

# Generic Strategy and Bankruptcy Risk of Nepalese Enterprises

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## Abstract

*The purpose of this paper is to examine the relationship between firm strategy and bankruptcy risk. The research design consists of descriptive and causal-comparative research designs in order to deal with the various issues raised in this study. In addition, this paper uses the Altman-Z score which combines several measures of performance and risk to come up with a score that denotes the bankruptcy risk inherent in a firm. Secondary data has been used collected from annual audit report of concerned organization of manufacturing and hotel industries from fiscal year 2000/01 to 2014/15. Factor analysis, descriptive statistics, correlation analysis, and regression analysis are different statistical tools that have been used for this study. Further, cost leadership and differentiation strategies has been constructed from selling, general, and administrative expenses scaled by net sales; net sales scaled by cost of goods sold; net sales scaled by net book value of plant and equipment; and net sales scaled by net book value of plant and equipment variables through factor analysis. By regressing Altman-Z score against relevant control variables and proxies for differentiation and cost leadership strategies, this study has evaluated the relationship between bankruptcy risk and firm strategy. The analysis shows that the enterprises adopting higher selling, general and administrative expenses in association with higher gross profit margin have been pursuing differentiation strategy whereas higher investment on property, plant and equipment along with their existing value indicates that they have been following cost leadership strategy. Value of Nepalese enterprises pursuing cost leadership strategy has a positive effect on reducing bankruptcy risk while pursuing differentiation strategy has a negative effect on reducing bankruptcy risk.*

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**Key Words:** *Generic Strategy, Bankruptcy, Risk, Altman-Z score, Differentiation Strategy, Cost-leadership Strategy, Nepalese Enterprise*

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## 1. Introduction

Bankruptcy is an important fact of life in the modern business environment. Bankruptcy occurs when a firm is unable to meet its obligations and applies to a federal court either for a period of relief to reorganize its debts or to liquidate its assets. It has an extremely disruptive effect on the firm undergoing bankruptcy and also on its various stakeholders such as employees, creditors, suppliers and customers. Precise bankruptcy forecasts are of great interest to academics, practitioners, and regulators. Regulators use forecasting models to monitor the financial health of banks, pension funds, and other institutions. Practitioners use default forecasts in conjunction with models like that of Duffie and Singleton (1997) to price corporate debt. Academics use bankruptcy forecasts to test various conjectures like the hypothesis that bankruptcy risk is priced in stock returns (e.g. Dichev, 1998) given the broad interest in accurate forecasts; a superior forecasting technology is valuable.

The models of Altman (1968), Ohlson (1980), Zmijewski (1984), Lau (1987) and those of several other authors are specified. Some authors have addressed the deficiencies of existing bankruptcy models. Queen and Roll (1987) and Theodossiou (1993) have developed dynamic forecasting models. This study builds on the work of these researchers by explicitly addressing the bias in static models and developing a consistent model. Bankruptcy forecasters are not the only researchers who can benefit from the results of this study. Forecasters of corporate mergers have also applied static models to multiple-period data sets. In particular, the merger model of Palepu (1986) is biased and inconsistent in the same way as the bankruptcy studies listed above.

There are some empirical results of a study predicting corporate failure as evidenced by the event of bankruptcy. There have been a fair number of previous studies in this field of research; the more notable published contributions are Beaver (1966), Altman (1968). Although bankruptcy is a one-off discrete event, financial distress in firms that may lead to bankruptcy is generally evident long before the event. Early indicators of bankruptcy include losses in multiple consecutive years, cash flows drying up, declining sales, etc. Research in the past 50 years has resulted in objective measures of bankruptcy risk. The most famous of these measures, the Altman Z-score, combines several measures of performance and risk to come up with a score that denotes the bankruptcy risk inherent in a firm. For this measure, and most other bankruptcy risk measures, performance is an important contributor to bankruptcy risk. However, performance that is analyzed with respect to bankruptcy and bankruptcy risk has almost, without exception, been accounting related measures.

