The Impact of the Emergence of Low-Cost Carriers and Budget Flights at Ninoy Aquino International Airport, Philippines

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Abstract

The emergence of the low-cost carriers in the form of budget flights and promotional fares in the Philippines has truly aided the developing socio-economic status of the Philippines. Its appearance greatly affected the air industry in the country in terms of the number of airlines operating and the demand of the passengers. The main objective of the study is to evaluate the effects of the emergence of low-cost carriers with respect to the performance of the airport and the airline industry of the Philippines. Results show that the emergence of low-cost carriers triggered an increasing trend of number of passengers. In terms of passenger demand, low-cost carriers are improving in the field of airline industry in the Philippines albeit the low-cost carriers and the present infrastructure design and policies implemented in Ninoy Aquino International Airport are not capable of properly adapting to the growing airline industry.

Keywords: low-cost carrier, budget flights, promotional fare, transportation engineering

1. Introduction

The primary airport of the Philippines and its gateway to its capital is the Ninoy Aquino International Airport (NAIA) which allows the operation of thirty-seven airlines, both international and domestic, as of 2012. The number of airlines operating in the airport denotes that the airport is in a healthy condition to accommodate a large number of passengers going in and out of the country. In relation with this, Department of Transportation and Communication Secretary Mar Roxas (2012) reported that in the year 2008 there were only around 18 million recorded passengers in the airport however, data from 2012 shows that there is an abrupt increase of recorded passengers of 30 million. The increase of air flights also affected factors easily overlooked by the airport such as its runway capacity. For instance, the runways of NAIA can only accommodate an average of 36 takeoffs and landings per hour but actual scheduled commercial and general civil aviation flights went up to 50 movements per hour (Roxas, 2012). The relative increase in usage of the runways due to the emergence of low-cost carriers results to the congestion of airlines and conflicts in the takeoffs and landings, which then lead to delays, and cancellations of flights. The problem lies within the fact that there was an increase in the aircrafts using the runways but capacity of the runways to cater takeoff and landings remained the same and unsophisticated, thus, congestion would likely to occur.

On a lighter note, the emergence of the low-cost carriers have truly aided the developing socio-economic status of the country to further improve through the increase in passenger demand, however, Carmelo Arcilla (2012), the Civil Aeronautics Board Executive Director, stated that some of these low-cost carriers offer promotional airline fares that sometimes dissatisfies and disappoints the passengers. For that reason, competition in service expectation, service perception, service value, passenger satisfaction, and airline image between low-cost carriers and and full-service carriers arise (Fourie et al., 2006). According to Fitzsimmons et al. (1994), customer satisfaction can be determined by numerous intangible factors such as the atmosphere, ambiance of the cabin and crews behavior, etc. that measures customer expectation and the service quality makes customers' expectations, as well as their service quality a real challenge.

2. Literature Review

There are various views on whether low-cost airlines would flourish in Asia since there are three main factors to be considered to be successful in this field – regulation, market demand, and demographics (Lawton et al, 2005). In order to promote new strategies of advertising and promotion, long-haul and short-haul carriers were introduced into the marketing agreements with the intention of cooperating and integrating of websites. These agreements permit passengers to fly to and from small markets in any region of the world through low-cost carriers (Wensveen et al., 2009). Regardless of whether they are full-service or low-cost carriers, airline services are made of complex mix of intangibles (Gursoy et al., 2005). The speed and intensity of change in service offerings of airline industry have developed since airline companies influence the satisfaction of the passengers (Atilgan et al., 2008). Since passenger's needs and wants are changing in variety as the challenges in the airline market are becoming globally tough, precise and timely information on a wide range of customer needs and expectations become critically important nowadays (Ariffin et al., 2010). The layout and design of the aircraft's cabin, employee's appearance, in-flight meals and refreshments, and even the air tickets should be developed in accordance to the expectations, wants or requirement specified by the target market of a particular airline.

Understanding and meeting customers' expectations and subsequently being different from competitors are important in order to survive in today's world of globalization (Saha et al. 2009). It is significant for airport management to establish both passengers and airlines as potential customers and to understand the resultant revenue streams before engaging in negotiation with low-cost carriers (Francis et al., 2003). The number of airlines operating on an airport affects the income of the airport since the arrival of low-cost carriers affects the performance of the airports.

