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RESEARCH ARTICLE

FIRM SIZE & SUSTAINABLE PERFORMANCE: A LITERATURE REVIEW

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Abstract

Firm size has been a key variable since time immemorial and there have been regular efforts by the State to control this variable to avoid monopoly to safeguard the interest of the consumers. Since the shared values need to be infused within the employees first and keep them exposed to the stakeholders for taking decisions so as to take care of the economic, environmental and social aspects benefitting all shareholders, we presume that beyond a certain size, the relationship and interconnection within all stakeholders shall be too complex for the firm to manage which would lead to unsustainability. The other variables are also important for the firm to be resilient as narrow scope, high end indivisible technology, complex management structure and concentrated ownership cannot keep the firm adaptive to the changing environment which might be deter the sustainable performance. In this study, I have looked at the variable firm size in depth while touching upon other variable to look for performance of the firm in terms of sustainability.

Introduction:-

Firm Sizeand Performance

Performance of a firm has always been a matter of interest for researchers and for centuries social scientists have been trying to estimate optimal parameters for firms to improve their performance. Several attempts have been made to study performance of firms based on strategy and size of the firm (Smith et al, 1989; Liu, 1995; Beaver, 2007; Glaister et al, 2008; Escriba-Esteve et al, 2008). However in most of the literature we find that not much attempt has been made to link sustainable performance with size. Researchers have focused more on technical efficiency, profit, total factor productivity, labour productivity etc. In the present scenario of depleting natural resources, it is important for firms to survive and thrive in the long run through contribution to shareholders, environment and stakeholders.

Some researchers have undertaken study to find effect of firm size on **rate ofgrowth (Sales)** of firm. There has been mixed findings on this issue. There is no relationship between size of a firm and its rate of growth (Simon, 1964). Large firms were found to have a better growth rate than small and medium firms in a study conducted Australia (Parker, 2000). More productive smaller firms exhibited lower productivity growth rates and subsequently lost their advantage during transition of Slovenia from closed economy to being part of EU (Polanec, 2004). Firm Size found to have a moderating effect on firm performance which is positively associated with formal strategic planning in a study where 500 large firms were studied in Turkey (Glaister et al, 2008). In a study conducted in manufacturing firms in eight European countries, it was found that Large firms perform better than SME due to their approach in product & process innovation (Vaona and Pianta, 2008). Small firmswith strategic orientation of top management team perform

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better sales growth and market share (Escriba-Esteve et al, 2008). Sales growth rate is negativelyassociated with firm size (Akcigit, 2009).

Another line of study has been to measure performance in terms of **technical efficiency** and productivity having some relationship with firm size. Bigger firms with more hierarchical level tend to be less efficient (Simon, 1964). Out of four Indian manufacturing industries studied, firm size is positively associated with high factor productivity in only one industry: machine tool manufacture. Other variables that contribute to difference in efficiency include (a) age of enterprise (b) vintage ofcapital stock(c) level of labour forceexperience (John, 1984).In industry wise study, higher total factor productivity (TFP) growth was observed for industries with larger firms having greater market share while lower TFP growth was observed for industries with smaller firm having greater market share (Acs et al, 1996). Small and medium firms tend to be less inefficient than the larger firms (Diaz and Sanchez, 2002). Larger firms are technically more efficient and productive in China (Chengand Lo, 2004). Labour productivity and Total Factor productivity found positively associated with size of the firm in a study conducted in African firms (Biesebroeck, 2005). Productivity increases with size till a certain level then decreases due to diseconomy of scale (Halkos and Tzeremes, 2007). The innovation and productivity found positively associated with firm size in a study conducted in Spain (Castany et al, 2007). Positive relationship between firm size and labour productivity and Total Factor Productivity found ina study in Canada (Leung et al, 2008). Firms in the mid- level size categories appear to be less efficient than small and large size firms(Truett and Truett, 2009). Large and older firms found less productive in a study conducted in large Australian firms (Palangkaraya et al, 2009). Firm size has a positive and significant impact onthe use of innovation and learning measures which has impact on performance (Jusoh, 2010). Regulations was found to have major effect in distribution of firm size and productivity in a study conducted in France (Garicano et al, 2011). Big firms are more productive, offer higher wages and pay more taxes than small ones. Economies dominated by small firms are often sluggish (The Economist, 2012, May 3).

