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The Impact of Firm Sustainability on Firm Growth: Evidence from USA

Fiaz Ahmad Sulehri[1], Saba Sharif[2]

Abstract

This study is to examine the impact of firm sustainability on firm growth as an effect of implementing an ecologically and socially responsible actions: Evidence from USA. This study investigates the relationship between firm sustainability and firm growth. This study examines how firm sustainability affects the firm growth and also explore the measures that can be adopted to examining the role of firm sustainability on firm growth to study this relationship between firm sustainability and firm growth, this study utilized panel data over the period from 2002 to 2018 taken from Thomson Reuters Assets-4 Database. Generalized Method of Moments (GMM) statistical method isemployed to measure the relationship among variables. The study is based on Agency theory, Stakeholder theory, Value-Enhancing theory and institutional theory perspective because firm sustainability, its impacts on firm growth is so multidimensional that a single theory cannot justify the issue. The hypothesis is that high Return on Assets (ROA)will cause high firm sustainability is maintained by the empirical findings. Leverage has negative impact on ROA rating since if firm has high debt, it will focus more on financing this debt rather than investing in ROA. Market to book ratio also has a negative impact on ROA rating. Total Assets significantly and positively affects the ROA rating.Other Tangible assets significantly and positive affect the ROA rating. Salaries to assets ratio has a negative impact on ROA. Because, larger firms have more social responsibility, since their information is visible hence, they are morelikely to be scrutinized by government, public and special interest groups. This find out some significant implicationfor the policy makers, ROA plays an important role to manage as well as ultimately provide safe environment to all the stakeholders as well as enhance the firm performance. Therefore, policy makers should follow those policies which enhance the ROA for the mutual benefits of all the stakeholder, firm, country and globe.

Keywords: Sustainability, Market to Book Value, Size of Firm, Leverage, Tangible Assets, Firm Growth
JEL Codes: L20, Q56

1. Introduction

The model of "sustainability" started being used at a large scale after being existing in the Brundland report, "Our Common Future" "Sustainability stands as the means of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). Firm sustainability is influenced by the profitability of the firm. The purpose of existing study is to examine the influence of firm sustainability on firm growth on non-financial firms of USA. According to Wilson (2003), He states that: though firm sustainability identifies that firm performance and profitability are significant, it also involves the corporation to follow societal goals, specifically those connecting to sustainable development environmental protection, social justice and equity, and economic growth. Through the growing attention in sustainability, firms appearance the challenge of increasing an advanced sustainability approach, associated objectives and an effective implementation (e.g. Chung and Parker, 2008; Crutzen and Herzig, 2013; Kleine and von Hauff, 2009. In accordance with the agency theory, intended disclosure of firms, generally on social and environmental features, is a means to decrease agency costs or future agency costs that might follow in the form of legislation and regulation. This decrease in the costs will affect the risk profile and profitability of companies and thus affect the market price. The stakeholder theory can be completed by the resource-based perspective since firms may view meeting stakeholder demands as a deliberate investment, demanding commitments beyond the minimum required to satisfy stakeholders (Ruf et al., 2001, Roberts, 1992). Stakeholder theory says that the achievement of the firm is determined by sustaining good relationships with its society, regarding society values and responding to their societal obligations and concerns (Branco and Rodrigues 2006, Foote et al., 2010). Institutional Theory offers a theoretical lens complete which researcher can classify and study effects that promote survival and legitimacy of managerial practices, containing aspects such as culture, social environment, regulation (comprising the legal environment), practice and history, as well as economic motivations, while recognizing that incomes are also significant (Baumol et al., 2009, Brunton et al., 2010, Hirsch, 1975, Lai et al., 2006, Roy, 1997; Ali and Audi, 2016; Ali and Audi, 2018). Value-Enhancing Abilities of sustainability there is little argument that firms have some responsibility to society. However, there is significant deliberation as to whether firms' socially responsible conduct is reliable with the wealth-maximizing benefits of stockholders. The responsible performance of businesses is not similarly respected in all financial areas. The effects of sustainable porting on business performances depend on both the manner in which they present the actions they accepted and on a superfluity of aspects that are specific of the society and corporate environment in which they function. The overall economic activities are the combinations of micro activities (Ali and Naeem, 2017; Ali, 2011; Ali, 2015; Ali, 2018; Ali and Bibi, 2017; Ali and Ahmad, 2014; Ali and Rehman, 2015; Ali and Senturk, 2019; Ali and Zulfiqar, 2018; Ali et al., 2016; Ali et al., 2021; Ali et al., 2021; Ali et al., 2015).