3. General Hypothesis

The main hypothesis formed by the researchers regarding the emergence of low-cost carriers and budget flights in the Philippines is mostly focused on the unique strategy of these airlines to provide inexpensive fares triggering an abrupt increase of passengers and flight trips in the airline industry resulting into problems such as frequent experience of delays and cancellation of flights, and overcapacity in the airport both in terms of passengers and flight schedules.

4. Methodology

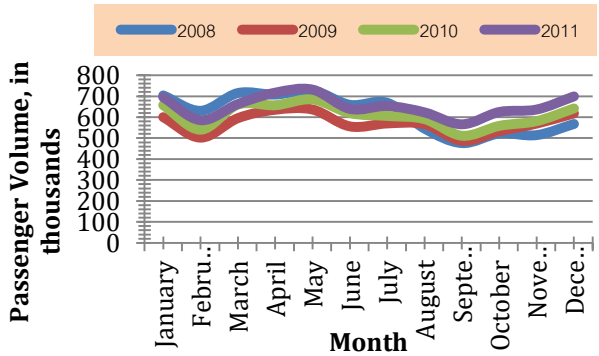
The researchers have employed two methods of gathering data for this study. First method is the quantitative approach which is the strategic collection of significant information and data from reliable sources. The implementation of this method ensures the collection of factual content, wherein there will be a solid numerical basis for analysis and provision of proofs that local airports could not satisfactorily accommodate low-cost carriers and all their flights in time that would then lead to flight delays and flight cancellations (Cahiles-Magkilat, 2012). The second method is the qualitative approach which was done through surveying the passengers inside the airport. This method identifies the general satisfaction, demand, and perception of the passengers in the airport.

5. Data Analysis

Operational statistics were gathered from the database of the Manila International Airport Authority (MIAA) regarding the flights and passenger count per annum. The acquired data contains the number of passengers in all four terminals per month for the years 2008 to 2011 which was then converted into graph lines to generate trendlines (See Figures 5.1, 5.2, 5.3 & 5.4).

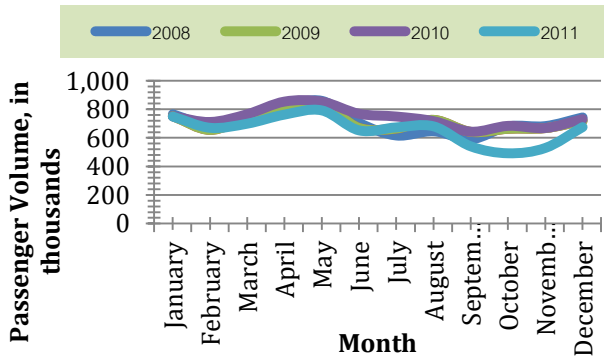
Terminal 1 which accommodates the international airlines operating in the airport shows gradual increasing passengers per annum. Terminal 2 operates only under a single airline – Philippine Airlines – which means that the performance of the airline directly affects the performance of the terminal. For this matter, the behavior observed for terminal 2 shows an almost similar trend as that of the terminal 1 with the exception of the year 2011 where negative passenger growth was noticed for the terminal 2. Through research, it was identified that the decrease of passenger volume was due to the internal problems of the airline, thus, affecting the performance of the terminal. For the terminal 3 which handles most of the low-cost carriers in the airport, an exceptional positive passenger growth can be noticed. For the last terminal, it also shows an increasing pattern, however, for the year 2008, there was a drastic decrease of passengers. It was identified that the decrease of passengers was due to the relocation of the low-cost carriers initially

operating in terminal 4 to terminal 3. With these operational statistics obtained from MIAA, it is noticeable that every terminal demonstrates an increasing passenger growth. However, the performance of the terminal 3 shows the most exceptional results with an average of 26% passenger growth in year 2009 onwards. This outstanding passenger growth trend can be attributed to the presence of low-cost carriers in the terminal especially when all the local airlines operating in terminal 3 are low-cost carriers. It is therefore understandable that in order to observe the behavior of low-cost carriers in the airport, it is important that we must focus on terminal 3 for data and information. With the terminal 3 having a total design capacity of 13 million passengers per annum, it will be the concentration of the study since the paper will be emphasising on the behavior of low-cost carriers in the country and it houses the majority of the low-cost carriers in the country – Zest Airways, AirPhil Express and Cebu Pacific Air.



