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National Culture as a Determinant of Corporate Capital Structure: Empirical Evidence from Three Emerging Economies¹

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Abstract

Purpose: Psychological perceptions of corporate managers are deeply inherent in their cultural background. Such an influential state of corporate managers can create versatilities regarding the different firm-level decisions. Given that, this study aims to quantify the dynamical role of national culture in determining corporate financing patterns i.e., debt and equity financing.

Design/methodology/approach: The sample size includes the top 100 non-financial sector firms each from Pakistan, India, and China over the period 2007 to 2016. Hofstede's six cultural dimensions were considered proxy variables of national culture. The capital structure decision was quantified through two proxy variables named debt financing and equity financing. The regression among variables was established by utilizing the fixed effect model.

Findings: The analysis reveals that individualism and masculinity have a negative while power distance shows a positive and statistically significant relationship with debt financing. Corporate managers with individualistic and masculine cultural backgrounds are less interested in debt financing due to more effort exerting behavior to manage the equity stock. However, managers from a high-power distance culture are more likely to acquire debt financing as they do not assume to adhere to shareholders. In brief, the findings of the study illustrate the significant role of national culture in firm-level decisions i.e., financing decisions.

Practical implications: Practically, the findings of the study can help managers design an efficient financing policy in the context of different cultural backgrounds.

Social implications: Socially, as cultural diversity has a significant role in managing financing, therefore it is recommended to consider the cultural background of corporate managers in their recruitment.

Novelty: This study provides new insights regarding the significant role of culture in firm financing decisions specifically in emerging economies. This study is most relevant to decision sciences studies as it explores the role of the cultural background of corporate managers in deciding financing preferences.

Keywords: Individualism, Masculinity, Power Distance, Capital Structure, Emerging Economies

JEL Classification: Z10: G32

1. Introduction

Most consciously, the subject of efficient capital structure decisions has remained the most prominent issue in the finance management arena (Sekely, 1988). It has become the most discussed topic in the subject of financial management after the research made by Modigliani and Miller (1958). Most of the financial management decisions relate to the capital structure of the firm. When a company acquires funds to finance its daily operations, then it either goes to debt financing or equity financing. Such financing decisions of firms are related to their internal management personality, cost of financing, and corporate culture (Abbas *et al.*, 2022; Ahmad *et al.*, 2017). Among the others, it also depends upon specific national cultural settings. However, the firms often ignored the national culture at the time of determining the capital structure. This study tries to find out the dynamic role of national cultural settings in determining capital structure. It extends the discussion on capital structure decisions by considering both firm-level and national-level factors.

Culture specifies how the inhabitants of a specific country make their decisions based on their values and beliefs (Schwartz, 1994). It also relates to individuals from different categories of nations (Hofstede, 2001). Culture directly or indirectly affects our attitudes & values and our thinking is malleable by different cultural settings (Acevedo *et al.*, 2021; Adler, 1997). Hierarchy (values-attitude-behavior) among cultural settings has been depicted by Homer (1988) which shows actions asserted by individuals. Hofstede gave his famous cultural model in 2010 in which he suggested that there exist six types of cultural dimensions. These dimensions are power distance: low vs. high, individualism vs. collectivism, masculinity vs. femininity, uncertainty avoidance: low vs. high, long-term orientation vs. short-term orientation and indulgence vs. self-restraint. These dimensions suggest the specific behavior of different nations and specify the activities of life according to their culture. Cultural variation across the nations surrogates human thinking. The psychology of managers changes when the culture varies from country to country (Kirsch *et al.*, 2012). The change in manager's psychology impacts on their decision-making style (Chang *et al.*, 2019; Hackbarth, 2008).

The discussion of whole finance management varies around capital structure decision and its relevant activities such as cost of financing, capital budgeting, funding resources, investment decision, liquidity position, dividend decision, and the decision of percentage of debt and percentage of equity in total financing (Booth, 2001; Duong *et al.*, 2020). The measurement of capital structure is not specific, but it depends upon the considerations and relevant objectives. The commonly used proxy of capital structure is debt to equity ratio which describes the capital structure decisions finely (Farooq *et al.*, 2020). The decision about appropriate capital structure is most important for achieving the maximum financial outcomes in the form of profitability. When firms decide the determination of capital structure, then different factors affect their decision. In the presence of other factors, national culture may also affect capital structure. However corporate firms often ignore the national culture at the time of determining the capital structure.

Capital structure is the most interesting topic in the finance literature (Wallmeroth *et al.*, 2018; Martinez *et al.*, 2019; Khoa *et al.*, 2020). There exist two sources through which the firms can

acquire the funds i.e., internal source and external source of financing. The retained earnings are an internal source of financing which is also called capital reserve. According to the Pecking order theory, firms first use internal funds and then move to external funds which are debt and equity. The internal source of financing is cheaper compared to the external source of financing. It has no fixed burden of interest payments and no liability towards dividend payments. However, excessive usage of internal financing can create opportunity costs for firms in the form of high volatility due to a lack of reserves. Additionally, it also reduces the firm's confidence in making innovations due to the depletion of financial reserves (Gabaix *et al.*, 2014; Le & Wong, 2019). The managers of the firm seem to be congested for slow growth. The second source of financing is external financing in which firms must construct efficient financing strategies for the fulfillment of business funding needs at low financing cost. The economic financing structure depicts managerial efficiency. Thus, corporate managers should carefully decide the capital structure and exert their efforts on funds management.