[1] Assistant Professor, Lahore School of Accountancy and Finance, University of the Lahore, Pakistan
[2] Scholar, Lahore School of Accountancy and Finance, University of the Lahore, Pakistan

Sustainability is a comprehensively deliberated subject in the specialty literature, with studies directing on two main research directions. On the one hand, the study emphases on the determinant factors of firm sustainability, such as sustainability, total assets, market to book value, other tangible assets, salaries to assets ratio and leverage. This study examined the effect of sustainability on firms' growth. The influence of sustainability to firms' development was evaluated in terms of both the role of social and environmental protection activities that are distributed, as well as in terms of the resources via which same are made dispersed. The subsequent aspect, firm's growth, was disaggregated into two study directions, namely: the prospect for increased market price (measured via the market-to-book value (MBV)), operational performance (as reflected by the firm' growth). The outcomes thus attained disclose a low effect of sustainability on the firms' development indicators. In the USA perspective, social and environmental protection activities do not create substantial responses on the economic (stock exchange or banking) or real (goods and services') market, the outcomes being in line with those specified by Guidry and Patten. Present and potential stakeholders, investors and corporate associates consider that sustainability reports are inadequately recognized and have a low capability to develop integrated in the decision- making practice, these statements correspondingly being maintained by Stacchezzini et al and Leszczynska. However, substantial dependency relations were recognized and particular on numerous connections without subsequent a correlation pattern among a firm's growth directions and the indicators of sustainability.

This paper discusses the role of sustainability in enhancing the policies approved for increasing a firm, Jo and Na (2012) find that sustainability appointment also decreases firm risk. Overall, sustainability engagement supports companies sustain their situations in the market long term and open doors to improved investment packages. Cheung et al. Owners with a short-term emphasis prefer projects where they can exploit their benefits in the short-term without needing to wait for long-term gains and thus their decisions can have a negative effect on the long-term sustainability of firms (Siegel and Vitaliano, 2007; Rees and Mackenzie, 2011). Sustainable development presents strategic profits by improving the connection among different investors e.g. consumers, suppliers and employees (Senturk and Ali, 2021; Becker et al, 2010; Brekke and Nyborg, 2008; McWilliams and Siegel, 2001; Siegel and Vitaliano, 2007; Turban and Greening, 1997; Audi et al., 2021; Audi et al., 2021; Audi et al., 2021; Haider and Ali, 2015; Roussel et al., 2021; Sajid and Ali, 2018) and these deliberate benefits ultimately increase the market price of a firm (Jo and Harjoto, 2011; Jo and Harjoto, 2012). Initial research by Spicer (1978) displays that there is a robust intermediary correlation among economic indicators, such as viability, and other ecological indicators, such as pollution controller, specially the flour and paper business. Additional study by Zhu et al. (2012), among others (e.g., Hart, 2005; Shrivastava, 1995; Arshad and Ali, 2016; Ashraf and Ali, 2018; Audi et al., 2022; Audi and Ali, 2017; Audi and Ali, 2017; Audi et al., 2021; Audi and Ali, 2016; Mehmood et al., 2022), have supported this conclusion, suggesting that improved environmental and social measures can help companies gain competitive benefit and later increase their development. This study debates the role of firm sustainability in enhancing the strategies adopted for increasing a firm, thus satisfying a gap in terms of approximating the less attentive area in research although many researchers study on this topic but this is still less focused area in research.

The rest of the paper is organized into four sections, namely a synthetic literature review on sustainability and the quality thereof, as well as substantiating the working hypotheses (Section2); the presentation of data, variables and research methods that were used (Section3); and the interpretation of the results (Section4). Finally, Section 5 synthesizes the main conclusions, while also presenting the limitations and future research directions.

2. Literature Review

This section details the work of researchers where the impact of firm sustainability is analyzed enabling other researchers to explore different facets of firm sustainability and their corresponding direct and indirect significances for organizations, especially the organization's profitability.