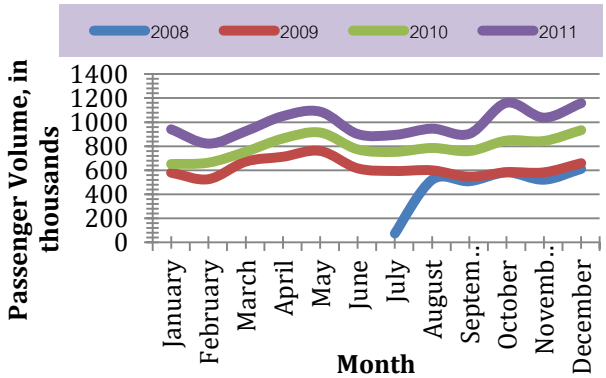
Source: Manila International Airport Authority, 2012

Figure 5.1 – Terminal 1 Operational Statistics



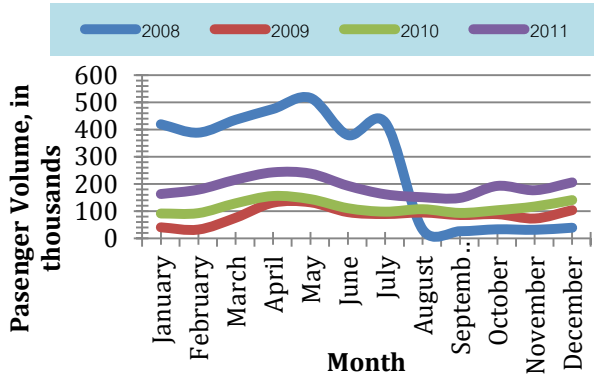
Source: Manila International Airport Authority, 2012

Figure 5.2 – Terminal 2 Operational Statistics



Source: Manila International Airport Authority, 2012

Figure 5.3 – Terminal 3 Operational Statistics



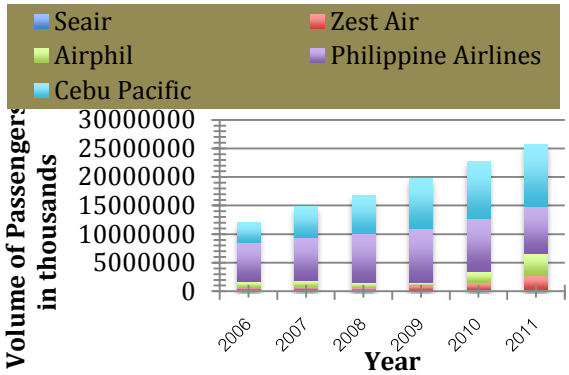
Source: Manila International Airport Authority, 2012

Figure 5.4 – Terminal 4 Operational Statistics

5.1 Local Airlines Market Dominance

The promise of low-cost carriers to offer low fares was the reason for the exponential growth for both domestic and international market. In turn, low-cost carriers battled it out in this competitive playing field by obtaining feul-efficient aircraft or by getting new owners or partners (Lowe, 2012). Currently, there are five local airline companies in the country that hosts both domestic and international flights, which are currently operating in NAIA and are distributed among terminals 2, 3 and 4. These five companies are composed of two airlines adapting full-service carrier model – SEAir and Philippine Airlines – and three airlines adapting low-cost carrier model – Zest Airways, AirPhil Express and Cebu Pacific Air. In order to evaluate the performance of low-cost carriers in the country, a comparison between the performances of low-cost carriers and full-service carriers was established. Furthermore, in order to determine the

market share of low-cost carriers, the data in terms of passenger volume for each airline was obtained from the database of Civil Aeronautics Board of the Philippines (CAB). The gathered data contains the total passenger count per annum per airline in the span of six years starting from 2006. A cumulative bar graph was generated to be able to compare the number of passengers of each airline annually with each other (See Figure 5.5).