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Altman (1968), Ohlson (1980), Zmijewski (1984) and Hillegeist, Keating, Cram, and Lundstedt, (2004) and others show that the accounting information available prior to a bankruptcy filing predicts whether a firm will file for bankruptcy protection. One of the more popular and robust accounting-based bankruptcy prediction models is the Altman's Z-score model first discussed in Altman (1968). The Altman model uses discriminant analysis (DA) to combine five ratios into a score that represents the firms' financial strength which is used to predict bankruptcy.

Altman Z-score has been used to proxy for many bankruptcy-related measures. Piotroski (2000) uses the Altman Z-score to proxy for financial distress and Elliott, Ghosh, and Moon, (2010) use it to measure default risk. In addition to the firm level research, macroeconomic events have also been found to be related to bankruptcy risk. There has been substantial research on the macroeconomic impacts on bankruptcy risk. In early studies Altman (1971) finds that economic decline, credit tightness, and decreased market performance are related to bankruptcy risk. More recently, Bhattacharjee, Higson, Holly, and Kattuman, (2009) combine both macroeconomic variables and firm specific financial variables to examine UK and US bankruptcies and acquisitions. Bankruptcy models typically use financial information which summarizes a firm's overall performance and financial condition.

The strategy of cost leadership is aimed at achieving an above-average return on investment within an industry by means of "a high relative market share or other advantages such as favorable access to raw materials" (Porter, 1980). Thus, cost leadership requires a strong focus on the supply side as opposed to the demand side of the market. In particular, firms pursuing a cost leadership strategy must continuously benchmark themselves against other competing firms in order to assess their relative cost (and therefore profitability) position in the marketplace. This requires a high level of competitor orientation (Day & Wensley, 1988). Thus, expectation of cost leaders is to be competitive rather than customer-oriented. Moreover, cost leaders are unlikely to engage in developing and launching new products, as cost leadership positions are mostly achieved by refining existing products or models (Dess & Davis, 1984). Consequently, it is not expected for a direct effect of a cost leadership strategy on new product activity, after controlling for any indirect effects via competitor orientation.

## **2. Literature review**

The generic strategy of differentiation involves creating a market position that is perceived as being unique industry-wide and that is sustainable over the long run (Porter, 1980). Such differentiation can be based upon design or brand image, technology, features, customer services, distribution, and so forth. In particular, differentiator firms create

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customer value by offering high-quality products supported by good service at premium prices (Walker & Ruekert, 1987). The effectiveness of a differentiation strategy depends on how well the firm can balance product benefits and product costs for the customer, relative to competitive offerings (Bryan Fernando, & Tripathy, 2013). Consequently, such a strategy requires a thorough understanding of both customer needs and the positioning of competing firms (Day & Wensley, 1988; Porter, 1996).

A firm's emphasis on differentiation will, therefore, positively influence both its customer and competitor orientation. In particular, firms that employ technology as a primary means of achieving competitive advantage, differentiate themselves through products that employ cutting-edge technology (Hamel & Prahalad, 1991; Miller, 1986). For example, Gatignon and Xuereb (1997) found that firms with a strategic orientation towards technology marketed products that were more radical, less similar to competing offerings and provided greater benefits. Given their objective of developing new products that create new market opportunities, technology-oriented differentiators are likely to engage in innovative activities without a specific orientation towards customers or competitors (cf. Workman, 1993). Specifically, customers may not be a fruitful source of ideas for radical new products (Berthon, Hulbert, & Pitt, 1999); indeed, study suggests that a customer orientation may be harmful for innovation in such cases as it can stimulate myopia for new opportunities (Christensen & Bower, 1996).

Hambrick (1983) cost leadership is achieved through cost efficiency (using the lowest amount of input for a given level of output) and asset parsimony (using the lowest amount of fixed assets to generate a given level of output). Thus, a cost leadership strategy is closely linked to productivity improvements, since productivity is the proficiency with which different inputs are combined to generate a specified output. Further, Chang, Fernando, and Tripathy, (2012) found that firms that follow a cost leadership strategy have higher levels of productivity.

