



東海大學學生報告 ePaper

報告題名：台中快捷公車的利與弊

Title: The Pros and Cons of the BRT in Taichung

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中文摘要

台中為現今台灣第三大發展的都市，但是交通壅塞問題層出不窮。為了因應改善台中主要交通幹道－台灣大道的交通問題，台中市政府於是開始進行環境影響評估並提出打造台中市快捷公車的想法。因此 BRT 在民國 103 年 7 月開始全面通車。BRT 目前營運的藍線優先路段是由台中快捷巴士公司與台中客運、統聯客運及巨業交通聯營，聯營業者依提供車輛數比例分配營運班次，並依行駛營運公里分配營收及分攤 BRT 系統運作成本。民眾搭乘的辦法比照普通公車系統，只要持有悠遊卡便能免費搭乘以鼓勵民眾搭乘大眾交通運輸工具以舒緩台灣大道交通壅塞的狀況，因此承載率大幅提升。然而，後續卻也引發不少的爭議。民眾的意見反映出 BRT 全線通車後，相對於普通公車系統，BRT 的速度與班次並沒有預期來的有效果，反而擠壓不少台灣大道的空間因而導致交通更加混亂。但是也有民眾表態支持 BRT，認為 BRT 帶來生活上的便利。為了因應層出不窮的爭議，2015 年 3 月，林佳龍主導的台中市政府最終提出「優化公車專用道」方案，等同於使臺中市快捷巴士計畫全面中止。2015 年 7 月 8 日後 BRT 專用道將改成公車專用道，原 BRT 藍線車輛改為 300 路公車、與部分走台灣大道幹線的市公車共用原 BRT 專用道。但是這項政策卻也引發更廣大的爭議，因此，我們進行這份研究的目的是要探討民眾表示支持或反對的百分比。透過發放一百二十份問卷與閱讀學術論文及報章雜誌而採集的資料，進行研究並且分析其最後的結果。然而我們卻得出一個結論：大部分的民眾不同意台中市政府取消 BRT 營運的政策。對於這個結論我們雖感詫異卻也讓我們得出一個滿意的結論：台中市政府應該想出最好的決策以改善 BRT 營運系統而不是將它與普通公車系統合併。

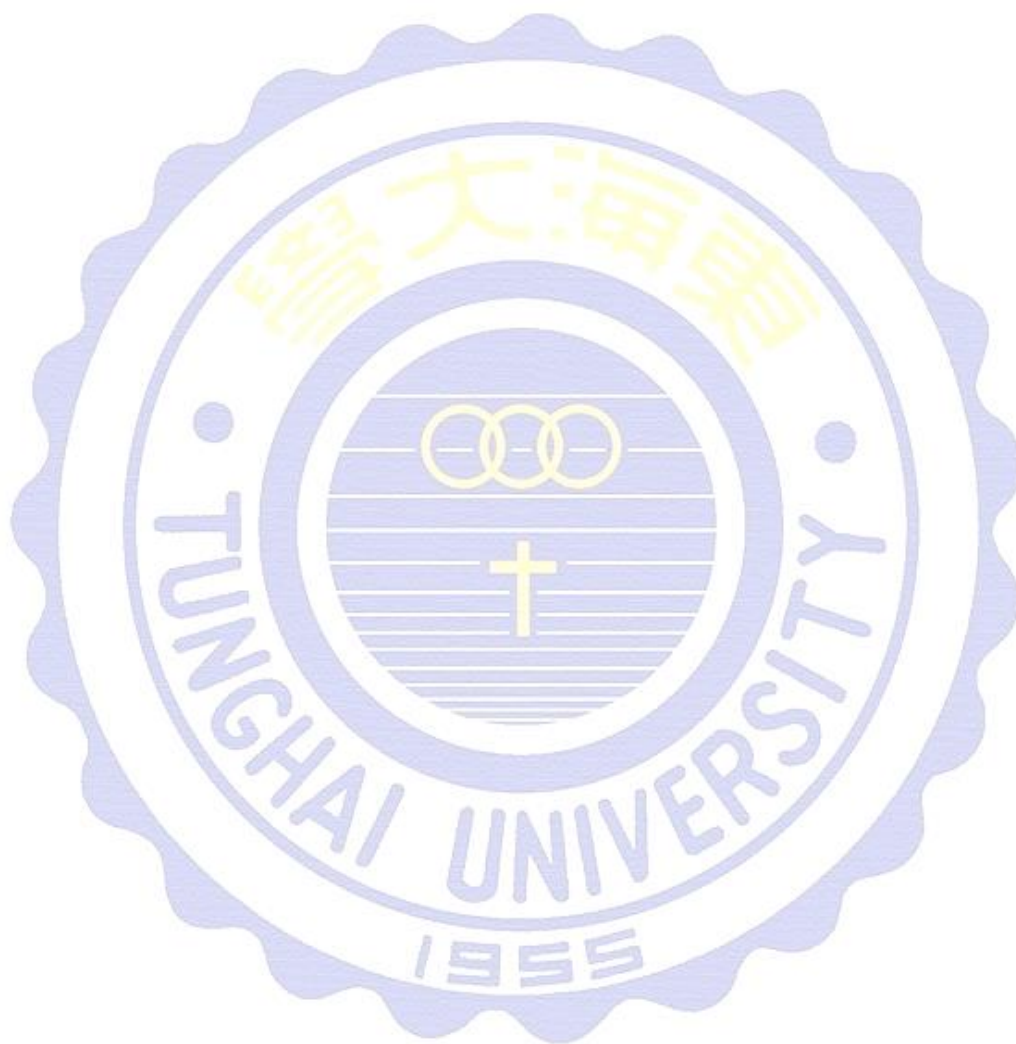
(The Pros and Cons of the BRT in Taichung)

