

Performance measures of civil aviation companies in India and their financial health - an impact analysis

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Keywords

Civil Aviation Market, Insolvency, Financial and Non-Financial Measures, Financial Health, Altman Z-score model.

Abstract

The Civil Aviation Industry in India is ranked among the top aviation industries across the globe. According to various reports, the Civil Aviation Market in India is likely to become one among the top five aviation markets by 2020. It is in a new era of expansion, influenced by the factors such as growing upper middle-class population as prospective customers and growing emphasis on regional connectivity, low-cost carriers due to high competition, modern airports, Foreign Investment, Advanced Information Technology etc. But since the last decade it has seen considerable changes in operations due to economic downturns and high fuel prices which caused air carriers in India to incur significant losses. The present scenario of Civil Aviation Business is vulnerable and in distress Condition. This sector is exposed to huge changes in Economic Environment and Market Variation. There is a need to assess the financial health of the companies and to assess the impact of financial and non-financial measures on Z-Score of the firms. Considering the above, an attempt is made to assess the impact of financial and non-financial measures on the on the Z-Score of selected civil aviation companies in India. This study is carried out for a period of twelve years i.e. from 2007-2018.

Introduction

The Indian civil aviation business is vulnerable to economic changes, market fluctuations due to volatile environment. Therefore, the airline business in India is featured by unsteady growth subject to many challenging factors which include the volatility in jet fuel prices and increase in labour cost. In the competitive business environment, the success of the business depends upon many factors. Both financial and non-financial parameters collectively give an appropriate picture of the happenings in the company at basic level and industry at large.

As far as insolvency and bankruptcy is concerned, the debtor is considered insolvent if he is unable to meet his economic obligations as they mature. He is not considered insolvent if his property and income are enough to cover the obligations. The calculation and analysis of Altman's Z-score is conducted for selected Indian carriers for measuring the financial health.

Indian Aviation Sector and Present passenger traffic Scenario

The civil aviation market in India is all set to become the world's third largest by 2020. Total passenger traffic stood at a 190.1 million in FY15, registering an increase of 12.47 per cent. By 2020, passenger traffic at Indian airports is expected to increase to 421 million from 190.1 million in 2015. Domestic passenger traffic expanded at a compound annual growth rate (CAGR) of 11.8 per cent over FY06-15. The Airports Authority of India (AAI) aims to bring around 250 airports under operation across the country by 2020¹.

Domestic air passenger traffic increased by 23.20 percent in October 2016 on a year-on-year basis as carriers flew 86.72 lakh passengers in the month. In the same month last year, airlines carried 70.39 lakh passengers. In September 2016, the passenger traffic rose by 23.46 percent to 82.30 lakh as compared to 66.66 lakh in corresponding month previous year. Passengers carried by domestic airlines during January-

¹www.acekp.in

October 2016 were 813.70 lakh as against 660.60 lakhs during the corresponding period of previous year thereby registering a growth of 23.18 percent².

Review of Literature

Saifuddin S.K (2018) studied the financial health of select Indian Aviation Companies. Four civil aviation companies in India were selected and it was found that two companies in the study are the potential candidate of bankruptcy despite of many improvements. Mushtaq Khan M and Safiuddin S.K. (2016) tried to predict the bankruptcy of selected two Indian Aviation companies and findings of the study revealed that both the companies are a potential candidate of bankruptcy despite of many improvements.

Monique Timmermans (2014) studied U.S. Corporate Bankruptcy Predicting models to see how accurate are the bankruptcy predicting models of Altman (1968), Ohlson (1980) and Zmijewski (1984) after recalibration, when they are applied to U.S. listed firms in the period after the BACPA change in bankruptcy law? The predictive power of all three models is low, but for Altman (1964) and Ohlson (1980) bankruptcies are overpredicted, as was expected. For the model of Zmijewski (1984), the amount of non-bankruptcies was overpredicted, which is contrary to what was expected. Ummad & Omvir (2012) in their study Distress Prediction Model-Model for predicting Bankruptcy in Aviation Industry found that of the three firms having Z-Score less than 2.60, two have been declared bankrupt. The lending institution has recalled term loan from one firm. Only one firm is financially stable.

Campbell (2008) in the study proposed a reduced form of econometric model using both accounting and market data to predict corporate bankruptcies and failures. The study reveals that their model is more accurate than other alternatives. A more accurate reduced form model of them confirms the negative association between distress risk and equity returns too. Boritz et al. (2007) studying bankruptcy in Canada founds predictive accuracy of Altman's and Ohlson's original models are higher than re-estimated model. They also compared the accuracy of models developed for Canadian firms, namely, Springate (1978), Altman and Levallee (1980), and Legault and Veronneau (1986). The study concludes the Canadian models are being simpler and requiring less data. All models have stronger performance with the original coefficients than the re-estimated coefficients.

