An assessment of the reliability and accessibility of an Airport Transit Network at the Ninoy Aquino International Airport: A case study on UBE Express

Freddie A. Quinito1, Patricia Lhea S. Agustin1, Marieanne Korrine C. Alde1, Kamila Niecel A. Dela Cruz1, Rachel Camille R. Lacanlale1, Catherine C. Mondejar1 and Aarika Karla C. Viola1

1Department of Travel Management, College of Tourism and Hospitality Management, University of Santo Tomas

*corresponding author: faquinito@ust.edu.ph

Abstract. In the Philippines, the worsening traffic condition urged passengers arriving at the Ninoy Aquino International Airport (NAIA) to utilize taxis or transport network vehicles (TNVs) to reach their destinations despite the expensive rates. The study aimed to determine the reliability and accessibility level of UBE Express as an airport transit network. In this study, a mixed method design was used, while Likert-scale based survey questionnaires and structured interview guides were used to gather information from 100 Filipino respondent-passengers, Ai1freight 21, Inc. and inter-organizational partners respectively. The data were statistically treated using count analysis, weighted mean, and Spearman rank correlation. Based on the respondents’ assessment, UBE Express’ comfortable seats and people with disability (PWD) and senior citizen friendly features were regarded as most important components. Conversely, on-board emergency and weather information as well as different payment modes appeared to be the least important features. The study findings revealed that there was a significant relationship between reliability and accessibility. In conclusion, UBE Express is perceived to be a reliable and accessible airport transit network that can alleviate the traffic congestion in the metro.

1. Introduction
The air transport development globally is increased in demand for airport services and need for more efficient processes of servicing aircraft, passengers or luggage [1]. Airport customers are varied which included passengers, airlines, employees, concessionaires, tenants and others [2]. Airport passengers is divided into different group such as departing, arriving and transfer passengers [3]. In the airport, the passengers are served by various service providers at check-in counters, security control, passport control and baggage access and boarding processes [4].

The Ninoy Aquino International Airport (NAIA), the Philippines’ central gateway, incurred an 8% increase in passenger traffic in 2016 with a volume of 39.5 million people who transited through the four terminals of the country’s major hub in same year. A demand for an increase in transportation units is expected with increment of passengers arriving in NAIA.
In addition, the personal mobility has been a rising trend in many places; thus, utilization of public transport has not shown significant increase for the past years [5]. The public transportation condition should be enticing enough to counter the effects of mobilization of automobiles [6]. Therefore, a need for an accessible and reliable form of transportation for airport ground access such as buses arises in order to facilitate the movement of the passengers properly.

In Metro Manila, there is an airport transit system called Ultimate Bus Experience Express, commonly known as "UBE Express". It is a point-to-point bus transit service available within the NAIA complex. It is owned and operated by Airfreight 2100 Inc., who has made considerable partnerships with various groups and associations, including government agencies such as the Department of Transportation (DOTr) formerly known as Department of Transportation and Communications (DOTC), Land Transportation Franchising and Regulatory Board (LTFRB), and Manila International Airport Authority (MIAA). AIR21 is long known as a cargo logistics company but has now also embarked on providing a more convenient, reliable, safer and modern mode of public transportation through the management of UBE Express. UBE Express is a means to expand the current mass transit available in the airport complex and to provide a tourist friendly travel.

The study aimed to evaluate UBE Express as a reliable and accessible means of transportation of Filipino passengers. The study was conducted as a result of observation on the eminent urban traffic congestion brought about by the influx of car-based culture and decreasing public transport capacity and performance.

2. Methodology
The study design adopted was a mixed method design which combination of the quantitative and qualitative approach based on the underlying research objectives and questionnaires. A structured interview guide and a survey questionnaire were used in this study to collect the data. The questionnaires were carefully formulated.

The study was conducted in Metro Manila which focused on UBE Express bus stops or stations included NAIA Terminal I in Paraiaque City, Terminal 2 in Pasay City, Terminal 3 which was located in between Pasay and Paraiaque, Robinsons Place Manila and Victory Liner Pasay.

The study respondents were focused on Filipino passengers who have utilized UBE Express during the study intervention. The study samples were 100 passengers regardless male or female. The sampling method was non-probability purposive sampling method, specifically the classification of homogenous sampling.

A structured interview guide was used to determine the reason of the different organizations in creating the UBE Express. The structure interview was prepared to gather valuable information from organizations such as Air21, DOTr, LTFRB, and MIAA who collaborated to create UBE Express. In addition, a survey questionnaire was prepared to analyze the reliability and accessibility of UBE Express. An online survey also created using Google forms and disseminated through social media for respondent convenience.

3. Result and Discussion

3.1. Result
Table 1 shows the respondents number who ranked each feature of UBE Express as most and least important accorded to their preference.

