

Predicting financial distress of Omani tourism companies during covid-19 using Zmijewski model

Ms. Samyuktha P Suresh¹

Email: samyuktha@act.edu.om

Ms. Arwa Salim Muslem Al Subhi²

Email: arwa2166@hotmail.com

Ms. Maryam Mubarak Mohammed Al Siyabi³

Email: maryamalsiyabi13@gmail.com

Ms. Amani Ahmed Mubarak Al Afari⁴

Email: alafariamoon@gmail.com

¹⁻⁴Department of Business Studies, Faculty of Accounting, University of Technology and Applied Science, Al Musanna, Sultanate of Oman.

ABSTRACT

The present study was conducted to predict the financial distress of the companies in Tourism industry listed in Muscat Stock Exchange during covid 19 using Zmijewski model by considering their performance for a period of three years from 2018 to 2020. The results of the study revealed that there are no any companies prone to bankruptcy at present and the safest among them is Dhofar Tourism company with a highest X score. The most unsafe company is Al Batinah hotels with a lowest return on assets and current ratio compared to others in the industry. But an in-depth analysis reveals that, some of the companies which has negative Return on Assets and X score which are gradually nearing to 0 X score can go into financial problems in future if necessary actions are not taken now.

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1. INTRODUCTION

Tourism is a significant driver of jobs and growth for every country. According to the Sultanate of Oman's Ninth Five Year Development Plan, the country is diversifying its economy from oil and gas to a sustainable, knowledge based and innovative economy which prioritizes tourism, manufacturing, mining, fisheries, transport and logistic services. Tourism is such a strong sector which can in general contribute around 10 to 30 percent towards the gross domestic product of the economy of a country. In 2016, according to Oman's National Strategy for Tourism 2040, a target rise of 6% was anticipated as a contribution towards GDP from Tourism industry (<http://bitwise.com.lb>, 2016) But since 2016, the contribution from the sector remained almost around 2.9% on an average, which is comparatively less than other countries. Later it was identified that, better investments in the sector will enable a higher percentage of contribution towards Oman's economy and simultaneously create labor intensive projects too. Covid 19 pandemic which was reported globally in 2019 and in Oman in the year 2020, posed innumerable challenges to the economy especially tourism sector along with the issues that were already prevailing in the market due to low oil prices. The present minister of Heritage and Tourism His Excellency Salim Mahrouqi had discussed about the issue of decreased revenue from tourism sector in second Shura council 2020 and pointed out that the revenue has decreased more than 60% compared to 2019 just after when the industry had started witnessing a steady growth both in terms of contribution towards GDP as well as number of visitors to country. Unfortunately, since the first quarter of the year 2020, the tourism industry started experiencing its downturn which was accounted to around 75%, bringing down the number of visitors to the country, which also reflected in the revenue generated from the sector. (<http://bitwise.com.lb>, 2022)

1.1 Background of the study

Tourism industry is one of the most vulnerable industry which was hit by Covid 19 very seriously. Various tourism stakeholders are expected to be impacted by the adverse effects of Covid 19 economically, psychologically and socially. The inbound tourism, travel and leisure activities across the countries steeply came down which created a loss of 2.86 trillion US dollars that was accounted to more than 50% of loss in revenues from this industry. (Abbas et al., 2021) The number of international travelers (arrivals) to Oman from the year 2019 shows a steep downward trend when it had a steady increase from 2011 until 2019. When compared to 2019, the year 2020 witnessed a -65% reduction in the number of travelers to the

country according to United Nations World Tourism Organization (UNWTO, 2019) The graph below illustrates the international tourist arrivals in Oman from 2010 to 2020:



Figure 1. International Tourist Arrivals in Oman (Millions)
 Source: United Nations World Tourism Organization

Obviously when the number of arrivals is reduced drastically the international tourism receipts shall also show a downward trend. And as anticipated, the receipts had gone down too much, from 1.8 billion USD in 2019 to 0.4 billion USD in 2020 (UNWTO, 2019) The revenues of three to five star hotels in Oman fell by 60.2% which accounted to OMR 70.70 million until the end of the year 2020 when compared to the year 2019. This was the after effects of reduction in the hotel occupancy rate by 50% which reached 26% by the end of October 2020, where it was 52.3% in 2019. (Nasseri, 2020) The below given graph elucidates the trend of international tourism receipts of Oman from 2010 to 2020:

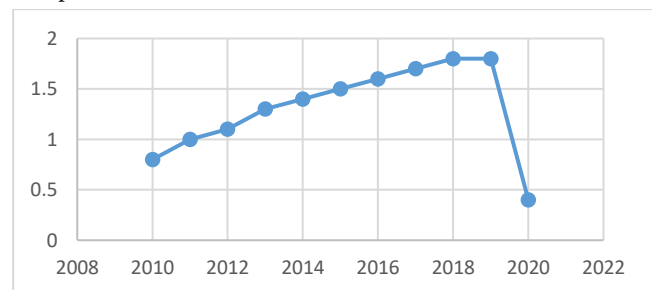


Figure 2. International Tourism receipts of Oman (USD billion)
 Source: United Nations World Tourism Organization

Ultimately this resulted in a reduced contribution to GDP of the country from tourism sector. Statistics shows that the GDP had showed a good surge in 2019 which was 2.84% which had come down to merely 2.33% in 2020. The details are given in the following bar chart (Tourism - Data Portal, 2022):

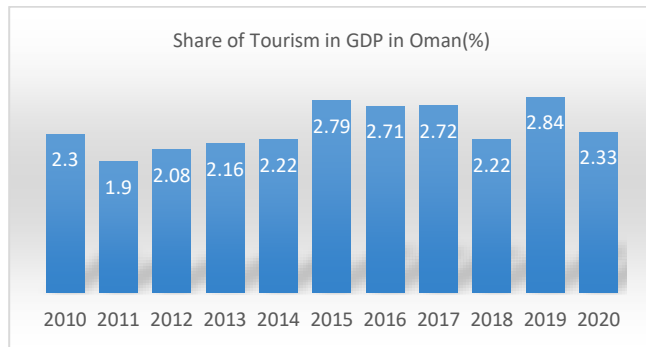


Figure 3. Share of Tourism in GDP (%)
Source: National Centre for Statistics and Information

Even during the phase of such a downturn, Oman's Vision 2040, aims Oman to be the most important tourist destinations across the world. Ahmed bin Nasser Al Meherzi, Minister of tourism in 2016 had specified that, Oman is expected to invest more in tourism, support the development of small and medium tourism enterprises, provide vibrant range of tourist models and thereby attract tourists to the country. But the present pandemic is a reason for a significant reduction in the number of tourists to the country which in turn is anticipated to have commendable impact on the financial position of the companies in the sector. But there is little to no researches done in Oman on Tourism industry which predicts the chances of these companies going bankrupt or financially distressed in the near future due to the impact of pandemic situation prevailing all over the world including Oman. This calls for a thorough analysis of the financial position financial of the companies in the sector and discover the scope for further developments of the industry (Cheraghrou, 2020) Predicting the chances of financial distress is helpful for the business owners as well as the government to take necessary steps to stop or to overcome the unpleasant situation of closing down of the business. In addition, it will be beneficial for other stakeholders like prospective investors to take appropriate decisions at the right time. Therefore, the objective of this research is to predict the chances of bankruptcy of tourism companies in Oman listed in Muscat Stock Exchange in light of the pandemic and to critically evaluate the financial performance of those companies. Bankruptcy prediction is done using Zmijewski Model – X score, which makes use of three financial ratios. The rest of the paper will contain review of literature, a detailed description about the model used for bankruptcy prediction, analysis of the financial data of the companies and then the findings and suggestions of the research. Lastly the areas for further research will be included followed by references.