Sun and Feng Hui (2006) revealed that bankruptcy not only brings much individual loss to interest parts such as stockholders, creditors, managers, employees, etc., but also too much bankruptcy will greatly shock the whole country's economic development. Altman (1968) was the first one to use multivariate statistical modeling in his "Z-score model" to find combinations of financial ratios that can indicate bankruptcy risk. The ratios included in Altman's model were for example a return on assets ratio and a leverage ratio. If we look at the recent past, Indian aviation has seen one of the best aviation company going bankrupt namely kingfisher airlines. Moreover, Indian aviation sector has been in trouble in recent times because of financial distress and it is common for both private as well as government owned Air India.

Hypotheses of the Study

H₀₁₋₀₄ There is no significant impact of financial measures (include liquidity, profitability and efficiency performance) on Z- Score (financial health) of Select Indian Civil Aviation Companies

H₀₅₋₁₀ There is no significant impact of Occupancy Ratio on Z- Score (financial health) of of Select Indian Civil Aviation Companies

Objective of the Study

The primary objective of the study is to assess the impact of Financial and Non-Financial Measures on the Financial Health as measured by Z-score of select Indian Civil Aviation Companies.

Research Methodology

The research places an emphasis on analysing the financial health of select Indian companies in the Aviation Industry. The impact of financial measures (liquidity, profitability and efficiency performance measured through current ratio, return on equity and receivables turnover ratios) on Financial Health is

² www.ibef.org/industry/indian-aviation.aspx

also assessed and Impact of Non-Financial measure i.e. occupancy ratio on Financial Health is also assessed. Regression analysis has been carried out for assessing the impact.

The selection of the companies is based upon market capitalisation. The top four private civil airline companies of India have been selected for the study. The data that has been used for this study is based upon the financial and non-financial indicators drawn from the databases and annual reports. Hypotheses have been framed and tested at 10% level of significance.

Techniques of Data Analysis

The tools which have been used for the analysis are selected ratios used for measuring financial performance include liquidity, profitability and efficiency performance. The non-financial measure used is occupancy ratio of passengers travelled through a particular airline company. Altman's Z-score that puts together five financial ratios (Four for service industry) generated using the following formula for publicly traded service sector firms³.

$$Z\text{-score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \text{ (original Z-Score Model)}$$

$$Z\text{-score} = 3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 \text{ (New Z-Score Model)}$$

Where

X_1 = Working capital/total assets

X_2 = Retained earnings/total assets

X_3 = EBIT/total assets

X_4 = Equity /total liabilities

X_5 = Sales/ Total Assets

Scope of the study

Scope of the study is confined to assessing the impact of Financial and Non-Financial measures on Financial Health of selected Civil Aviation companies in India using regression analysis. The study was carried out for a period of 10 years from 2007 to 2018. The overall financial indicators of the companies are assessed for measuring the liquidity, profitability performance and efficiency using selected ratios. The non-financial measure used is occupancy ratio of passengers travelled through an airline company.

Limitations of the study

Top players in the sector have been considered for the study based on market capitalization. The study is limited for a period of twelve years and for some of the companies the data was not available for all the twelve years. The data used for the study is based upon the financial reports and financial data available from various databases

Financial Health of Select Indian Aviation Companies Using Altman Z-Score Model

The Z-score of Indigo for 2008 is 0.32 which means the company was in "distress zone" for this year, but for the year 2009 the company has performed well and the score increased to 6.20 and showed an increasing trend for the next two years as well. So, the company was in "safe zone" for the years 2009, 2010, and 2011. But showed a declining trend and fall to 4.97 in 2012, which reveals that the company was in "grey zone". But again, increased in 2013 and declined in 2014, the score falls down to 3.26, which means it is in "distress zone" again. For the year 2015 and 2016 the company has improved its performance and the Z-score has risen to 6.55, which is "safe zone". (see table 02)

The Z-score of Jet Airways in 2007 was 4.80 which means the company was in "grey zone" for this year, but for the year 2008 the company has not performed well and the Z-score has gone down and reached to 3.35 and it has been almost same for 2009. So, the company was in "distress" for the years 2008, 2009, and 2010. But the trend has continued, and the Z-score has fallen in 2011 to 1.10, which means the company was in "distress zone" for the year 2011. But again, jet airways have not performed well 2012, in 2012 the Z-score falls to -1.18, which means it is in "distress zone" again. For the year 2013,14 and 2015 the z-score has fallen further, and the company was in "distress zone" In 2016 there has been a bit of improvement and the z-score has improved a bit, but still jet airways is in "distress zone". (see table 02)

³ Altman, E. I., & Hotchkiss, E. (2006). Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt.

