



SUSTAINABLE BUSINESS MODEL IN DAIRY SECTOR

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ABSTRACT

The unabated rise in the scale of materials consumption has increased global environmental, social and economic pressures. The study compares sustainability aspects of the business model (economic, environmental, social, multidimensional/holistic and commercial/business) of select companies (Nestle, Amul and Mother Dairy) from dairy sector. The paper discusses whether there is a correlation between the various sustainability characteristics. The paper also focuses on inter-firm differences in sustainability components of the business model of select companies.

Introduction

“A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.” (Osterwalder 2004). Recently, there is a Growing interest in the business model applicability in management sciences. Many approaches and a lot of literature exist on how to launch strategic reflections on one's business. However, little efforts have been made to identify if business model concepts could enhance research on corporate sustainability. A sustainable business model can be defined as one where sustainable development plays an integral role in shaping the core objectives of the firm and consequently its decision making (Wicks, 1996, Stubbs and Cocklin, 2008). Such business models therefore incorporate a value proposition that reflects a balance between economic, ecological and social needs (Boons and Lüdeke-Freund, 2012) and organisations practicing such models therefore seek ‘to deliver economic, social and environmental benefits...through core business activities’ (Wilson et al., 2009). Although it is not possible to provide a comprehensive prescription of a Sustainability Business Model based on the discussion in this paper, the following discussion draws out salient features from Mother Dairy, Amul and Nestle business models that contribute to Sustainability.

Table 1 shows the components of Stubbs and Cocklin model for business sustainability. The last characteristic, which is, commercial/ business characteristic is added by author in order to

show linkage between sustainable business activities and commercial activities of the select companies.

Background

The structure of the model used in the present study is analogous to the model, developed by Stubbs and Coklin (2008). The model discusses the sustainability aspect of business on four characteristics – economic, environment, social and holistics. Out of four characteristics, three are important component of Sustainability Report. A sustainability report is an organizational report that gives information about economic, environmental, social and governance performance. The **Global Reporting Initiative** (GRI) one of the world's most prevalent standards for sustainability reporting — also measure performance of the organization on the basis of ecological footprint reporting, environmental social governance (ESG) reporting, triple bottom line (TBL) reporting, and corporate social responsibility (CSR) reporting. GRI seeks to make sustainability reporting by all organizations as routine as, and comparable to, financial reporting.

Several research papers have focused on similar characteristics earlier for the development of Sustainability Business Model. Schaltegger and Synnestvedt (2002) proposed a model to visualize and analyze the overall relationships between environmental performance and economic success. This model can be used to illustrate the general challenge of linking social or environmental performance with economic success and which helps in understanding the concept of business cases for sustainability

There is enough literature that focuses on environment, social and economic characteristics as important component of Sustainability business model. The present study uses these components as well as some new identified components for assessing the Sustainability business activities of the select organizations. The organizations selected for present study are from dairy sector - Mother Dairy, Amul and Nestle.

We selected three companies from dairy sector on the basis of their financial performance and sustainability business activities.

Sustainability at Select Dairy Companies

AMUL - AMUL was awarded with the best environmental initiative in the “sustainability category” during the 4th Global Dairy Conference held from 27th April to 29th April 2010 at Salzburg Congress Centre, Austria. AMUL has also won the “Green Globe Foundation Award” in a 4th Green Globe Awards ceremony at the 12th Delhi Sustainable Development Summit 2012

Mother Dairy-Mother Dairy is an IS/ ISO 9062, IS 15000 HACCP and IS 14001 EMS certified organization. Mother Dairy, Delhi has been awarded ISO 9001:2000 (Quality Management Systems), HACCP, 2002 f 3A (Food Safety Management Systems) and ISO 14001:2004 (Environmental Management Systems) Certifications.

Nestle- In June 2005, Nestlé India’s factory in Punjab was awarded the Punjab Government’s award for “Environmental Excellence” in recognition of its efforts in the construction of these clean drinking water facilities. Nestlé was crowned the winner of the 27th World Environment Centre (WEC) Gold Medal award for its commitment to environmental sustainability. The Company was praised for its accomplishments in international corporate sustainable development, including its environmental practices that are driven by its Creating Shared Value initiative.