To illustrate the relationship between the national culture and capital structure decisions, six hypotheses were developed. To test these hypotheses, the top fifty companies from each country were sampled, and data were collected from authorized publishing institutes i.e. The State Bank, Bank of China, and Bank of India. To make the statistical analysis, the panel fixed effect model was adopted. The statistical results of the study result in the acceptance of alternate hypotheses. Firms from highly individualistic and masculine countries prefer more equity due to freedom and hardworking behavior to manage the funds. But the firms from high power distance countries are interested in more debt financing because managers from such countries dislike communication with stockholders. Some hypotheses were not tested due to measurement problems. The findings of the study confirm the effect of national culture and add new thoughts regarding the role of national culture in corporate financial decisions. It also provides robustness relating empirical findings of prior literature findings in alternative model specifications. The findings of the study recommend that finance managers should consider national culture in their financing decisions. This study is most relevant to decision sciences studies as it explores the role of the cultural background of corporate managers in deciding financing preferences.

The study comprises five sections. The first section explains the introduction, section 2 describes the detailed literature review, and the third section of the study discusses the data and methodology. Section four discusses the results and section five narrates the conclusion. Reference detail is given at the end of the paper.

2. Literature Review

Hofstede (2001) defines culture as “*the collective programming of mind that distinguishes the people of one country, region or group from people of other countries, regions or groups*”. The national culture of any country has a dynamic role in the financing decisions of firms. Firms from different national cultures have different preferences in shaping the capital structure (Chui *et al.*, 2002). The national culture of a country may be considered an important factor that adheres to many economic activities and also affects the economic outcomes in different ways (Guiso,

2006; Beugelsdijk *et al.*, 2015; Mahmood *et al.*, 2022). Capital structure has remained a prominent topic in the literature of finance. The decision regarding capital structure is a strategic challenge for companies of all ages. Irrespective of extensive studies arranged on this issue, there is still a need to formulate efficient capital structure strategies that may enhance the profitability of firms (Raviv, 1991). In the past, studies have also been made on capital structure, but there was no ground evidence of how the decision regarding capital structure varies in different countries. Aggarwal (1981) studied the 500 largest European firms and proved that capital structure is strongly affected by country-level factors i.e. national culture, and lending institution arrangements. The capital structure of a specific firm can be measured as debt to equity ratio, debt-to-asset ratio, long-term debt-to-equity ratio, and long-term debt-to-equity ratio. These ratios best proxies the capital structure of any firm (Dananti & Cahjono, 2017). In many studies, profitability, tangibility of asset, tax rate, size of firm, non-debt tax shield, and volatility have also been used as determinants of capital structure (Huang, 2006; Perera & Sato, 2020).

Booth (2001) found that although developing countries differ in capital structure from developed countries with the same variables there exist clear differences in leverage over the nations. He suggested that it's equally important to know the country of origin of firms to get information about the financial indicators of firms. The multiple finance theories on capital structure suggest that the capital structure of a company depends upon its financing cost i.e. interest rate, dividend rate and managerial cost, etc. But there also exists the influence of national-level traits which encompasses the capital structure of firms (Antonczyk & Salzmann, 2014; Ramadan & Safavi, 2022). Some other studies such as Bhaird and Lucey (2014) have also investigated the impact of national culture on capital structure. He provoked the concept of national culture by studying the small and medium enterprises (SMEs) of 13 countries and found that there exists a negative relationship between uncertainty avoidance and long-term debt. Individualism also prevails in the same relationship. Hall *et al.* (2000) also suggested that the capital structure of SMEs ameliorated from profitability, growth, structure of assets, size of firm, and industry type. Bartholdy and Mateus (2008) proved in their study that the asset structure affects the capital structure of SMEs.

Recently, Farooq *et al.* (2020) arranged an empirical analysis of 13 Asian economies and found the significant impact of national culture on firm financial performance. In addition, their study discloses the mediating role of financing decisions in the nexus of national culture and financial performance. Frijns *et al.* (2022) aimed to disclose the impact of national culture on firm risk-taking behavior and found that enterprises in high individualism culture take more risk, implying the significant role of national culture in firm-level decisions. As debt financing is more risk financing as compared to equity financing, it can be conjectured that individualism shows a positive relationship with debt financing. Khan, *et al.*, (2022) asserted that individualism and masculinity enhance the financial sector development while uncertainty avoidance hampers the growth of the financial sector. Due to low financing costs, the enterprises working economies having developed financial sector will prefer more debt financing. Therefore, it can be assumed that both individualism and masculinity will lead to boosting debt financing. Antoniazzi and Bengesser (2023) checked the role of European policies in the Europeanisation of national culture at the global level. Similarly, Boubakri *et al.*

(2023) investigated the role of national culture in the creation of bank liquidity across 66 countries of the world. Their analysis infers that individualism boosts bank liquidity while power distance and uncertainty avoidance hamper bank liquidity. High bank liquidity assumes the soundness of the banking sector and thus more bank loans can be expected.

