

Hello Inc



Financial Investment Decision Report April 2023

Abstract

In this project, we recommend providing shared electric bike service on the CUHKSZ campus. The investment project's payback period is only three years, and it will provide a sustainable income in the following years. The motivation for us to do this project is students' demand for more convenient transportation. Queuing for the bus for more than 15 minutes during rush hour, crowded parking of private electric bikes, and conflicts caused by insufficient charging piles all confirm our assumption and further demonstrate the potential of the school's shared electric bike market.

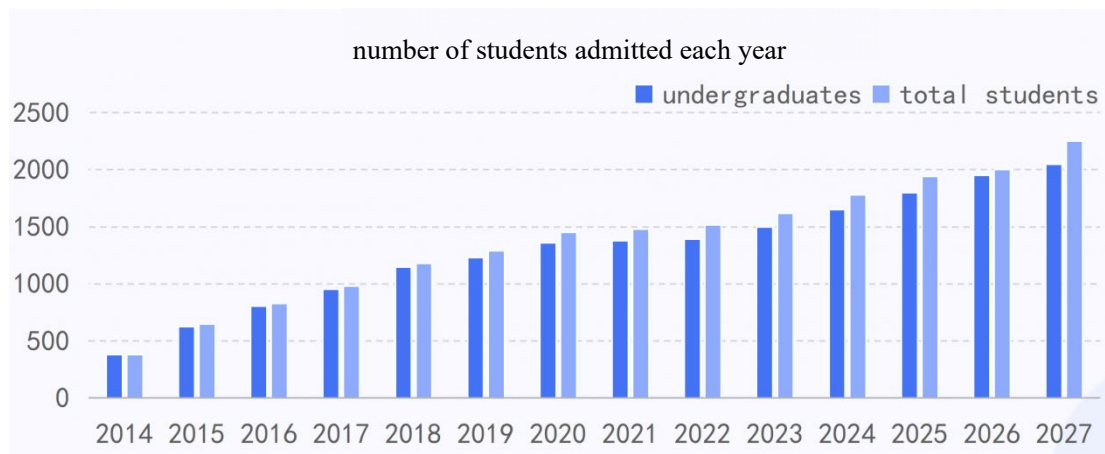
Industry Analysis

a. Campus outlook

· *The total number of students keeps increasing*

The number of students (including undergraduates, graduates, and doctoral students) admitted by CUHKSZ increased from 308 in 2014 (the first year of CUHKSZ) to 1516 in 2022 (this semester) and may even reach 2250 in 2027 (according to the admission plan and historical information on the school's official website). Due to the school's enrolment expansion policy, the total population in CUHKSZ may reach 8700. A growing school population is driving up demand for more efficient transportation.

Source: <https://admissions.cuhk.edu.cn/admissions-policy>



Since most of the graduates and doctoral live off the campus, we just focus on the undergraduates, who are our main users. According to the estimation by the teacher in the administration, there are still 7000 students living in the school and need to take the transportation provided by the school.

· *The existing public transportation (only bus) cannot meet the demands of students, especially around the beginning and end of class time*

At present, the only public transportation provided by the school is the bus. The main reason why students are not satisfied with the school bus is that the school bus supply is not time before class time. Waiting in line, getting on the bus, and stopping at the stops along the

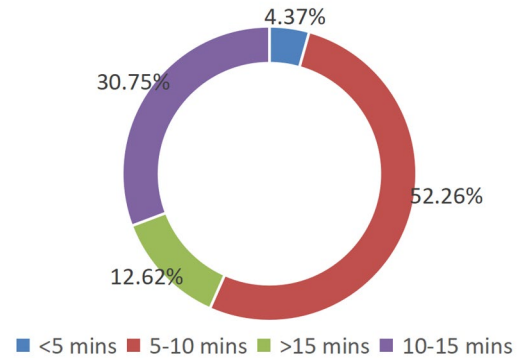
way all waste time, making some students unable to get to the classroom on time. We believe that schools need to provide faster and more convenient transportation to improve students' commuting efficiency. Our questionnaire among 147 students also supported our assumption.