2.1 Firm Sustainability and Firm Growth

According to Carp & Georgescu, (2019) examined the impact of sustainability on the growth of firms. The impact of sustainability on the growth of firms was assessed in relations of the role of available societal and ecological protection functions (authenticity and information integration), as well as in the relationships of the means by which those products are made distributed (sustainability quality). The next factor, the firm's development, was divided into three study guidelines, specifically: inflation outlook (price-per-book (PBR)), effective performance (as shown by sales growth) and capital expenditure (anticipated by average capital cost (WACC)).

According to Schrettle and Friedli, (2014) continues to shed more light on how industrial firms are changing their approach in terms of sustainability testing. The determination of this research is toward offered a description of how sustainability results are promoted and what values in the firm are involved in this movement. On the further indicator, investment research shows the connection among environmental determinations and economic activity, which is measured as the performance of the stock market, in particular to establish positive relationships (Hart and Ahuja, 1996; Klassen and McLaughlin, 1996; Jacobs et al., 2010). On the other hand, studies that guide the

connection between sustainability determinations and willingness to pay (WTP) produce optimistic relationships (Anstine, 2000) or undesirable relationships (Luchs et al., 2010) significance that customer's value stained produces under unstable products.

According to Bodhanwala & Bodhanwala (2018) examined how a firm's resilience affects profitability. Continuous development is an important factor whether it is associated with the firm's resources or economic resources. A working vision supports the long-term ongoing results of business companies. Approval of good corporate sustainability strategies such as code of conduct, environmental and environmental sustainability, human savings and expansion and socially responsible behavior, etc. It must lead towards product creation besides improved corporate governance (Husted, 2000; Shrivastava, 1995; Orlitzky et al., 2003). This and better management can lead to better business performance. The actual analysis is based on entirely Indian firms that are reliably calculated by the Thomson Reuters Asset 4 ESG documents set for the entire six-year dated from 2010 to 2015. The study discloses a substantial positive connection among sustainability and firm development procedures (return on capitalized investment, return on impartiality, reappearance on assets and incomes per share). Observed indication proposes that organizations that repetition substantial sustainable growth approaches explosion developed productivity and have substantially low gearing level.

According to Artiach & Walker (2010) investigates factors that drive high levels of business sustainability. Sustainability is measured as a corporate and investment approach that pursues to utilize a well- executed business to encounter and stability the requirements of existing and future investors (Report of the United Nations Commission on Environment and Development, 1987). The focus of this paper is to discover the influences that effect firm investment results in the CSP. Using a shareholder framework, we examine the incentives for US companies to invest in sustainability principles and develop a number of hypotheses that relate CSP to firm-specific characteristics. Our results specify that leading CSP firms are significantly larger, have higher levels of growth and a higher return on equity than conventional firms. Contrary to our predictions, leading CSP firms do not have greater free cash flows or lower leverage than other firms. The annual DJSI review providing by the SAM team shows that 107 different US companies signified DJSI through the 2002 to 2006 sample. Of these, only 26 firms were included in the index annually during the sample dated, and 81 companies were submitted periodically. Our results also highlight the ongoing and important positive relationship between BSP and profitability. The t-test with the signed Wilcoxon is recycled to statistically combine the changes between the definition and the middle (correspondingly) of the leading BSP and usual firms.

In the study of Bachoo & Wilson (2013) examines the relationship among the strong rate and sustainability of registered companies in Australia. This paper examines how strong market-based prices reflect information that can be incorporated from firming firm processes. Using the patented data attained from a technology outlay study company, we write an adverse suggestion among excellence assurance and price impartiality costs aimed at ASX 200 companies from 2003-2005, as well as an optimistic correlation among future development and durability factor. If additional indication could be collected to propose that marketplaces can be influenced to start to perceive the societal and ecological consequences of their economic results then an applied circumstance can be additional to the ethical situation that practical ecological expose requirements to developed. This study has providing the main measurable indication of the connotation among Australian companies' sustainability observes and company value, as restrained by the ex- ante price of impartiality investment and predictable future development. We explosion a substantial relationship among the superiority of companies' sustainability exposés and the ex- ante cost of parity investment, and a substantial positive connotation among sustainability reporting eminence and estimated future growth. We treasure that all of these belongings are vigorous to endogeneity controls, and are mostly focused in business sectors for which ecological expansion is of specific applicability. A steady, substantial and measured part of business revelation. (Murray et al. 2006: 246).