關鍵字：

BRT 運輸系統

台灣大道

是否改善



Abstract

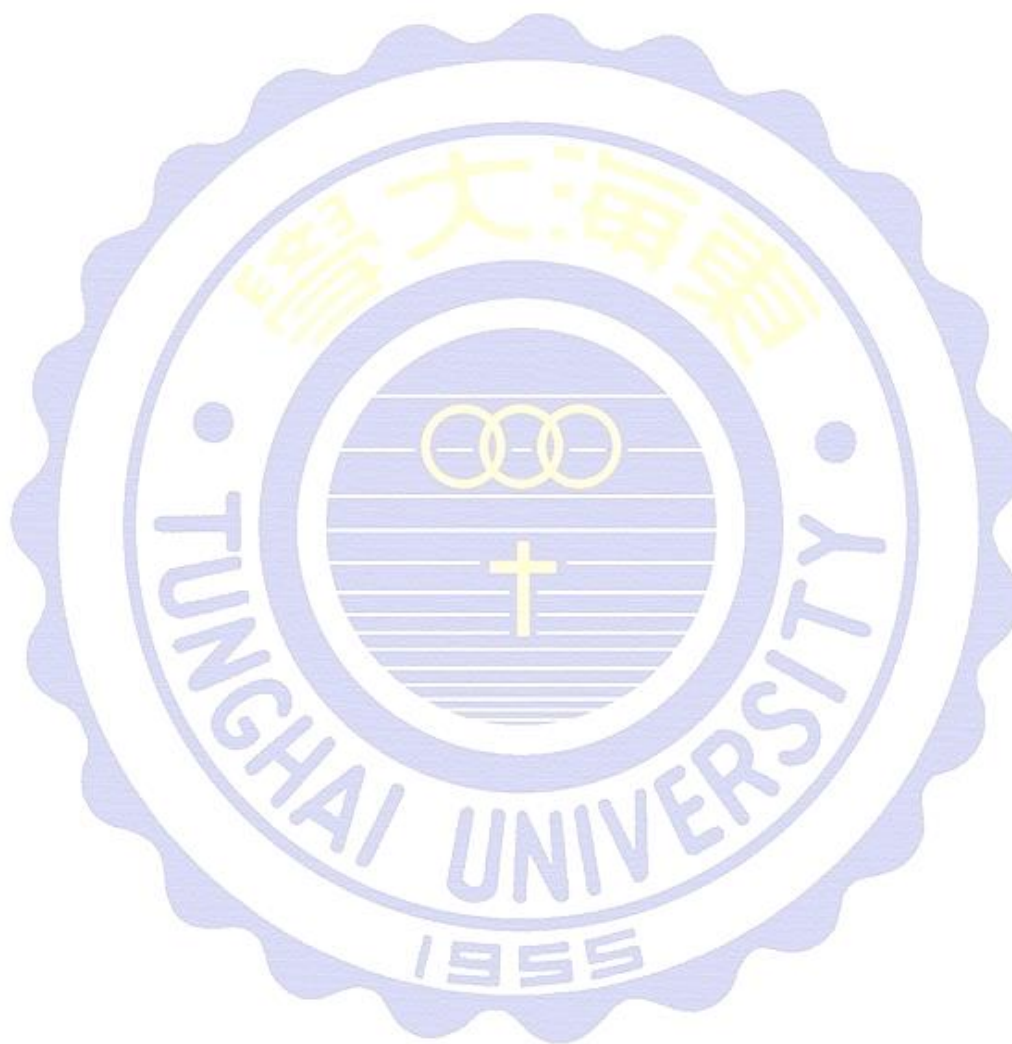
Taichung city is the third largest city in Taiwan with 2.7 million population. Thus, the convenience of transportation is a crucial problem for the citizen. The government of Taichung came up of building a BRT for the sake of the citizen, hoping to improve the traffic in town. It was built in the summer of 2014. Since then, there are a lot of controversial issues about it. For almost a year the BRT has been used yet still there are a lot of negative and also positive opinions about the benefits of this kind of transportation. In this study, we attempt to investigate people's tendency toward the BRT. We gave out about 120 copies of questionnaires to our participants. And we use both quantitative and qualitative method to support our research by doing survey with questionnaires and finding information from professional journals and newspapers. And the reason why we chose this way is because that questionnaire is the most direct way to reflect the opinions of the citizens. And we also use professional journal and newspaper to receive different points of view toward the BRT. Through the survey we found out that most of the people disagreed with the policy that Taichung government is going to cancel the original function of BRT, which is really beyond our expectation. The reasons why people would like to keep BRT operating are the convenience which BRT had brought up; what's more, other transportations can no longer replace it. And we are also satisfied with the final results. Besides, according