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Operational performance and financial performance of Malaysia Airlines

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ABSTRACT

This study empirically investigates the impact of operational performance on financial performance of Malaysia Airlines system (MAS). Based on twenty two (22) years' annual time series data, step wise least square regression analysis is carried out to examine the relationship of variables. In addition, viable diagnostic tests are applied to verify the validity and reliability of the models. Interestingly, findings of the study revealed that operational performance of MAS has no impact on profitability, whereas, employee productivity, capacity and capacity Utilization have highly significant impact on revenues. Moreover, route rationalization has a negative impact on total revenues. Above all, further studies are suggested to investigate the impact of revenue and cost on profitability of MAS.

Keywords: Financial Performance, Malaysia Airlines, Productivity, Capacity, Route Rationalization, Capacity Utilization, Operational Performance
JEL Classification: G3, M1, R4

INTRODUCTION

The origin and history of Malaysia Airlines dates back to the year 1937, within the scope of domestic destinations first national fly begins in the year of 1947 under the name of Malayan Airways Limited (MAL). Eventually, the company expanded in terms of size, routes and assets. Later on, company was listed on Bursa Malaysia (Official Malaysian stock Exchange) with the name Malaysia Airline System Berhad. In Pre 2000, company sound performance and financially stable position has been recorded and company growth reflected as international symbol of economic progress, social modernity, and technological capability. Since early 1950s, MAS captured Asian market with increased demand and admirable business profits and such trends has massively forced MAS to instill a sound policy for continuous improvement and such measures proved to be customer oriented in serving large competitive market.

However, MAS has been plagued with number of crises more specifically financial hurdles since 2000. MAS quarterly and annual financial reports of 2007, 2013, and 2014 indicate financial troubles and factors that are contributed to miserable financial conditions which are ranging from high fuel-related and operating costs, foreign exchange losses, lack of route rationalization, low yield to revenue, intense competition, low seat factor and lower productivity. More or less, these factors took company at the brink of collapse and company is experiencing regular losses in Millions of dollars.

In addition, the more recent tragic incidents of MAS planes (i.e, the missing MH370 and crashed flight MH17) has increased the intensity of problems in more catastrophic manner for the company. In fact, bearing in mind operational inefficiencies the present status which severely tarnished the consumer confidence which considered as all-time low and the demand for international flights is declined.

Moreover, MAS claims that profitability is affected either by cost mismanagement or lack of desirable operational performance. Undoubtedly, improving organizational policies for operational performance could play a crucial role, which in turn will lead to improved financial performance. However, despite the implementation of organizational policies are evident, for example policies such as three years Business Turnaround Plan (BTP) 2006 and Business Plan 2012, MAS is still far away from achieving desired company's objectives and has experienced severe losses in last 15 years. Consequently, these critical problems led MAS to tumble downward and created a huge question mark on the sustainability of the organization. Therefore, this study aims to analyze the impact of operational performance on the financial performance of Malaysia Airlines system and researchers establish two main objectives of the study; firstly to investigate the impact of employee productivity, capacity, capacity utilization and route rationalization on the profitability of MAS. Second is to investigate the impact of employee productivity, capacity, capacity utilization and route rationalization on the total revenues of MAS.

Apart from research objectives up to the knowledge of the authors, no single study is available where the impact of Employee productivity, capacity, capacity utilization and route

rationalization on financial performance are mutually measured. On the other hand, this study contributes "Capacity" itself as an explanatory variable to the financial performance in the airline industry, while the variable is adopted from the study of Hammesfahr, Pope, and Ardalan (1993) which was tested in the manufacturing industry. The focus of past studies on airlines industry have ever been on capacity utilization (Parast, & Fini, 2010; Tsikriktsis, 2007), however, Hammesfahr et al. (1993) asserts that the increase and decrease in capacity itself can affect the financial performance. Finally, in contrast to previous research of Parast and Fini (2010) and Tsikriktsis (2007), where their main interest were on operational efficiency and service quality as the explanatory variables of financial performance, this study has focused on long term strategic operational performance variables to unveil their relationship with the financial performance.