In the research conducted by Ioannou and Serafeim (2015) examine the impact of corporate social equity rating (CSR) on the estimates of market analysts on the future financial performance of firms. We are using panel data. The emerging sample includes a total of 16,064 views with available data for all variables for the period from 1993 to 2007. The findings of this article also provide support for an institutional perspective that focuses on how financial markets recognize and evaluate policies similar to those related to CSR. Future research has been to examine how this change in institutional perception has affected the rate at which CSR interpretation and measurement have changed by international forecasts.

The study of Goyal et al., (2015) discuss the current state of research on how to measure sustainability and its effect on both price stability besides customer value growth in all areas (Production and Services) and develop social besides environmental incomes that determination be desirable in the imminent" (quoted in Labuschagne et al., 2005). It contains the conception of the "Triple Bottom Line" presented by Elkington (1998), which raised the essential for a balanced stability, between the three ecological, societal and economic factors to attain stability

in administrations. The viability of a business enterprise is primarily the ecological, societal and financial viability of sustainable progress (Takala and Pallab, 2000; Wagner, 2010). In the study of Hong and Rawski (2012) present a research model that describes the sustainability practices in the competitive environment of the corporate environment, deliberate motorist, operative and amenity delivery strategies, and operational outcomes. This paper identifies research gaps in the areas of integration of sustainability practices at all levels of performance within firms and across networks. In total, 379 companies were analyzed in the development of the measurement model. The study has three key outcomes: First, market-response firms and customers are also improving ecological enactment; additional, this research approves minor practices as an imperative facilitator in achieving better ecological performance; thirdly, the forward-thinking firm is leading in attaining ecological performance, and providers are in an understanding circle of impact. By growing importance on the situation, companies are essential to contain sustainability performs at all levels considered, active, and outcome actions.

According to the study of Bergquist (2017) provides a long-term business history perspective on environmental sustainability. Business historians have shown how corporate has determined financial development subsequently the Business Revolution. Scholars devour dated this singularity back to the late nineteenth century, disclosed it increased impetus from the 1960s, and discovered how it caused in the mainstreaming of sustainability pomposity, and occasionally repetition, in big Western companies from the 1980s. An additional current study refrain has been the section of in what way for-profit magnates industrialized whole new invention sets such as biological food and wind and cosmological energy.

2.2 Substantiation of Hypotheses

The literature established by studying sustainability emphases on two main directions, namely identification of determinant factor for social and environmental protection activities, and the role of such actions in a firm's growth, correspondingly. Our study focuses on examining the impact of sustainable reporting on a firm's growth indicators. Sustainability develop the firm's reputation (with positive effects of performance) and can help avoid a decrease in share price. To this end, certain studies identify a positive relationship between sustainability and financial performance of the firm (measured via return on invested capital, return on equity, return on assets and earnings per share or cash flow). The results show that, although a proactive environmental strategy can be associated with future economic performance, not all firms adopt such a strategy. However, other papers identify that a firm's profitability has a statistically significant negative relationship with disclosing information regarding sustainable reporting. These results are justified by the fact that firms with high levels of profitability do not depend on foreign resources to attract capital, but can finance their activity using own resources, and thus they are more preoccupied with economic aspects than contributing to a better society and protecting the environment. From yet another perspective, however, a high level of profitability can raise public suspicions, in which case the situation could be clarified by providing non-financial information. Starting from the main objective of our research, i.e. determining the impact of sustainable reporting on firms' growth, we considered the following hypotheses:

Hypothesis 1 (H1). There is a significant association between sustainability and firm growth

According to Wilson (2003), He states that: while sustainability recognizes that firm growth and profitability are important, it also requires the firm to pursue societal goals, specifically those relating to sustainable development, environmental protection, social justice and equity, and economic development. Schadewitz and Niskala (2010) argue that the relationship between sustainability and firm value is still inconclusive. It denotes a situation in which firms aim to combine their economic goals with the taking of concern for their impact on environments and human beings (Maas and Boons, 2010).

Hypothesis 2 (H2). Firm size has significant impact on firm growth

According to Clandia (2015) this study aims to explore the relationship between management practices and business performance, in terms of the size of companies in the Brazilian mining industry. Explanatory and quantitative environmental research has been conducted through research with companies affiliated with the Brazilian Mining Association (IBRAM). Big results show that large companies are showing high levels of implementation of business sustainability management systems. The study providing evidence signifying that the business size is an important factor with regard to the management for sustainability in the mining sector, given that larger companies seem to be more strongly engaged with the adoption of sustainable practices when compared to smaller companies.