The Z-score of Go Airlines for 2011 was -5.77 which means the company was in “distress zone” for this year, but for the year 2012 the company has not performed well, and the Z-score has gone further down and reached to -13.46. So, the company was in “distress” for the years 2012. But in 2013 company has performed good and thereby improving z-score, which was 4.66. So, the company was in “grey zone” for 2013. In 2014 the z-score had fallen further and reached to 1.96 keeping the company in “distress zone”. The trend has continued, and z-score had fallen for 2015 and 2016 having z-score of -4.11 and -4.09 respectively and putting the company in “distress zone”. there has been a bit of improvement and the z-score has improved a bit but still Go airlines is in “distress zone”. (see table 02)

The z-score of spice jet was -0.16 which is very low and shows the company was in “distress zone” for this year. In 2008, there had been some improvement and Z-score had shown some improvement and reached to 1.24, but still it is “distress zone”. In 2009 the companys performance has worsened and the z-score decreased to -4.18, which is again “distress zone”. The Z-score was -1.88 for 2010, 0.92 for 2011, -8.22 for 2012 and -1.79 in 2013, which means company was in “distress zone” for all these years. For 2014 the z-score had further decreased to -9.42 and in 2015 it had crossed all previous own records and reached to -11.16, and in 2016 there had been a good recovery with the z-score reaching to 0.086, but for all the years of study the spice jet was in “distress zone”. (see table 02)

Impact of Financial Measures on Financial Health of Select Indian Aviation Companies:

Impact of Liquidity, profitability and efficiency on Financial Health of Indigo

The calculated R square is 0.619 which reflects that a major change in Z-Score is caused efficiency performance, liquidity performance and profitability performance. It is depicted from the analysis that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Financial Health of the firm as the significant value is 0.156. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm is 0.406. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.603. There is no significant impact of profitability performance measured through return on equity on Z-Score of the firm as the significant value is 0.121. (table.03)

Impact of Liquidity, profitability and efficiency on Financial Health of Jet Airways

The calculated R square is 0.654 which reflects that a major change in Z-Score is caused by the independent variables/predictor variable i.e. efficiency performance, liquidity performance and profitability performance. It is depicted from the table that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.078. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.308. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.056. There is no significant impact of profitability performance measured through return on equity on Z-Score of the firm as the significant value is 0.898 (table.04)

Impact of Liquidity, profitability and efficiency on Financial Health of Go Air

The calculated R square is 0.234 which reflects that 23.4% of change in Z-Score is caused by efficiency performance, liquidity performance and profitability performance. It is depicted from the table that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.671. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.957. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.435 (table.05)

Impact of Liquidity, profitability and efficiency on Financial Health of Spice Jet

The calculated R square is 0.446 which reflects that a 44.6% of change in Z-Score is caused by efficiency performance, liquidity performance and profitability performance. It is depicted from the table

that there is no significant impact of efficiency performance, liquidity performance and profitability performance measured through receivables turnover, current ratio and return on equity on Z-Score of the firm as the significant value is 0.127. There is no significant impact of efficiency performance measured through receivables turnover on Z-Score of the firm as the significant value is 0.412. There is no significant impact of liquidity performance measured through current ratio on equity on Z-Score of the firm as the significant value is 0.377. (table.06)

Impact of Non-Financial Measures on Financial Health of Select Indian Aviation Companies:

Impact of Occupancy Ratio on Financial Health of Indigo

The calculated R square is 0.251 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.170. (table.07)

Impact of Occupancy Ratio on Financial Health of Jet Airways

The calculated R square is 0.608 which reflects that a major change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.008. (table.08)

Impact of Occupancy Ratio on Financial Health of Go Air

The calculated R square is 0.173 which reflects that a minor change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.412. (table.09)

Impact of Occupancy Ratio on Financial Health of Spice Jet

The calculated R square is 0.069 which reflects that a negligible change in Z-Score is caused by occupancy ratio. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm as the significant value is 0.496. (table.10)