The survey:

We conducted a questionnaire among 147 students from different colleges. The survey included how long the upper campus students often use to wait for a bus every morning (the most significant rush hour) and whether a student needs extra transportation to help them commute.

According to the survey, most students spend 10 minutes waiting for the bus, and more than half of them think they need an electric bike to help them commute.

how long does it usually take the students to wait for the bus during the rush time



b. Competitive Position Advantage

· Conduct business within the school --- low cost

The parking spots of shared electric bikes in CUHKSZ can be set in the spare space on the campus to reduce the cost of venue rental. At the same time, the shared electric bike can provide more convenient rental and return services to meet the needs of students to travel anytime and anywhere. Due to the high demand from students and teachers, we can also effectively reduce the marketing and promotion costs.

· Solve the problem of insufficient charging piles

Currently, about 300 students in CUHKSZ have private electric bikes. But there are only 12 charging piles provided in each parking lot. According to the survey, 60% of them think that charging piles are not enough. Anyway, increasing students consider buying electric bikes, so the question of charging-pile-shortage may be more serious. In addition, problems such as sun exposure to the charger and removing the power supply untimely in rainy days have also bring some potential safety hazards. If we use shared electric bikes, we will regularly transport the bikes to our branch in Longgang, Shenzhen for charging, and ship back a batch of fully charged electric bikes. This not only solves the problem that electric bikes cannot be charged in time, but also reduces safety hazards in the school.

· Environmental

The shared electric bike is a kind of more environmentally friendly transportation than buses, which can reduce greenhouse gas emissions in schools to a certain extent. At the same time, shared e-bikes are less noisy during operation, which reduces the noise pollution caused by bikes, reduces the noise level of the campus environment, and improves the quality of life of students and teachers. It will be very popular.

Introduction

Overview of Hello Inc

Hello Inc was founded in 2016 and is headquartered in Shanghai. It is a professional local travel and life service platform in China. Committed to using the advantages of digital technology to provide people with more convenient travel services. In the past ten years, Hello Inc has continuously improved its service. It has won many awards such as the “ChinaBang Awards Annual Travel Service Award”, “The Annual Industry New Marketing Leader Award,” and so on. By April 2022, Hello Inc will hold more than 550 million registered users, which is 5 to 10 times more than that of companies in the same industry. And by September 2022, the daily activity of Hello APP had exceeded 15 million, and the platform GTV even achieved a record high of more than 200 million. It is a service company with high domestic recognition.

Now, Hello Inc has 25 branches in Shenzhen, including seven in Longgang. We could set up our branch in Dayun, which means from CUHKSZ to get there just needs a ten-minute drive. This is very convenient for laborers to charge or maintain electric bikes in the future. And the cost of money and time is relatively low.

Basic information about our business

Aspects	Key Inforamtion	Details/Comments
Location	both the upper and lower campus	in the upper campus, each college will hold a parking spot (six in total), in the lower campus, one parking spots will located around new library, and one beside the Sports Hall.
Target audience	All CUHKSZ members	the customers also includes the visitors, but the customers are expected to use the shared electric vehicle only in campus.
Business hour	24h	
Supplier	electric vehicle	In fact, we are just introducing the service of Hello shared electric vehicle to the campus
Labor	6 clerks	They are responsible for putting the vehicles in order. Two of them are also responsible for transporting the vehicle to be recharged every day.
Service	Offline	the users just should use their phones to scan the QR code stick to the vehicle