Some similar studies have been conducted taking **profit** of the firm as measure of performance. Firm size has no effect on profit in manufacturing industries in USA (Amato and Wilder, 1985). Large and Extra-Large enterprise make more profit if they are more market oriented (Liu, 1995). No significant growth in firm performance was observed on size as it was dependent on other factors (Orser et al, 2000). Size does not matter for performance while innovation is the key driver for profit (Skypala, 2005). Small and Large firms generate more profit than medium sized firms in financial services (Amato and Burson, 2007). Small firms with strategic orientation only survive in the long run (Beaver, 2007). In a study conducted on US apparel intermediary firms in small and medium size, it was found that Firm size has noeffect on profit (Ha-Brookshire, 2009). Size and Financial performance are not consistently related and performance is dependent in financing (debt or equity) of size expansion (Muzir, 2011).

A very few studies also have been conducted checking sustainability efforts. Size is positively associated with environmental performance (Khaled, 2006). Firm size has no effect on Corporate Social Responsibility activities (Blomback and Wigren, 2009). Organisation size, ownership and industry are strongly related with support mechanisms and reporting of sustainability (Gallo and Christensen, 2011).

In 16 of the above studies employment is taken as a measure firm size. Turnover is used for size determination in 3 of the studies. Capital investment and net asset is used for the purpose in one study each and a mix of these is used in 2 studies. The exact determinant of firm size is not specifically mentioned in 11 of the studies mentioned above.

In all above sets of studies, findings were found to be inconsistent with each other. It makes us understand that other factors are responsible for firm performance.

There is a finding that medium sized firms are more market oriented than small firms (Laforet, 2009). Large and Extra Large enterprise make more profit if they are more market oriented (Liu, 1995). Some studies also have mentioned effect of strategic planning on performance (Beaver, 2007; Glaister et al, 2007; Escriba-Esteve et al, 2008). Other studies say innovation and other strategic factors influenceperformance alongwith size (Orser et al, 2000; Skypala, 2005 ;Castany et al, 2007 ; Vaona and Pianta, 2008 ; Jusoh, 2010).

This brings us to an assumption that firm size and performance are having some relationship. We assume that as the firm size grows, the firm in its tendency to grow bigger may adopt different strategy to consume more of resources and often abuse the social and environmental factors.

SustainablePerformance

There have been debates and arguments going on for decades to bring out a comprehensive definition of sustainability and sustainable performance of firms. Many companies only allocate some funds for CSR activities and in India the funds are mostly handed over to local administration for taking up peripheral development in improving road communication, health care, education etc., where donor firms rarely go for monitoring and evaluation of the fund they provide. They think that by contributing for such activities through Government is enough for creation of sustainability and this they use as a marketing tool everywhere.

The history of Sustainability dates back to early human civilization where a community or region developing by using surrounding natural resources and then during some crisis arising due to external threat try to resolve the issue to survive and sustain or perish under its pressure. The industrial revolution prompted use of the fossil fuel deposits which are non-renewable and in the race for rapid growth people generally ignored the fact that with rampant use the deposits, the supply might end in decades. This also has adversely affected the environment.

Sustainability is about building a society where firms address the triple bottom line instead of profitability as the only measure of performance. Firms moving towards creating a balance between economy, society and environment would be seen as approaching sustainable performance which will make them maintain and expand economically, increasing shareholder value, enhancing corporate image, creating customer delight, improving quality of products and services, following ethical practices, improving the quality of human resources, creating value for all stakeholders and also taking care of people who might lose out their land and resources in the process of establishment and operation of the firm. To achieve this, mere allocation of certain percentage of economic profit as CSR fund shall not be enough until these are not linked to the business strategy of the firm and not being driven by the vision and mission of the firm.

Firms also would gain out of sustainability initiatives. These activities shall reduce risks, waste, increase material and energy efficiency, innovate and develop environment friendlyproducts thismakestheoperationprofitableandmakesthe firm stand out in the long run. The firms therefore should integrate economic, social and environmental objectives into their business strategy and strike a balance between these three (Szekely and Knirsch, 2005).