On the other hand, firms pursuing a differentiation strategy create value using a different paradigm with the focus primarily on generating high margins through the uniqueness of products, price inelasticity, customer loyalty and innovative distribution channels. Hence, there is heavy emphasis on R&D expenses and advertising to create unique product features and also generate customer awareness and brand loyalty. Productivity is not essential for a differentiator; in fact, the process of implementing a differentiation strategy (such as product uniqueness, emphasis on quality, etc.) may actually be detrimental to a focus on productivity. Chang, et al. (2012) formally has demonstrated that firms that concentrate on differentiation do so at the expenses of productivity and productivity reduces bankruptcy risk (Bryan, et al., 2013).

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### **3. Statement of hypothesis and development of theoretical framework**

A cost leadership strategy is closely linked with productivity improvements, as productivity is the proficiency with which different inputs are combined to generate a specified output. According to Chang, et al, (2012) firms following a cost leadership strategy have higher levels of productivity. Productivity is not essential for a differentiator; in fact, the process of implementing a differentiation strategy (such as product uniqueness, emphasis on quality, etc.) may actually be detrimental to a focus on productivity. Chang et al. (2012) formally demonstrate that firms that concentrate on differentiation do so at the expense of productivity. Porter shows that there are two generic strategies either of which, if successfully implemented, will enable firms to have competitive advantage over their competitors. Numerous studies have empirically confirmed this contention. The implementation of the two strategies will be different though: cost leadership will rely on productivity enhancements, while differentiation will seek innovation and brand loyalty. A successful implementation of either strategy will lead to better performance. Since better performance leads to a lower risk of bankruptcy, the following hypothesis is formulated for examining the generic strategies and risks.

#### ***H1. Firms pursuing higher degrees of differentiation reduce bankruptcy risk.***

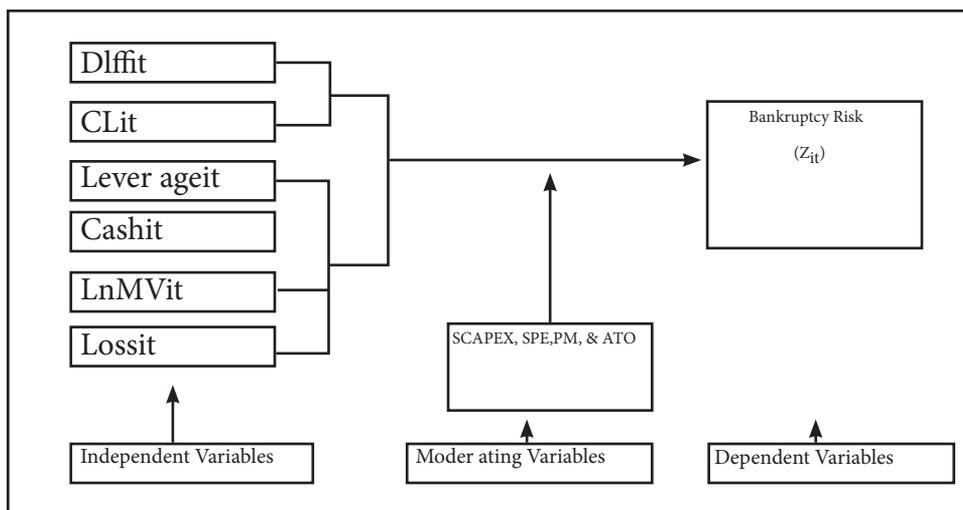
Chang et al. (2012) show the heterogeneous relationship between productivity and a firm's strategy through demonstration that cost leadership (differentiation) firms are associated with a higher (lower) level of productivity. Therefore, higher levels of either cost leadership or differentiation lead to a lower bankruptcy risk. Combining the different ideas, it is proposed that one of the mechanisms by which firm strategy impacts bankruptcy risk is through productivity. According to Chang et al. (2012), there exists a positive link between cost leadership and productivity. The implication is that as the level of cost leadership increases, the productivity also increases. It is expected that higher levels of productivity lead to a lower risk of bankruptcy. Hence, it is assumed that the impact of cost leadership on bankruptcy risk will be at least partially mediated through productivity. Therefore, this study formulates following hypothesis in order to clarify this relationship.

