Needfinding study: Biking in the Philippines

Biking, also called bicycling or cycling, serves as both a mode of transportation and a leisure activity. It offers many benefits, yet many Filipinos do not consider it a primary option. According to a news article by Cervantes (2023), approximately 24%, or an estimated 6.6 million, of Filipino households own a bicycle. This statistic highlights a moderate presence of bicycles within households, suggesting its potential for widespread use. Despite this, many Filipinos remain hesitant to adopt biking as a regular means of transportation.

There are many advantages when biking. From a health perspective, regular cycling can help lose weight, improve cholesterol levels, and reduce the risk of cardiovascular diseases (Cronkleton, 2023). In 2022, there was an average 191,578 bike traffic volume in the Philippines. These bikers are equivalent to an everyday fuel cost savings of up to ₱307,000 per kilometer. They also reduced 4.46 tons of carbon dioxide emissions (Dela Peña, 2022). Given the contrast between the positive effects and the number of bikers in the Philippines, the group aims to explore the issues preventing Filipinos from considering biking as a viable option for transportation and leisure. The group addressed the following research questions to find the root of the problem.

1. What are the primary concerns that deter Filipinos from biking?
2. What potential solutions can be proposed to increase the adoption of biking in the Philippines?
3. What are the social and cultural perceptions of biking?

Study participants and Methodology

The group would like to analyze the population of the Philippines with a focus on the biking population. We aim to target both bikers and non-bikers so that the group can get the bigger picture in regards to both sides' perspectives on biking. This approach is essential for capturing the full range of opinions, experiences, and attitudes toward

biking in the country. The participants will be divided into two main groups: bikers and non-bikers. The biker group will mainly consist of participants who actively bike. The group hopes to analyze data based on their firsthand experiences including their safety concerns, challenges they face, the viability of biking lanes, and overall satisfaction of biking as a mode of transportation or recreation. Insights from this group will help identify specific issues that need addressing to improve their experience. On the other hand, the non-biker group will consist of participants who do not actively bike. The researchers aim to delve into their perceptions of biking, the reasons they might refrain from biking, and any potential barriers they face. Understanding their perspectives is crucial, as it can reveal what might encourage or deter them from considering biking in the future. This group's feedback will help identify the factors that could make biking a more attractive and viable option for a broader population. Through combining these findings we would like to determine methods in which biking can be more appealing to both parties. To collect such findings, the group opted to conduct both a survey and an interview. Both of which contained questions generalized for people who bike, who previously owned one, and those who thought of getting one. The survey aims to get a broad view of the general views and attitudes of the population toward biking. The interviews will provide a more in-depth qualitative insight compared to the former, allowing for a deeper exploration of individual experiences and opinions. This targeted approach ensures that the data collected is relevant and comprehensive, covering a wide range of perspectives within the population.