Studies have already been conducted on the theme of national culture and capital structure (Chui *et al.*, 2002; Li *et al.*, 2011; Haq *et al.*, 2018; Sahoo & Kumar, 2021). Most of the studies used Schwartz's cultural dimensions for the measurement of national culture. However, in this study, Hofstede's cultural dimensions are considered for the measurement of national culture. Moreover, prior studies were arranged on different topics such as the impact of national culture on trade credit by Ghoul and Zheng (2016) on dividend policy and corporate investment by Shao *et al.* (2010, 2013) and investment efficiency by Zhang *et al.* (2016). This study takes capital structure as a variable of interest because it is also influenced by national culture. The magnitude of studies on firm-specific and institutional determinants of capital structure in literature is very high but the discussion on psychological determinants i.e., culture is very rare. This study is innovative in the way that prior studies often used Schwartz's cultural dimensions for the measurement of culture, but this study uses Hofstede's cultural dimensions as proxies of culture.

The firms diluted with more fixed assets have different capital structures as compared to firms with more current assets. Junior *et al.* (2015) have studied the impact of national culture on capital structure. Their study concluded that the tangibility of assets has an insignificant impact but a firm's profitability and size have a significant role in the determination of capital structure. On the other hand, conservatism has a significant relation but equal commitment, hierarchy, intellectual, and affective autonomy have an insignificant impact on capital structure. The review of literature enhanced the concept of capital structure and its determinants in different countries. The previous studies showed the dynamic behavior of different determinants and provided the concept of cultural dimensions and their effect on capital structure. This study tested these determinants which were suggested by previous studies in different research models.

2.1 Theories and Theorization

It is important to know how the different capital structure theories synergistic with the national culture dimension and how it can be justified that national culture affects the capital structure decision. The high power distance dimension of national culture can be related to capital structure decisions through the Pecking order theory because high power distance tends to the problem of information asymmetric. The high power distance assumes the non-consultive or non-reporting behavior of managers which causes the problem of information asymmetric. The Pecking order theory suggested the strict preference for debt financing over equity financing. This fact occurred because the Pecking order theory assumed information asymmetry and also the high cost of equity. This thing leads to more preference for debt financing over equity financing (Myers & Majluf, 1984). The second dimension of national culture which is individualism theoretically adheres to capital structure decisions via Agency cost theory (Davis *et al.*, 1997; Sayim & My, 2023). The Agency cost theory suggests that the agency cost of financing increases due to conflict of interest between the managers and stockholders and

lenders. The managers of firms are often interested in more equity-based financing due to incentives from stockholders (Mehran, 1995).

The masculinity vs. femininity dimension of national culture is associated with capital structure decisions via the Trade-off theory of capital structure. The masculine behavior allowed the firms to not bind themselves with specific types of financing and firms deliberately decide which type of financing is economical. This factor is in line with trade-off theory. The research made by Chui *et al.* (2002) suggested that a high mastery score allowed the managers not to be restricted to debt financing only. This type of behavior can also be suggested from the masculinity dimension because the mastery dimension of Schwartz correlated with the masculinity dimension of Hofstede (Hofstede, 2001). The fourth dimension of Hofstede's cultural dimensions is uncertainty avoidance which can be linked with capital structure by the Pecking order theory. The Pecking order theory manifested the strict hierarchy of financing i.e. retained earning, debt, and equity, and assumed no uncertain or ambiguous financing. The high uncertainty behavior also negates vague or false assumptions. Archambault (2003) documented that the firms from highly uncertain avoidance countries did not reveal the information and kept a high level of secrecy in their proceedings and disclosed the minor information with shareholders due to highly uncertain behavior. This factor increases the cost of equity due to high information asymmetry.

The linkage between long-term orientation and capital structure decisions can be interpreted by Trade-off theory. Companies that have long-term strategies never bound themselves to specific types of financing. Companies from long-term-oriented countries often show more profitable behavior because consistency is linked with the profitability of firms (Friend & Lang, 1988; Suu *et al.*, 2021). The profitability of firms increased when firms balanced the cost of financing by choosing a specific percentage of debt and equity. The indulgence dimension of national culture focused on the free gratification of feelings that inhabitants own and allowed them to freely enjoy their lives. In terms of Pecking order theory, firms freely move from internal financing to external financing i.e., debt financing and equity financing relatively. However, this effect was uncertain (Bram, 2018; Trang, *et al.*, 2021; Wahyono *et al.*, 2023).

The firms diluted with more fixed assets have different capital structures as compared to firms with more current assets. Junior *et al.* (2015) have studied the impact of national culture on capital structure. Their study concluded that the tangibility of assets has an insignificant impact but a firm's profitability and size have a significant role in the determination of capital structure. On the other hand, conservatism has a significant relation but equal commitment, hierarchy, intellectual, and affective autonomy have insignificant impacts on capital structure. The review of literature enhanced the concept of capital structure and its determinants in different countries. The previous studies showed the dynamic behavior of different determinants and provided the concept of cultural dimensions and their effect on capital structure. This study tested these determinants which were suggested by previous studies in different research models.

2.2 Hypotheses Development

Individualism narrated that inhabitant of a country like to work individually and tend to achieve their goals separately. They make their efforts for success on an individual basis and do not

adhere to others in making their decisions. While the residents from collectivist countries cooperate and make efforts in groups and achieve their goals collectively. Chui *et al.* (2010) have examined that inhabitants from more individualistic countries tend to be more confident and overconfident and wish for personal freedom which suggests more equity because debt is a fixed payment of interest. So, it can be hypothesized as

H1: There exists a negative and significant relationship between individualism and preference for debt financing.