#### ***H2. Firms pursuing higher degrees of cost leadership reduce bankruptcy risk.***

On the basis of above hypothesis, figure 1.1 schematic diagram of the theoretical framework has been developed.

Figure 1.1 shows that the benefit of cost leadership and differentiation strategies are measured on bankruptcy risk of overall sampling organizations which is measured through value of the Altman Z-score including controlled variables such as leverage, market capitalization, cash holdings to total assets and dummy variables loss.

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**FIGURE 1.1: CONCEPTUAL FRAMEWORK**

#### 4. Research methodology

The research design adopted in this study consists of descriptive and causal-comparative research designs to deal with the various issues raised in this study.

##### 4.1 Data

This study focuses the spotlight on cost of goods/cost of service sold and sales revenue out of various elements to measure impact of cost leadership and differentiation strategy to reduce bankruptcy risk. Thus, this study goes for a limited number of manufacturing and hotel enterprises. The population of this study is eleven listed manufacturing and processing companies presently operating and four listed hotels. These are: Bottlers Nepal Ltd.(Balaju), Bottlers Nepal (Terai)Ltd. Raghupati Jute Mills Ltd., Gorakhkali Rubber Udhog Ltd., Uniliver Nepal Ltd., Nepal Khadya Udhog Ltd., Fluer Himalayan Ltd., Shree Ram Sugar Mills Ltd, Nepal Bitumin and Barrel Udyog., Himalayan Distillery Ltd., Nepal Lube Oil Ltd., Soaltee Hotel Ltd., Tara Gaun Regency Hotel Ltd., Oriental Hotel Ltd., and Yak and Yeti Hotel Ltd. Out of these, Nepal Khadya Udhog Ltd., Shree Ram Sugars Ltd., Fluer Himalayan Ltd., Raghupati Jute Mills Ltd., and Yak and Yeti Hotel has been excluded in the sample due to lack of annual audit report after fiscal year 2011/2012. Remaining seven manufacturing and processing organizations and three hotel organizations have been included in the sample.

To measure bankruptcy and firm strategy of the listed Nepalese enterprises, secondary data has been used. These data have been collected from Security Board of Nepal, Nepal Stock Exchange and concerned companies. The data collected from 2000/01 to 2014/15 due to lack of annual audit report of fiscal year of 2015/16 of Gorakhkali Rubber Udhog

Ltd. and Nepal Bitumin and Barrel Udyog Ltd. Data have been converted into five-year moving average.

#### 4.2 Strategy measures

Balsam, Fernand, & Tripathy, (2011) and Asdemir, Fernando, & Tripathy (2013) have critically looked at strategic positioning of the firms using realized indicators obtained from the firms' financial statements. Accordingly, three variables SGA (selling, general and administrative expenses scaled by net sales), R&D (research and development expenses scaled by net sales) and MARGIN (net sales scaled by cost of goods sold) have been used to measure strategic positioning based on the differentiation dimension.

Three additional variables SCAPEX (net sales scaled by capital expenditures on property, plant and equipment) SPE (net sales scaled by net book value of plant and equipment) and EASSETS (the number of employees scaled by total assets) have been used to measure strategic positioning based on cost leadership (Asdemir et.al, 2013; Bryan et.al, 2013). These measures capture the firms' long-term strategic orientation along with the dimensions of differentiation strategy and cost leadership strategy.

This study has computed the mean of the previous five years of data for each of the above four variables i.e. except R&D and EASSETS to capture the long-term strategic orientation of the firms and conduct a factor analysis to construct the two strategy variables, "Cost Leadership" and "Differentiation".