Analysis of results - Survey

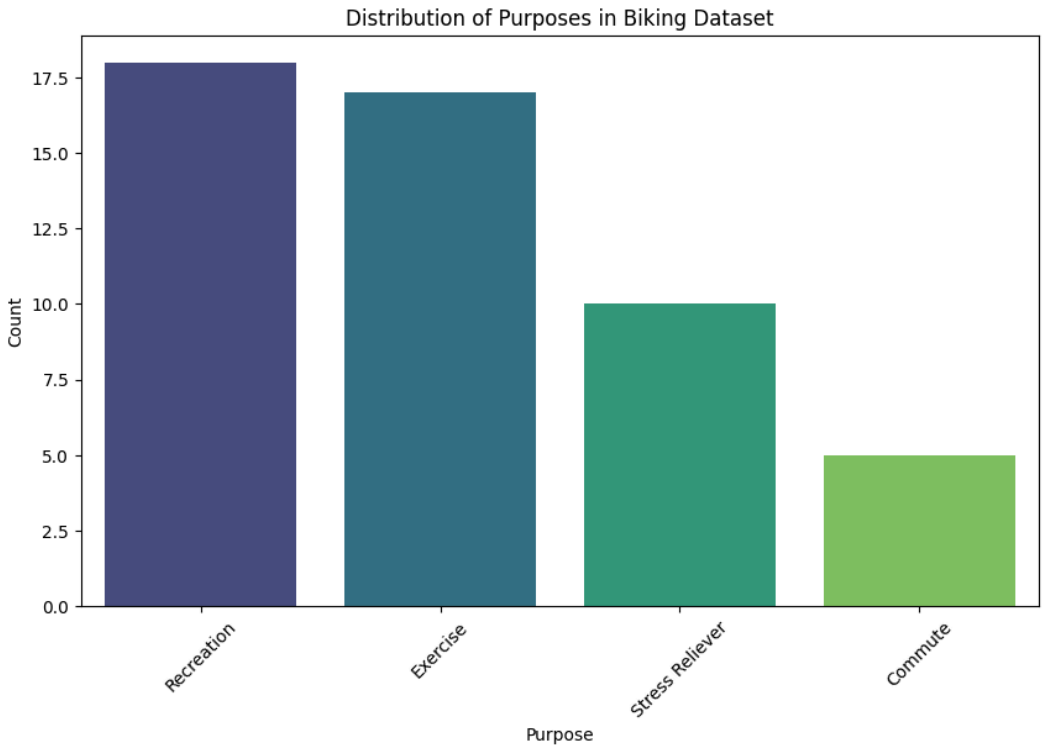

Table 1.1 Biking Purposes Distribution

First, we asked the participants their main purpose for biking in the first place, and the majority engaged in biking for recreational and exercising purposes. As seen from the data above, biking is mostly used as a form of recreational activity or exercise. The former implies that people conceive biking as a means to bond and strengthen trust and camaraderie between people. On the other hand, biking is also seen as a form of exercise, it highlights its significance in promoting physical health and well-being. This perspective emphasizes the health benefits of biking. Interestingly enough, the variable with the lowest frequency is commute, which implies that the majority of the population does not give emphasis on the practicality of biking functionality-wise.