Sustainability is not just a one shot activity. Sustainability spreads across a larger space with many stakeholders spread over a very long period of time. It refers to a natural open system which is diverse and heterogeneous in character. The objective function is to balance and optimize multiple objectivesof the ecosystem andmanage with self-control while helping to strengthen the weaker stakeholders through an attitude of giving, loving and sacrificing (Nayak, 2011). Love, sacrifice and co- operation are going to help achieve sustainability (Meadows et al, 1992).

Globalchangesintermsofdevelopmentofindustrialestablishmentstherebyrivaling nature in many facets, Land conversion from traditional use to industrial use, Population growth, biodiversity loss, agricultural intensification in terms of rampant use of pesticides and insecticides induce climate change and ozone depletion which affects the weakest of the society the most (Daily and Ehrlich, 1996).

Research has established that several common pollutants increase at a society having lower levels of per capita income and decrease at high levels (McConnell, 1997). Therefore, approaching sustainable performance would create a better environment and improve the lifestyle of even the weakest stakeholder.

Sustainabledevelopment normallyisreferred human wellbeingtobe the object to be sustained. Some look at the current generation's wellbeing where sustainable development leads to the wellbeing of future generation which is at least as high as the wellbeing of the current generation. Others classify it as intergenerational wellbeing where they define social welfare as not the only wellbeing of the current generation but also include the potential wellbeing of the generations to follow (Pezzey, 1992). While estimating these, only economic capital is not to be considered. It is important to consider natural capital, human capital, reproducible capital and environmental capital to work out a broad spectrum to determine the movement for sustainable development (Arrow et al, 2004).

SustainabilityMovement

The movement for sustainable development started in 1962 by Researcher Rachel Carson who brought together research on toxicology, ecology and epidemiology in thebook"Silent Spring" to suggest that agricultural pesticides are building to catastrophic levels, linked to damage to animal species and human health (www.iisd.org).ThiswasfollowedbyvariousconferencesonBiosphere, Paul Ehrlich's publication "The Population

Bomb", formulation of National Environmental Policy Act by USA, continuing deliberations and debates by WTO, UNEP, Global Reporting Initiatives and Climate Negotiations.People all over the world are now working on reduction of overconsumptionand new concepts of deep ecology and de-growth is emerging.

DeepEcology

We have been using, abusing and exploiting resources provided to us by mother earth from the earliest days of civilization. Human race has been doing this with a pride ofbeing the master of this world and allthe resources available arebeing used without considering the need of millions of other species existing on earth.

Every entity on earth has some value irrespective of its use to population and happiness in life is dependent on richness and bio-diversity of the environment. For the sake of development, we have no right to adversely affect this richness and have to use the available resources in a responsible manner. Unfortunately, the human impact on bio-diversity has been damaging due to the competition for staying ahead of others, depletion of resources due to exponentially growing population and changing lifestyle. This is possible only if changes in political willpower, economic objectives, suitable technology and human ideology are made peacefully and democratically (Harding, 1997, 17).

All the communities, organizations, states and nations should respect the above and every action should keep the above in mind which will ultimately lead to sustainability. If we think of the above concept, we must also think of possible ways to measure actionsof firms, communities and nationsmoving in thedirection of deep ecology. The underlying indication of measurement from this concept is about consumption of resources such as power, water, fuel, minerals etc and estimation of wastage and recycling. The other measure would be about internal and external co-operation for development of employees, community and society.

Degrowth

Theconceptofdegrowthisalsoalignedwiththeabovedeepecologyprinciples.Itputs forward the concept that global economic growth is not sustainable and infeasible from an ecological point of view. It states that the goods and services produced by economic activities of firms are not the only wealth available for creation. Fair justice, healthy ecosystem, reduction of inequality, good human relations within a society and democratic institutions are other and very important forms of wealth. Nations should formulate policies and firms should work towards creation of this important wealth as well. As resources available for economic activities are limited and finite, overconsumption and wastage will lead to scarcity for future generation. This will degrade the quality of life, biodiversity, natural resources and shall lead to growth in local violence for sharing common resources.