LITERATURE REVIEW

Financial performance is considered as core indicator of firm's success. Financial performance is measured through the profitability or return on the business activities and the profit is primarily classified into economic and accounting profit (Hirsch, 1991). Economic profits are the accrued cash flows to the shareholders which represent the future growth perspective, however, accounting profit represent the historical accounting records which are adjusted by depreciation, accounting method, measurement error and so forth. However, the consideration of present investigation is more associated with the accounting profit which has a superior worth in the financial market. Accounting profits are measured either as operating income or net income (Meigs, Williams, Haka, & Bettner, 2002), these measurements represent the absolute values of profit but lack the property of comparison. Furthermore, comparative measures of profit are return on equity (ROE), return on assets (ROA) and profit margin. ROE and ROA represents the efficiency of firm's investments in generating returns; ROE specifically focuses on the return on the shareholders' investment, however ROA represents the return on overall investment. On the other hand, profit margin represents the efficiency of operations in managing and controlling the cost or improving the output (Ross, Westfield, & Jaffe, 2005).

Rigorous literature reveals that financial performance /profitability is influenced by various factors and some of these factors are highlighted in the previous studies. According to McGuire, Sundgren, and Schneeweis (1988) financial performance is significantly influenced by corporate social responsibility (CSR). They analyzed the impact of CSR both on internal profitability measure ROA and stock market risk-return factor and researchers concluded that CSR has a potential positive impact on ROA. Moreover, Huselid (1995) reported that High Performance Work Practices (HPWP) has a great impact both on intermediate factors; productivity and turnover and ultimately it will enhance firm financial performance.

Besides, Anderson, Fornell, and Lehman (1995) argued that quality positively affects the customer satisfaction and then customer satisfaction will positively affects the profitability. They argued that customer satisfaction works as a bridge between the quality and profitability. Further, researchers, considered Return on Investment (ROI) as the measure of profitability. Though, satisfied customers become more loyal to the products and then customer loyalty indicates and ensures viable future cash flows (Reichheld & Sasser, 1990). In fact, firms which achieve higher customer satisfaction would incur lesser cost for attracting new customers (Fornell, 1992).

Accordingly, this concept is well explained by Heskett, and Schlesinger (1994) as they elucidates that internal service quality creates satisfied employees, which leads to higher employee retention and employee productivity. Thus, these factors in turn result into external service value, which provide satisfied customers, which ultimately cause to customer loyalty and finally customer loyalty make grounds for growth in revenues and profit maximization. They termed this model as service – profit chain model.

Additionally, in terms of Banker, Chang, and Majumdar (1993), firm's performance which was measured as Return on sales (Profit Margin) and ROI is a measure of productivity, price recovery, and product mix and capacity utilization. In contrast, Anderson, Fornell, and Rust (1997) changed the dimension of profitability measurement as their analysis compared the goods and services industry. Authors referred, customer satisfaction and productivity are positively correlated in goods industry but negatively related in services industry; however, both customer satisfaction and productivity are positively related with the ROI both in goods and services industries. In the analysis researchers elaborated that the production of goods tends to standardization which increase the productivity while decrease the customer satisfaction, however services are more customized which negatively affect the productivity but positively affect the customer satisfaction.

Turning now to the scope and context of current study which covers airline industry in general and MAS in particular. A large and growing body of literature has investigated several real world problems of airline industry. Doganis (2006) affirms that world's airline industry has faced worse situation during 1990 to 1993 because of huge oil prices resulting from Iraq invasion of Kuwait, but the industry's financial performance boomed during 1994 – 1998, and it was predicted that from 2007 onward world airline traffic would be double to the world's GDP. In addition, Zuidberg (2014) argued that newer aircrafts have higher operating costs per movement as compared to the older aircrafts and further stressed that dominant aircrafts at a particular hub have higher operating costs per movement as well.