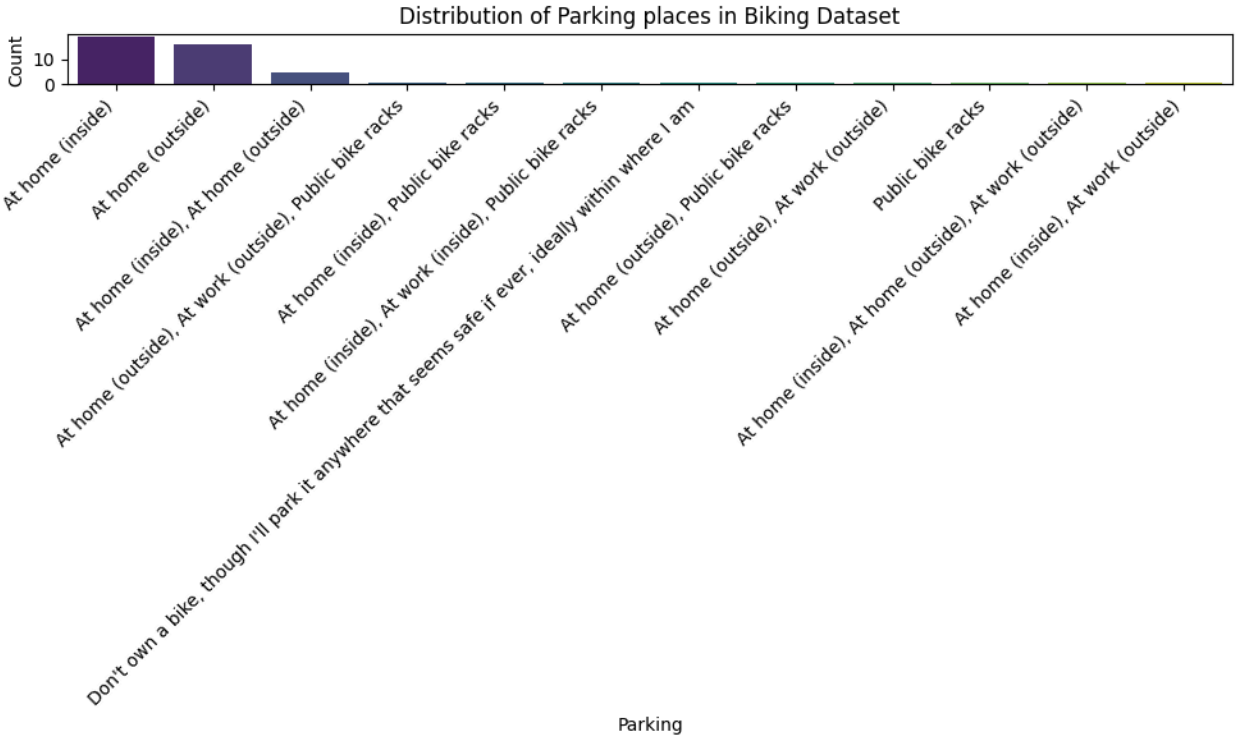

Table 1.2 Parking Places Distribution

Next, the group wanted to know where the population generally parks their bikes. Interestingly, the table indicates that a very minimal percentage of the population will park at public bike racks. This can indicate two factors: poor infrastructure and safety insecurity. Firstly, the low usage of public bike racks could indicate inadequate or poorly maintained infrastructure. Public bike racks might be scarce, inconveniently located, or perceived as insecure, discouraging people from using them. Second, people may have personal preferences or specific needs. People may prefer to park their bikes in more secure or private locations, such as at home, in workplaces, or at designated bike storage facilities. Generally, concerns about bike theft, damage, or the convenience of accessing their parked bikes can influence their choice of parking spots.

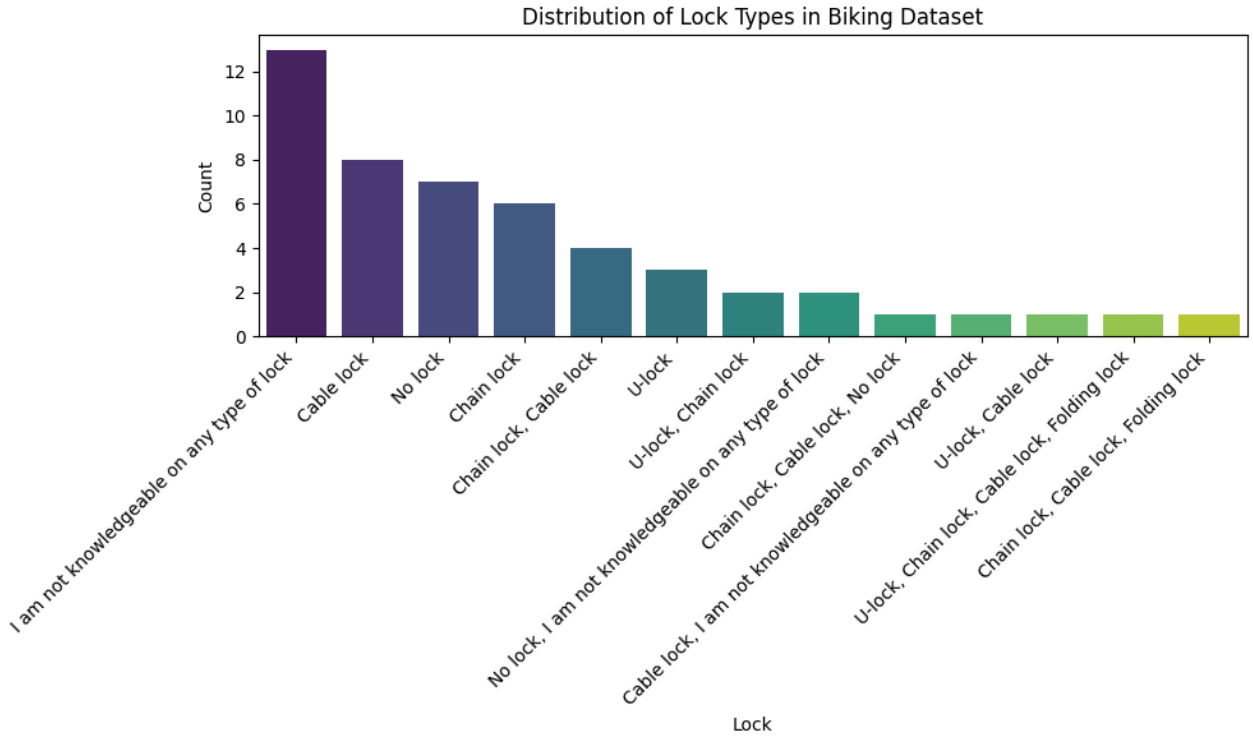

Table 1.3 Lock Type Distribution

After considering parking spots, the group wanted to examine the types of locks people typically use. Based on the table above, the majority of the population does not have knowledge on any type of lock. This can imply two things either the general population lacks general biking knowledge or the more likely implication of these votes coming from people who have only thought of biking. More interestingly, the group was surprised how cable locks and no locks were more frequent than chain locks. Objectively speaking, a chain lock will provide more protection to your bike compared to the latter, especially considering how durable its material is compared to a cable lock. However, one factor that may have led to these results is convenience. Typically a chain lock, though safer, will be heavier to bring. Considering the majority of the population mostly park at home (as seen in table 1.2), then a cable lock or even no lock at all will be the preferred option. This line of thinking is supported by the table below:

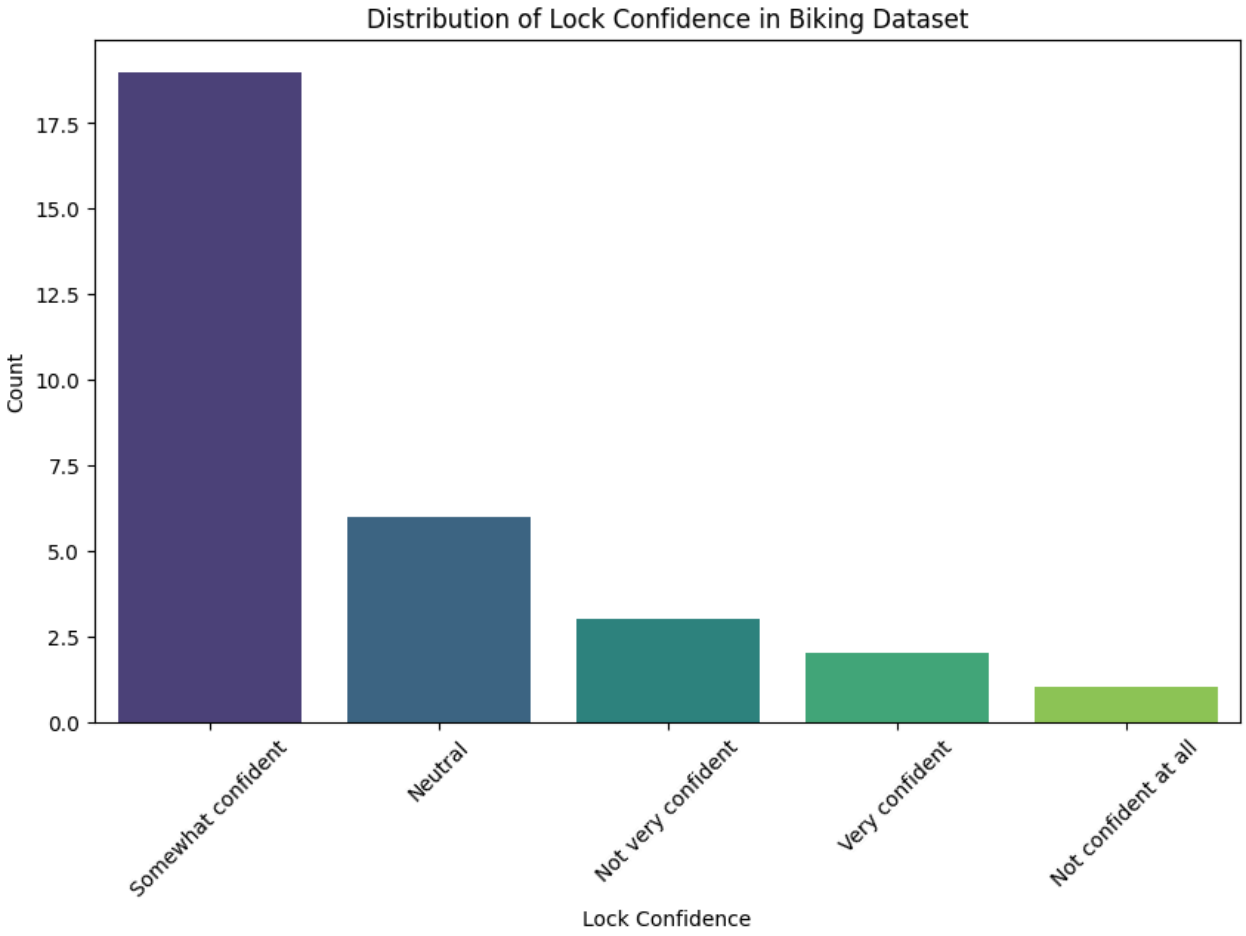

Table 1.4 Lock Confidence Distribution

In this table, the majority of the population selected "somewhat confident" rather than "very confident" regarding the security provided by their chosen bike locks. This suggests that while people might be aware of the varying levels of security offered by different types of locks, they typically prioritize convenience and practicality over maximum security. Those who park at home might feel sufficiently secure without the need for a chain lock.