The rapid growth and adverse impact thereof were explained through results of a complex computer simulation program World3 jointly by a team of scientists from USA, Europe and Japan which looked at population, industrialization, pollution, food production and resource depletion in different scenario, and in their book "Limits to Growth" (Meadows et al, 1972) have cautioned the world about running out of esources if the current trend of overproduction and over consumption is not checked. Updates on this have been published in 2002, 2007 and 2012 where their past predictions are related to current facts.

Responsibility of Firms in the direction of degrowth should be to stay small by focusing on right size of profit, right size of production capacities, employment level, marketshareandcustomersize.Excessprofitissomethingthatwouldendanger ecological sustainability and social well being of the firms' environment (Jamali et al, 2010, 600). Degrowth has also been referred to as Green Growth (Victor, 2010).The concept of degrowth or green growth is an economic state in which the rate of reduction of environmental impact per unit GDP exceeds the rate of increase of GDP. Brown Growth and Black Growth have also been defined in this line of thought. Even tillnow developed countries like USA have not shown any better than Brown Growth (Victor, 2010, 371).

Degrowth is the intentional redirection of economies away from the perpetual pursuit of growth. This includes a planned and controlled contraction to get back in line with carrying capacity, witheventual creation of a steadystate economic system that is inbalance with earth's limits. The race for development has caused obesity, increasing loan burdens, work stress, health problems, traffic congestion and social isolation. Therefore, it is important to reduce overconsumption by individual, community, society, nations and firms. Co-operation, love and sacrifice are the key for reduction ofoverconsumptionandeverycommunityornationshouldsetanexampleofacting on these themselves while advising others to work accordingly (Assadourian, 2012, 25).

It is proposed to to do away with GDP & GNP as the measure of economic growth. The GDP Paradox can create problem is actual measurement of economic well- being (Bergh, 2009, 122). Degrowth is the solution for nations and firms to be sustainable (Kallis, 201, 8781).

The driving factor for degrowth is co-operation among firms not competition. Co- operation does not mean forming a cartel for exploiting the consumers and affecting the society and environment. This co-operation is essentially to work together by limiting growth benefitting all stakeholders including society and environment. Co- operation can only be achieved as long as we firm or community or region stayed within manageable limit. This will lead to conservation of natural resources and shall have positive effect of society and well-being of people.

Gross National Happiness would be a better indicator of social well-being and development of all stakeholders instead of GNP or GDP (Seeland, 2008, 491) and shall create friendly atmosphere within people from diverse culture and background (Seeland, 2009, 16).

Firms in a bid to grow big and grab more market share resort to unethical practicesinadvertisingwhichleadstoconsumptionofuselessarticles.GNHindexforeverypromotional campaign run by firms to regulate the same shall be useful so that overconsumption shall go down (Hellemont, 2009, 683).

Militarism and conflict between countries also has given rise to arms race and over production of defense goods which is disastrous for society (Szell, 2007, 3). Countries also should limit its boundaries to reduce conflicts and small countries which are self-dependent shall never engage in conflicts (Galtung, 1970).

Self-reliance and maintenance of equality within community through a long span of time would lead to more co-operation, harmony and well-being of the society (Gamson &Palgi, 1982, 64). We owe this environment to our successors and we must make an effort to decide about the type of world we want to spend our life now and what we keep in store for the future generation (Robinson, 2004, 382).

Allthese conceptslead to thedimensionof reductionofconsumptionandincreasein co-operation. This also reinforces the latent performance measurement concept within deep ecology.

With all the above background, it is now imperative that sustainable development for nations and sustainable performance for firms are going to be the religion of the future. It is just a matter of time before the actors realize the need. The most important fact is that, people must realize the gravity of this before it is too late.Therewillbemoreco-operationswithinfirmsiftheystaysmall.Thiscanbe understood from the Prisoners' Dilemma game theory, where chance of co-operation is more if the community or group is small where probability of collective working is more and co-operation would also enhance reputation of the group. From this it is assumed that, firms need to stay small to be sustainable, we now look at the sustainable performance of small firms and their action in terms of sustainable performance.