Caves, Christensen, and Tretheway (1984) argues that density of traffic in a network and length of individual flights has a major impact on cost of Airline Company. In their study they compared the cost of US trunk airlines with the smaller regional airlines within the framework of economies of scale. Researchers like Baltagi, Griffin, Vadali, and Sharada (1998) have also emphasized that the deregulation in US airline

industry along with route rationalization had substantially improved the capacity utilization and cost reduction. Further this notion is more validated by Mantin and Wang (2012) and contends that operations strategy, productivity and service measures had a significant impact on profitability of US airline industry before 9/11. But after 9/11 these measures have no impact on profitability. According to them this is because people are forgivable to such issues after 9/11. More recent studies, for instance Keiningham, Morgeson, Aksoy, & Williams (2014) studied the impact of service failure severity on customer satisfaction and market share in US airline industry. They concluded that minor incidents had strongly influenced the customer satisfaction and market share while major incidents didn't influenced so. This considerable significance also identified by Parast, and Fini (2010), they studied the impact of productivity and quality on profitability in US airline study, where researchers found that productivity and employee salary have significant positive impact on profitability and gas price and average annual maintenance cost have significant negative influence on profitability, while on time performance has not significantly influenced profitability of US domestic airline industry during 1989 to 2008.

Therefore, on the basis of above literature, we develop the following hypothesis.

H_1. Employee Productivity has a strong impact on profitability.

H_2: Capacity utilization has a significant impact on profitability.

H_3: Capacity has a significant impact on profitability.

H_4: Route rationalization has a substantial impact on the profitability.

H_5. Employee Productivity has a strong impact on total revenues.

H_6: Capacity utilization has a significant impact on total revenues.

H_7: Capacity has a significant impact on total revenues.

H_8: Route rationalization has a substantial impact on total revenues.

METHODOLOGY

This study takes into account (MAS) data from 1992 to 2013 to investigate the impact of operational performance on financial performance. The data for 2014 is not included because the financial reports for 2014 are not available. Secondly, the events of MH370 and MH17 can have a huge impact on the financial performance of the organization which can harm the cause and effect relationships of our model. The data were drawn from the financial reports of MAS to explain the relationships described in Figure 1.

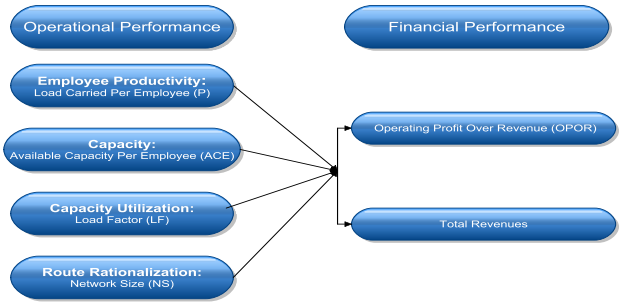

Figure 1: **Framework**

The study investigates the impact of operational performance on the financial performance of the MAS. Variables are operationalized as follows.

Tangen (2002) defines productivity as the ratio of output to input, and the employee productivity can be considered as ratio of output to labor/employee input. In MAS, the overall output is the *total load carried total kilometers in the year* which includes the load of the passengers, baggage, mail and cargo. This *total load carried total kilometers* was divided by the number of employees to find the load carried per employee, which is used as the proxy of employee productivity.

$$LoadCarriedPerEmployee = \frac{Total\ Load\ Carried\ Total\ Kilometers\ in\ the\ year}{Number\ of\ Employees\ per\ year} \quad (1)$$

In line with previous research of Parast and Fini (2010) this study utilizes this variable with a single difference that they measured total labors in terms of labor hours, however, this study considers the total number of employees per year. This change is made because MAS's larger numbers of employees are permanent employees

Further, Stevenson, and Sum (2009) termed Capacity as "the upper limit or ceiling on the load that an operating unit can handle" Baltagi. et al. (1998) studied the capacity utilization as an economic factor in the airline industry, however, the capacity itself can be a determinant of financial performance, as Eisenger (2002) claimed that organizational capacity contributes to the organizational effectiveness in the food pantries and soup kitchens industry. In addition, Eisenger (2002) defined capacity as the set of attributes which contributes towards the mission fulfillment. Moreover, Hammesfahr et al. (1993) claimed that capacity decision contributes to the profitability. This study considers capacity as the ability of available flights to fly up to their maximum range in load of tonne kilometers over a single year. Additionally, present study considers the ratio of capacity to total number of employees as the measure for capacity, this represents the efficiency of firm's decision towards the optimal combination of flight retention to employees.