#### 4.3 Bankruptcy risk

This study uses Altman Z-score as a measure of bankruptcy risk. Altman (1968) was the seminal contribution in the bankruptcy literature. This study introduces the first bankruptcy evaluation model using multiple DA (discriminant analysis) to discriminate between bankrupt and non-bankrupt firms. The statistical DA uses a linear combination of independent variables to assign a score, referred to as the "Z-score" to a particular firm. The summary of Z-score provided by the model represents a firm's risk of bankruptcy. It is computed as:

$$Z = 1.2(WC) + 1.4(RE) + 3.3(EBIT) + 0.6(MVE) + 0.999(S)$$

Where: WC = working capital scaled by total assets, RE = retained earnings scaled by total assets, EBIT = earnings before interest and taxes scaled by total assets, MVE = market value of equity scaled by total liabilities and S = sales scaled by total assets.

WC is included as a measure of liquidity. RE is cumulative profitability while providing implicit information about the age of the firm. EBIT is, naturally, a measure of profitability. MVE is a measure of leverage, and S represents the sales-generating ability of the firm's

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assets. Recently, Altman (1993) has extended his original idea on the default/non-default classification into various credit rating issues such as credit rating migration (Altman & Kao, 1992a.b) and credit rating of agencies (Altman & Rijken, 2004). This study uses this alternative specification of the Z-score to evaluate the robustness of the results.

For describing the various characteristics and dimensions of quantitative data, different tools of descriptive statistics are used. Mean, median, maximum value, minimum value and standard deviation are used for analysis of secondary data. In correlation analysis in this study, different variables such as Altman Z-score, differentiation strategy, cost leadership strategy, leverage, market capitalization, cash holdings to total assets and an indicator of loss firm's variables are analyzed through correlation analysis.

### **Empirical model**

To evaluate research hypothesis, the effect of differentiation and cost leadership strategy to reduce bankruptcy risk of multiple regression analysis is used which is given below:

$$\text{AltmanZ}_{i,t} = \alpha_0 + \beta_1 \text{Diff}_{i,t} + \beta_2 \text{CL}_{i,t} + \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{LnMV}_{i,t} + \beta_5 \text{Cashi}_{i,t} + \beta_6 \text{Loss}_{i,t} + \epsilon_{i,t} \dots (\text{Bryan et.al, 2013})$$

Where  $\text{AltmanZ}_{i,t}$  represents the bankruptcy risk of a firm  $i$  in a period  $t$  calculated based on Altman (1968). A lower value of Altman Z denotes a higher level of bankruptcy risk.  $\text{Diff}_{i,t}$  and  $\text{CL}_{i,t}$  represent the strategic positioning of a firm  $i$  in a period  $t$  constructed based on Balsam, et al. (2011). Based on hypothesis one, this study expects the coefficients on the two strategy variables  $\alpha_1$  and  $\alpha_2$  to be positive and significant, indicating that there is lower risk of bankruptcy for firms which are able to successfully pursue either of the strategy.

Leverage ratio ( $\text{Leverage}_{i,t}$ ), calculated as ratio of book value of long and short term debt to total assets of a firm  $i$  in a period  $t$ . Firm size ( $\text{LnMV}_{i,t}$ ) calculated as the natural logarithm of market capitalization at the end of the fiscal year of a firm  $i$  in a period  $t$ . Liquidity ( $\text{Cashi}_{i,t}$ ) calculated as the ratio of cash holdings to total assets of a firm  $i$  in a period  $t$  and an indicator of loss firms ( $\text{Loss}_{i,t}$ ) which is set to 1 if the firm has a loss during the year, otherwise 0 of a firm  $i$  in a period  $t$ .

## **5. Data Analysis and Findings**

### **5.1 Factor analysis**

Factor analysis has been carried out to reduce four different variables MARGIN, SG&, SCAPEX, and SPE into two variables which are differentiation and cost leadership strategy. KMO and Bartlett's test of four strategic variables are presented in table 1.