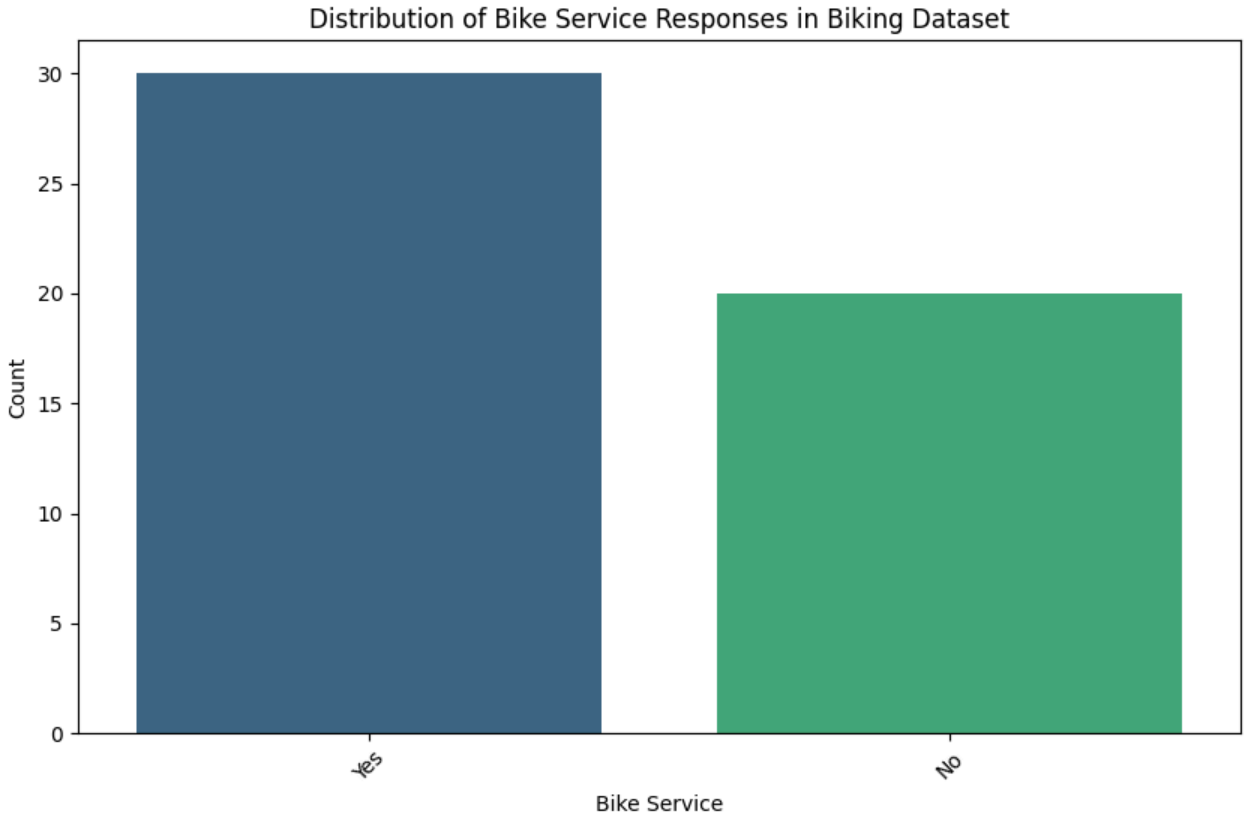

Table 1.5 Bike Servicing Distribution

Delving deeper, the group wanted to find out whether the population generally services their bike or not. However, as seen in the table, the majority will typically run a maintenance check on their bike, which implies that people value the quality of their bikes before using them. Moreover, the tendency to perform maintenance checks could reflect an awareness of the potential risks associated with neglecting bike care. A well-maintained bike is less likely to encounter mechanical failures, reducing the chances of accidents or breakdowns during rides.