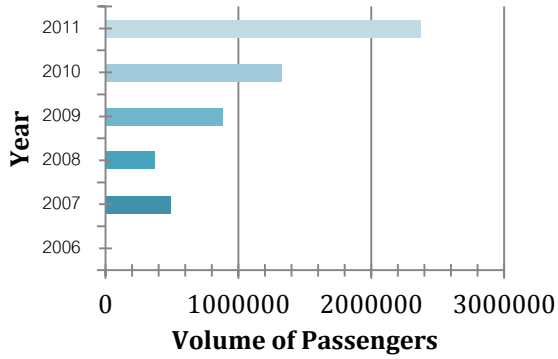
Source: Manila International Airport Authority, 2012

Figure 5.5 – Market Dominance of Local Airlines in th Philippines

Through examination of the graph, the dominance of the leading airlines – Philippine Airlines and Cebu Pacific Air – could be easily noticed particularly in the early years. It is evident that of all the 6 local airlines, Cebu Pacific Air continued to govern the domestic market that Philippine Airlines conquered for decades. The other remaining airlines – SEAir, Zest Airways and AirPhil Express – have also managed to create impacts in the local airline industry, but they produce minimal effects in comparison with the two major local airlines. However, the most significant observation that could be extracted from this data is the positive and negative passenger growth of Cebu Pacific Air and Philippines Airlines, respectively.

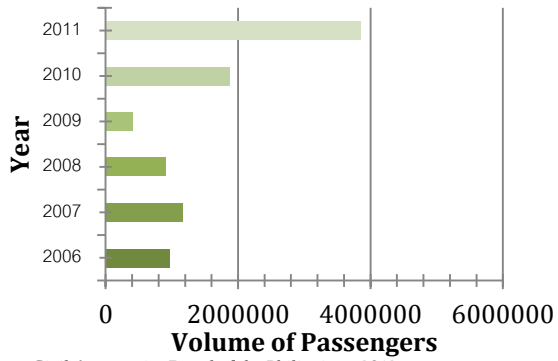
5.2 Local Airlines Adapting Low-cost Carrier Model

Before proceeding with the analysis of the behavior of low-cost carriers, it is important to identify first the behavior of the three local airlines operating in the terminal 3 whose model adaptations are that of the low-cost carriers. It is significant whether the trends produced by the three low-cost carriers are almost similar with each other. For this reason, the database of CAB was accessed in order to extract information regarding the three local airlines (See Figures 5.6, 5.7 & 5.8).



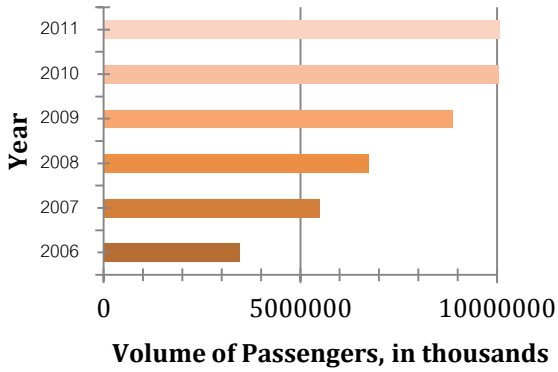
Source: Civil Aeronautics Board of the Philippines, 2012

Figure 5.6 –Zest Air Passenger Volume per Annum



Source: Civil Aeronautics Board of the Philippines, 2012

Figure 5.7 –AirPhil Passenger Volume per Annum



Source: Civil Aeronautics Board of the Philippines, 2012

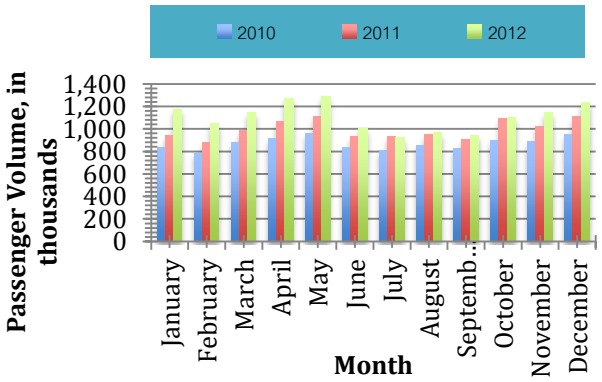
Figure 5.8 – Cebu Pacific Air Passenger Volume per Annum

Upon comparison of the graphs, it is evident that both Zest Airways and AirPhil Express have reached their highest passenger demand only in 2011 while Cebu Pacific Air shows a consistent

positive passenger growth. The reason for this behavior is the transition of strategy of both Zest Airways and AirPhil Express from adapting full-service carriers into offering low-cost carriers. Both local airlines were formerly known as Asian Spirit (until 2008) and Air Philippines (until 2010), respectively. Together with rebranding of their airline name is their adaptation of the low-cost carrier model, thus, causing an abrupt increase of passengers for both airlines. On the other hand, Cebu Pacific Air exhibits a consistent passenger growth in its performance. In addition, Cebu Pacific Air is also the pioneer low-cost carrier airline in the country and banking on the data acquired for the airline, it is safe to assume that the starting years of the airline was rough and passengers have not yet appreciated low-cost carriers. Through this data, it is therefore decided that the best option among the three local airlines to represent the behavior of the low-cost carriers is the Cebu Pacific Air, given its residency in the airport of 17 years as well as its initial strategy of adapting low-fare flights.