to Professor Chang from National Taiwan University, "the meaning of rapid from the terms of BRT will no longer exist if BRT is going to be part of the bus system." We think that the government should upgrade the whole system of the BRT by improving it instead of degrading it by changing it into normal bus. Otherwise, "BRT will no longer be BRT."

(The Pros and Cons of the BRT in Taichung)

Keyword : BRT system

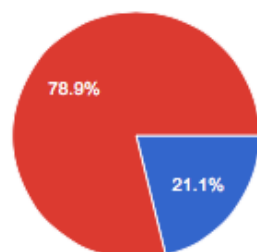
Taiwan Boulevard

Whether improve the traffic jam or not



研究結果

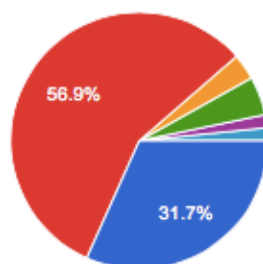
性別



男	26	21.1%
女	97	78.9%

1. After we collect the questionnaires and analyze the resulting data, we find out that the gender of people according to the survey is almost female people. The accurate percentage of female people is 78.9%; on the other hand, the accurate percentage of male people is 21.1%.

年齡

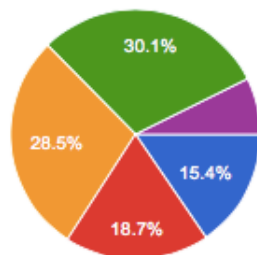


20歲以下	39	31.7%
20~30歲	70	56.9%
30~40歲	4	3.3%
40~50歲	6	4.9%
50~60歲	2	1.6%
60歲以上	2	1.6%

2. Then, the graph which we analyze shows the age of the people who most often take the BRT is about 20~30 years old; on the other hand, the age of the people who most less take the BRT is above 50 years old. Below 20 years old is about 31.7%, 20~30 years old is about 56.9%, 30~40 years old is about 3.3%, 40~50 years old is about 4.9%, 50~60 years old is about 1.6% and finally above 60 years old is about 1.6% and we think that the resulting answer shows the common passenger is teenager and middle age because they need to commute from school to home or from office to home.