2. REVIEW OF LITERATURE

2.1 Impact of Covid 19 pandemic on tourism industry globally

There are numerous studies conducted across the world which focused on various aspects of hospitality/tourism industry and the approaches used were also varied. Some of them used simulation and scenario modeling, comparing the Covid 19 pandemic with previous public health crises, mere reporting of covid -19 impact, measuring the economic and social impact of Covid 19, resuming of activities of the sector during and after the covid-19 and some even conducted different types of surveys. Some of the researchers even used a combination of these approaches. (Davahli et al., 2020) There are a few studies which has focused on reporting the financial or the economic impact of Covid 19 on the tourism or hospitality industries. A combination of logit model of bankruptcy along with the stress test methodology which is commonly used in banking industry was advocated to study the impact caused by Covid 19 on selected Spanish hospitality industries. Most of these companies were financially distressed with problems on account of operating leverage. The companies were forced to pay fixed costs even when there is low or

no revenues. (Crespí-Cladera et al., 2021) A study on Polish Tourism companies was conducted using Wedzki logit model in addition to Prusak, Gajdka and Stos, and Altman's EM-score for the prediction of bankruptcy and found that more than half of the companies were at a risk of bankruptcy. The result revealed that the debt ratios, cash-based ratios and other financial ratios tend to be helpful in predicting the situation well (Wieprow & Gawlik, 2021). Whereas in China, selected tourism and hotel experts, managers and tourist attraction managers were interviewed to understand their perception on damages caused by Covid 19 to tourism and hospitality industry. It was understood that there was huge loss of operation costs, hotel revenues and prior investments made by the industry. Operating costs loss faced by the companies was mainly in the form of loan interest, property costs, staff salaries, utilities, investment cost interest, social insurance, venue rents and compensation. With respect to revenue loss, the revenue of various domestic and international hotels was also adversely affected by the pandemic. Most of the hotel revenues losses accounted to 90% compared to last year and entered to very bad cold winter. (Zhong et al., 2022)

2.2 Impact of Covid 19 pandemic on tourism industry in Oman

When it comes to Oman there are no much studies conducted which showcase the financial impact of Covid 19 in view of the impact on individual tourism companies and their future in the market. There are a very few studies which shows that the industry is now facing the issue of inadequate financial resources which ultimately leading to insufficient manpower for business operations due to nonpayment of emoluments and lacking resources for routine activities of the business. According to the study conducted for a period representing 2020- 2024 based on the reports extracted from UNWTO and World Economic Outlook April report, an annual tourist arrival shrinkage of -11.54% and thereby an economic loss of 141.4 billion dollars are estimated in tourism industry. The economic impact on the sector as a whole reveals a drastic reduction in the revenue generated from tourism in Oman since the reporting of pandemic and there was also the threat of imposing levy of 4% by government of Oman on tourists using hotels which eventually escalated the complexity of the situation. Thus, tourism sector, the second highest contributor to the GDP of the country, started reporting a downturn in generating revenue for the industry themselves and for the government. (Al-Hasni, 2020) The pandemic had created a severe financial impact on the travel agencies, hotels, restaurants etc., in Oman, which affected the future business and travel bookings by means of cancellation etc. Several national and international events were cancelled; and as a result, the country was unable to attract tourists. Therefore, the business owners in the sector were forced to suffer huge losses and suspect even permanent closure of their businesses. The tourism sector companies could not have enough funds to cover variable and fixed costs and also to fulfill their expansion plans (Al-Mughairi et al., 2021) In a similar study on the economic impact of the pandemic the hotels in the country faced on an average 50% reduction in occupancy rates paving to the decrease in revenue. Most of the staffs were sent on unpaid leaves, pay cuts, and some were even terminated by the business owners (Al-Hasni, 2021) A survey conducted on small and medium sized enterprises operating in tourism sector in Oman, whereby the participants were either employees or the owners, revealed that the government of the country has extended the time of repaying the loans and interest, but the owners are worried about non resumption of tourism activities in the country full-fledged to earn them revenue and thereby start repaying the loans and interest. And therefore, Omani SME's working in tourism sector started offering transportation services of delivering customer orders from shopping malls at their door steps to generate revenue. They even started consultation services on tourism which demanded less to no capital as a diversification tool of generating revenue. (Alhanai & Matriano, 2021)

Albeit these researches which analyses the economic impact of Covid 19 on tourism industry, there are no any studies which specifically tells about the financial soundness of the companies in the sector specifically and about their capability of going concern in this period of pandemic. Therefore, this research article mainly focuses on the financial impact caused by the pandemic on the tourism industry in Oman with special reference to individual companies listed under Tourism sector in Muscat stock exchange. The study uses Zmijewski model for the analysis of financial

soundness of the companies which is discussed in detail later in the paper.