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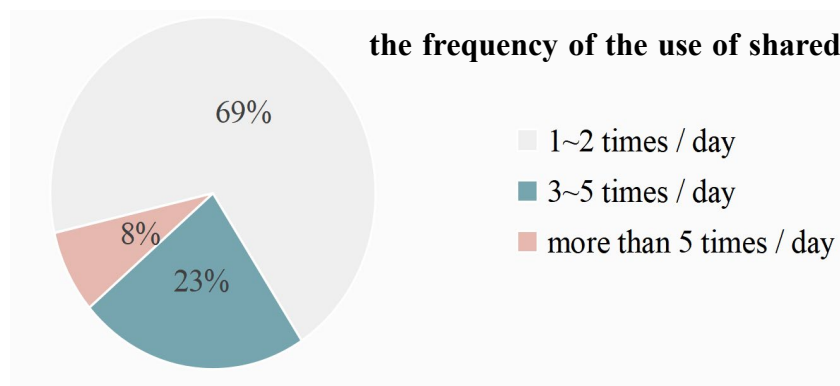
Facility	two wagons	to realize the transportation between Hellobike's headquarters in Shenzhen and CUHKSZ
Insurance	personal accident insurance	
Initial Funding	905 thousand RMB	each partner will invest exactly 181 thousand RMB
Ownership Structure	owned by 5 students	the equity of branch in CUHKSZ will be divided equally. each partner will own 20% of the share.

Price table

The majority cost is fixed cost, and we will talk about that later. The price follows the price set by the headquarters of Hello Inc. And due to different students having different demand frequencies for shared electric bikes, we negotiated with the company to introduce three modes of payment on campus for students to choose from.

payment plan	explain	frequency of target users	price
plan A	pay per use	1~2 times / day	¥2.5 / time
plan B	pay once for multiple uses	3~5 times / day	¥112 / 50 times
plan C	unlimited monthly use	3~5 times / day more than 5 times / day	¥135 / month

The survey: the diverse demand

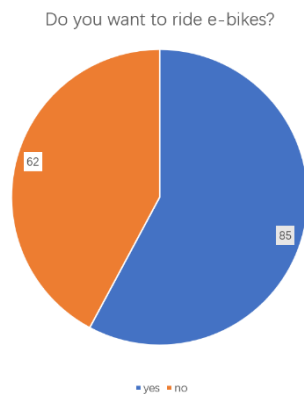


Survey Analysis

To better understand the market situation in our school, we conducted a survey for our classmates to fill out. Here are the questions we designed for the survey and the resulting data:

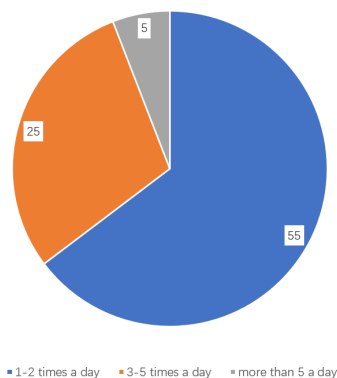
Firstly, we asked the students whether they have willing to ride e-bikes to have a brief data of the willingness:

From the graph, we can find that about 57.8% of students in the school have the willingness to ride bikes; according to the university school life and data from the school parking space, we assume the students who actually buy the e-bike takes about 10% in the students who wants to buy e-bikes.

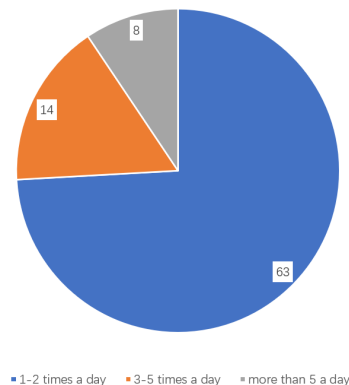


Secondly, we asked about the frequency of students use e-bikes in their daily life; we take different conditions into consideration; in our assumption for the industry, we need to take vacations and weekdays differently:

the frequency you ride e-bikes during weekdays



the frequency you ride e-bikes during vacations

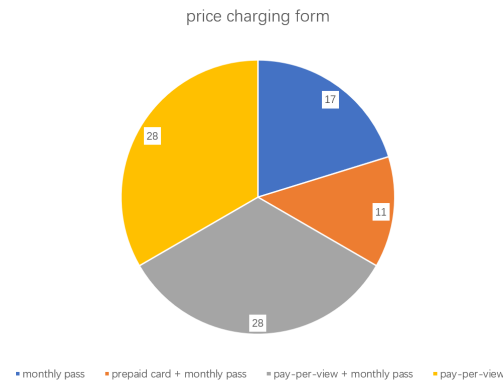


So we can get the data that during weekdays: 5.88% of students ride e-bikes more than five times a day, 29.4% of students ride e-bikes 3-5 times a day, 64.7% of students ride e-bikes 1-2 times a day, so to make a brief assumption we take an average of each choice and we use six times a day as a maximum so we can get the expectation by calculating each time which is: $5.88\% \times 6 + 29.4\% \times 4 + 64.7\% \times 1.5 = 2.49$ times a day

So we can get the data that during vacation: 9.41% of students ride e-bikes more than five

times a day, 16.47% of students ride e-bikes 3-5 times a day, 74.17% of students ride e-bikes 1-2 times a day, so to make a brief assumption we take an average of each choice, and we use six times a day as a maximum so we can get the expectation by calculating each time which is: $9.41\% \times 6 + 16.47\% \times 4 + 74.17\% \times 1.5 = 2.33$ times a day

The last question we asked the price charging form students want to use, and we get the result below:



According to the survey, we know that 12% takes the prepaid card and monthly pass, 21% takes the monthly pass, the number takes pay-per-view, and monthly pass and pay-per-view are both 33%

Cash Flow Projection

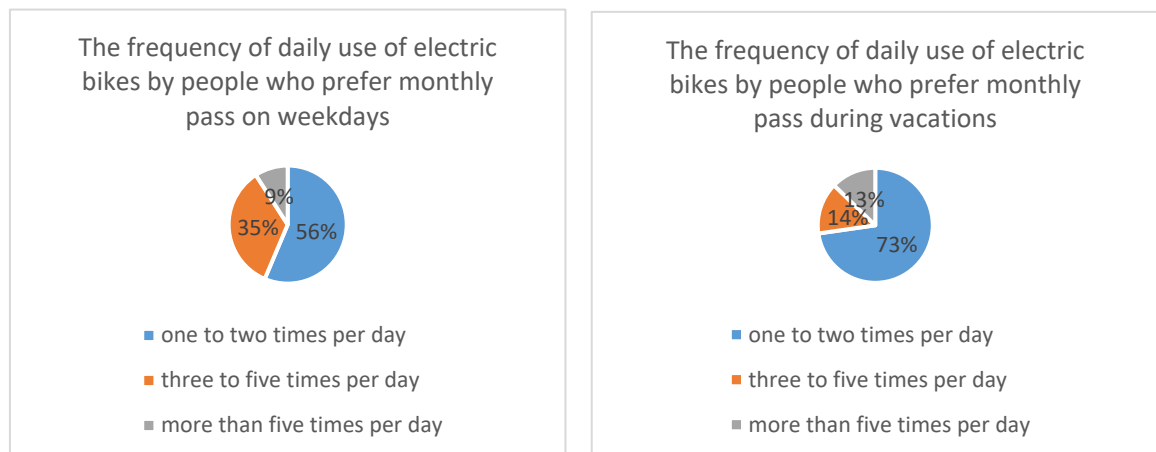
Cash Flow Table

Year	0	1	2	3	4	5
Regular cash flows						
Revenue		705099.78	881374.725	881374.725	881374.725	881374.725
-COGS		0	0	0	0	0
=Gross Profit		705099.78	881374.725	881374.725	881374.725	881374.725
-Expense		326400	408000	408000	408000	408000
-Depreciation		164000	205000	205000	205000	205000
=EBIT		214699.78	268374.725	268374.725	268374.725	268374.725
-Income Tax at 25%		53674.945	67093.68125	67093.68125	67093.68125	67093.68125
=Unlevered Net Income		161024.835	201281.0438	201281.0438	201281.0438	201281.0438
Free Cash Flow						
+Depreciation		164000	205000	205000	205000	205000
-Capital Expenditures	820000	205000	0	0	0	0
-Changes in net working capital	81600	20400	0	0	0	-102000
=Free cash flow	-901600	99624.835	406281.0438	406281.0438	406281.0438	508281.0438
PV of free cash flow	-901600	83718.34874	286901.3797	241093.5964	202599.6608	212994.8516
NPV	125707.8372					