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**Table 1**  
**KMO and Bartlett's test**

Particulars	Results	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.549
Bartlett's Test of Sphericity	Approx. Chi-Square	196.453
	Df	6
	Sig.	0.000

The KMO measures the sampling adequacy, which should be greater than 0.5 for a satisfactory factor analysis to proceed (Hutcheson & Sofroniou, 1999). Table 1 shows that KMO measure is 0.549 and therefore, it is satisfactory. Rotated Component Matrix and Communalities of four strategic variables are presented in table 2.

**Table 2**  
**Rotated component matrix and communalities**

	Component		Communalities
	Diffit	Clit	
MARGIN	0.937		.872
SG&A	0.919		.901
SCAPEX		0.891	.801
SPE		0.811	.734

SG&A and MARGIN support component 1 and is denoted by differentiation strategy. SCAPEX and SPE support component 2 and is denoted by cost leadership strategy and it is similar with (Asdemir et al. 2013). With all communalities above 0.6, relatively small samples (less than 100) may be perfectly adequate. Samples between 100 and 200 can be good enough provided there are relatively few factors each with only a small number of indicator variables, with communalities in the 0.5 range (MacCallum, Widaman, Zhang, & Hong, 1999). The value of communalities presented in the last column of 3 of each component is adequate in 110 numbers of observations.

## 5.2 Descriptive statistics

Table 3 presents descriptive statistics of Altman Z-score, strategic variables of differentiation and cost leadership and other controlled variables which are leverage, market capitalization, and cash holdings to total assets.

**Table 3**  
**Descriptive statistics**

	Unit	N	Mean	Median	Std. Deviation	Minimum	Maximum
Diff <sub>i,t</sub>	Ratio	110	0	-0.22123	1	-1.29344	2.81023
CL <sub>i,t</sub>	“	110	0	-0.26514	1	-1.59178	7.6738
Z <sub>i,t</sub>	“	110	1.283212	1.273421	0.770123	0.13234	4.1238
Leverage <sub>i,t</sub>	“	110	0.000412	0.00123	0.000299	0	0.0012
LnMV <sub>i,t</sub>	Rupees	110	19.12431	19.32156	1.533541	16.10234	22.26321
Cash <sub>i,t</sub>	Ratio	110	4.98E-05	1.73E-05	7.21E-05	1.6E-06	0.000411

The first two variables are the strategy measures such as differentiation and cost leadership. The mean and standard deviation of these two measures are 0 and 1 respectively. Difference between maximum value and minimum value of cost leadership strategy is greater than that of differentiation strategy. Mean and median value of dependent variable Altman Z-score is 1.283212 and 1.273421 respectively.

### 5.3 Correlation analysis

Table 4 tabulates the correlation statistics between dependent variable Altman Z-score, two main independent strategic variables i.e. differentiation strategy and cost leadership strategy and other four independent controlled variables i.e. leverage, market capitalization, cash holdings to total assets and loss which is presented in the table 4.

**Table 4**  
**Correlation analysis**

	Diff <sub>i,t</sub>	CL <sub>i,t</sub>	Z <sub>i,t</sub>	Leverage <sub>i,t</sub>	LnMV <sub>i,t</sub>	Cash <sub>i,t</sub>	Loss <sub>i,t</sub>
Diff <sub>i,t</sub>	1						
CL <sub>i,t</sub>	-.113*	1					
Z <sub>i,t</sub>	.331*	0	1				
Leverage <sub>i,t</sub>	-.545*	0.178	-0.129	1			
LnMV <sub>i,t</sub>	.312*	.432*	-.314**	-0.212**	1		
Cash <sub>i,t</sub>	.416*	-0.082	.467*	-0.163**	0.214	1	
Loss <sub>i,t</sub>	-.523*	.282*	-.212*	.342**	-.312*	-.412*	1

Table 4 shows that there is a significant relation between independent variable differentiation strategy with all other variables at 1 percent level. Differentiation strategy shows low degree of positive relation with Altman Z-score. Cost leadership and market capitalization as well as cost leadership and loss shows low degree of positive correlation at 1 percent LOS.