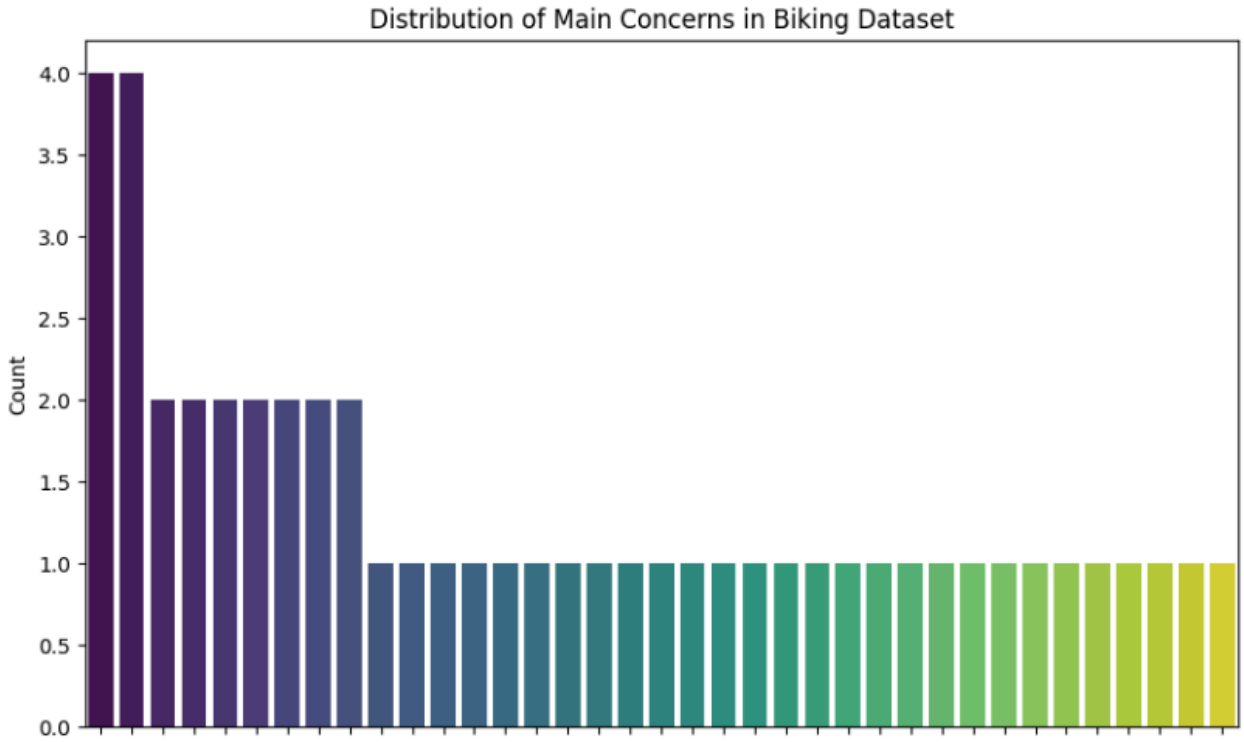

Table 1.6 Concerns Distribution

Aside from the standard bike safety questions asked on the prior tables, the group wanted a general view of all possible concerns when biking. Although not seen in the x-axis of the graph, the participants were asked to choose any of the following they deem applicable: Poor road conditions, Physical fitness, Cost of maintenance, Bike theft, Traffic accidents, Weather conditions, and Lack of spatial awareness. Out of all possible combinations, a total of two garnered the most frequent responses. The first combination is **traffic accidents**, **poor road conditions**, and **lack of bike lanes**. Interestingly, these combinations can be related to one another; poor road conditions can lead to higher chances of traffic accidents as bikers navigate uneven or unsafe surfaces. The lack of bike lanes increases this risk, forcing bikers to share the road with motor vehicles, and increasing the likelihood of collisions and accidents. The second combination of concerns also revolves around interrelated issues: **traffic accidents**, **weather conditions**, and **lack of spatial awareness**. Weather conditions can significantly impact biking safety, especially within the Philippines as frequent rain creates hazardous road conditions. Lack of spatial awareness, both on the part of bikers

and other road users, can further complicate this problem. In adverse weather, reduced visibility and slippery surfaces require bikers to be more alert and aware of their surroundings to avoid accidents.