2.3 Financial distress and use of Zmijewski model.

Financial distress is considered to be the inability of the firm to pay off its obligations and thus the firm can have operational, financial or managerial problems. In corporate world, it can also be interpreted as liquidity issue due to low cash inflows and high levels of leverage. The companies can manage to get the warning signs about such situations of the business whereby they get to know in advance whether the prevailing situation will push them to closure of the business with the help of financial distress prediction models. Several such prediction models have been developed and used since 1968 like Multivariate Discriminant Analysis (MDA), Neural networks, Logit analysis and Probit analysis. Probit analysis takes into consideration the probability of a company going bankrupt in the near future. The first bankruptcy prediction model developed using Probit analysis is Hanweck Model in 1977. It was used in predicting bankruptcy of banks and later on other models were developed like Zmijewski model (1984), Gentry, Newbold and Whitford (1985), Gloubos and Grammatikos (1988), Skogsvik (1990), Theodossiou (1991), Boritz and Kennedy (1995), Lennox (1999) etc (Pavlović & Radovanov-Matarić, 2012).

Table 4. Ratios calculated for the companies for 2018, 2019 and 2020 along with mean value.

Name of the company	X1 -Return on assets				X2 -Financial Leverage				X3 Current ratio			
	2018	2019	2020	Mean	2018	2019	2020	Mean	2018	2019	2020	Mean
Al Batinah Hotels	-0.08	-0.12	-0.17	-0.12	0.23	0.28	0.39	0.30	0.26	0.19	0.12	0.19
Dhofar Tourism	0.05	0.02	0.00	0.03	0.12	0.12	0.12	0.12	3.05	1.59	2.01	2.22
Gulf Hotels	0.02	0.04	-0.13	-0.02	0.23	0.22	0.21	0.22	1.02	1.16	0.89	1.02
Hotels MN Co International	0.16	0.12	-0.12	0.05	0.20	0.20	0.15	0.18	2.99	0.29	3.02	2.10
Sahara Hospitality	0.09	0.10	0.09	0.09	0.23	0.18	0.12	0.18	2.58	1.61	3.65	2.61
Salalha Beach Reso	0.01	-0.01	-0.09	-0.03	0.14	0.12	0.10	0.12	2.32	2.56	1.32	2.07
Ubar Hotels and Resorts	0.03	0.03	-0.03	0.01	0.32	0.26	0.26	0.28	1.60	1.68	1.64	1.64

Source: Data Analysis

Zmijewski model is a Probit analysis model which has been used in different countries on diverse industries and proved to be accurate including Gulf Cooperation Council countries (GCC) too. In Saudi listed firms, bankruptcy prediction models like Zmijewski, Altman Zscore and Kida were used and Zmijewski model turned out to be the most accurate and was recommended to be the best for Saudi Arabia and GCC countries who has similar economic conditions in comparison to Altman Z score model and Kida model (Merza Radhi & Sarea, 2019) When the model was used on oil and gas companies of Kuwait, it showed a healthy and financially sound picture of the companies. But a close analysis of the companies revealed that during the study period, two of the companies had applied for delisting from the stock market. Even though the Zmijewski X score of these companies were negative, the calculation of mean change of the X score was huge and there was a high chance that the companies could get delisted from the market and still trade in the gray market (AlAli et al., 2018) The model was also successfully applied on Telecommunication companies listed in Kuwait stock market, and the companies researched were financially sound too (AlAli, Bash, et al., 2018) In Indonesia, the impact of Covid 19 on Tourism companies were analyzed using the same model with purposive sampling for a period of 2018 to 2020 which revealed that out of 27, four companies were under distress and all other were financially healthy (Ilmiyono & Bon, 2021) In a study in Pakistan, O score model was compared with the Logit model to predict the financial distress of 290 Pakistani firms with 45 distressed and 245 healthy firm for the period of 2006 -2016. Profitability ratios, leverage ratios, liquidity ratios and cash flow ratios used turned out to be very effective in predicting financial distress of those companies. It was identified that distressed firms will have high debt in their capital structure with a higher leverage ratio. In addition, the Return on Assets Ratio showed a significant highest ability to