(The Pros and Cons of the BRT in Taichung)

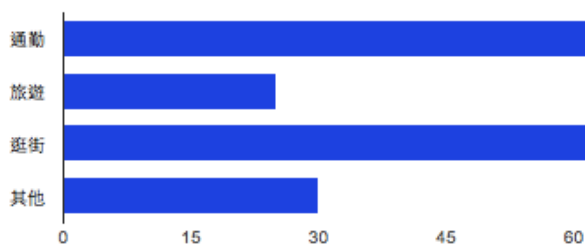
請問您一周搭乘BRT的次數為



頻繁	19	15.4%
時常	23	18.7%
有時候	35	28.5%
很少	37	30.1%
從不	9	7.3%

3. Next, about the question that how often do you take BRT in a week? Most people select the answer that they sometimes take BRT but seldom people select the answer that they never take BRT. The resulting data shows that most of people in Taichung have been taking BRT before and would like to try to take it after BRT system finished.

您搭乘BRT的目的為

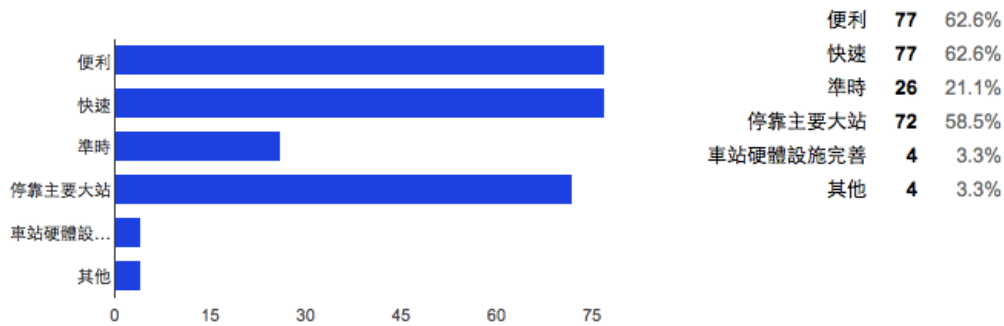


通勤	66	53.7%
旅遊	25	20.3%
逛街	63	51.2%
其他	30	24.4%

4. From the result we got, we can see that most of the people take BRT to school or work. Because BRT has many buses and it is quite on time. Therefore, many people choose to take BRT instead of normal buses so they will not be late for school or work. On the other part, many people also take BRT to go shopping. People usually go shopping on the weekend. However, there's always a traffic jam on Taiwan Boulevard on the weekend. As a result, people prefer to take BRT for shopping.

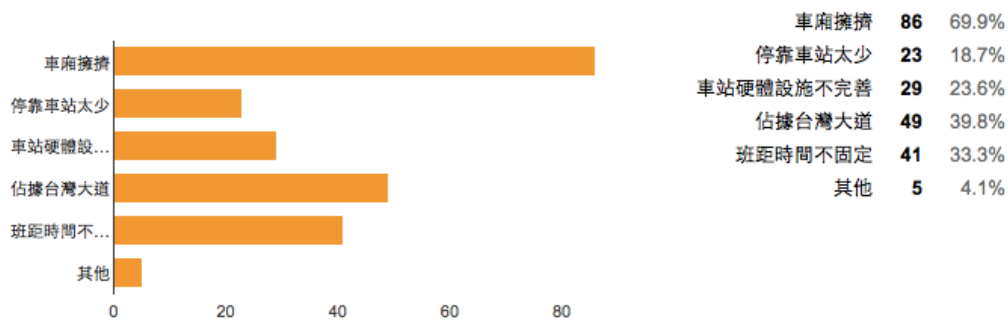
(The Pros and Cons of the BRT in Taichung)

您認為BRT的優點是



5. Based on the chart we know that both convenience and rapid are the main features of BRT, which turns out to be advantages as well. They share the same data that nearly eighty people agree with such idea. First of all, BRT takes relatively less time for people who are in a hurry; what's more, we do not have to walk too much miles to catch up the BRT because each of the station is quite close. The other advantage for BRT is that it stops at the most important station where people get on and off more frequently.