Explanation

I . Revenue

Here we offer three kinds of sales for the sharing e-bike: **the pay-per-view** is **2 RMB** within 15 minutes, we get the data from our daily life that in CUHK-SZ the time a student spends going through the school is less than 15 minutes so that we will use **2.5 RMB** every 20 minutes as our single ride fee; The discounted fare for customers who purchase a **prepaid card** is intended to be 10% off the regular price of 2.5 RMB per ride, which amounts to **2.25 RMB per ride**. When calculating our revenue, we will multiply the number of rides by the price directly. However, since we receive this money upfront, it will not be discounted using the discount rate; Our third pricing option is a **monthly pass**, which allows holders to ride an unlimited number of times within a month. We used the data obtained from our survey responses that university students who prefer monthly passes will have a large proportion use electric bikes one to two times a day and a few use more than three times a day. To benefit customers who use it no less than two times a day, we decide to determine the price of the monthly pass using the data of price 2.5 RMB per time, 30 days for a month, and a 10% discount for the users of a monthly pass, finally resulting in **135 RMB** per month. ($2 \times 2.5 \times 30 \times 90\%$)



We assume we have **3 months in vacation** and **nine months** (3.5months for each term and two months for the summer course) by calculating **for weekdays** (for the one who always chooses a monthly pass he will pay ten months of money)

Based on the survey results, it can be inferred that the proportion of upper-campus students who are inclined to utilize electric bicycles stands at 57.82%. The total number of students on the upper campus is around 4500 (according to the teacher in administration). We can infer from our questionnaire that the proportion of students who are willing to use electric bikes is 57.82%. So the number of students who are willing to use electric bikes is $4500 \times 57.82\% = 2601.9$. We assume that the conversion rate (the number of students who actually use / the number of students who are willing to use) is 15%. That is, the number of users per day is $4500 \times 57.82\% \times 15\% = 390$. However, because of the site limitation, we finally decided that the number of electric bikes on campus every day to be 350. According to our assumption, these 350 bikes will support the use requirements of students and site demand. According to our

survey, the average number of times students use electric bikes is around 2.49 on weekdays and 2.33 on weekends and holidays. We take these two numbers for further calculations. So the total number of times used per day is around $2.49 * 390$ on weekdays. Averagely, per electric bike will be used at most $2.49 * 390 / 350 \approx 2.78$ **times per day** on weekdays. Similarly, we can calculate the statistic for vacations, which is $2.33 * 390 / 350 \approx 2.60$ **times per day** during vacations.

To calculate our income, our main method is to separate the user groups of the three charging methods and calculate the sum of the final results.

The process is in the table below.

	Vacation and holiday	Weekdays	Rate
monthly pass	$135*3*350$	$350*135*(4+4+2)$	21%
prepaid card + monthly pass	$2.601*350*90\%*3*30*2.5$	$350*(135*8+2*0.5*2.780*90\%*2.5*30)$	12%
pay-per-view + monthly pass	$2.601*350*3*30*2.5$	$350*(135*8+2*0.5*2.780*2.5*30)$	33%
pay-per-view	$2.601*350*3*30*2.5$	$350*2.780*2.5*30*9$	33%

Here, we assume that students who prefer both pay-per-view and a monthly pass will only use a monthly pass on weekdays because of the strong discount and will only use pay-per-view during vacations because of the incompleteness of months spent in school. By the same token, students who prefer all three choices and both a prepaid card and a monthly pass will only use a prepaid card during vacations, and those who prefer both the pay-per-view and monthly pass will only use pay-per-view during vacations.