$$Available\ Capacity\ per\ employee = \frac{Total\ Available\ Capacity\ in\ tonne\ Kilometers\ in\ financial\ year}{Total\ Number of Employees\ during\ financial\ year} \quad (2)$$

On the other hand, capacity utilization refers to the overall load factor of total load including passenger, cargo, and mails. Wang (2014) and Tsikriktsis (2007) considered passenger load

factor as the measure of capacity utilization; conversely, this study considers the overall load factor as the measure, since overall load factor includes all the revenue generating components of the organization.

Overall load factor is derived by the ratio of overall load carried in tonne kilometers with the total capacity in tonne kilometers.

$$Overall\ Load\ Factor = \frac{Total\ Actual\ Load\ Flown\ in\ tonne\ Kilometers\ in\ one\ financial\ year}{Total\ Available\ Capacity\ in\ tonne\ Kilometers\ in\ financial\ year} \quad (3)$$

In addition, Route rationalization is the decision regarding the routes of the flights by the management of MAS. A larger number of routes result into a diversified route. Network size in kilometers is considered as the proxy for the route rationalization. Baltagi at. al., (1998) claim that route rationalization has significantly reduced the costs of US airline industry, and MAS Group Chief Executive Officer (financial reports, 2012) stated that rationalize networking decision resulted to profits in 2012. The claim develops the need for a time series econometric study to unveil the relationship between route rationalization (diversification) and financial performance.

Finally financial performance is considered as the only dependent variable of the study. Profitability is the key dimension which determines the financial performance, though profitability is measured with different proxies in different studies. Anderson, Fornell and Lehmann (1994) considered Return on Investment as the measure of profitability, while Parast, and Fini (2010) considered Load factor. In contrast, this study considers operating profit over operating revenue (OPOR) (Wang, 2009; Tsikriktsis, 2007; and Banker, Chang and Majumdar, 1993) as this variable excludes the impact of financing decision on profitability and only includes the impact of operating activities on the profitability. Besides, this study analyzes the impact of operational performance on total revenue as well, whereas total revenue is the immediate financial response of operational performance.

DISCUSSIONS

Mean and standard deviation along with the skewness and kurtosis for the data of each variable are presented in Table 1, the results suggest that the variables are normally distributed; however, revenues have no skewness but are platykurtic as the kurtosis value 1.77 is less than 3. This reflects the heavy fluctuations in revenues in the sampled years. On the other side, operating profit over revenue is abnormally distributed since it is negatively skewed and platykurtic. This is consistent with the behavior of profitability over these years as MAS has suffered some huge losses, which shifted the mean towards the loss, however the concentration of the variable was heavily towards the profits which resulted into a negatively skewed curve, besides continuous fluctuations in profits caused a large standard deviation; thus a platykurtic curve.

Table 1
Descriptive Statistics

Variables	Mean	Standard Deviation	Skewness	Kurtosis	Jarque-Bera	Kolmogorov-Smirnov
Revenues (in Mil. RM)	984.	3660.64	-0.01	1.77	1.39	0.156
Operating Profit Over Revenues (%)	-1.33	6.80	-1.01	0.29	3.26	0.167
Employee Productivity (in Th Km Ratio)	26.7	78.42	-0.19	2.55	0.32	0.118
Capacity (in Th Km Ratio)	36.5	95.62	-0.41	2.18	1.22	0.164
Capacity Utilization (%)	67.0	4.54	0.82	2.79	2.53	0.178
Route Rationalization (In Th Km)	33.6	72.71	0.20	2.18	0.76	0.157

***Significant at 0.05 level**

Further examination of normality was conducted through different tests; Jarqu-Bera normality test, Kolmogorov-Smirnov normality test and Shapiro- Wilk Test. Razali and Wah (2011) affirm that Shapiro-Wilk test is the most powerful normality test. Though, researchers further argue that all normality tests are effective only for large samples and ineffective for the samples of less than 30. Yet, the findings of tests are tabulated in table 1 for the healthier examination of normality of data.