您認為BRT的缺點是



6. For the multifaceted aspects of BRT's disadvantages, most of the people concerned with the overcrowding while standing in the cabin and it may lead to some invisible dangers. For examples, when people get into the car and there is no extra space for them to stand, they may get hurt if the driver is not aware of people sticking in the crowd right aside the door and then close it. Some other thought that BRT lane takes up too much space in Taiwan Boulevard which may cause a heavy traffic jam.

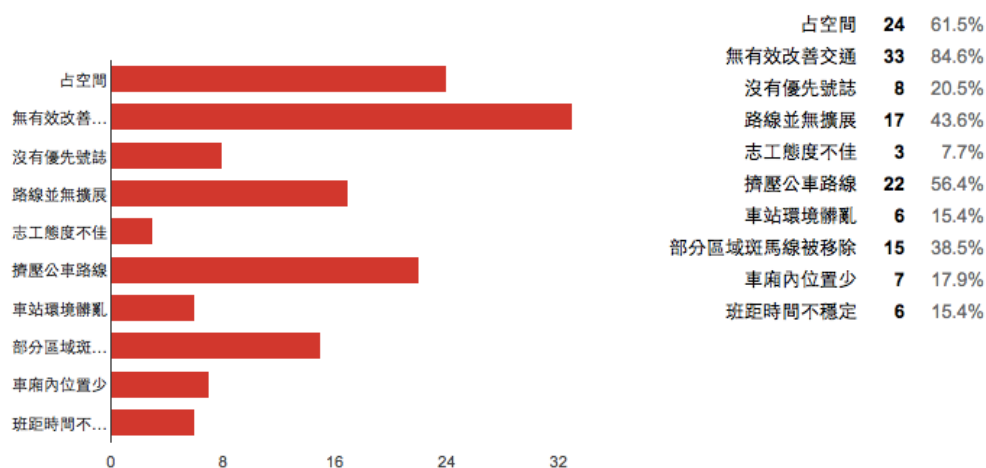
您對於BRT將取消的看法是



(The Pros and Cons of the BRT in Taichung)

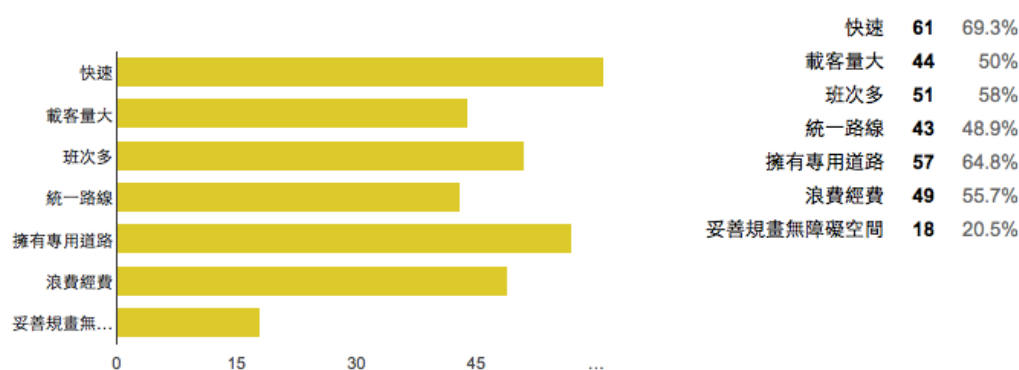
7. For this controversial issue: Whether should BRT be canceled? The result is quite surprising because we heard people complaining about the BRT all the time. Apparently, most people don't agree to cancel the BRT. People who disagree with it are about 70%. On the contrary, people who agree with it are only 30%.

同意BRT取消的原因



8.33 people believe that BRT fails to improve the traffic, thus, agree that BRT being abolished. Least people, 3 people to be precise, think that the volunteers who help the process of entering the BRT has bad attitude. Besides, 24 people think that BRT has taken the space of the road which brings no benefit. In addition, BRT was seen to be disturbing the road-line of other public-buses. 6 people dislike BRT and agree that the BRT station was too dirty and also found the unstable schedule of the incoming bus disturbing.