Review of literature

“A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing a company's logic of earning money. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, in order to generate profitable and sustainable revenue streams.” (Osterwalder 2004). A business model is dynamic and is prone to changes due to changes in the external and internal environment in which business is conducted.(Nisa, 2014)

The existing literature on business models is infantile, and quite dispersed. It is just starting to make inroads into the top management journals. A common conceptual base is still missing, but companies strongly feel that designing a successful business model is all the more important for their long life and sustainance. (Nisa S, Ravichandran N, 2013). Recently, there is a Growing interest in the business model applicability in management sciences. Many approaches and a lot of literature exist on how to launch strategic reflections on one's business. However, little efforts have been made to identify if business model concepts could enhance research on corporate sustainability. A business model represents a story of what it is an organisation believes their customers want, how they want it, how it believes it should organize itself and interact with others to best meet those desires, and in turn, how it will generate revenue by being compensated for doing so (Johnson et al., 2008, Teece, 2010, Magretta, 2002, Johnson, 2010). In essence, a ‘business model describes the rationale of how an organization creates, delivers and captures value’ (Osterwalder and Pigneur, 2010) by fulfilling the needs or desires of its customers. When enterprises compete using business models that differ from one another, the outcomes are difficult to predict. One business model may appear superior to others when analyzed in isolation but create less value than the others when interactions are considered. Or rivals may end up becoming partners in value creation. (Nisa S, 2015)

Neither theoretical nor empirical research offers sufficient answers to the question what a sustainable business model might be (e.g. Stubbs and Cocklin, 2008). Moreover, the integration of the business model with sustainability evokes significant conceptual challenges: On the one hand the integration of economically relevant sustainability aspects with corporate business success is a multidimensional task (e.g. Hansen et al., 2009; Stead and Stead, 2008; Schaltegger, 2011; Wagner, 2007), while on the other the business model of a firm is a somehow elusive idea of how business is conducted in order to create and capture economic value (e.g. Mäkinen and Seppänen, 2007; Teece, 2010; Zott et al., 2011).

Mapping the links between both concepts may, however, be worthwhile to get from business cases for sustainability, which can be based on single and event-driven occasions, to business models for sustainability, which instead can serve as a kind of template for reproducing business cases on a regular basis. Moving from single to continuous business case creation may be supported by a business model rationale which positions sustainability as an integral part of the company's value proposition and value creation logic.

Theoretical considerations suggest that various approaches to integrating sustainability aspects into a business model as well as extending it should exist and that these should be directly related to the degree to which environmental and social aspects have become ingrained into the corporate sustainability strategy that underlies the business model. In general, it seems obvious that as environmental and social issues gain relevance in the strategy, more extensive business model modifications have to be conducted; both, with

regard to modifications of existing models as well as the development of new ones from sketch.

A sustainable business model can be defined as one where sustainable development plays an integral role in shaping the core objectives of the firm and consequently its decision making (Wicks, 1996, Stubbs and Cocklin, 2008). Such business models therefore incorporate a value proposition that reflects a balance between economic, ecological and social needs (Boons and Lüdeke-Freund, 2012) and organisations practicing such models therefore seek ‘to deliver economic, social and environmental benefits...through core business activities’ (Wilson et al., 2009). A business operating a sustainable business model typically creates, delivers and captures value in a truly sustainable way by providing products and services that improve the quality of people’s lives but do so within environmental limits (Uren, 2010).

A number of scholars have emphasised the need to incorporate the development and implementation of novel business models into strategies designed to promote sustainable development (Johnson and Suskewicz, 2009, Nidumolu et al., 2009, Wells, 2006), which has been echoed by high-profile institutions such as the European Commission and McKinsey & Company (Bonini and Gorner, 2011, COWI, 2008): ‘Greater spread and application of innovation in business models that reduce resource use has the potential to create multi-billion euro markets in the EU and overseas and bring very substantial environmental and economic benefits’ (COWI, 2008)

‘Companies should integrate environmental, social, and governance issues into their business model—and act on them...Our research finds that a handful of companies are capturing significant value by systematically pursuing the opportunities sustainability offers’ (Bonini and Gorner, 2011). Sustainable Development is one of those things that not only brings value to your firm but can be highly cost effective to incorporate if properly planned from the very beginning. The application(s) of sustainable development can be used as a competitive advantage for startups whose competition is an incumbent that would have to undertake enormous costs to make their business model sustainable. (Fatakdawala, 2012).