Hypotheses Testing

S. No	Hypotheses of the study	Sig. Value	Accepted/Rejected
1	There is no significant impact of financial measures on Z- Score (Financial Health) of Indigo	0.156	Accepted
2	There is no significant impact of financial measures on Z- Score (Financial Health) of Jet Airways	0.078	Accepted
3	There is no significant impact of financial measures on Z- Score (Financial Health) of Go Airlines	0.671	Accepted
4	There is no significant impact of financial measures on Z- Score (Financial Health) of Spice Jet Ltd	0.127	Accepted
5	There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Indigo	0.170	Accepted
6	There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Jet Airways	0.08	Rejected
7	There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Go Airlines	0.412	Accepted
8	There is no significant impact of Occupancy Ratio on Z- Score (Financial Health) of Spice Jet Ltd	0.496	Accepted

Findings

The following are the major findings from the study

The Z-score of Indigo for the year 2016 reveals that the financial health of the company is in "safe zone". So, there are very less or no chances of company going bankrupt in the next two years as per this model. There was no significant impact of liquidity, profitability and efficiency on z-score of the company. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Z-Score of the firm

The Z-Score of Jet Airway for the year 2016 has improved over the previous year but the score reveals that the company is still in "distress zone". Therefore, it is revealed that the airline firm is a

potential bankruptcy candidate. There was no significant impact of liquidity, profitability and efficiency on z-score of the company. It is also revealed from the analysis that there is significant impact of occupancy ratio on equity on Financial Health of the firm

Go Airlines carried out with the help of z-score reveals that in most of the years it is in "distress zone". The Z Scores calculated shows a varied trend over the years. There was no significant impact of liquidity, profitability and efficiency on Financial Health of the company. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Financial Health of the firm

The analysis of Spice Jet Ltd made through z-score reveals that there had been a good recovery with the z-score reaching to 0.086, but for all the years of study the spice jet was in "distress zone". There was also no significant impact of liquidity, profitability and efficiency on Financial Health of the company. It is also revealed from the analysis that there is no significant impact of occupancy ratio on equity on Financial Health of the firm

Suggestions

It is suggested that Jet Airways, Go Airlines and Spice Jet needs to enhance its earnings through expansion of the business and adopting new policies for development of the business. Several schemes may be introduced to attract customers and improve the earning ability of the firm. In terms of efficiency as calculated through financial measures, all the companies are under performers and reveal that there is a need to make effective utilization of assets and avoid blockage of funds. In terms of liquidity, Jet Airways, Go Airlines and Spice Jet can face liquidity crisis at any point of time, these companies need to improve their financial ability to meet their current obligations. Investment in current assets needs to be concentrated upon. In terms of growth all the selected companies performed well, but they should try to improve their growth and expand their market.

Conclusion

The Airline companies in India are prone to financial distress because of many reasons. The present study reveals that out of the selected Indian Airlines, the financial health of Indigo is very good, and it is in safe zone. The Z score of other three companies reveal that these companies reveal a poor financial health and lie in the distress zone as measured through Z-score model. These companies need to take necessary corrective measures to prevent them from possible bankruptcy.

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Table: 1-Occupancy Ratio or Passenger Load Ratio of Select Indian Civil Aviation Companies

Year	Indigo	Jet Airways	Go Airlines	Spicejet Ltd
2007	-	69.5	-	-
2008	72.7	69.2	77.4	73
2009	69.6	67.7	68.8	67
2010	80.0	77.4	78.2	78
2011	85.1	78.6	80.2	83
2012	82.3	79.3	77.3	75
2013	81.1	78.8	75.1	74
2014	77.2	78.2	74.3	72
2015	79.8	82.3	79.1	81
2016	84.0	82.4	83.7	91
2017	85.2	81.8	88.0	92.9
2018	88.2	84.3	88.6	94.7

(Source: calculated from the data collected from <http://dgca.nic.in>)

Table:02-Financial Health (Z-Score Model) of Select Indian Aviation Companies

Year	Indigo	Jet Airways	Go Airlines	Spicejet Ltd
2007	-	4.80	-	-0.16
2008	0.32	3.35	-	1.24
2009	6.20	3.48	-	-4.18
2010	7.84	3.75	-	-1.88
2011	7.26	1.10	-5.77	0.92
2012	4.97	-1.18	-13.46	-8.22
2013	5.78	-2.68	4.66	-1.79
2014	3.26	-5.53	1.96	-9.42
2015	5.05	-10.20	-4.11	-11.16
2016	6.55	-4.75	-4.09	0.086