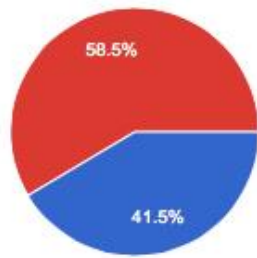
不同意BRT取消的原因



9. On the other hand, 61 people admit the fast speed of BRT which makes it the most advantages. 57 people found that the special road-line for BRT as the second most favorable specialties that BRT possess. 51 people agree that BRT has a lot of buses intervals which was the third most chosen advantage of BRT. The least option that had been chosen is the special area for the disable was considered the least favorable where only 18 people choose this choice.

(The Pros and Cons of the BRT in Taichung)

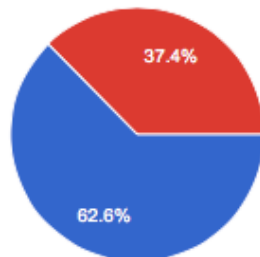
你滿意上下車秒數限制的設計嗎



滿意	51	41.5%
不滿意	72	58.5%

10. From the chart we can see that about 70% of people are not satisfied with the limited time for passengers to go on and off the BRT. Although the limited time can shorten the time that BRT stopped at every station, it also causes lots of dangers on passengers as we can see on the news these days. Since the opening and close of the door is controlled by the driver and there is no perfect device to induce whether there is still passengers at the door, passengers have a very

BRT運行以來，您搭乘BRT的次數有無比公車頻繁



有	77	62.6%
無	46	37.4%

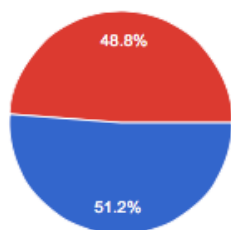
11. After BRT are started, 62% of people said that they have been taken BRT more frequently than bus. There are several reasons that cause this situation:

(1). Most of the buses that passed Taiwan Boulevard have the same route with BRT, so the government canceled about 70% of buses and replaced them with BRT. Passengers have to spend lots of time waiting for bus and this inconvenience make them choose to take BRT instead of bus.

(2). BRT has fewer stations than buses which will save more time from stopping over at each stop and waiting passengers to get on and off.

(The Pros and Cons of the BRT in Taichung)

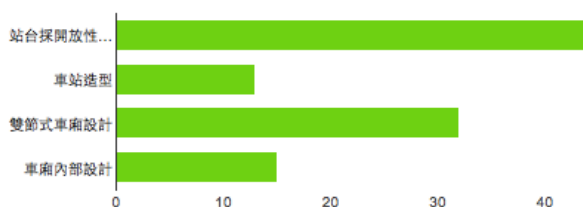
您滿意BRT的整體設計嗎



滿意(請跳至第13題) 63 51.2%
不滿意(請跳至第14題) 60 48.8%

12. And we asked the people whether they are satisfied with the general design of the BRT. The result came out unexpectedly, which is quite out of our group's expectation. We thought that most people are not satisfied with the general design of the BRT. Nevertheless, the percentage of both sides is quite even.

滿意BRT整體設計的原因



站台採開放性空間設計 44 75.9%
車站造型 13 22.4%
雙節式車廂設計 32 55.2%
車廂內部設計 15 25.9%

13. From the first graph we know that most people are satisfied with the general design of BRT because the station is built on the ground, not like the MRT in Taipei, close-ended with less fresh air to breathe. With the open design, people who are waiting for the bus can feel the breeze, touch the rain and embrace the sun. Another reason voted for this section is the double-cabin design of the BRT which it indeed carries more passengers than a normal city bus.