There have been many proposals to find out possible factors for measurement of sustainable performance. Before we proceed further, the question comes to mind that how to say this firm is making progress towards sustainability. What can be the measures of sustainable performance?

IndicatorsofSustainable Performance

Many scholars, activists and organizations have been working to converge into a commonlistoffactorswhichcanbemeasuredforsustainableperformanceoffirms.

WorldResourcesInstituteproposedmeasurementofenvironmentalperformancein the context of sustainable performance on four aggregate indicators namely pollution, resource depletion, ecosystem risk and environmental impact on human welfare (Hammond, 1995, 16).

Measurementofsustainabledevelopmentmaybebasedonindicatorswhichsignal the pressure that society puts on the environment (in the form of pollution and resource depletion), the resulting state of the environment (especially the incurred changes) compared to desirable (sustainable) states; and the response by human activity,mainlyintheformofpoliticalandsocietaldecisions,measuresandpolicies (Hardy and Pinter, 1995).

For sustainable performance of firms, it is important to develop sustainability of nature (earth, biodiversity, ecosystems) through development of people (child survival, life expectancy, education,equity),sustainability of lifesupport(ecosystem services, resources, environment) through development of economy (wealth, productivesectors,consumption),andsustainabilityofcommunity(cultures,groups, places) through development of society (institutions, social capital, states, regions) (Parris and Kates, 2003, 561). Wellbeing Index (developed by The World Conservation Union) and Environmental Sustainability Index (developed by The World Economic Forum) are also used for measurement of sustainability for countriesandregions.TheDiversityIndexdevelopedbyREGLABcanalsobeused as an indicator to assess the efforts of an organization towards sustainable performance.

The Sustainability Assessment Model for firms developed by BP uses 22 performance indicators under four broad categories of environmental impact, economicimpact,resourceimpactandsocialimpact(Baxteretal,2004,114).

Sustainable performance of firms can also be measured through indicators beyond triple bottom line by measuring ethics, values and principles, accountability and transparency, commitment to triple bottom line, focus on environmental processes, socio-economicdevelopment,humanrightsandworkplaceconditionsandengaging business partners (Hubbard, 2006).

Cost based approach by estimating monetary impact of business operations and offsettingthe same from revenue generation can be one approach of measurement (Nourry, 2007, 451) of sustainable development. Full cost accounting approach proposedthroughmeasurementofGreenValueAddedbyafirmbysubtractingcost of estimated environmental damage from the Economic Value Added to measure corporate sustainable performance (Proops et al, 1999, 92).

Anotherapproachformeasurementoffirmsustainableperformanceisthrough sustainability linkage and factors of socio-environmental, socio-economic and environmental-economic (eco-efficiency) issues (Ranganathan, 1998, 3).

Sustainability within a firm is influenced by both internal and external factors. We take the approach suggested by Szekely and Knirsch in 2005 as given below as we find this to be inclusive of all above approach where both internal and external factors and their sub-components are well discussed. The factors that determine sustainabilitywithinacompany(SzekelyandKnirsch,2005)areInternal:

Government stakeholders and expectations managerial factors, operational factors, and economic factors and external: market factors,

Manyfirmswhilereportingsustainableperformancemoreorlessfollowtheabove points to determine the performance indicators.

Strategyfor sustainability

The only hope for sustainability is to change forms of consumption. To do so, we must innovate (WBCSD, 2002). This emphasizes the need for changing the consumption and production and innovate ways to bring these down without compromisingthe wellbeingofthefuturegeneration.Firms pursuingsustainability strategyshallinfluenceandimprovesustainableconsumptionbehavior(Mariadoss et al, 2011).

Afirmperformingsustainablyistheonewheretherareprofitsfortheshareholders and in addition has implemented business practices which constantly improve the relationship of the firm with the natural world and human society (Tueth, 2010).

The concept ofsustainable development for an enterprise focuses on (a) taking care ofhumanfactorssuchasemployeesandcustomers(b)Reductionofadverseimpact on nature through changes in business processes (c) Respecting human value, love and cooperation (d) take a holistic systemic view and understanding the interdependence and interconnectedness and acting in such a way which would not disturb the balance (e) create products and services those are durable and long lasting so that overproduction and overconsumption is avoided (Barbian, 2012).