The countries that have a highly masculinity culture represent men's domination in decision-making. It shows that specific countries have a nature of rigidity in decisions and egoism, and do tasks with their efforts, not co-operatively. Femininity culture focuses on cooperating with the weak, interdependence, supporting in distress, and making decisions with consensus. Chui *et al.* (2002) noted that managers in highly masculine cultures assert more efforts on better performance of stocks and are eager to enhance the wealth of stockholders. So, financing in a high-masculinity culture results in more equity financing. Based on the above narrations, it can be supposed that

H2: There exists a negative and significant relationship between masculinity and preference for debt financing.

Uncertainty avoidance resembles termination of opacities. Countries tend to have high uncertainty avoidance and are interested in proper rules and regulation implications, no flexibility in decisions, and clear-cut strategies for achieving their goals. The inhabitants of these countries are not interested in making decisions without proper models, extensive research, and limitation of ambiguity. Knight (2009) noted that debt financing is more riskier than equity financing. So, we can hypothesize that.

H3: There exists a negative and significant relationship between high uncertainty avoidance and preference for debt financing.

Long-term orientation shows that companies of specific countries make decisions for long-run implications and these decisions may be used repeatedly. A long-term orientation country relies on hard work, the value of useful education, and change in archive methods of production. While countries with short-term orientation culture believe in short-term benefits and have no strategic planning for achieving their desired goals. Companies in long-term-oriented countries tend to hedge with long-term funds (Lievenbrück & Schmid, 2014; Wong *et al.*, 2007). Equity is normally for the long term, but debt is for the short term.

H4: There exists a negative and significant relationship between long-term orientation and preference for debt financing.

Power distance shows the hierarchical structure of management within organizations. Most decisions are made at upper-level management and flow down for implications. These decisions are made without the involvement of line managers. According to the pecking order theory, high power distance tends to be more information asymmetric which leads to a higher cost of equity (Myers & Majluf, 1984). So, it can be suggested that

H5: There exists a positive and significant relationship between high power distance and preference for debt financing.

The sixth dimension of Hofstede's national cultural dimensions is indulgence vs. restraint which he introduced in 2010. A society or nation with high indulgence values allows its residents to freely enjoy their social life. On the other side, a restraint society imposes strict social norms, and it compels its residents to follow these norms. Hofstede (2010) has asserted that inhabitants from more restrained countries strictly appendages themselves with strict rules and manifest the bound behavior. As for concern debt or equity decisions, it is supposed that firms from high-indulgence countries tend to use more debt because it gives decision freedom.

H6: There exists a positive and significant relationship between indulgence and preference for debt financing.

2.3 Theoretical Diagram

The names of the variables and their graphical representation are shown in Figure 1.

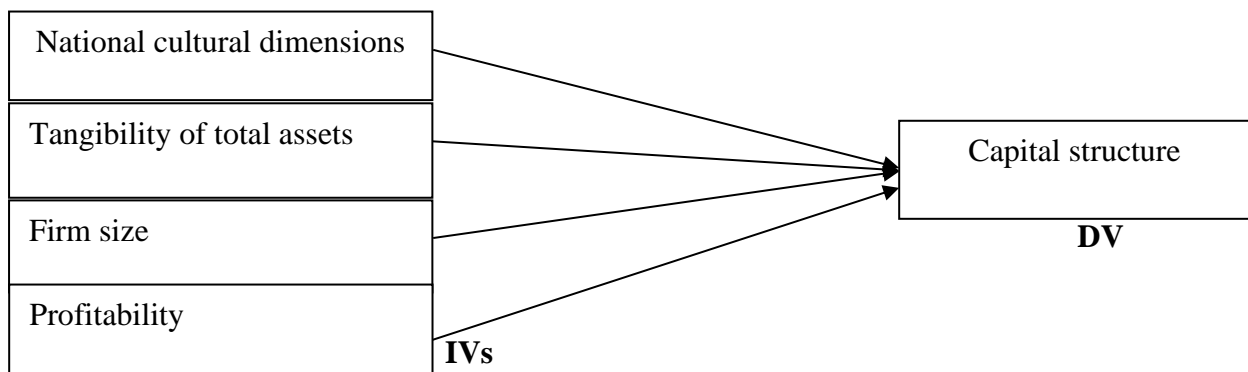


Figure 1. Relationship among Variables

3 Data and Methodology

3.1 Data and Sample Size

This study follows the deductive research approach (Farooq *et al.*, 2020). The sample size comprises 10 years of annual data ranging from 2007 to 2016. Data were collected from multiple data sources. For example, the data on cultural dimensions were collected from Hofstede's national insights² of different countries, and financial information of firm-specific variables was sourced from financial statements of companies and other authorized publishing institutions (central bank, stock exchange, etc.) of specific countries. We select the top 100 enterprises from each economy i.e., Pakistan, India, and China. The size of the firm was defined by market capitalization. This proxy has also been used by Gabaix *et al.* (2014) to measure firm size.