differentiate between the healthy and the unhealthy firms in the data set and also found that liquidity ratio was positively related to financial distress (Waqas & Md-Rus, 2018)

2.4 Zmijewski model

This paper uses Zmijewski model of bankruptcy prediction, which is the first general Probit model of bankruptcy prediction ever developed. Zmijewski model was developed by Mark. E. Zmijewski to be applied on industrial firms but later on it started to be routinely used on non-industrial firms also. The model is as follows:

$$Z = -4.3 - 4.5X_1 + 5.7X_2 - 0.004X_3$$

Where:

X1=Net Income/Total Asset (Return on assets)

X2=Total Liabilities/Total Assets (Leverage)

X3=Current Asset/Current Liabilities (Liquidity)

The cut-off value of the Zmijewski model is 0. It means that companies that have an X value greater than or equal to 0 is predicted to go bankrupt. On the contrary, if a company has a value of X less than 0, it is less likely to go bankrupt. The present study is purely based on secondary data extracted from the published financial statements of the companies in Tourism industry of Oman. There are eight companies listed in MSX under Tourism sector and considered all the eight for analysis.

They are Al Buraimi Hotel, Al Batinah Hotels, Dhofar Tourism, Gulf Hotels, Hotels MN Company, Sahara Hospitality, Salalha Beach Reso and Ubar Hotels and Resorts. Panel data from the financial statements of the said companies were taken for the period 2018, 2019 and 2020. But at a later stage, Al Buraimi company was excluded from the study as the published financial statements of the company was unattainable for some years. So altogether seven companies were closely analyzed using the model and X score was calculated, which are discussed below:

From the above table its very evident that the ROA for all the companies is not very satisfactory. The companies like Al Batinah Hotels, Gulf Hotels and Salalha Beach Reso are having a negative mean ROA which is a clear indicator of unprofitability. Among the companies, the Al Batinah Hotels had a negative ROA for three consecutive years and is the lowest among the others. When 2020 is closely analyzed, other companies like Hotels MN Co International and Ubar Hotels and Resorts also started getting a negative ROA. So, in brief all the companies with the negative ROA are vulnerable to sustainable operations overtime. All the seven companies are having a leverage ratio which is lesser than 1 and therefore it can be interpreted that the companies are not using required debt funds in the capital structure for growth. This could be because they are not getting enough revenue they are reluctant to survive on borrowed fund or maybe they are denied debt/loans due to prevailing market conditions. But no any company can survive for a long depending only on equity which increases the financial risk. For the companies' like Hotels MN Co International, Sahara Hospitality, Salalha Beach Reso and Ubar Hotels and Resorts the financial leverage is reducing year by year which is not a very good sign. At the same time, leverage ratio of Dhofar Tourism was the same 0.12 for all the three years. Dhofar Tourism and Salalha Beach Reso had the lowest mean

leverage of 0.12. All the companies, except Al Batinah hotels, has a current ratio higher than 1 in all the three years except for few companies like Gulf Hotels and Hotels MN Co International for which the current ratio dropped down in 2020 and 2019 respectively. But still, if the average of the current values for all the three years are analyzed, it is understood that the current ratio of all the companies except Al Batinah Hotels is higher than 1 which is a safe and ideal ratio. For Al Batinah hotels, the current ratio is showing a downward trend from 2018 to 2020 which is a warning sign of inability of meeting solvency obligation.