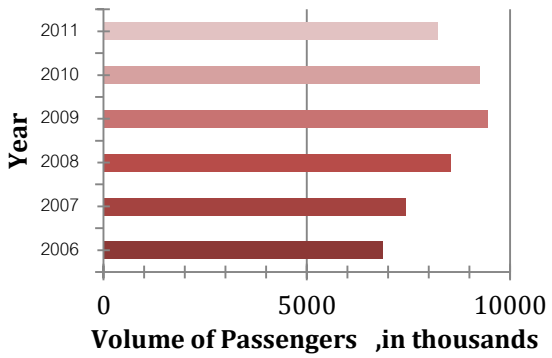
5.3 Cebu Pacific Air (Low-Cost Carrier Representative)

In March 1996, Cebu Pacific Air entered the airline market, pioneering the first low-cost carrier in the Philippines (Senarez, 2012). It was originally stationed in terminal 4 but was transferred to terminal 3 when the terminal was opened to public in 2008 as a part of decongestion in terminal 4. By 2011, it eventually branched out to accommodate international flights and by 2012, it managed to handle an averaged passenger count of 1.1 million for every month (See Figure 5.9). Due to its success in terms of passenger demand, it managed to outrank its rival full-service carrier airline, Philippine Airlines, thus becoming the country's largest and number one local airline. In order to verify this claim, passenger volume for the Philippine Airlines was acquired from CAB (See Figure 5.10) which is to be compared to the passenger volume for Cebu Pacific Air in figure 5.8. Upon comparison of the passenger volume for each airline, it is evident that the Cebu Pacific Air managed to outrank Philippine Airlines on the year 2010 where it managed to service 10 million passengers in comparison with the 9 million passengers of Philippine Airlines.



Source: Cebu Pacific Air, 2012

Figure 5.9 – Cebu Pacific Air Operational Statistics



Source: Civil Aeronautics Board of the Philippines, 2012

Figure 5.10 – Philippine Airlines Total Passengers

In order to further understand the effects of weather conditions to the passenger demand behavior, passenger load factor may be considered as a part of the analysis (See Table 5.1). Passenger load factor (PLF) is a measure of capacity utilization which shows how much of the given seat capacity were used by the passengers. This is an important factor in calculation of the average occupancy for each airline in calculation of profitability and revenue of potential various routes to be incorporated. In order to calculate for passenger load factor, the passenger volume must be divided by the seat capacity. For this study the average PLF for the years 2010 and 2011 is 0.85 and 0.86, respectively, on the other hand, the average PLF obtained for the year 2012 was 0.82. The discrepancy in the data for the year 2012 can be attributed to the relatively lower average PLF for the specific months of June July and September with a PLF value of 0.77, .75 and .75 respectively.

Table 5.1 – Passenger Load Factor

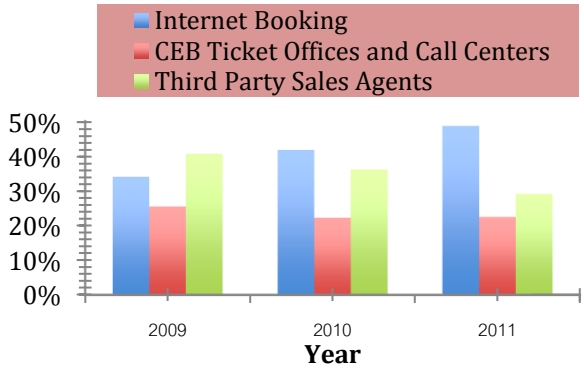
Month	Year		
	2010	2011	2012
January	0.80	0.86	0.87
February	0.82	0.87	0.83
March	0.85	0.88	0.82
April	0.89	0.90	0.88
May	0.89	0.91	0.87
June	0.86	0.84	0.77
July	0.83	0.83	0.75
August	0.84	0.85	0.75
September	0.84	0.84	0.80
October	0.88	0.88	0.84
November	0.88	0.84	0.85
December	0.86	0.85	0.87

*PLFs were computed from the data of Cebu Pacific Air

Moreover, the success of the airline is not only dependent on its strategy of providing budget flights but also due to its aggressive yet effective marketing strategy. By 2009, the airline managed to be the first local airline to utilize internet to allow passengers to book for their selection of flights and the first to use social medias (i.e. Facebook, Twitter, etc.) to attract passengers. Furthermore, the use of internet became popular that it managed to dominate the other ticket distribution channels – ticket offices and travel agencies (See Figure 5.11).