3.2 Methodology Discussion

The pooled ordinary least square (POLS) with cross-section fixed effect method commonly known as the panel fixed effect model was used to estimate the regression among the variables. This method was also used by Haq *et al.*, (2018) to check the regression between national culture and leverage. Culture is itself a static thing and cultural values show the minor variation (Williamson, 2000). It varies over the decades, but its effects vary every year (Wu, 2006). To capture the year effect, it is used as an interaction term with national culture. Finally, this study employed the three cultural dimensions i.e. individualism, masculinity, and power distance as proxies of national culture. The reason behind dropping the other dimensions was that the indulgence has zero value for Pakistan. It may create an outlier in data. The effect of uncertainty avoidance may be captured by the masculinity dimension because firms in highly masculine cultures take the dare decision and show low uncertainty behavior. The effect of long-term orientation is synonymous with individualism to some extent. This is consistent with Zheng *et al.* (2012) in which they have dropped the mastery for the measurement of national culture because it overlaps with other variables.

3.3 Econometric Models

The relationship between dependent and independent variables is expressed in the form of mathematical equations.

$$DTE_{it} = \beta_0 + \beta_1 IND_i + \beta_2 MSCL_i + \beta_3 PD_i + \beta_4 TTA_{it} + \beta_5 LOS_{it} + \beta_6 ROA_{it} + \beta_7 CD_i + U_{it}, \quad (1)$$

$$DTA_{it} = \beta_0 + \beta_1 IND_i + \beta_2 MSCL_i + \beta_3 PD_i + \beta_4 TTA_{it} + \beta_5 LOS_{it} + \beta_6 ROA_{it} + \beta_7 CD_i + U_{it}, \quad (2)$$

² <https://www.hofstede-insights.com/product/compare-countries/>

$$LTE_{it} = \beta_0 + \beta_1 IND_i + \beta_2 MSCL_i + \beta_3 PD_i + \beta_4 TTA_{it} + \beta_5 LOS_{it} + \beta_6 ROA_{it} + \beta_7 CD_i + U_{it}, \quad (3)$$

$$LTA_{it} = \beta_0 + \beta_1 IND_i + \beta_2 MSCL_i + \beta_3 PD_i + \beta_4 TTA_{it} + \beta_5 LOS_{it} + \beta_6 ROA_{it} + \beta_7 CD_i + U_{it}, \quad (4)$$

where equation (1) shows the impact of cultural proxies including IND (individualism), MSCL (masculinity), and PD (power distance) on DTE (debt to equity ratio). It also includes other variables including TTA (tangibility of total assets), LOS (log of sales), and ROA (return on assets). In this equation, CD is a country dummy, and subscripts i is for cross-section, t is time, and U is an error term. The symbol of β denotes the vector of the coefficient. Equation (2) shows the impact of all explanatory variables on DTA (debt to asset ratio), while equation (3) shows the impact of explanatory variables on LTE (long-term debt to equity ratio). Similarly, equation (4) shows the impact of independent variables on LTA (long-term debt to asset ratio).

3.4 Selection of Variables

The debt to equity ratio exhibits the percentage of debt to equity in total financing that companies acquire for financing their assets and other operational needs. The total debt comprises both short-term and long-term debt. The debt-to-assets ratio conjectures how much debt is used by the company specifically to purchase the assets. The long-term debt-to-equity ratio analyzes the percentage of long-term debt with total equity. The companies issue bonds, notes payable, and other instruments that have a maturity period of more than one year. Similarly, the long-term debt-to-asset ratio estimates how much assets were financed through long-term debt. It compares the percentage of long-term debt in total financing which was used for the acquisition of assets. We also consider some control variables including tangibility of assets ratio, size of firm, and profitability ratio. The tangibility of total assets exhibits the stability and sustainability of firms. These factors also change the firm's preference for a specific type of financing. The profitability of firms explains the net profit earned by the company by utilizing its assets. The profitability of firms has close adherence to capital structure decision and change the preference of firms either negatively or positively (Handoo & Sharma, 2014; Oino & Ukaegbu, 2015). Similarly, the size of the firm is a log value of total sales volume (Dang *et al.*, 2018). Table 1 shows the measurement of variables.

Table 1: Detail of Variables

Variable	Used as	Calculation	Resource
Cultural dimension	Independent variable	Hofstede's insights	(Ramirez & Kwok, 2009; Wang & Esqueda, 2014)
<ul style="list-style-type: none"> • Individualism vs. collectivism • Masculinity vs. femininity • Uncertainty avoidance • Power distance 			

<ul style="list-style-type: none"> • Long-term vs. short-term orientation • Indulgence vs. restraint 			
Corporate specific factors	Control variables	<ul style="list-style-type: none"> • Total assets-intangible assets • Log of sale • EBT/total assets 	(Huang, 2006)
<ul style="list-style-type: none"> • Tangibility of assets • Size of firm • Profitability of firm (ROA) 			
Capital Structure	Dependent variable	<ul style="list-style-type: none"> • Total debt/total equity • Total debt/total assets • Long-term loan/total asset • Long-term loan/total equity 	(Dananti & Cahjono, 2017; Booth, 2001; Sekely, 1988; Adam, 2008)
<ul style="list-style-type: none"> • Debt to equity ratio • Debt-to-asset ratio • Long-term debt-to-asset ratio • Long-term debt-to-equity ratio 			

Source: Review of the given literature

4 Results and Discussion

4.1 Descriptive Stats

The values of mean, median standard deviation, etc. are presented in Table 2. Table A1 shows the cultural scores while Figure A1 shows the comparison of cultural scores among the countries.