Table 5. Zmijewski- X score

Years	2018	2019	2020	Mean
Al Batinah Hotels	-2.60	-2.17	-1.32	-2.03
Dhofar Tourism	-3.84	-3.73	-3.62	-3.73
Gulf Tourism	-3.08	-3.23	-2.49	-2.94
Hotels MN CO International	-3.87	-3.69	-2.91	-3.49
Sahara Hospitality	-3.36	-3.71	-4.04	-3.70
Salalah Beach Reso	-3.51	-3.55	-3.32	-3.46
Ubar Hotels and Resorts	-2.62	-2.93	-2.67	-2.74

Source: Data Analysis

The Zmijewski X score is expected to be less than 1 so that the company is not vulnerable to bankruptcy. As the X score comes closer to 0 and if crosses the value 0, the company is considered to be exposed to bankruptcy. From the above table, it is noticeable that, overall the X score of all the companies are less than 0 which means they are at present not prone to bankruptcy. But an comprehensive analysis of the values will reveal that, for Al Batinah, Gulf Tourism and Hotels MN CO International, the X score has plunged down approximately around 0.85, 0.74 and 0.78 points respectively and taking the X score near to 0. All the company's X scores are showing a downward trend except Sahara Hospitality which is exceptionally a strong X score away from and less than 0.

3. CONCLUSION

Overall, all the companies listed in the MSX under Tourism industry are currently healthier and are not prone to financial distress based on the Zmijewski X scores calculated. All the companies have a negative zmijewski score which is less than zero, and is a sign of financial soundness. However, the safest financially healthy company among the seven is Dhofar Tourism company with a Zmijewski X score of -3.73 which is the highest among the other companies and it also has a low mean leverage ratio of 0.12 when compared to others. This is in line with the study conducted in Pakistan (Waqas & Md-Rus, 2018) which clearly says that the companies with less leverage are safer than those with a high leverage. But too low leverage also is not considered beneficial to the companies. Moreover, the company could not get any returns on assets in the year 2020 and recorded 0 which has to be further analyzed. Sahara Hospitality is considered to be the second safest company in the industry with a Zmijewski score of -3.70 and the highest return on assets of 0.09 and the current ratio of 2.61. Al Batinah hotels is identified as the most unsafe company among the seven with a lowest return on assets and current ratio of -0.12 and 0.18 respectively compared to others in the industry. In addition, the company has the highest financial leverage, which clearly points out that the company is having more debts than equity which makes the company likely to be bankrupt in the coming future. Other than that, Al Batinah hotels, Gulf Hotels and Salalah Beach Reso has a negative return on assets which is an indicator of inefficiency of the companies to effectively make use of the assets in generating adequate profit which can in future lead to issues and chances of financial distress.

4. RECOMMENDATIONS

Most of the literature on impact of Covid 19 on Tourism industry in Oman studied only the general impression in terms of finance, psychology and society. In this paper Zmijewski model was used to precisely predict the chances of the companies under Tourism industry going bankrupt. For the study all the eight companies listed in the MSX were chosen, but during the data collection stage due to unavailability of financial data on Al Buraimi company for certain years, that company was excluded from the analysis. Thus, this

research is the first in Sultanate of Oman conducted on Omani Tourism industry to specifically assess the performance and exposure of these companies towards financial distress using Zmijewski X score model. As per the result of the study, overall the companies are not prone to bankruptcy but a deep analysis brings out certain matters which has to be considered seriously by the owners of the companies. The return on assets, leverage ratio and current ratios calculated for three consecutive years for the companies revealed certain significant cautioning if not seriously considered the companies can face financial distress soon. As the study was conducted merely on the seven companies listed on MSX, the results cannot be used to generalize about the industry as a whole. There are many companies which are not listed on MSX but which fall under Tourism industry in Oman. Therefore, future studies can incorporate those companies as much as possible in their study. Also, the present study included the financial data of three years namely 2018, 2019 and 2020. But the future researchers can include a greater number of years like 2021, for a better result as the pandemic has still not come to an end. Moreover, the present study was purely based on secondary data, which has its own limitations. It is advisable that future studies can make use of a mixed source, where by interviews and surveys can also be conducted with owners of the companies under Tourism industry for a better insight on the financial disparities faced by the company which cannot be identified by a mere analysis of financial statements.

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