Then we can get the results of each kind of charging fees

	Vacation and holiday	Weekdays	Rate
monthly pass	141750	472500	21%
prepaid card + monthly pass	184345.875	443677.5	12%
the pay-per-view + monthly pass	204828.75	450975	33%
the pay-per-view	204828.75	656775	33%

So the total sales income is

$$(141750+472500)*21\%+(184345.875+443677.5)*12\%+(204828.75+450975)*33\%+(204828.75+656775)*33\% = 705099.78\text{RMB}$$

We get the data from the teacher in the administration that the number of students will increase by 25%, making the sales increase by the same rate of 25% in the coming years which is **881374.725RMB**. We learned from the market that the replacement age of electric cars is approximately every five years, so our project needs to continue for five years. After analysis, we think that the market tends to stabilize after the second year. So we assume that the revenue remains unchanged from the second to fifth years.

Our revenue looks like:

year	1	2	3	4	5
revenue	705099.78	881374.725	881374.725	881374.725	881374.725

II. Cost of Goods Sold

Our cost of goods sold is 0 because we don't sell any product.

III. Capital Expenditures

1. Initial equipment cost

Totally, **410** electric bikes will be purchased at year 0, with 350 electric bikes on campus every day and 60 being charged. Each electric bike will be used six days a week, leaving one day to be recharged. We have calculated from the previous data that the average per electric bike that will be used is $2.49 \times 390 / 350 \approx 2.78$. So the total distance an electric bike travels a week is $2.78 \times 1.9\text{km} \times 6 = 31.692\text{km}$, which is less than 35km a fully charged electric bike can travel. Therefore, we guarantee that each electric bike can be charged at least once a week, maintaining normal operation.

According to the market, the average price of an electric bike is **2000** RMB, including insurance expenses for electric bikes. So the capital expenditure in year 0 is **$410 \times 2000\text{RMB} = 820000$** RMB.

Due to the increase in the number of students from the second year, we need to increase the amount of equipment at the same growth rate. So the capital expenditure at year 1 is approximately **$820000 \times 25\% = 205000$** RMB.

Source:

<https://www.chinacacm.org/data/upload/file/202011/912aff87a24dcc3211e88082f23a2ae3.pdf>

2. Venue cost

The venue cost is 0 because we can use the schoolyard for free to park electronic bikes.

IV. Expenses

The total expenses for the first year are **326,400**, and for the second to fifth years are **408,000**. The detailed analysis is the following:

First-year expenses are as follows:

1. Transportation expense

The transportation expense is around **36,000**.

Every day we should use a truck to transport our electric bikes to recharge and bring them back the next day, according to the recruitment information online. The transportation drivers' salaries are around 5,000RMB / month. We assume that the driver can work for two places (one of them is us) a day for transportation work. Then, we take weekends into account and add 500 more into the transportation expense per month. So the total

transportation cost will be $(5000 / 2 + 500) * 12 = 36,000$ on transportation every year.

2. Electricity expense

The electricity expense is around **20520**.

According to the official documents of Hello Inc, the electric bike uses a 48V 13AH power supply, according to which we can calculate the power required to fill a car as $48V * 13AH = 624Wh$, $624Wh / 1000 = 0.624kWh = 0.624$ degrees. And then according to the enterprise electricity charging standards of the Guangdong Provincial Development and Reform Commission, the industrial electricity quotation during the peak period is about 1.5 RMB per kWh, so our charging fee per vehicle per time is $0.624 * 1.5 = 0.936$ which is approximately equal to 0.95, so the annual charging cost is $0.95 * 60 * 360 = 20520$ RMB.

Source:

<https://www.chinacacm.org/data/upload/file/202011/912aff87a24dcc3211e88082f23a2ae3.pdf>

<http://sz.bendibao.com/news/2021512/864202.htm>

3. Maintenance cost

The maintenance cost is **123,000**.