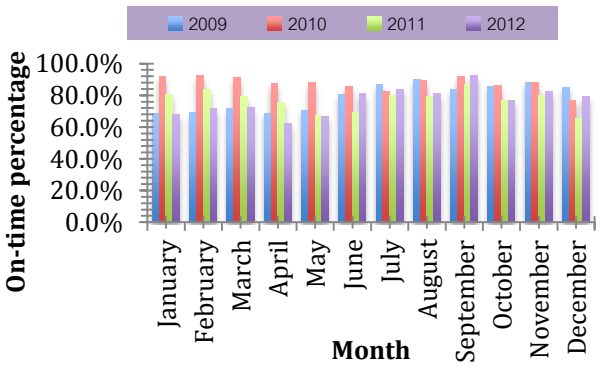
The figure shows the share of sales per distribution channel wherein internet booking share continue to increase signifying an effective market strategy of the airline, thus, resulting to the positive passenger growth per annum. However, while the passenger demand for the airline increases, the design capacity of the terminal is rapidly being reached. The capacity of terminal 3 is only 13 million passengers and Cebu Pacific Air alone has managed to consume 80% of its design capacity. This causes an alarming notion that the terminal may reach overcapacity by 2013 and yield consequences in forms of delays in scheduled flights. In order to further understand the impendent problem, on-time performance of the airline was acquired from its database (See Figure 5.12).

The airline started the year 2009 with an average on-time percentage performance of 70% until May, however, through research it was identified that the cause of delays was due to the flow control issue done by the Air Traffic Control system limitations. From June of 2009 onwards, increase of on-time performance can be observed and starting in 2010, the airline has been performing well. However, the average on-time performance for 2010, 2011 and 2012 has been recorded to be 88%, 77% and 76%, respectively. The data shows a diminishing performance as passengers increase. To further understand the relationship of the on-time performance and passenger volume, averaged on-time performance is to be graphed together with passenger volume (See Figure 5.13).



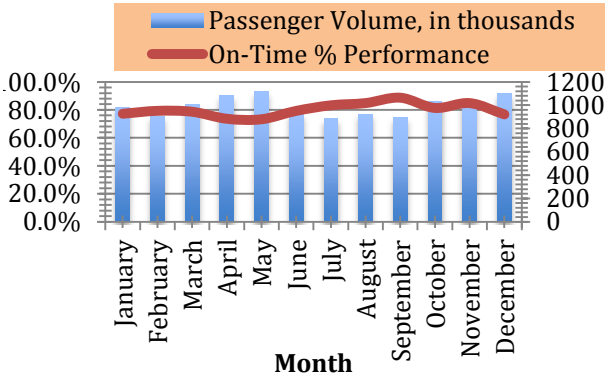
Source: Cebu Pacific Air, 2012

Figure 5.11 – Breakdown of Sales by Distribution Channels



Source: Cebu Pacific Air, 2012

Figure 5.12 – On-Time Percentage Performance



Source: Cebu Pacific Air, 2012

Figure 5.13 – Average On-Time % Performance vs. Average Passenger Volume

Observation of the figure 5.13 shows that the relationship between the on-time performance and passenger volume is indirectly proportional. It is noticeable that as the passenger volume increases, on-time percentage performance decreases and vice versa. This signifies that whenever the airline experiences an increase in volume of passengers, on-time performance is affected negatively. This situation, if not mended, will continue to produce delays not only to Cebu Pacific Air but also to the other airlines operating in NAIA.