Table 2: Overall Summary Statistics

Variables	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis
DTE	0.6829	0.5925	1.7480	0.0206	0.4307	0.5810	2.4808
DTA	0.2611	0.2677	0.5802	0.0129	0.1215	-0.0444	2.4075
LTE	0.3611	0.2785	1.5472	0.0034	0.3092	1.2562	4.1797
LTA	0.1381	0.1179	0.5071	0.0017	0.0988	0.8278	3.1976
LOS	2.9730	3.0612	5.2060	0.0969	1.0557	-0.1363	2.0482
TTA	0.4189	0.4094	0.9138	0.0105	0.2238	0.1538	2.0543
ROA	0.0754	0.0659	0.7257	-0.2439	0.0696	1.5451	3.4798
IND	158.638	112.000	480.000	14.000	122.2353	1.2265	3.6050
MSCL	310.386	300.000	660.000	50.000	165.5721	0.1557	2.0424
PD	382.544	385.000	800.000	55.000	209.8554	0.2468	2.0746

Note: DTE= Debt to equity ratio, DTA= Debt to asset ratio, LTE= Long-term debt to equity ratio, LTA= Long-term debt to asset ratio, LOS= Log of sale, TTA= Tangibility of total assets, ROA= Return on assets IND= Individualism, MSCL= Masculinity, PD= Power distance

The descriptive stats of variables are shown in Table 2. The mean value of DTE is 0.6829 which shows the average responses of respondent's firms. On average, the firms have almost 68% debt as compared to equity in total financing. The median value is 0.5925 which indicates that the most of firms in the overall sample have a 59.25% debt ratio in total financing as compared to equity. The standard deviation which shows the dispersion from the mean has a value of 0.4307. The Skewness and Kurtosis which show the data pattern have values of 0.5810 and 2.4808. These values are normally distributed and show that there is no noise in the data. The other variables have the same trend according to their values of mean and median.

4.2 Correlation Analysis

The correlation shows the inter-relationship or co-relation among the variables. The correlation values of variables are shown in below Table 3.

Table 3: Pearson Correlation Coefficients among the Variables

	DTE	DTA	LTE	LTA	LOS	TTA	ROA	IND	MSCL	PD
DTE	1.000									
DTA	0.832	1.000								
LTE	0.758	0.632	1.000							
LTA	0.557	0.661	0.894	1.000						
LOS	0.007	-0.130	0.123	0.057	1.000					
TTA	0.063	0.200	0.169	0.279	-0.149	1.000				
ROA	-0.317	-0.302	-0.201	-0.167	-0.023	-0.104	1.000			
IND	0.042	0.015	0.128	0.105	0.246	-0.187	-0.014	1.000		
MSCL	-0.027	-0.051	-0.058	-0.091	0.200	-0.103	-0.131	0.635	1.000	
PD	-0.013	-0.042	-0.017	-0.050	0.264	-0.141	-0.121	0.757	0.982	1.000

Note: DTE= Debt to equity ratio, DTA= Debt to asset ratio, LTE= Long-term debt to equity ratio, LTA= Long-term debt to asset ratio, LOS= Log of sale, TTA= Tangibility of total assets, ROA= Return on assets IND= Individualism, MSCL= Masculinity, PD= Power distance

Table 3 describes the correlation coefficients among the variables. In column 1, the correlation values between DTE and DTA, LTE and LTA are 0.832, 0.758, and 0.557. These values suggest that proxies are highly correlated and describe the one thing i.e., capital structure. Moreover, the similar signs are also proof of it. The LOS has a correlation value of 0.007 which is a bit low. This value shows that the LOS has 0.71% participation in determining the debt-to-equity ratio. The correlation value of TTA is 0.063 or 6.3% which predicts the relationship between TTA and with DTE ratio. The ROA has -0.317 or 31.7% correlation with DTE but inversely. It indicates that when profitability (ROA) increases then the preference of the firm for debt will decrease, and this effect is 31.7 percent. The three cultural dimensions i.e., IND, MSCL, and PD have correlation values of 0.042, -0.027, and -0.013 relatively. These values

show the degree of association between the DTE and three cultural dimensions. Similarly, the correlation values of other variables present the inter-association or inter-relationship of all the variables of the study.

4.3 Regression Analysis

The regression between the variables shows whether specific variables have any effect on other variables.