Hypothesis 3 (H3). Tangible assets have significant impact on firm growth

Asset tangibility is expected to be positively correlated with firm growth, as it provides collateral. Collateral reduces agency problems with debtholders and reduces bankruptcy costs and credit risk. De Jong (1999) confirms the positive relationship between tangible assets and firm growth, whereas Titman and Wessels (1988) report a negative, though not statistically significant, relationship.

Hypothesis 4 (H4). Tobins'Q has significant impact on firm growth

For measuring a firm's performance, a review of the literature shows a wide range of available proxies that can be used for a company's performance. Initially, the use of new ratios such as Tobins'Q as a measure of performance and Economic value-added was intended. The use of Tobin's Q is ruled out since it is based on the market value of a firm.

Hypothesis 5 (H5). Leverage ratio has significant impact on firm growth.

The Degree of leverage is positively related to performance whereas efficiency is negatively related to the performance of organizations. The findings are supported by the existing literature according to which improvement in capacity management primarily drives cost operational efficiency consequentially reducing the firm's operational risk thereby enhancing asset utilization (Walters, 1999 and Kuhn et al., 2012).

Hypothesis 6 (H6). Salaries to assets ratio have significant impact on firm growth.

A review of the literature shows a wide range of available proxies that can be used for a company's performance. Salaries to Asset ratio is expected to be positively correlated with firm growth, as it provides a significant relationship with firm growth.

3. Materials and Methods

In testing the working hypotheses, this study assessed the effect of firm sustainability on firms' growth. To this end, publishing environmental protection and social actions is a quality indicator for the organizational culture of entities, which can help reap certain benefits substantiated in the form of increased and streamlined activities thereof.

3.1. Sample, Data and Variables

Data with many cross-sectional units and periods is termed as panel data. The population of this study consists of all non -financial firms of USA. This study utilizes panel data with 7555 observations. The data is collected for 2327 number of US firms for 17 years from 2002 to 2018.The industries included are basic materials, consumer goods, consumer services, health care, industrials, oil & gas, technology and utilities. This secondary data is collected from Thomson Reuters DataStream Asset4 (ESG) for environmental, social and governance variables (Cheg et al., 2014). ESG is acronym of environmental, social and governance and more than 7000 listed companies are reporting their ESG data to Thomson Reuters DataStream Asset4 (Thomson Reuters, 2019). This database provide reliable and comprehensive data against 400 + ESG measures. The variables substantiated based on the collected information are concentrated in Table1, function of their role in the conducted analysis. The resulting dimension, i.e. the growth of a firm, was broken down into three study directions: the prospect for increased market value, operational performance and the level of cost of capital. Representative indicators were used for each of these directions.

Table 1. Description of variables used in the study

Variables	Description	Measurement	Unit	References
FG	Firm Growth	Net income to total assets at year *t*;	Ratio	Clarkson et al. (2011).
Sus	Sustainability	Composed of Environmental, Social and Governance score;	Score	Yu & Lee (2017), Lin et al. (2015).
TAA	Total Assets	Natural logarithm of total assets at the end of year*t*;	Ratio	Cavaco and Crifo (2014),
Lev	Leverage	Debt to Equity ratio;	Ratio	Khan, A., Bibi, M., & Tanveer, S. (2016)
OTA	Other Tangible Assets	Tangible assets to total assets ratio, at the end ofyear *t*;	Ratio	Yu & Lee (2017).
MBV	Market to Book Value	Market capitalization divided by book value of equity at year *t*;	Ratio	Yu & Lee (2017).
S2A	Salaries to Assets ratio	Total salary to assets during year *t*;	Ratio	Yu & Lee (2017).

Firm growth is a way to introduce innovation and is a leitmotiv of technological change (Pagano and Schivardi, 2003). The core objective of firm is to optimize their firm value (Brealey et al., 2012; Sulehri and Ali, 2020). However, the firms do respond to their operating environment to achieve their objective of value maximization (Mirza & Ahsan, 2019). Sustainability is based on a simple and long-recognized factual premise: Everything that humans require for their survival and well-being depends, directly or indirectly, on the natural environment (Marsh 1864). Wilson (2003), He states that: while sustainability recognizes that firm growth and profitability are