2017	7.18	-5.01	-	-3.85
2018	8.90	-6.35	-	0.71

(Source: calculation based upon data from www.acekp.in)

Table: 03-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Indigo

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Score	5.2478	2.29142	9
Current ratio	1.4767	.79204	9
Return on equity	118.2078	124.60561	9
Receivables Turnover	2.0500	.55675	9

Correlations

		Z Score	Current ratio	Return on equity	Receivables Turnover
Pearson Correlation	Z Score	1.000	.594	.301	-.141
	Current ratio	.594	1.000	-.232	-.186
	Return on equity	.301	-.232	1.000	.456
	Receivables Turnover	-.141	-.186	.456	1.000
Sig. (1-tailed)	Z Score	.	.046	.216	.359
	Current ratio	.046	.	.274	.316
	Return on equity	.216	.274	.	.109
	Receivables Turnover	.359	.316	.109	.
N	Z Score	9	9	9	9
	Current ratio	9	9	9	9
	Return on equity	9	9	9	9
	Receivables Turnover	9	9	9	9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.787 ^a	.619	.390	1.78937

a. Predictors: (Constant), Receivables Turnover, Current ratio, Return on equity

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	25.996	3	8.665	2.706	.156 ^b
	Residual	16.009	5	3.202		
	Total	42.005	8			

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio, Return on equity

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.460	2.921		1.184	.289	-4.049	10.969
	Current ratio	1.960	.825	.678	2.377	.063	-.159	4.080
	Return on equity	.011	.006	.587	1.866	.121	-.004	.026
	Receivables Turnover	-1.162	1.282	-.282	-.907	.406	-4.458	2.133

a. Dependent Variable: Z Score

Table: 04-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Jet Airways

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Score	-.7860	4.95789	10
Current ratio	.6970	.48362	10
Return on equity	5.0400	8.25445	10
Receivables Turnover	27.5730	4.77453	10

Correlations

		Z Score	Current ratio	Return on equity	Receivables Turnover
Pearson Correlation	Z Score	1.000	.763	-.154	.576
	Current ratio	.763	1.000	-.176	.441
	Return on equity	-.154	-.176	1.000	-.250

Sig. (1-tailed)	Receivables Turnover	.576	.441	-.250	1.000
	Z Score	.	.005	.335	.041
	Current ratio	.005	.	.314	.101
	Return on equity	.335	.314	.	.243
N	Receivables Turnover	.041	.101	.243	.
	Z Score	10	10	10	10
	Current ratio	10	10	10	10
	Return on equity	10	10	10	10
	Receivables Turnover	10	10	10	10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.809 ^a	.654	.481	3.57182

a. Predictors: (Constant), Receivables Turnover, Return on equity, Current ratio

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	144.678	3	48.226	3.780	.078 ^b
	Residual	76.548	6	12.758		
	Total	221.226	9			

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Return on equity, Current ratio

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B			
					B	Std. Error	Beta	Lower Bound
1	(Constant)							
		-14.130	7.522					
	Current ratio	6.503	2.751	.634	2.364	.056	-2.229	13.235
	Return on equity	.020	.149	.033	.134	.898	-.346	.385
Receivables Turnover	.316	.283	.304	1.115	.308	-.377	1.009	

a. Dependent Variable: Z Score

Table: 05-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Go Air

Descriptive Statistics

	Mean	Std. Deviation	N
Z Score	-3.4683	6.34769	6
Current ratio	.1850	.07893	6
Return on equity	.0000	.00000	6
Receivables Turnover	1.2717	.74679	6

Correlations

	Z Score	Current ratio	Return on equity	Receivables Turnover
Pearson Correlation	Z Score	1.000	.483	.166
	Current ratio	.483	1.000	.400
	Return on equity	.	.	1.000
	Receivables Turnover	.166	.400	.
Sig. (1-tailed)	Z Score	.	.166	.000
	Current ratio	.166	.	.000
	Return on equity	.000	.000	.
	Receivables Turnover	.377	.216	.000
N	Z Score	6	6	6
	Current ratio	6	6	6
	Return on equity	6	6	6
	Receivables Turnover	6	6	6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484 ^a	.234	-.277	7.17320

a. Predictors: (Constant), Receivables Turnover, Current ratio

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	47.101	2	23.551	.458	.671 ^b
	Residual	154.365	3	51.455		
	Total	201.466	5			