Table 4: Regression Analysis among the Variables of Study

Models	Model 1	Model 2	Model 3	Model 4
Variables	DTE	DTA	LTE	LTA
Constant	0.353*** [4.591] (0.000)	0.183*** [7.719] (0.000)	-0.058 [-0.820] (0.412)	0.014 [0.684] 0.494
LOS	0.074*** [4.364] (0.000)	0.006 [1.223] (0.221)	0.078*** [5.465] (0.000)	0.013*** [3.065] (0.002)
TTA	0.120*** [2.025] (0.043)	0.205*** [11.840] (0.000)	0.352*** [7.281] (0.000)	0.210*** [15.223] (0.000)
ROA	-2.220*** [-13.649] (0.000)	-0.744*** [-15.844] (0.000)	-1.428*** [-9.300] (0.000)	-0.385*** [-8.630] (0.000)
IND	-0.001*** [-2.489] (0.012)	-0.007*** [-3.265] (0.001)	-0.002*** [-3.658] (0.000)	-0.000*** [-3.532] (0.000)
MSCL	-0.004*** [-2.462] (0.013)	-0.002*** [-3.589] (0.000)	-0.005*** [-3.642] (0.000)	-0.001*** [-3.043] (0.002)
PD	0.004*** [2.417] (0.015)	0.001*** [3.521] (0.000)	0.005*** [3.604] (0.0003)	0.001*** [3.043] (0.002)
D_Pak	0.396*** [5.467] (0.000)	0.086*** [3.936] (0.000)	0.304*** [4.849] (0.000)	0.040*** [2.210] (0.027)
D_IND	0.310*** [4.726] (0.000)	0.073*** [3.604] (0.000)	0.354*** [6.020] (0.000)	0.122*** [7.116] (0.000)
R-square	0.180	0.297	0.185	0.303
Adj. R-square	0.174	0.293	0.178	0.298
S.E. regression	0.407	0.133	0.332	0.099
Prob. (F-statics)	0.000	0.000	0.000	0.000

Acronyms: DTE= Debt to equity ratio, DTA= Debt to asset ratio, LTE= Long-term debt to equity ratio, LTA= Long-term debt to asset ratio, LOS= Log of sale, TTA= Tangibility of total assets, ROA= Return on assets IND= Individualism, MSCL= Masculinity, PD= Power distance

Note ***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.10 level. Furthermore, values in [] show the t-value while values in () show the p-value.

Table 4 expresses the statistical analysis for the proposed econometric equations. As shown in Table 4, LOS has positive and significant t-stats values in all the models. Corporate firms that have high sales volume or large sizes prefer more debt instead of equity. Jong *et al.* (2008) have noted that large firms prefer more debt as compared to smaller firms due to the high agency cost faced by smaller firms. Furthermore, the Trade-off theory suggests a positive relationship between size and debt financing because larger firms bear the low agency cost in the case of debt financing. The tangibility of total assets has t-stats values as 2.025, 11.840, 7.281, and 15.223. These values show that the tangibility of assets has a significant role in determining the capital structure of firms. The study arranged by Deesomsak *et al.* (2004) has also documented that the tangibility of assets has a significant and positive role in determining the capital structure decision. The firms that have more tangible assets prefer more debt because these firms may offer tangible assets as collateral to the banks. The ROA which measures the profitability of a company has negative t-statics values in all the models. The companies with high profitability have high capital reserves in the form of retained earnings and thus such firms first use this reserve and then move to external financing (Jong *et al.*, 2008). The Pecking order theory also suggests the negative relationship between the profitability of firms and preference for debt.

As for concern cultural role, IND which shows the cultural dimension of individualism has significant but negative t-statics values -2.489, -3.589, -3.642, and -3.043 relatively. Corporate firms from those countries that tend to have more individualistic character prefer low debt. Bhaird and Lucey (2014) have also documented that the countries that were more on individualism score preferred low debt because these countries did not accept the fixed burden of debt and wanted to move on an individual basis. The MSCL has negative and significant t-statics values in all models. Industrial enterprises from countries that have more masculine behavior structured their total financing with more equity financing instead of debt financing. The masculinity shows that the specific country has men's domination in decision making which assumes more efforts to achieve better. Managers with high masculinity cultural values make more efforts to increase shareholder wealth. They did not bound their skills in debt financing (Chui *et al.*, 2002). The next dimension is power distance (PD) which has positive and significant t-statics values (2.417, 3.521, 3.604, and 3.043). These values show that companies from high power distance culture countries prefer more debt financing. The pecking order theory suggests that managers from high power distance countries preferred more debt financing due to high information asymmetric which may cause the high cost of equity (Myers & Majluf, 1984).

The country dummy of Pakistan has positive and significant t-statics values. This dummy highlights the overall trend that the Pakistani firms preferred more debt over equity in their capital structure. The study conducted by Ahmad *et al.* (2017) investigated the different determinants of capital structure and found a positive relationship. This study generalizes the trend that Pakistani firms are equipped with more debt financing. Similarly, the country dummy of India has a positive and significant relationship with all proxies. The study arranged by Chakraborty (2010) suggested that the pecking order theory and trade-off theory are more relevant in India. According to the pecking order theory, firms prefer more debt over equity. The adjusted R-square values that show the degree of association of independent variables with

the dependent variable are 0.180, 0.297, 0.185, and 0.303 relatively. These values seem to be low. This factor is due to the presence of cultural values that are non-financial and non-firm-specific variables. The F-statistics which measures the overall significance of the model has a probability value of 0.000 which is less than the benchmark value of 0.05 indicating that the models are significant. The overall results of all models were according to notions of theories and empirical findings of prior literature.

The value of the adjusted R-square shows the degree of association of independent variables with the long-term leverage ratio. The probability value of F-statistics (0.000) is less than the benchmark value of 0.05 which strengthens the conjecture of model significance. The findings of this model were findings that were suggested in other studies and arranged in different countries.