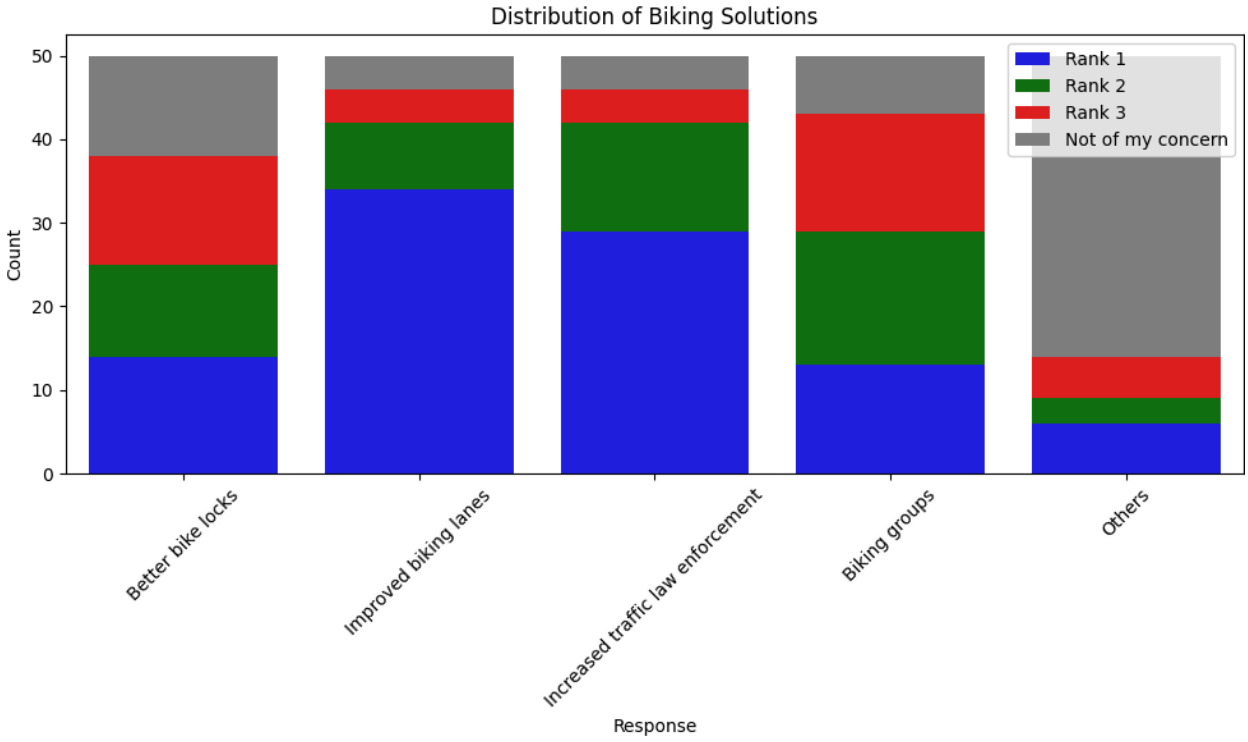

Table 1. 7 Biking Solutions Distribution

Lastly, the group asked participants to rank various solutions wherein 1 is the highest and 3 is the lowest. As seen in the table above the results actually complement the concerns distribution (as seen in table 1.6) as what the majority of the population deemed as the most needed solution was **improved biking lanes** and **increased traffic law enforcement**. Improved bike lanes were the top-ranked solution, reflecting widespread concern over poor road conditions and the lack of dedicated biking infrastructure. Addressing or minimizing this issue will result in a safer and more reliable space for bikers, reducing the risk of accidents and encouraging more people to use bikes for transportation and recreation. On the other hand, increased traffic law enforcement was another highly ranked solution. This ranking shows the participants' concerns about traffic accidents and the need for stricter regulation to ensure safety on

the road. Finding a means for either educating both parties (bikers and drivers) or keeping both parties on equal ground in terms of law enforcement will mitigate risky behaviors by both bikers and drivers, such as speeding, and reckless driving. . By holding all road users accountable, enhanced enforcement can significantly reduce the likelihood of accidents and improve overall road safety. In conclusion, the way participants ranked the options implies a logical strategy for resolving issues related to bike safety. Enhancing bike lanes and stepping up traffic enforcement are the two primary solutions the group can choose to focus on. Based on statistical data, if either of these problems were to be resolved or mitigated by the group, it would likely create a more supportive environment for bikers and encourage more people to consider biking as a viable mode of transportation/recreation.

Analysis of results - Interview

Building on the insights gathered from the survey, the group also opted to conduct a few interviews to get a more in-depth and personalized answer from a few of the respondents. Each interviewee provided unique insights into their experiences and perspectives as either current or potential bikers. Through their stories, common themes and specific issues emerged, shedding light on the broader context of biking in the country. The analysis synthesizes these insights to identify key areas for improvement in biking infrastructure, safety, and community support.

Interviewee 1 is a potential biker who has not yet started biking but is interested in it for environmental and health reasons. They highlighted safety as a major concern, pointing out the lack of safe places to bike in Manila. They suggested the need for more parks and well-maintained bike lanes. Additionally, Interviewee 1 lacks knowledge about bike maintenance and riding skills, which are barriers to starting biking. Fear of accidents and unsafe road conditions, including potential hazards from other people, further deter them from biking. While a biking community could provide useful maintenance tips, it is not seen as essential for starting to bike. Interviewee 1 prefers

practical bikes similar to those used by students in Japan, which include baskets for convenience.