important, it also requires the firm to pursue societal goals, specifically those relating to sustainable development, environmental protection, social justice and equity, and economic development. Firm size has been used as key explanatory variable in empirical work both in asset pricing and in empirical Þnance. Firm size is commonly used as an important, fundamental firm characteristic. However, no research comprehensively assesses the sensitivity of empirical results in corporate finance to different measures of firm size. Firm size an important and fundamental firm characteristic, and, in many situations, observe a "size effect" firm size affects the empirical results. A leverage ratio is any one of several financial measurements that look at how much capital comes in the form of debt (loans) or assesses the ability of a company to meet its financial obligations. The leverage ratio category is important because companies rely on a mixture of equity and debt to finance their operations, and knowing the amount of debt held by a company is useful in evaluating whether it can pay off its debts as they come due. Net tangible assets are calculated as the total assets of a company, minus any intangible assets such as goodwill, patents, and trademarks, less all liabilities and the par value of preferred stock.Net tangible assets are calculated similar to a company's stockholders' equity. However, net tangible assets exclude the value of a company's intangible assets. To calculate a company's net tangible assets, subtract its par value of preferred shares and any intangible assets, such as goodwill, patents and trademarks, from its total assets. The market to book ratio is a metric that compares your business's book value to its market value. This is determined by its current price on the stock market and any outstanding shares it may have. The book to market ratio works in the same way in reverse, but can be used to determine the same thing: the overall value of your company. Both ratios may be used by analysts or investors to decide if your business is overvalued, or undervalued. The salaries to asset ratio is the current value of marketable securities and cash, divided by the company's current liabilities. Also known as the salaries to assets ratio, the salaries to asset ratio compares the amount of highly liquid assets (such as cash and marketable securities) to the amount of short-term liabilities.

3.2 Data Analysis Methods

The study on the influence of sustainable reporting on firms' growth employed correlation analysis and multiple linear regression analysis with alternative independent variables. The general econometric model is illustrated in Equation.

$ROAit = \alpha o + \beta 1\ ROAit - 1 + \beta 2Susit\ , + \beta 3MBVit\ , + \beta 4TAAit\ , + \beta 5LEVit\ , + \beta 6\ OTAit + \beta 7S2Ait + \varepsilon it$

Where i represent a firm or a company (i=1…3000) and t represents period (t=2002….2018), equation 1-3 is a general specification allowing for dynamic firm sustainability, and also a stochastic error term which is represented by (c)

4. Results and Discussion

The study results entail presenting the general conditions of the economic environment, in the form of a descriptive analysis of used variables and the relations between same, followed by conclusions reached in the process of testing the stated working hypotheses. The descriptive statistics in Table 2 explain behavior of data about all variables of the research model form the period of 2002 to 2018. Descriptive statistics of firm sustainability and firm growth are explained separately. Data behavior are studies to explore its accuracy before performing other statistical tests. Descriptive statistics shows the general behavior of the data, including the dependent, independent, and moderating and control variables. The descriptive statistics test shows the summary of data that include average value (Mean), lower value in the data set (minimum), higher value in the data set (maximum) and measurement of dispersion (Standard deviation). The mean value tells about the average of data, the standard deviation tells about spread and measure of dispersion in the value of the data from mean, minimum and maximum tells about current series of data.

Table 2. Descriptive statistics of the analyzed variables

Variables	Obs	Mean	Std. Dev.	Min	Max
ROA	92,483	12.20217	23.75959	0	100
MBV	123,958	3.179061	241.5691	-1073.95	39024.88
S2A	97,259	462393.7	1736033	-91500	4.27e+07
TAA	104,459	2.23e+07	1.30e+08	0	3.95e+09
Lev	37,165	46.10896	8805.128	-1546070	665620.8
OTA	106,147	791331.6	1.50e+07	-882000	1.88e+09
Sus	12,804	97.00447	63.46726	0	3.34e+02