5. Conclusion

This study explores the dynamic role of culture in defining the capital structure decisions of corporate firms. The culture is a non-financial factor and its cohesiveness with different types of business decisions is often obscure. But current study manifests the relationship of culture with crucial decision of firms i.e., capital structure decision which has a pivotal role in overall business success. The results of the study illustrate the acceptance of the first alternate hypothesis (H_1) which assumes the negative and significant relationship between individualism and debt financing. Corporate managers prefer more equity due to an offensive attitude towards debt. The second alternate hypothesis (H_2) in which a negative and significant relationship between masculinity and preference for debt financing was suggested also accepted. Masculinity tends to be more flexible behavior to indulge in risky decisions. It also shows that managers with masculine cultural backgrounds are often interested in exerting more efforts to enhance corporate wealth which tends to have more equity preference. Additionally, the empirical results show that the power distance has a positive association in all four models which corroborates the acceptance of the fifth alternate hypothesis (H_5). The managers in high power distance cultures show non-consultative behavior with stockholders and thus prefer more debt financing. Briefly, analysis reveals the significant role of national culture in corporate capital structure decisions. All the research questions were properly answered, and the findings of the study also met with objective and filled the research gap. This study is most relevant to decision sciences studies as it explores the role of the cultural background of corporate managers in deciding financing preferences.

5.1 Policies and Limitations of Study

The analysis yields an important policy regarding the management of financing policy in diverse cultures. Corporate managers should consider the cultural sensitivity of corporate financing. However, the study does not discuss some hypotheses. The sample size was also small due to data constraints. In the future, the studies can be arranged by adding more countries that have more diverse cultures. Moreover, we have made a combined analysis of three countries, but future studies can also be arranged on an individual basis. However, the findings recommend the financing policy for finance managers to consider the national culture variation when deciding about the capital structure of firms. Local firms can also utilize the current findings of the study to understand the impact of culture which may compel them to adopt a specific percentage of debt or equity. It will also help them to reduce the financing cost.

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Appendices

Appendix 1

Table A 1 Cultural Dimensions Scores of Three Countries

	<i>Pakistan</i>	<i>India</i>	<i>China</i>
<i>Individualism (IND)</i>	14	48	20
<i>Power distance (PD)</i>	55	77	80
<i>Masculinity (MSCL)</i>	50	56	66
<i>Uncertainty avoidance (UND)</i>	70	40	30
<i>Long-term orientation (LTO)</i>	50	51	87
<i>Indulgence (IDG)</i>	0	26	24

Source: <https://www.hofstede-insights.com/product/compare-countries/>

Appendix 2

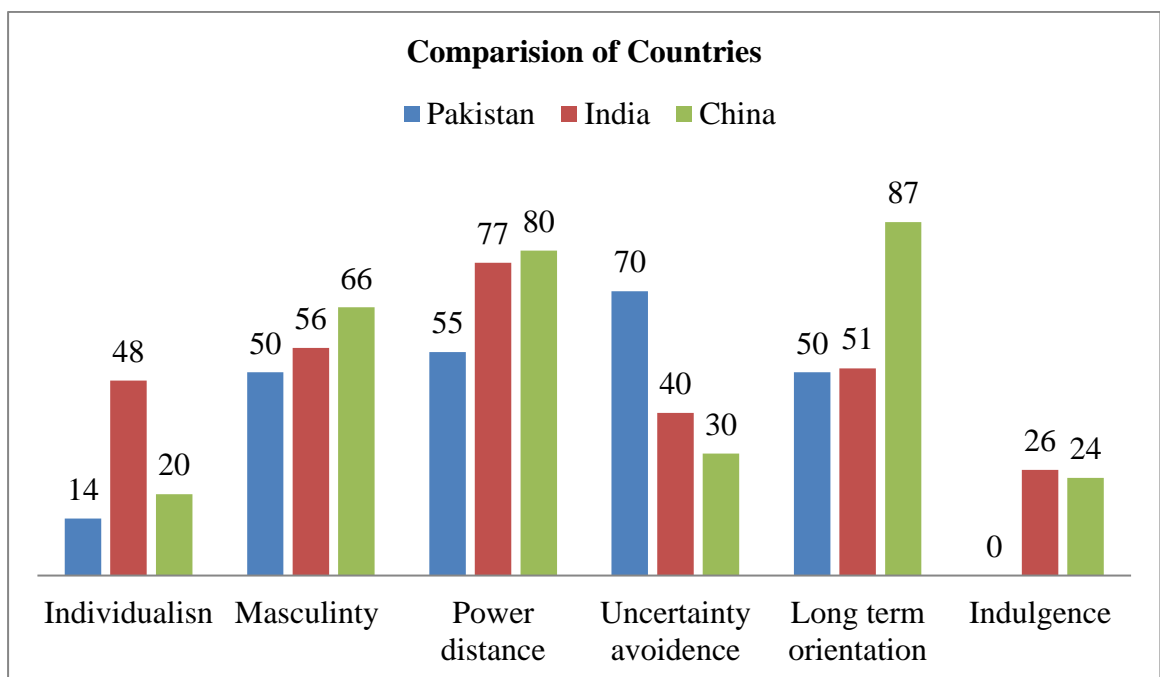


Figure A1 Graphical Representation of National Cultural Scores