#### 5.4 Regression analysis

Different stepwise multiple regressions have been analyzed to measure the impact of differentiation strategy and cost leadership strategy on bankruptcy risk including the impact of different controlled variables which are leverage, market capitalization, cash holdings to total assets and loss. Measurement of impact of differentiation and cost leadership strategy including different controlled variable leverage, cash holdings to total assets, dummy variables loss on bankruptcy risk, following multiple regression models are used.

$$Z_{i,t} = \alpha_0 + \beta_1 \text{Diff}_{i,t} + \beta_2 \text{CL}_{i,t} + \beta_3 \text{Leverage}_{i,t} + \epsilon_{i,t} \dots (1)$$

$$Z_{i,t} = \alpha_0 + \beta_1 \text{Diff}_{i,t} + \beta_2 \text{CL}_{i,t} + \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{Cashi}_{i,t} + \epsilon_{i,t} \dots (2)$$

$$Z_{i,t} = \alpha_0 + \beta_1 \text{Diff}_{i,t} + \beta_2 \text{CL}_{i,t} + \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{Loss}_{i,t} + \epsilon_{i,t} \dots (3)$$

$$Z_{i,t} = \alpha_0 + \beta_1 \text{Diff}_{i,t} + \beta_2 \text{CL}_{i,t} + \beta_3 \text{Leverage}_{i,t} + \beta_4 \text{Cashi}_{i,t} + \beta_5 \text{Loss}_{i,t} + \epsilon_{i,t} \dots (4)$$

Before dependent variable is regressed on independent variables, Glejser test has been used for detecting heteroscedasticity problem that is found. Dependent and all independent variables have been divided by unstandardized predicted variables due to heteroscedasticity problem. The computed values of the regression equations for the selected enterprises are presented in table 5.

Table 5 presents that the F-ratio of all regression models are statistically significant at one percent LOS. Value of DW of each model is approved that all models are free from auto correlation problem. Value of VIF of all independent variables of each regression model is approved that all regression equations are free from multicollinearity problem.

**Table 5**  
**Regression result of Altman Z-score on differentiation strategy, cost leadership strategy and controlled variables like leverage, market capitalization, cash holdings to total assets and loss of each firm in a year t.**

Models	Model 1				Model 2				Model 3				Model 4			
	Coeff.	SE	T value	VIF	Coeff.	SE	T value	VIF	Coeff.	SE	T value	VIF	Coeff.	SE	T value	VIF
Constants	0.911*	0.042	19.382		0.88*	0.059	15.36		0.854*	0.041	16.213		0.863*	0.056	15.232	
Diff <sub>it</sub>	-0.113*	0.04	-2.564	1.511	-0.05**	0.031	-2.29	1.78	-0.13*	0.031	-3.423	1.81	-0.11**	0.031	-2.33	2.48
Cl <sub>it</sub>	0.081	0.069	1.112	1.132	0.0521	0.081	0.61	1.61	0.084	0.072	1.154	1.54	0.036	0.073	0.55	1.72
Leverage <sub>it</sub>	311.102*	55.125	5.761	1.883	247.214*	61.84	3.87	2.42	272.31***	85.35	3.237	6.52	228.32*	83.54	2.78	5.62
Cash <sub>it</sub>					439.11	1342.81	0.3144	1.52					454.35	1283	0.364	1.54
Loss <sub>it</sub>									0.093	0.089	0.945	8.76	0.034	0.085	0.521	6.63
	R <sup>2</sup> = 0.251 F = 10.951* D.W. = 1.983, d.f. = 106				R <sup>2</sup> = 0.211 F = 5.812* D.W. = 1.986, d.f. = 105				R <sup>2</sup> = 0.396 F = 16.163* D.W. = 2.112, d.f. = 105				R <sup>2</sup> = 0.265 F = 6.861* D.W. = 2.101, d.f. = 104			