To strategize sustainability, the top management plays key role as driver of the initiativewithsupportiveinfrastructureandpolicies.Externalandinstitutionalefforts can only bring firms to a reporting arena where they can present their actions in numbers and figures irrespective of their real intent to move in this direction. Thereforesustainability performance is aninternalfactorof the organizationwhichis embedded into the firm strategy driven by top management (Law & Gunasekaran, 2012).Sustainabilitystrategymustincludeexplorationandexploitationofknowledge management practices to bring in change in product, processand market (Schrettle, 2011).Strategywillhavetobedynamictobringinsustainabilityasthefirmhastobe open minded to welcome the change in technology and infuse better relationship within all stakeholders which would take care of the triple bottom line and one single policy can never hold good to keep the firm running forever (Hidding, 2001).

Many firms feel that investment in social and environmental factor is a trade-off for the shareholders and the financial performance shall be compromised. However, there are empirical evidences that firms are able to implement environmental, social andgovernancestrategywithoutincurringanysignificantfinancialcost(Humphreyet al, 2012). Therefore, the firm is going to gain in the long run as green practices will bring down the process cost and wastages. Empirical evidences also show that green supply chain management improves firm believing the firm's sustainability intent rather than a marketing tool and try to legitimize performance (Lin & Sheu, 2012). Visualdisclosureofgreenpracticestotemptconsumersandstakeholdersin their action through photographs and other means. Firms who strategize sustainability in responsible manner rather present quantitative data for reflecting theirrealandjustmotive(Hrasky,2012).Firmsneedtodevelopstrategiccapabilities and resources to improve social and human welfare, reduce ecological impact and effectively achieve organizational goals (Murthy, 2012) and society is required to be the key component in business strategy of a firm (Hall, 2007). Strategy for building sustainability prevents firms from conflicts with authorities and stakeholders and this in turn enhances image of the firm which brings in benefit to the firm in the long run (Pratoom&Cheangphaisarn, 2011).

Strategyforbuildingsustainabilityneedstobealong-termactionplanwherereverse substitution of human labour in place of scarce fossil fuel and other materials extracted from environment are to be initiated which will add value to both society and environment while taking care of the shareholders (Ayres, 1996). The key to being successful and sustainable is to incorporate sustainability concepts into all levels of the firm's business goals (Challener, 2013).

Manyfirmsreporttheirachievementforcompliancepurpose.Butatransparent reporting provides insight into a firm's strategic focus and develops trust of authorities and stakeholders (Magarey, 2012). A strong corporate culture blended withhighdegreeofsocialresponsibilityandenvironmentalconcerncaninfuseright value to the employees at all levels (Napal, 2013).

Therearesocialdilemmasorconflictsbetweenshorttermselfinterestandlong-term collective interests. Firms, for short term gain many times ignore the long-term potential benefits and therefore engage in competitive practices in exploiting resources. Collective interest needs cooperation, love and sacrifice which would bring well being in the long run (Dijk et al, 2013). This idea has been worked upon through millions of iterations in a game theory set up which leads to the inference that only cooperation can bring welfare to all stakeholders in the long run (Nowak, 2011).

There is a belief that one can not follow both economic and ethical considerations simultaneously in strategy as there might exist a trade off. But recent studies advance the idea that both can co-exist if we take an integral approach to strategic model.Thishastobebuiltuponstrongvaluesystemwhichneedstobebuiltintothe organization culture which develops employees to enjoy their work and derive satisfaction which forms a higher level of benefit over the monetary compensation. These employees with individual values would collectively work to get sustainable competitivenesswhichwillshowcase strong value systemraise the standardswithin the industry. This will lead to the next level of external strategy driven by both social andenvironmentalsustainabilityfactorwhichbringsinsystemicchange(Landrumet al, 2013).

Asweseethestrategyforsustainabilityneedstoaddressvalues,loveandsacrifice and needs cooperation and working for collective wellbeing in the long run, we now go through different strategy models and see how they would be applicable in the sustainability requirement of wellbeing to create a better world.

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