不滿意BRT整體設計的原因



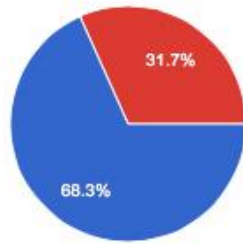
站台採開放性空間設計 19 27.1%
車站造型 22 31.4%
雙節式車廂設計 27 38.6%
車廂內部設計 31 44.3%

14. For the people who are not satisfied with the general design of the BRT, the most common reason they voted for is the interior arrangement of the bus. It is too crowded because the seats are not enough and also with less space to stand, passengers had to squeeze together in order to let other passengers on board. Surprisingly, the second reason appear on the graph is the double-cabin design which at a sense it pleases some voters for the advantage while others do not think in that way. They believe it does not help to solve

(The Pros and Cons of the BRT in Taichung)

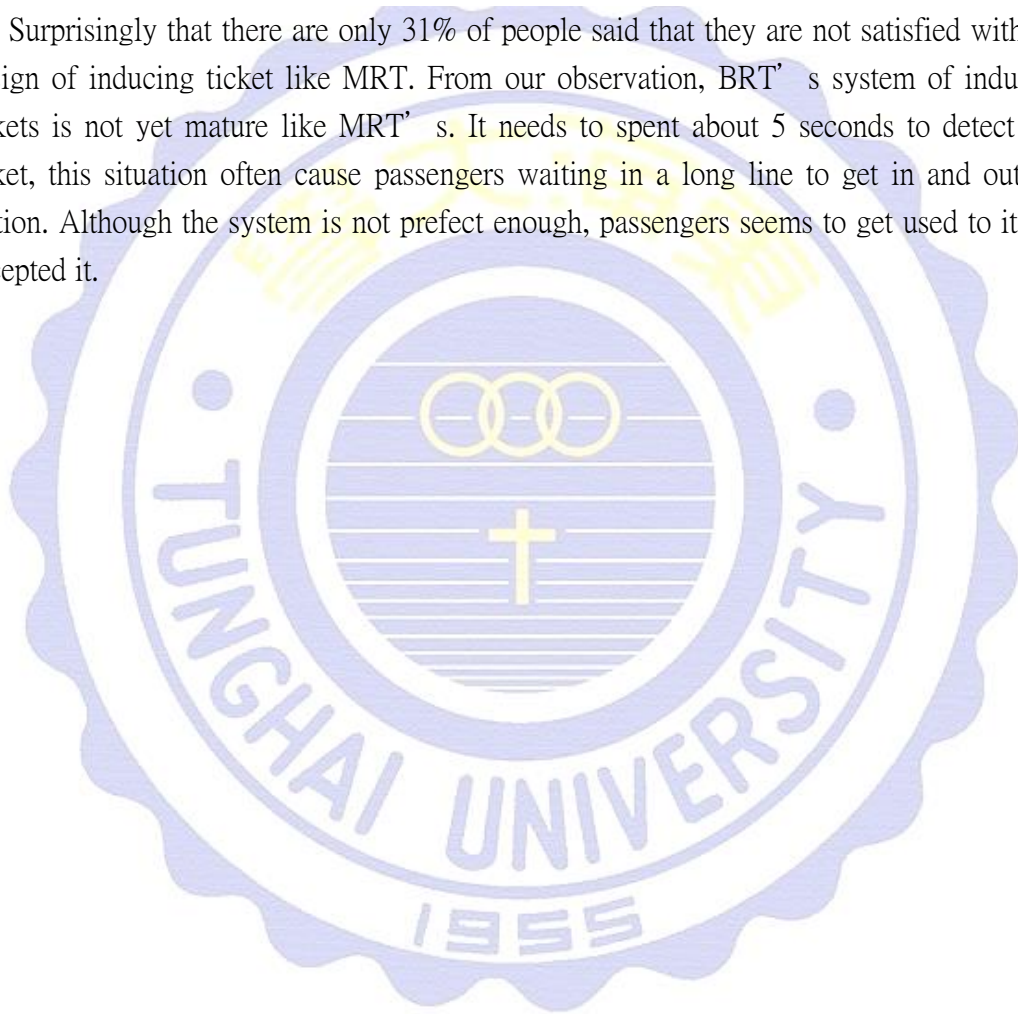
the large amount of transport needs of the passengers.