The daily maintenance cost per electric bike is around 0.7-0.9 RMB. To simplify calculations, we assume the annual maintenance cost per electric bike is 300 RMB. Therefore, the total maintenance cost for 410 bikes is $300 * 410 = 123,000$ RMB.

Source:

https://pdf.dfcfw.com/pdf/H3_AP202106161498240996_1.pdf?1623839257000.pdf=

4. Employee wage

The total employee wage is **129,600**.

We spend 360 RMB every day to hire six people to organize and arrange electric bikes. Each person takes turns working for one hour every day. We also offer two levels of bonuses, 30 RMB and 18 RMB per day, to reward outstanding performers. To calculate the annual wage, we multiply the daily wage by the number of days in a year, which is 360. Thus, the employee wage for a year is $(360 + 30 + 18) * 360 = 146,880$ RMB.

Total expense for the first year	Transportation expense	Electricity expense	Maintenance cost	Employee wage
326,400	36,000	20520	123,000	146,880

The total annual expense for the second to fifth year will increase by 25% due to the increase in the number of students on the upper campus, which will result in 408,000.

So our expenses are

year	1	2	3	4	5
expenses	326,400	408,000	408,000	408,000	408,000

V. Depreciation

The life of an e-bike in the market is five years in usual, so we use this data to assume the life of depreciation. Moreover, we think the way during the life of the e-bike is totally homogeneity (just imagine the same way every day a student goes through school), so we use the straight-line depreciation to calculate the depreciation.

The asset on our e-bike is 820000 RMB (including the insurance), so the depreciation in the first year is **164000** RMB. In the next several years with an increase of 25% of students, the depreciation increases at the same rate which finally results in **205000** RMB.

VI. Tax

The tax rate is **25%**. Because we are using the name Hello, we are not a small enterprise with little profit (tax: 20%) or a high-tech enterprise (tax: 15%). As a result of that, we need to pay the general corporate income tax (25%).

Source: <http://www.invest-data.com/eWebEditor/uploadfile/2019042120352579696311.pdf>

VII. Changes in Net Working Capital

In the first year, we have a total expense of 326400RMB. In order to ensure normal operation in the first quarter and avoid the condition that revenue is below 0, we assume the required net working capital to be the expense for the first quarter of the year, which is $326400 / 4 = \mathbf{81600}$ for the first year. Due to the increased number of students in the upper campus, in the second year, we need to buy 25% more e-bikes of the first year to catch up with the increasing number of students, so the change in net working capital for the second year is $81600 * 25\% = \mathbf{20400}$.

VIII. Discount Rate

Our discount rate is **19%**. According to Hello Inc. Prospectus, the WACC was 19% in 2019 and 17% in 2020. Because society was seriously affected by the epidemic in 2020, we use 2019 WACC as our discount rate.

Source: <https://www.ligongku.com/resource/94547>

Risk Analysis

Investment Risks

Market risk

-Competition with other existing transportation on the campus

The demand for individual vehicles is always high. Though large school buses cross between the upper and lower campuses, the arrival time and the volume of buses are fixed. Students prefer to have a more flexible choice and can catch up on some important meetings in case of

emergency. However, these are not current demands, meaning some have already purchased their private electric bikes. Those who bought their own vehicles will scarcely use the shared electric bikes and purchase our service. Also, shared vehicles are still public transportation, so they cannot be as convenient as private vehicles. For those who appreciate the flexibility of electric vehicles that they can drive to a destination and park their vehicles directly, shared vehicles will not be their first choice.

Management risk

-Scheduling efficiency during the peak usages period

One of the biggest problems of the demand for school buses is that students cannot get on the bus at the peak usage period, around 8:30 every weekday. Shared vehicles are public transportation, and they also face these problems. We need more staff during the peak period and fewer at other periods. That means we need to consider flexible labor allocation. Due to the limitations of employees, we need to hire student assistants at specific periods. However, students will also be busy during these periods, so it will be hard for us to find enough labor. Also, the training and supervision for the student assistants is another cost of time and money.