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		
	B	Std. Error	Beta			Lower Bound	Upper Bound	
1	(Constant)	-10.493	8.503		-1.234	.305	-37.554	16.568
	Current ratio	39.842	44.335	.495	.899	.435	-101.252	180.936
	Receivables Turnover	-.272	4.686	-.032	-.058	.957	-15.185	14.641

a. Dependent Variable: Z Score

Table: 06-Regression analysis showing Impact of Liquidity, profitability and efficiency on Financial Health as measured by Z-score of Spice jet

Descriptive Statistics

	Mean	Std. Deviation	N
Z Score	-3.4564	4.57057	10
Current ratio	.5090	.27859	10
Return on equity	.0000	.00000	10
Receivables Turnover	3.9390	2.96178	10

Correlations

	Z Score	Current ratio	Return on equity	Receivables Turnover
Pearson Correlation	Z Score	1.000	.621	.
	Current ratio	.621	1.000	.
	Return on equity	.	.	1.000
	Receivables Turnover	-.612	-.707	.
Sig. (1-tailed)	Z Score	.028	.000	.030
	Current ratio	.028	.000	.011
	Return on equity	.000	.000	.000
	Receivables Turnover	.030	.011	.000
N	Z Score	10	10	10
	Current ratio	10	10	10
	Return on equity	10	10	10
	Receivables Turnover	10	10	10

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.668 ^a	.446	.287	3.85889

a. Predictors: (Constant), Receivables Turnover, Current ratio

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	83.774	2	41.887	2.813	.127 ^b
	Residual	104.237	7	14.891		
	Total	188.011	9			

a. Dependent Variable: Z Score

b. Predictors: (Constant), Receivables Turnover, Current ratio

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		
	B	Std. Error	Beta			Lower Bound	Upper Bound	
1	(Constant)	-4.484	5.456		-.822	.438	-17.386	8.418
	Current ratio	6.161	6.531	.376	.943	.377	-9.281	21.604
	Receivables Turnover	-.535	.614	-.347	-.871	.412	-1.988	.917

a. Dependent Variable: Z Score

Table: 07-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Indigo

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	INDIGO_OR ^b	.	Enter

a. Dependent Variable: INDIGO_Z

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.501 ^a	.251	.144	2.120

a. Predictors: (Constant), INDIGO_OR

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.542	1	10.542	2.345	.170 ^b
	Residual	31.463	7	4.495		
	Total	42.005	8			

a. Dependent Variable: INDIGO_Z
 b. Predictors: (Constant), INDIGO_OR

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	-12.457	11.582		-1.076	.318
	INDIGO_OR	.224	.146	.501	1.531	.170

a. Dependent Variable: INDIGO_Z

Table: 08-Regression Analysis showing Impact of Occupancy Ratio Health as measured by Z-score of Jet Airways

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Jet_OR ^b	.	Enter

a. Dependent Variable: Jet_Z
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780 ^a	.608	.559	3.292

a. Predictors: (Constant), Jet_OR

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	134.551	1	134.551	12.419	.008 ^b
	Residual	86.675	8	10.834		
	Total	221.226	9			

Coefficients^a

a. Dependent Variable: Jet_Z
 b. Predictors: (Constant), Jet_OR

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	53.188	15.351		3.465	.009
	Jet_OR	-.707	.201	-.780	-3.524	.008

a. Dependent Variable: Jet_Z

Table: 09-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Go Air

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	GoAir_OR ^b	.	Enter

a. Dependent Variable: GoAir_Z
 b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416 ^a	.173	-.034	6.454

a. Predictors: (Constant), GoAir_OR

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.853	1	34.853	.837	.412 ^b
	Residual	166.613	4	41.653		
	Total	201.466	5			

Coefficients^a

a. Dependent Variable: GoAir_Z
 b. Predictors: (Constant), GoAir_OR

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	55.876	64.929		.861	.438
	GoAir_OR	-.758	.829	-.416	-.915	.412

a. Dependent Variable: GoAir_Z

Table: 10-Regression Analysis showing Impact of Occupancy Ratio on Financial Health as measured by Z-score of Spice Jet

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Spice_OR ^b	.	Enter

a. Dependent Variable: Spice_Z

b. All requested variables entered.

a. Predictors: (Constant), Spice_OR

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.262 ^a	.069	-.064	4.838

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.085	1	12.085	.516	.496 ^b
	Residual	163.853	7	23.408		
	Total	175.938	8			

a. Dependent Variable: Spice_Z

b. Predictors: (Constant), Spice_OR

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17.178	18.657		-.921	.388
	Spice_OR	.173	.241	.262	.719	.496

a. Dependent Variable: Spice_Z