5.4 Survey

The collection of data was done by the researchers at NAIA focusing mainly in terminal 3 where Cebu Pacific Air is based. The survey activity was conducted from 26 to 27 of October 2012 and on February 2 and 7, 2013 from 9 AM to 5 PM Philippine time (GMT +8). The dates were selected on a vacation week and on a normal* week, respectively This will determine whether the special occasions would trigger a change in perception of passengers upon choosing low-cost carriers over full-service carriers. The survey objective was to gain information on the perception or choice of the passengers regarding the option of using either low-cost carriers or full-service carriers for their flights. The survey questionnaires were distributed inside terminal 3 among passengers waiting for their respective outgoing flights. The researchers have distributed and collected 300 survey forms but after thorough checking of the completed questionnaires, the total number of samples was reduced to 271.

Table 5.1 - Descriptive Statistics of the Respondents (N = 271)

Age		32.73 (M)	11.31 (SD)
Gender		**Percentage**	
	Male	108 (39.85%)	
	Female	163 (60.15%)	
Travelling:			
	Individually	162 (59.78%)	
	By groups of		
	2-5	86 (31.73%)	
	>5	23 (8.49%)	
Occupation			
	University Students	55 (20.30%)	
	Employee	50 (18.45%)	
	OFW	41 (15.13%)	
	Others	125 (46.13%)	
Purpose			
	Vacation/Tour	192 (70.85%)	
	Work/Business	55 (20.3%)	
	Conference/Seminar	24 (8.86%)	
Household size		3.85 (M)	1.69 (SD)
Car Ownership			
	None	147 (54.24%)	
	1	79 (29.15%)	
	2+	45 (16.61%)	

M: mean, SD: standard deviation

The survey data contains several factors that determine the frequency of flights for each passenger. However, not everything can be considered to have a great impact upon determining the occurrence of flights. With this concept in mind, it is important to determine which factors contribute the most to the frequency of flights which will be identified through the use of ordered probit analysis using the software SPSS (Statistical Package for Social Science). After configuration of the code into the software, it would run a program that would identify the significance, goodness of fit, and the factors that will affect the frequency of flights based on the input data. Actual values that resulted from utilizing the program showed that the pseudo R^2 value for this set of data turned out to be 0.211, which is considered to be highly satisfactory set of data.

Table 5.2 - Ordered Probit Model for Frequency of Airline Trips

	Estimate	Std. Error	Sig.	95% Confidence Interval		t-stat
Frequency of Trips				Lower Bound	Upper Bound	
Once a year flight	1.432	.395	.000	-2.207	-.657	3.622
More than once a year flight	.380	.389	.329	-1.141	.382	0.976
Age Classification						
Age≤25	.060	.300	.842	-.528	.648	0.200
Age≤40	.229	.200	.251	-.162	.620	1.147
Age>40*	0	.	.	.	.	
Occupation						
Student	.179	.317	.572	-.800	.442	0.565
Employee	.199	.208	.338	-.608	.209	0.957
OFW	.423	.226	.062	-.021	.867	1.869
Others*	0	.	.	.	.	
# of Cars Owned						
0 car	.524	.238	.028	-.990	-.058	2.204
1 car	.051	.250	.838	-.439	.540	0.204
1+ car*	0	.	.	.	.	
Household Size						
HH ≤3	.061	.162	.706	-.256	.379	0.377

*values are set to 0 by SPSS because of redundancy

With the consideration of a relatively lower value of significance and a relatively higher value for t-statistical, it was identified that most of the passengers tend to travel by air once a year with ages around 26 to 40 years old. It was also identified that the job that requires the most flight travel is the Overseas Filipino Workers where they tend to look and find job abroad. It was also shown that people who does not own any car travels more often in comparison with those with cars. However, the household size is insignificant in determining the frequency of flights.

Finally, when the passengers were asked whether which they prefer, comfort over expense in the form of full-service carriers or expense over comfort in the form of low-cost carriers, most of the answers returned to be the latter. By using SPSS, it was confirmed that the perception between the two carriers are significant for the study with a t-statistical value of 1.98 for the low-cost carriers.

6. Conclusion

Banking on the data acquired from various firms, organizations, and airport authorities, results showed that the emergence of low-cost carriers in the Philippines has truly influenced and changed the airline industry in the country. The emergence of low-cost carriers in the country indeed triggered an increasing trend of airline trips and passenger volume in all terminals in NAIA. For NAIA terminal 1, a gradual increase of both passengers and flights were observed. Conversely, for NAIA terminal 2, the increase of both passengers and flights were very minimal. An outstanding increase in flights and passenger volume was observed in NAIA terminal 3 since this terminal houses Cebu Pacific Air, which is the current leading local airline. In comparison with the other terminals, NAIA terminal 3 had the largest passenger growth and for that reason it is believed that under normal circumstances, low-cost carriers certainly triggers an increasing number of flights and passengers. With that being said, it could also be concluded that the performance of the airlines directly affects the performance of the terminals.

