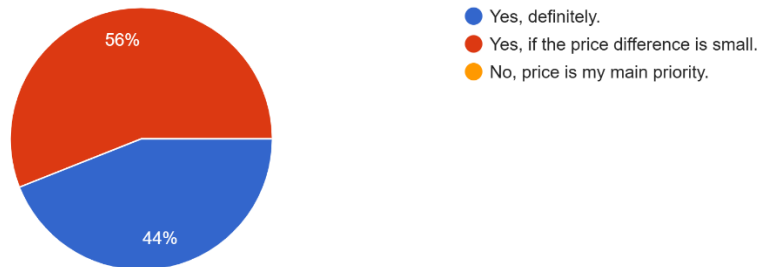
When choosing a ride-hailing service, which factor is more important to you?

25 responses



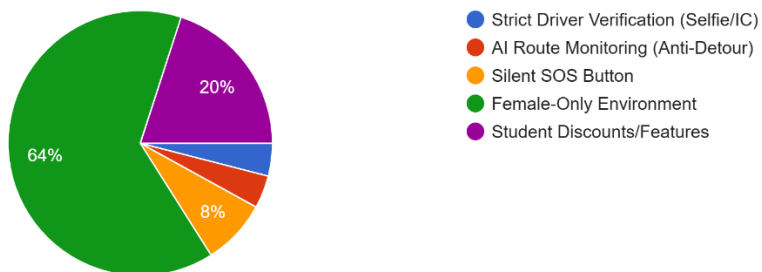
Would you be willing to pay slightly higher fares (e.g., RM2 - RM4 extra) for these dedicated safety features?

25 responses



Which GRLGO feature appeals to you the MOST? (Select one)

25 responses



Would you recommend a women only ride hailing service to others?

25 responses