At 0.01 significance level of alpha, the critical values of chi square distribution with 2 degrees of freedom must be less than 9.21 under Jarque-Bera test for a normally distributed data. Based on Jarque-Bera normality test, the findings which are produced in table 1 indicates that all study variables are normally distributed. As for Shapiro-Wilk test and Kolmogorov-Smirnov test, the statistics must be insignificant for the normality of data. Therefore, as per Shapiro-Wilk test, all the variables are normally distributed at 0.05 level of significance except operating profit over revenues and capacity utilization. Finally, Kolmogorov-Smirnov test shows that all variables are normally distributed.

After considering the lack of proper normality tests for small samples we conclude our analysis of data normality on the basis of five tests conducted and represented in Table 1. Thus we assume that all the variables excluding operating profit over operating revenues are normally distributed.

Furthermore, Analysis of coefficient of correlation is obtained in Table 2 which indicates that dependent variable (Operating Profits Over Revenues) has weak negative relationships/no relationship with Capacity (-0.08), Route Rationalization (-0.14), Employee Productivity (-0.19) and Capacity Utilization (-0.37). The dependent variable of the second model "Revenues" has a strong positive relationship with Capacity (0.88), Employee Productivity (0.74) and Capacity Utilization (0.75), but it has a weak positive relationship with Route Rationalization (0.38). Further causal relationships are investigated in the following paragraphs.

Additionally Capacity is indicating a strong positive relationship with Employee Productivity (0.71) and moderate positive relationship with Route Rationalization (0.66) and Capacity Utilization (0.54). The impact of this correlation on the causal relationship with the dependent variable is analyzed through Variance Inflation Factor (VIF) test. The results are presented in Table 7. All other independent variables are weakly correlated.

Table 2
Correlation between Variables

Variables	Revenues	Operating Profit Over Revenues	Capacity	Route Rationalization	Employee Productivity	Capacity Utilization
Revenues	1.00	-	0.8	0.38	0.74	0.75
Operating Profit Over Revenues	-	1.00	0.0	-0.14	-0.19	-0.37
Capacity	0.88	-0.08	1.0	0.66	0.71	0.54
Route Rationalization	0.38	-0.14	0.6	1.00	0.46	0.08
Employee Productivity	0.74	-0.19	0.7	0.46	1.00	0.41
Capacity Utilization	0.75	-0.37	0.5	0.08	0.41	1.00

Ordinary least square regression analysis and Step wise least square regression (Parast, & Fini, 2010) are conducted to unveil the causal relationship between operational performance and financial performance. Least square method is efficient for the small sampled time series data if all the assumptions are tested and satisfied. A step wise regression analysis helps to understand the impact of each additional independent variable on the model and the relationships.

For analysis, we established following two models.

$OPOR = \alpha + \beta_1 P + \beta_2 NS + \beta_3 LF + \beta_4 ACE + \varepsilon$(4)

$R = \alpha + \beta_1 P + \beta_2 NS + \beta_3 LF + \beta_4 ACE + \varepsilon$(5)

OPOR = Operating Profit Over Revenue = Total Revenues

P = Employee Productivity

NS = Network Size (Route Rationalization)

LF = Load Factor (Capacity Utilization)

ACE = Available Capacity Per Employee (Capacity)

Impact of operational performance on profitability is measured and the results are provided in Table 3 and 4. Table 3 describes four models; each additional model is employed by adding an independent variable. The results of R square reveal that as we add more variables, the ratio of explanation of variance increases as R square is increasing from 0.01 in model 1 to 0.29 in model 4. Conversely, in relation to Adjusted R square, Standard Error, Significance F and Schwarz Criterion model is improving from 1st to 3rd as Adjusted R square is increasing from -0.04 to 0.14, Standard Error is decreasing from 6.94 to 6.30, Significance value of F statistics is decreasing from 0.72 to 0.13 and Schwarz Criterion is decreasing from 6.90 to 6.88, but as we add Employee Productivity into the model it weakens the entire model, as Adjusted R square has decreased to 0.13 and standard error, Significance F and Schwarz Criterion have increased to 6.34, 0.18 and 6.98 respectively. The adjusted R square suggests that only 13% profitability is explained by the operational performance, and according to Significance level of F statistic (0.18), the overall model is weak at 5% level of significance.