Descriptive statistics in Table 2 shows the summary of descriptive statistics including maximum, minimum value, average and standard deviation of both dependent as well as explanatory variables. For performance-related measures, The Return on Assets (ROA) of non- financial firms of USA has a mean of 12.20217, while the minimum and maximum are 0 and 100 percent and standard deviation 23.75959 respectively. In a strict sense, the

deduced implication is that most of the non-financial firms make good and sound decisions of investment consequentially resulting in an averagely high-performance metric (ROA). Another reason could be that the US non-financial firms is still at its primary stage and will mature in the future. Market to Book Value (MBV) indicate the performance of firm, has a mean value of 3.179061 with minimum and maximum values of are -1073.95 and 39024.88 and standard deviation 241.5691 in US firms in non-financial sectors. However, a point to consider is that the price of the shares is high so the profits and accumulated profits is high over time. With regards to firm sustainability, Salaries to Assets Ratio (S2A) the mean is 462393.7, while the maximum and minimum value is 4.27e+07 and -91500 and standard deviation 1736033 in US firms non-financial sectors respectively. Total Assets (TAA) of non- financial firms of USA has a mean of 2.23e+07, while the minimum and maximum are 0 and 3.95e+09 percent and standard deviation 1.30e+08 respectively. Lev mean value is 46.10896, while the maximum and minimum value is 665620.8 and -1546070 and standard deviation 8805.128 in US firms non-financial sectors respectively. Other Total Assets (OTA) has a mean value of 791331.6, the minimum and maximum values are -882000 and 1.88e+09 and standard deviation 1.50e+07 in US firms' non-financial sectors. The highest value is due to the early years where maximum investment is made in the infrastructure thereby increasing the value of the total assets. Since returns against these assets are recovered over the coming year, higher total asset in the early years appears to be normal for US non-financial firms. With regards to firm sustainability, Sustainability (Sus) the mean value is 97.00447, while the maximum and minimum value is 3.34e+02 and 0 and standard deviation 63.46726 in US firms non-financial sectors respectively. The profits of the firm increase the firm growth and the short term profits of the firm impact of the shareholders' value. The variations in the values visibly propose that the companies which are included in the statistical analysis have a high score of Sustainability, while other has relatively low.

Table 3 Correlation Analysis

Variables	ROA	MBV	S2A	TAA	Lev	OTA	Sus
ROA	1						
MBV	-0.0178	1					
S2A	0.0487	-0.0084	1				
TAA	0.0142	-0.0052	0.3604	1			
Lev	0.0257	0.0001	-0.0011	-0.0005	1		
OTA	-0.0003	-0.0021	0.1716	0.5074	0.0009	1	
Sus	0.4775	0.0065	0.1326	0.1058	0.0288	0.0593	1

Correlation analysis shows to determine the relationship between firm sustainability and firm growth. In table 3 we examine the correlation analysis among variables. To check the strength of relationship among variables with the direction of positive and negative measure through correlation matrix. The range of correlation analysis is (-1 to +1) which shows the correlation between variables. Table 3 provides details of the correlation analysis and the probability of multicollinearity problems among the variables needs to be addressed. Multicollinearity is used to capture the level of correlation between variables. Correlation analysis provides information on how the two variables react to each other's. The correlation of the variable itself is always 1. The correlation of ROA with S2A, TAA, Lev and Sus is positive, MBV and OTA is negative, the positive relation show significant relation high profit and high returns, the negative correlation show very week relation. On the other hand, MBV is positively correlated with Lev and Sus, while negative with S2A, TAA and OTA. The correlation among S2A with TAA, OTA and Sus is positive but Lev is negative. Furthermore, the correlation of TAA with OTA and Sus is positive and Lev is negative. Additionally, the estimated findings of the correlation matrix show that the correlation among the entire variable of the study is below the threshold of 0.9 which states that there no multicollinearity among the variable of the study.

This study utilized independent and dependent variables based on the understanding that control variables are mostly used to account for unidentified endogeneity which is covered in GMM. Indifference, GMM employs small tell stats to use for small sample adjustment and report-t instead of 2-statistic and the chi-square test instead of the F test. Small no level is working as an alternative method. In this model, the study can use AR1 and AR2 as a serial correlation, however, its value must be less than 0.5 (Arellano and Bover, 1995; Ali et al., 2021). Further, in this model, there is a range of analyses that can be used if required such as Homoscedasticity, cross-sectional, Linear Factor Models, and Sargan Test of Over-Identifying Restrictions. GMM provides more reliable judgments by using the tools that aim towards the orthogonality situations that were present in the lagged variable and error term (Arellano & Bond, 1991; Arellano & Bover, 1995; Ali et al., 2022; Ahmad et al., 2022).