Through the data that were presented and the studies that were applied, it was also established that low-cost carriers could directly compete in the airline industry in the country in terms of passenger demand. Banking on the performance of Cebu Pacific Air and Philippine Airlines, which was considered to represent low-cost carriers and full-service carriers respectively, it was identified that promotional fares were truly appreciated in the later years of operation in the airport. Philippine Airlines, the former largest local airline in the country in terms of passenger demand, lost in performance with Cebu Pacific Air through its effective marketing strategy. The success of the budget flight is the motivation of airlines such as Zest Airways and AirPhil Express to modify their strategy into that of a low-fare flight.

The researchers have also confirmed that the current airport infrastructure design is not efficient enough to support the growing number of flights of low-cost carriers. The infrastructure design and policies implement in NAIA needs modification and adjustments in order to properly adapt to the growing airline industry in the Philippines. Problems in forms of delays and cancellations of flights are encountered by the passengers since the present capacity of the airport is insufficient in accommodating the passenger volume and the guidelines and scheduling plans employed in the airport is inappropriate in handling the flights. Evidences that the airport could not cope with the increasing number of passengers could be observed especially in terminals 1 and 2 who have already reached their design capacity already and in terminals 3 and 4 who are nearing breaching its design capacity. This circumstance causes an alarming notion that the NAIA is unable to properly handle its passenger demand especially when the initial capacities of the terminals in the airport are already reached.

7. Recommendation

As local airlines take advantage of the Philippine government's goal to increase tourist

arrivals to 10 million by 2016, factors such as the design capacity of the Ninoy Aquino International Airport (NAIA) was affected. At the present, the infrastructure constraint is the major problem that airlines have been facing in the Philippines due to the increase in passenger demand. In order to provide solution for the overcapacity of terminals, establishment of possible actions such as proposal of a planning policies and regulations to improve the efficiency of the Ninoy Aquino International Airport (NAIA) could be done in order to minimize, if not totally eradicate, the problems stated.

It is recommended for Manila International Aviation Authority (MIAA) to review the current status of their terminals, especially terminals 1 and 2 who have already reached their design capacity already and terminals 3 and 4 who are nearing breaching its design capacity. Since the intersecting runway of NAIA is not effective, the construction of rapid exit taxiway would increase the rate of arrivals and departures between 40 to 50 aircrafts per hour, according to the chief of Air Traffic Services Antonio Gonzales. Conversely, it is established that only 52% of NAIA terminal 3 is being utilized at the present time and the government anticipate finishing the remaining 48% before the year ends. With this, as soon as NAIA terminal 3 is fully operational, 2 million passengers from NAIA terminal 1 could be transferred to NAIA terminal 3 to minimize congestion in NAIA terminal 1. With regards to the proper distribution of passengers, the consideration of adding another terminal is also suggested to decongest the Ninoy Aquino International Airport.

The most evident consequences of overcapacity in airports are delays and cancellations of flights. In order to avoid flight delays and terminal congestion, carefully planning of flight schedule is recommended if decreasing of flights seems impossible. The slotting system to shift bulk of traffic to off-peak1 hours that was suggested by the Transportation Department could be maintained. This spreading of flight schedule is effective since the 2012 on-time performance of Cebu Pacific Air increased starting in June due to the collaboration done with CAAP, CAB, and MIAA to decongest the runway of the airport through careful planning of flight schedules. Given that there is a little room for physical expansion of the airport, redirection of airline routes is also considered. In redirection of flights, flights would be distributed to other airports to decongest the operation. This application can be considered in the study in the form of retaining of domestic flights in NAIA and transferring of international flights to Diosdado Macapagal International Airport (DMIA) in Clark, Pampanga which is about 80 kilometers away from the capital. Since there is a limitation to the number of international airlines in operation, its relocation to DMIA would be commendable provided that the government would work on the long-delayed Northrail project which remained saddled by financial and legal issues between the government and the rail system's Chinese contractor for easier access. This parting of international flights and domestic flights is acceptable so that domestic flight would not be able to affect the performance of other international airlines considering the aggressive domestic market.

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