Table 3
Step wise Least Square Model Analysis (Dependent Variable: Operating Profit over Revenue)

Model	R Square	Adjusted R Square	Standard Error of the Estimate	F – Statistics	Significance – F	Schwarz criterion
1*	0.01	-0.04	6.94	0.1297	0.722	6.90
2**	0.16	0.07	6.55	1.8190	0.189	6.87
3***	0.26	0.14	6.30	2.1568	0.128	6.88
4****	0.29	0.13	6.34	1.7771	0.179	6.98

*. Independent variable is Capacity, **. Independent Variables are Capacity and Capacity Utilization, ***. Independent Variables are Capacity, Capacity Utilization and Route Rationalization, ****. Independent Variables are Capacity, Capacity Utilization, Route Rationalization and Employee Productivity

Furthermore, the results in Table 4 reveal that capacity utilization (p=0.03) is the only significant variable at 5% level of significance which explains the profitability.

Table 4
Significance of Parameters in the 4th Model of Regression Explaining Operating Profit over Revenues

Variables	Beta	Standard Error	P Value
Capacity	0.05	0.03	0.08
Capacity Utilization	-0.96	0.40	0.03
Route Rationalization	-0.04	0.03	0.13
Employee Productivity	-0.02	0.03	0.40

Impact of Operational performance on revenues is measured and the results are exhibited in Table 5 and Table 6. Table 5 describes the step wise regression analysis where the impact of each additional variable on the overall model is analyzed. Results disclose that the addition of each additional variable from model 1 to model 4 is strengthening the model as both R square and adjusted R square have increased from 0.78 to 0.93 and 0.77 to 0.92 respectively and standard error of estimates and Schwarz Criterion are reducing from 1752.27 to 1066.69 and 17.96 to 17.23 respectively. Moreover, significance of F statistic is 0 which confirms a strong model at 5% level of significance.

Table 5
Step wise Least Square Model Analysis (Dependent Variable: Total Revenues)

Model	R Square	Adjusted R^2	Standard Error of the Estimate	F Statistics	Significance F	Schwarz criterion

1*	0.78	0.77	1752.3	71.6	0.00	17.96
2**	0.89	0.87	1298.4	73.9	0.00	17.45
3***	0.91	0.90	1181.0	61.2	0.00	17.35
4****	0.93	0.92	1066.7	57.5	0.00	17.23

*. Independent variable is Capacity, **. Independent Variables are Capacity and Capacity Utilization, ***. Independent Variables are Capacity, Capacity Utilization and Route Rationalization, ****. Independent Variables are Capacity, Capacity Utilization, Route Rationalization and Productivity

Additionally, Table 6 represents the impact and their significance of individual operational performance variables on revenues. Co-efficient of all the variables are significant at 95% confidence level.

Table 6

Significance of Parameters in the 4th Model of Regression Explaining Total Revenues

Variables	Beta	Standard Error	P Value
Capacity	28.38	4.88	0.0000
Capacity Utilization	229.41	67.54	0.0034
Route Rationalization	-11.74	4.75	0.0242
Employee Productivity	9.50	4.22	0.0379

Further diagnostic tests are conducted to affirm the validity of econometric model. The analysis of multicollinearity is conducted through Variance Inflation factor (VIF) (Parast, & Fini, 2010). As per Gujrati (2003), if the VIF of a variable exceeds 10 or R-Square exceeds 90%, that variable is strongly correlated with other independent variables. Table 7 recommends that there is no multicollinearity among the independent variables of the model.