There were 61 respondents considered comfortable seats as most important components of the buses. Most respondents who utilized UBE Express preferred comfortable seats as their top priority because the respondents felt relax well throughout the entire journey or trip. The comfortable seats also decided the passengers in using a specific mode of transportation. The seat is considered as important feature of every vehicle interior.
There were 15 respondents regarded the PWD & senior citizen friendly features of UBE Express as the second most important attribute of the bus. The respondents considered PWD and senior citizen friendly features of UBE Express as second most important component. that transportation was very important role in enabled persons with disabilities to travel. Inefficiency of public transport terminal accessibility has contributed toward inconvenienced and prohibits many disabled from moving around freely [7].

Meanwhile, there were 24 respondents ranked payment through cash, credit card or stored value card as least important special feature of UBE Express. The passengers were preferred traditional cash-based transaction which different to special feature of UBE Express which used wireless handheld payment device to process cash, credit card or stored-value card payments.

Meanwhile, 16 respondents were indicated on-board display of weather and emergency information as least important components of UBE Express. Bus units was accompanied with information display related to Metro Manila weather and other emergency details which considered less in significance compared to other features.

Table 1. Passenger ranking of UBE Express features

| Rank 1 | Rank 10 | Features                                      |
|--------|---------|-----------------------------------------------|
| 61     | 4       | Comfortable seats*                            |
| 4      | 1       | Enough luggage space                          |
| 3      | 3       | Ample leg room                                |
| 1      | 13      | Low floor design                              |
| 15     | 5       | PWD & senior citizen friendly features*       |
| 2      | 15      | On-board WiFi                                 |
| 4      | 6       | On-board display of arrival and departure information |
| 0      | 16      | On-board display of weather and emergency information** |
| 4      | 13      | On-board CCTV camera                          |
| 6      | 24      | Payment via cash, credit card or stored-value card |

Table 2 represented r value was 0.559. The result indicated that there was a moderate to strong positive relationship between the reliability and accessibility of UBE Express.

UBE Express reliability correlated with accessibility which meant that if the former decreases, the latter would also decrease and vice versa. Therefore, there was significant relationship between the variables.

Table 2. Statistical analysis result.

| Accessibility               |
|-----------------------------|
| Spearman’s rho reliability correlation coefficient | 0.559** |
| Sig.2 (2-tailed)             | 0.000 |
| N                            | 100   |

3.2 Discussion
In this study, the passengers deem that the buses conform to the scheduled arrival and departure times. Buses are stationed at the access points for 45-50 minutes to pick up passengers and depart after that period regardless of how many or how less the passengers are. Arhin & Noel (2014) suggested that a bus transit system can be seen as unreliable if buses did not conform to time schedules which resulted to long waiting times [8].
Rahman et al. (2017) illustrated that unsafe driving conditions were among the reasons the passengers were dissatisfied with the bus service quality [9]. In this study, the respondents were satisfied with UBE Express service quality in terms of safety since accidents were minimal.

The respondents claimed that amenities provided were favourable for PWDs, senior citizens and pregnant women. However, there was an issue regarding the CCTV units installed on the buses. The unreliable perception due to only certain passengers watched the CCTVs for the selected buses have these units installed on the buses.

The result also showed that the buses had good working condition of the air conditioning system inside the bus and there is ample leg room for the passengers to stretch their legs and sit comfortably during the whole trip. Hence, the passengers were able to sit comfortably due to the reclining seats.

In addition, the passengers were paid through cash only compared other payment method. The respondents perceived that luggage space was sufficient and no worries regarded large luggage or many luggage’s inside UBE Express buses. The different modes of payment and internet connection speed were interpreted only reliable which infer that these features were incomplete convenient to the passengers and need more improvement.

Meanwhile, the passengers did not experience overcrowding meant there was the passenger control in UBE Express buses to overloading and passengers comfort being compromised. The drivers performance was evaluated with high rates which interpreted that prior became public utility bus drivers. The bus drivers were professional driving license holders and received extensive and professional trainings or seminars to expand theoretical knowledge on road safety included traffic policies.

Based on passenger perception that UBE Express staff and personnel had received high evaluation from the respondents. The staff had attended training which enhance their communication, management and financial skills.

In addition, the respondents suggested UBE Express provided more buses that easily recognized by the public in strategic locations since insufficient buses in specific route. Besides, UBE Express had manifested a worthy service in term of conforming to speed limits assigned in primary roads and other intersection. The buses also needed speed to meet the scheduled time of arriving and departing based on their route. The respondents also claimed that the buses stops were nearby and easily reached. The respondents did not perceive the distance between bus stops as too far or too close to each other.

Furthermore, the respondents claimed that there were sufficient pick-up and drop-off points based on specific route. From the airport vicinity, four routes of UBE Express were relatively close to each other.

4. Conclusion
In conclusions, UBE Express was launched to fulfill the transport demands at the airport. The company had delivered very reliable transportation service. There was moderate to strong positive relationship between reliability and accessibility of UBE Express as an airport transit network as perceived by Filipino passengers. Moreover, UBE Express was met the passenger demand to be on time with their respected flights or travel schedule.

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