Interviewee 2 is an experienced biker facing multiple challenges due to inadequate biking infrastructure in the Philippines. They mentioned that infrastructure, safety, theft, and weather are significant issues. Larger vehicles using bike lanes and inadequate city planning exacerbate these challenges. Interviewee 2 shared experiences of mismatched road conditions compared to maps, leading to difficulties during long trips. They suggested that better city planning, stricter enforcement of bike lane rules, and more visible bike shops are needed. Despite using helmets and hand signals, Interviewee 2 still feels unsafe and suggests biking in groups for added safety. Regular maintenance issues, such as checking brake pads, chains, and tires, are common, and there is a need for accessible bike maintenance tools and resources. Protective gear is used to mitigate sun and emissions, but biking is avoided in the rain. City planners should consider biker needs, and better signage for bike shops would be beneficial.

Interviewee 3 is a leisure biker who bikes primarily in safe, low-traffic areas. They highlighted the challenge of finding time to bike and preferring other forms of exercise like running. Interviewee 3 bikes in safe areas like villages and schools where there is minimal traffic and good road quality. Traffic does not significantly affect their biking due to the choice of safe locations. Weather, however, plays a significant role; extreme conditions like rain or intense heat are deterrents. Interviewee 3 has not experienced bike theft, as they do not leave their bikes unattended outside. They feel safe in familiar, low-traffic areas but acknowledge the risk on main roads. Maintenance involves routine checks and fixes for flat tires and chains before biking. They expressed the need for comfortable bike seats and have minimal issues due to already biking in safe areas.

Interviewee 4 is a potential biker attracted to biking for its physical and therapeutic benefits. They mentioned physical activity and mental health as primary attractions. However, concerns about the cost of bikes and safety due to narrow and

uneven roads are significant barriers. Interviewee 4 suggested road widening, more road signs, and better dissemination of road safety information. While they find the local biking culture supportive, they prefer to learn independently before joining groups. Information on bike maintenance, safety practices, and types of equipment is needed. The overwhelming amount of information required to start biking is a barrier. Theft is a concern, but not the primary one. Sharing the road with motor vehicles causes anxiety due to the possibility of incompetent drivers. Social support is nice to have but not crucial. Interviewee 4 would prefer a cost-efficient, sturdy, and easy-to-maintain bike. The lack of viable roads is their primary concern, as it requires administrative action beyond personal control.

Interviewee 5 is a biker who faces challenges mostly related to weather and road conditions. They mentioned that weather and poor road conditions, including unexpected obstacles, significantly impact their biking experience. When faced with issues like flat tires, they rely on calling for help. Interviewee 5 noted the lack of dedicated bike lanes and suggested incorporating bike lanes into pedestrian walkways to avoid misuse by parked cars. Theft prevention involves using chains, but they feel these are insufficient against determined thieves. Traffic can unexpectedly lengthen biking sessions, affecting their decision to bike. Interviewee 5 feels safe with appropriate gear and awareness but acknowledges the need for helmets as a priority. Regular maintenance checks on tire pressure and chain maintenance are conducted before biking. Weather conditions, such as wind speed, influence their biking habits. More bike events and casual gatherings to make biking more enjoyable and community-oriented would improve their biking experience.

The interviews reflect many of the survey findings, particularly regarding the need for improved biking infrastructure and safety measures. Both sets of data highlight the importance of dedicated bike lanes, better road conditions, and increased traffic law enforcement. The interviews provide a more nuanced understanding of these issues, revealing personal perspectives that emphasize the statistical trends. Common themes such as safety concerns, the impact of weather, and the need for community support

are prevalent across both analyzes. By integrating the insights from both the survey and the interviews, it is evident that focusing on either enhancing bike lanes or stepping up traffic enforcement would address the critical concerns identified by participants. Resolving one of these issues would likely foster a safer and more supportive environment for bikers, potentially increasing biking as a preferred mode of transportation and recreation.

Focused design problem

In conclusion, the group identified two main problems: Poor bike lanes and traffic enforcement. Upon reviewing all the data that the group has analyzed it is evident that bikers chose to place a greater emphasis on road safety rather than thieving concerns. With that in mind, the group chose to focus on the former since the group thought it would open up to a wider variety of solutions and ideas as compared to the latter in which government intervention is much more likely needed, thus, flexibility is hindered. Moreover, the problem of traffic enforcement, objectively speaking, covers a wider population than the group anticipated; apart from bikers, drivers would need to be considered as well to place both parties on an equal playing field politically. Upon careful consideration, addressing poor bike lanes is more in line with the original objective of the group which is to create a safe biking environment, encouraging people to consider biking as a viable mode of transportation and recreation. Therefore, the group would like to focus on this problem: How can we improve or provide an alternative to biking lane infrastructure?

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