Table 7

Multicollinearity Test (Variance Inflation Factor)

Dependent Variable	R-Square	VIF
Capacity	0.751036	4.02
Capacity Utilization	0.423893	1.74
Route Rationalization	0.544941	2.2
Employee Productivity	0.505933	2.02

The analysis of autocorrelation is conducted through two distinct tests; Durbin-Watson stat (Parast, & Fini,2010) and Breusch-Godfrey Serial Correlation LM Test. Gujrati (2003) explains that a Durbin-Watson stat (d) of strongly less than 2 or near to zero represents a positive autocorrelation and a strongly greater than 2 or near to 4 reports a negative autocorrelation. Further at 0.01 level of significance, a value of d greater than 1.543 with 4 explanatory variables and 22 observations indicates nonexistence of autocorrelation. Table 8 describes that d of the model is 1.59 which specifies that autocorrelation does not exist. In addition, LM test of serial correlation in contrast to Durbin-Watson stat can analyze the autocorrelation of multiple orders autoregressive models. A Chi-square insignificant co-efficient of LM test assures the non-existence of autocorrelation. Accordingly, Table 8 elucidates that the LM test is insignificant at 0.05 level of significance of Chi-square distribution thus evidences the nonexistence of autocorrelation.

Table 8

Autocorrelation Tests

Tests	Breusch-Godfrey Serial Correlation LM Test	Durbin-Watson stat
Values	1.762757	1.59

*. Significant at 0.05 level of Significance

On the basis of results revealed from Table 1 through 8, we reject H_1, H_2, H_3 and H_4 and conclude that employee productivity, capacity and route rationalization are not significantly influencing the profitability of MAS. Yet, capacity utilization has a negative impact on profitability with a 0.03 P-value. But as Table III explains, the overall model is weak, therefore, we cannot infer on the results of H_2. In contrast, we accept H_5, H_6, H_7 and H_8 as results suggest that Capacity, Capacity Utilization and Employee Productivity have positive impact on revenues and route rationalization has a negative impact on revenues of MAS. It supposes that as routes are diversified revenues decrease. This determines that an increase in capacity, capacity utilization and employee productivity have enhanced the financial performance while a diversified route has reduced the revenues of MAS.

CONCLUSIONS

Malaysia Airline System Bhd (MAS) is the only government based airline company in Malaysia which has both economic and social responsibilities towards the economy. It has proved its enormous performance since its inception, however, operational inefficiencies since Malaysian economic crisis in 1997-1998 has drastically disrupted the financial performance. This study is conducted to find an empirical relationship between the operational performance and financial performance of MAS. The regression analysis of model suggests that employee productivity, capacity and route rationalization have weak impact on profitability, and capacity utilization has strong negative impact on profitability. However, the overall model analysis is weakening the relationship. These results are inconsistent with (Tsikriktsis, 2007). Moreover, the regression analysis of second model recommends that employee productivity, capacity and capacity utilization have strong positive impact on revenues and route rationalization has a strong negative impact on revenues; productive employees, a larger number of aircrafts to employee ratio, a better utilization of capacity and rationalized routes result into higher revenues.

RECOMMENDATIONS

The results of this study advocate that the operational performance variables are strongly contributing towards the revenues in MAS, however, these are not the contributing factors of profitability. Therefore, it is suggested that in future, investigation should be conducted to find key cost and revenue factors which are contributing towards the profitability of the company. Further, a larger sample with the inclusion of other airline industry may provide different results. Similarly, future studies could be carried out in other geographical and industrial context with differentiated characteristics in other services and manufacturing industries or other regions as well.

REFERENCES

Anderson, E. W., C. Fornell, D. R. Lehman. (1994). Customer satisfaction, market share and profitability: Findings from Sweden. *J. Marketing* 58, 53–66.

Anderson, E. W., Fornell, C., & Rust, R. T. (1997). Customer satisfaction, productivity, and profitability. *Marketing Science*, *16*(2), 129-145.

Baltagi, B. H., J. M. Griffin, S. R. Vadali, R. Sharada. (1998). Excess capacity: A permanent characteristic of US airlines? *Journal of Applied Econometrics. 13*(6) 645–657.