Table 4. Two Step GMM Results with ROA is Dependent Variable

Variables	Coefficient Value
L1ROA	-0.771*(0.015)
MBV	-0.0001*(2.230)
S2A	-1.030 (2.410)
TAA	-5.780**(2.830)
Lev	1.730(0.001)
OTA	5.390**(3.200)
Sus	0.0161*(0.003)
-cons	7.781*(0.537)

Probability value*, **, *** refers to 1%, 5% & 10% level of significance respectively while standard errors are inparenthesis

The results of association between response variable (ROA) and other explanatory variables are represented in table 4 In two-step system GMM not all the coefficients show significance. The variables L1ROA, MBV, SUS, and CONS are significant at the level of 1% while TAA, OTA is significant at 5%. S2A, LEV are not statistically significant. The level of sustainability is positively associated with ROA. It implies that high sustainability index rate positively effects ROA and the firms with high sustainability rating tries to increase ROA so to enhance its ROA. This result is in line with the theory, because the firms that take into account the social responsibility and do something for the betterment of society. Only the firm with higher sustainability level are the one that take into consideration the environmental aspects and struggle to achieve a high ROA. Results show that one unit increase in Sus the ROA will be increase with .0161265 units, its co-efficient is significant at 1% significance level which shows the positive relationship. This reflects that the good firms performance, high will be Sus score and highly it will be rated in terms of the ROA Index. Sus positive and significant, because it is believed that larger firms design strategic policies to control the expenses. The larger firms have large production units so they spend huge amount to make sure that their production activities do not affect the environment of given industrial zone. Therefore, large size firm strive more for controlling the rate, thus enjoy more ROA score and lower expenses.

5. Conclusions

The fundamental objective pursued in the activity of any firm is continued growth for the purpose of achieving results that are superior to the investments made. The research was aimed to explore the influence of Firm sustainability on firm growth on USA non-financial firms. The sustainability policies in the operational strategies of firms in USA is a challenge, but one that can generate economic benefits for such firms by means of boosting and streamlining their activities. The research set out to seek and examine whether performances of US non-financial firms are influenced by firm growth. To ensure the reliability of the findings, firm sustainability was proxied with three variables, unlike previous literature where firm sustainability is given one representative proxy. The impact of each of these variables was examined idiosyncratically. Unlike other researchers, financial performance metric has been considered from the perspective of shareholders and internal management's performance. For shareholders, return based profit measures, more specifically earnings with respect to Equity and with respect to Total Equity and Total Debt have been used. For management's performance, the ability to generate revenue utilizing the organization's total assets has been used. Results indicate that the financial performance of the US non-financial firms is significantly influenced by firm growth and the finding is consistent with all of the proxies of firm growth. In addition, it is also concluded that as independent variable, firm size is also a key determinant of sustainability rating, it remains highly significant in the model. Hence, it can be said that large size firms enjoy high sustainability rating. Firm sustainability is extremely important for environmental protection policies of the firm. So, the improved rating of firm sustainability in long run will give a deep insight into some important environmental aspects, and provide external benefits that every individual in a society can avail. The firm sustainability is a combination of several terms, like the profitability of the firms, social contribution, stability conditions of the firm etc. The results of this study indicate that in order to attain a high firm sustainability it is also important for a firm to put efforts for environmental protection, social and corporate governance actions. The direction of the relationship is positive, suggesting an increased firm sustainability increase firm growth. The finding is in accordance with the Agency theory, Stakeholder theory and Value-enhancing theory that reduce the cost and to establish and maintain a strong competitive performance. The theory fits perfectly in context of competing firms in an industry such non-financial firms of USA who are at a constant war with each other in terms of technological advancements, economies of scale and acquisition and merger with other firms. Some limitations and future research are written up regarding to this study. This study included only one developed country USA. In this research work has been taken out the sample of 17 years of data. Only seven variables of firm growth, such as market to book value, sustainability, Total assets, Leverage ratio, other Tangible assets and Salaries to assets ratio are included in this study. The study was limited by the resources available to the researcher. The results from the research conducted might not be representative for the whole accommodation sector in USA. The work can be extended to identify the relationship of firm sustainability with other aspects such as Financial Health, companies' survival times, Companies' overall risk profiles, etc. The use of modern ratios

such as GMM is also recommended as proxies for performance. Further researchers have to add three to four developed countries. Moreover, studies are also needed to improve understanding of firm sustainability in both developed and emerging economies. In future researcher can take more years of data for the fairness of study findings. Further, this study will be extended by incorporating firm sustainability other characteristics, such as age diversity, nationality diversity, number of board meetings, etc.

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