您滿意BRT比照捷運系統採取車外囉卡的設計嗎



滿意	84	68.3%
不滿意	39	31.7%

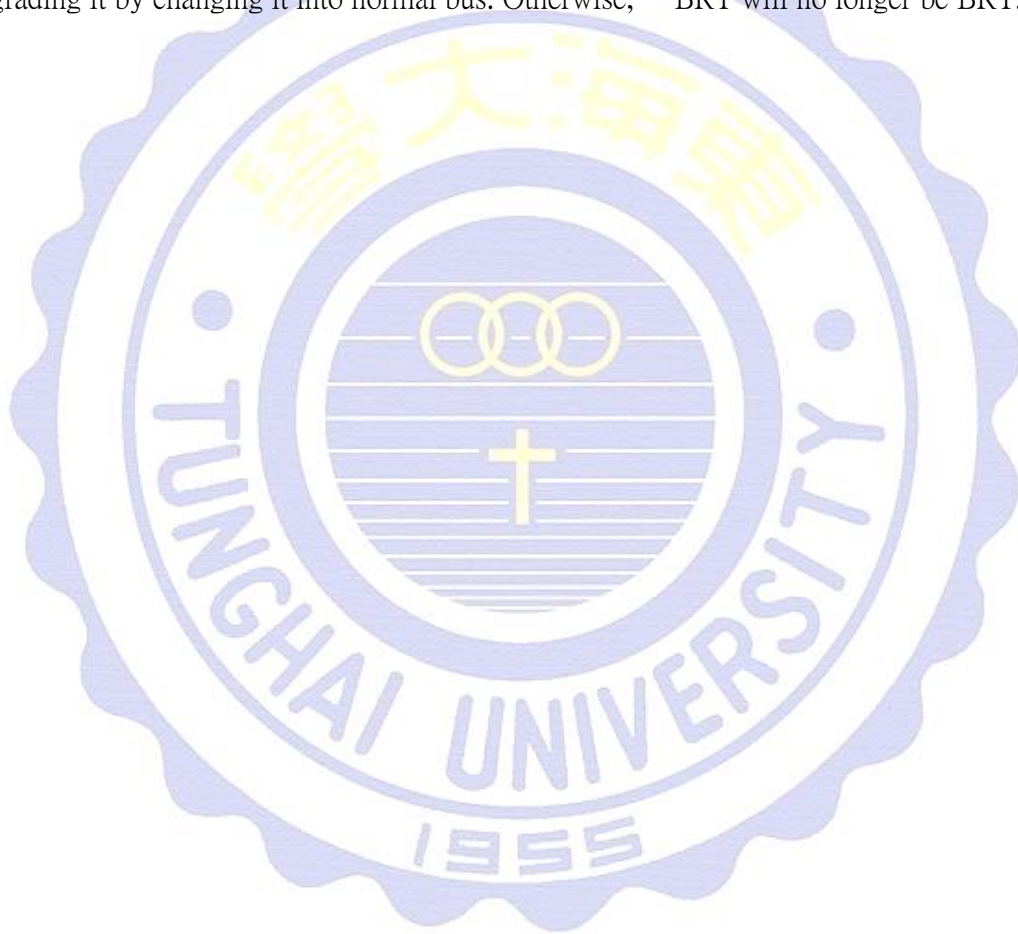
15. Surprisingly that there are only 31% of people said that they are not satisfied with the design of inducing ticket like MRT. From our observation, BRT's system of inducing tickets is not yet mature like MRT's. It needs to spent about 5 seconds to detect one ticket, this situation often cause passengers waiting in a long line to get in and out the station. Although the system is not perfect enough, passengers seems to get used to it and accepted it.



(The Pros and Cons of the BRT in Taichung)

結論

Through the survey we found out that most of the people disagreed with the policy that Taichung government is going to cancel the original function of BRT, which is really beyond our expectation. The reasons why people would like to keep BRT operating are the convenience which BRT had brought up; what' s more, other transportations can no longer replace it. And we are also satisfied with the final results. Besides, according to Professor Chang from National Taiwan University, " the meaning of rapid from the terms of BRT will no longer exist if BRT is going to be part of the bus system." We think that the government should upgrade the whole system of the BRT by improving it instead of degrading it by changing it into normal bus. Otherwise, "BRT will no longer be BRT."



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