Banker, R. D., H. Chang, S. K. Majumdar. (1993). Analyzing the underlying dimensions of profitability. *Managerial & Decision Economics. 14*(1) 25–36.

British Broadcasting Corporation (BBC) (2014). *MH17 Malaysia plane crash in Ukraine: What we know*. Retrieved from http://www.bbc.com/news/world-europe-

British Broadcasting Corporation (BBC) (2014). *Missing Malaysia plane MH370: What we know.* Retrieved from http://www.bbc.com/news/world-asia-26503141

Caves, D. W., Christensen, L. R., & Tretheway, M. W. (1984). Economies of density versus economies of scale: why trunk and local service airline costs differ. *The RAND Journal of Economics*, 471-489.

Doganis, R. (2006). *The airline business*. Routledge, London, New York.

Eisinger, P. (2002). Organizational capacity and organizational effectiveness among street-level food assistance programs. *Nonprofit and Voluntary Sector Quarterly*, *31*(1), 115-130.

Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *The Journal of Marketing, 56* 6–21.

Gujarati, D. N. (4th) (2003). *Basic Econometrics*, McGraw Hill, New York.

Heskett, J. L., & Schlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard business review*, *72*(2), 164-174.

Hirsch, B. T. (1991). Introduction to Labor Unions and the Economic Performance of Firms. *Kalamazoo, MI: W.E. Upjohn Institute for Employment Research*, 1-6.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of management journal*, *38*(3), 635-672.

Jack Hammesfahr, R. D., Pope, J. A., & Ardalan, A. (1993). Strategic planning for production capacity. *International Jr.of Operations & Production Management*, *13*(5), 41-53.

Keiningham, T. L., Morgeson, F. V., Aksoy, L., & Williams, L. (2014). Service Failure Severity, Customer Satisfaction, and Market Share An Examination of the Airline Industry. *Journal of Service Research*, *17*(4), 415-431. doi: 10.1177/1094670514538119.

Malaysia Airline System Bhd. (2014). *Investor Relations*. Retrieved from http://ir.chartnexus.com/mas/index.php

Malaysia Airlines System Bhd. (2015). Retrieved from http://www.malaysiaairlines.com/my/en.html.

Mantin, B., & Wang, J. H. E. (2012). Determinants of profitability and recovery from system-wide shocks: The case of the airline industry. *Journal of Airline and Airport Management*, *2*(1), 1-33.

McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academy of management Journal*, *31*(4), 854-872.

Parast, M. M., & Fini, E. E. H. (2010). The effect of productivity and quality on profitability in US airline industry: an empirical investigation. *Managing Service Quality: An International Journal*, *20*(5), 458-474.

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and Anderson-darling tests. *Journal of Statistical Modeling and Analytics*, *2*(1), 21-33.

Reichheld, F. P., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *Harvard business review*, *68*(5), 105-111.

Ross, S., Westfield, R., & Jaffe, J. (7th) (2005). *Corporate Finance*, McGraw Hill, Singapore.

Stevenson, W. J., & Sum, C. C. (8th) (2009). *Operations management*, MA: McGraw-Hill/Irwin, Boston.

Tangen, S. (2002, December). Understanding the concept of productivity. In *Proceedings of the 7th Asia-Pacific Industrial Engineering and Management Systems Conference, Taipei*, 18-20.

The Edge Market (2014). Retrieved from http://www.theedgemarkets.com/my/article/trading

Tsikriktsis, N. (2007). The effect of operational performance and focus on profitability: A longitudinal study of the US airline industry. *Manufacturing & Service Operations Management*, *9*(4), 506-517.

Wang, J. H. E. (2009). *Determinants of Profitability and Recovery from Shocks: the case of the US domestic Airline Industry.*

Williams, J., Haka, S., Bettner, & M. Meigs, R. (12th) (2002). *Financial & Managerial Accounting*, McGraw Hill, New York.

Zuidberg, J. (2014). Identifying airline cost economies: An econometric analysis of the factors affecting aircraft operating costs. *Jr.of Air Transport Mgt.*, *40*, 86-95.