-Equipment repairment and maintenance efficiency

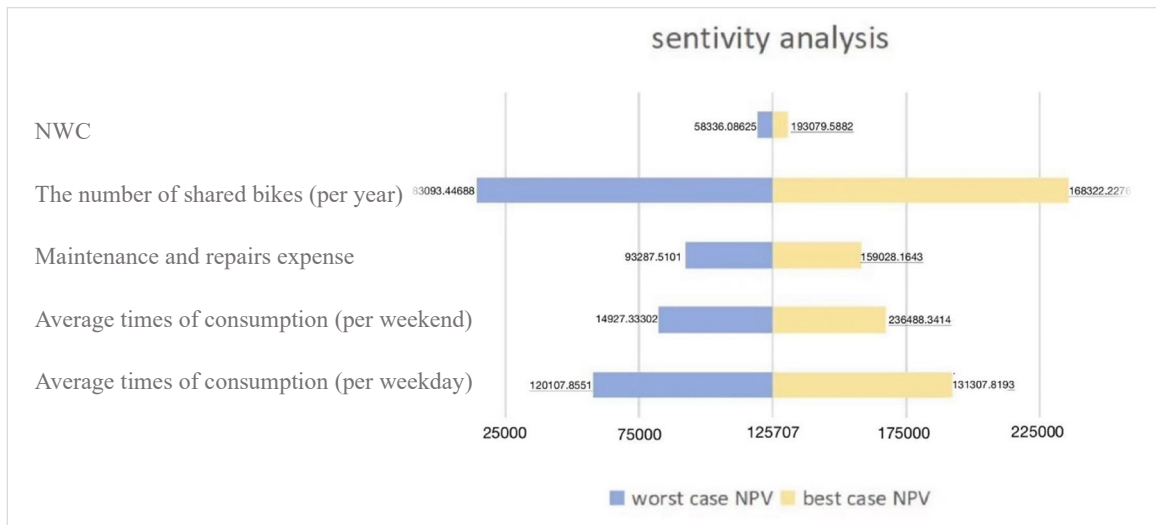
Electric bikes are easy to wear and tear. Shared vehicles are more likely to have depletion. Besides the fixed maintenance period, the bikes' degree of loss cannot be predicted precisely. And accidental problems can happen daily, impacting the daily usage of shared bikes. Also, although our shared electric bikes should be used inside the campus, it is still possible that the bikes will be driven outside the campus. This is the additional risk that should be considered.

Operational risk

-Riders' personal accident

It is unavoidable that riders may have accidents and get hurt during the riding process. It can be a result of shared bikes' own faults or traffic accidents caused by people. No matter what causes, as these situations happen, we need to take responsibility for the riders using our bikes. However, the degree and the frequency of accidents cannot be predicted precisely. That means we cannot expect how often and how much we will pay for the accidents. That is a risk during the operational process.

Sensitivity Risks



Column1	initial assumption	worst case	best case
average times of consumption (per weekday)	2.5	2.25	2.75
average times of consumption (per weekend)	2.3	2.07	2.53
maintenance and repairs expense	300	330	270
the number of shared bikes (per year)	410	451	369
NWC	81600	73440	89760

According to our questionnaires and the above analysis, we assume that the initial average times of consumption per weekday is 2.5, the average times of consumption per weekend is 2.3, the maintenance and repairs expense is 300, the number of shared electric bikes is 410, and the net working capital is 81600. We assume that these criteria will fluctuate between 110 and 90 percent of the amount of our initial assumption.

Conclusion

According to our former research and the above analysis, we recommend providing shared electric bike service on the CUHKSZ campus. The project's period will be five years and its payback period will be three years. The investment project will provide a stable income in the following years. The project will meet abundant risks in the future, but these risks can be avoided by our prior measurements. Providing the shared electric bike service will largely reduce the pressure of traffic between the lower campus and the upper campus and will benefit students' and staff's convenience. So this project is still profitable and feasible on the CUHKSZ campus.