Note: Number of Observations = 110 \* Significant at 0.01 levels \*\* Significant at 0.05 levels \*\*\* Significant at 0.10 levels

.In the perspective of regression model first, value of R<sup>2</sup> indicates that this regression model explains 25.1 percent area. Coefficient value of all independent variables except cost leadership is statistically significant at 1 percent level. There is an inverse relation between differentiation strategy and bankruptcy risk. Hence, firms' pursuing higher degrees of differentiation strategy increase bankruptcy risk. It is just opposite as per prior expectation i.e. it does not support hypothesis one but result is insufficient with hypothesis two.

Regarding the regression result second, coefficient value of leverage and differentiation strategy is statistically significant at 1 percent and 5 percent level respectively. It is observed that the explanatory power of the R<sup>2</sup> is 0.211 indicating that 21.1 percent variation in the level of satisfaction is explained by variation of the independent variables included in the model. The coefficient value of differentiation strategy indicates that there is inverse relationship between bankruptcy risk and differentiation strategy i.e. pursuing higher degree of differentiation strategy increases bankruptcy risk. Hence, it is just opposite as per prior expectation i.e. hypothesis one is rejected. But, there insignificant is positive relation between cost leadership strategy and bankruptcy risk. This model presents insignificant result in hypothesis two.

Table 5 presents the result of regression model third; value of R<sup>2</sup> explains that the model is responsible for 39.6 percent of the variability in the measurement of bankruptcy risk. Coefficient value of independent variable differentiation strategy at 1 percent and leverage is significant at 10 percent level. Coefficient value of differentiation strategy indicates that pursuing higher degrees of differentiation strategy increases risk i.e. result is just opposite as per prior expectation of hypothesis one and result is insignificant positive with hypothesis two.

Result of regression model fourth presents that the explanatory power of the model is reasonably low given as the R<sup>2</sup> is estimated at 26.5 percent. Coefficient value of independent variables of leverage and differentiation strategy is statistically significant at 1 percent and 5 percent level respectively. Coefficient value of differentiation strategy is negative. Hence, it is approved that firm pursuing higher level of differentiation strategy increases bankruptcy risk and it does not support hypothesis one. In the perspective of hypothesis two, coefficient value of cost leadership strategy is insignificant.

## **6. Conclusion, limitations, and future research**

The enterprises adopting higher selling, general and administrative expenses in association with higher gross profit margin indicates that they are pursuing differentiation strategy whereas, higher investment on property, plant and equipment along with their existing

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value indicates that they are following cost leadership strategy. Pursuing differentiation strategy has a negative effect on reducing bankruptcy risk.

Six variables SG&A/SALES, R&D/SALES, SALES/COGS, SALES/CAPEX, SALES/P&E and EMPL/ASSETS were used in factor analysis (Asdemir et al. 2013). Out of these, EMPL/ASSETS and R&D/SALES are excluded in factor analysis to reduce them to two variables i.e. cost leadership and differentiation strategy due to no separate record of research and development expenditure and number of employees in different fiscal years of different enterprises. Variables have been visible in descriptive statistics and correlation matrix but all are not included in regression analysis due to the lack of regression assumptions.

This study is limited to the study of the impact of cost leadership and differentiation strategy on bankruptcy risk i.e. it does not cover the analysis of relationship between productivity, firm strategy and bankruptcy risk. The study does not pretend to enlighten the mediating effect of productivity in the relationship between strategy and bankruptcy risk.

This study has not included impacts of productivity on bankruptcy risk. Hence, further research should emphasize the impact of productivity to reduce bankruptcy risk in Nepalese enterprises. So, future research should focus on the three way relationship between productivity, generic strategies and bankruptcy risk in Nepalese enterprises.

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