Methodology

Sample Selection

To understand the corporate behavior and performance effects of a culture of sustainability, we need to identify companies that have explicitly put a high level of emphasis on employees, customers, products, the community, and the environment as part of their strategy and business model. Moreover, we need to find firms that have adopted these policies for a significant number of years to allow for such policies in turn, to reinforce the norms and values upon which a culture of sustainability is based. In addition, by identifying firms that adopted such policies prior to CSR becoming widespread, we are less likely to have measurement error by including firms that are either “greenwashing” or adopting these policies purely for public relations and communications reasons. Finally, by identifying firms based on policy adoption decisions - and as a result introducing sustainability components in their business model long time ago - we mitigate the likelihood of biases that could arise from reverse causality.

Based on the above perception, the study identified three firms: Mother Dairy, Nestle and AMUL. All the firms have included Sustainability as important component in their Business Model. The information is collected from sustainability report and various published sources

and the ranking (such as fair, moderate, excellent etc.) was assigned based on their relative performance with other companies.

	Economic characteristics	Environmental characteristics	Social characteristics	Multidimensional or holistic characteristics
Structural attributes	External bodies that track performance of companies use a TBL approach	Threefold strategy: offset, sustainable, restorative	Stakeholders engagement skills; understanding stakeholders skills and expectations	Systems approach: Cooperative business strategy and planning Collaborative model
	Lobby industry and government for changes to taxation system and legislation	Closed loop systems: responsible for product throughout its lifecycle	Educate stakeholders; 'relentless communication'	TBL approach to measure organizational performance
	Keep capital local: local shareholders & local sustainability initiatives	Implement a services model	Implement stakeholder consultation programme	Institutionalize sustainability in the business: 'relentless' communication, stakeholder education
		Industrial ecosystems and stakeholders networks	Get 'buy-in' from internal & external stakeholders	Demand-driven model, not supply driven model
Cultural attributes	Profit is a means not an end	Treat nature as a stakeholder	Stakeholder approach	Medium to long-term focus
	Shareholders invest for social, environmental & financial reasons.		Alignment of stakeholder expectations.	Reduction in consumption
	Shareholders temper expectations for short-term financial returns.		Sharing of resources among stakeholders to achieve sustainable outcomes	

Table 1: sustainability business characteristics of a business model as given by Stubbs and CocklinSpecific Objectives

The main objectives of the study are as follows:

1. To analyze the business model of the select companies on the basis of sustainability components identified by Stubbs and Cocklin.
2. To understand the interfirm differences in business model under competition
3. To establish interlinkage between commercial characteristics and sustainable characteristics of a select firms

Hypothesis

H0₁. Inter-firm differences are not present in sustainability characteristics of selected dairy companies

H1₁. Inter-firm differences are present in sustainability characteristics of selected dairy companies

H0₂. There is no linkage between Commercial/Business characteristics and sustainability characteristics of the selected firms.

H1₂. There is inter-linkage between Commercial/Business characteristics and sustainability characteristics of the selected firms.

Sustainability Business Model at the select companies

In this section, we will discuss the business model components of the select companies under structural & Cultural attributes based on the Stubbs & Cocklin Sustainability Business Model.

INTERFIRM DIFFERENCES IN BUSINESS MODELS OF SELECT COMPANIES

In order to know the inter-firm differences in Dairy sector, we applied Kruskal-wallis test on the data of the select companies. The results of the test are -

Interfirm differences in sustainability characteristics with respect to Dairy Industry

Ranks

	comp name	N	Mean Rank
economic	Mother dairy	6	11.83
	Amul	6	9.83
	Nestle	6	6.83
	Total	18	
environment	Mother dairy	6	13.42
	Amul	6	9.25
	Nestle	6	5.83
	Total	18	

social	Mother dairy	6	15.00
	Amul	6	9.25
	Nestle	6	4.25
	Total	18	
holistic	Mother dairy	6	10.17
	Amul	6	11.25
	Nestle	6	7.08
	Total	18	
commercial	Mother dairy	6	15.50
	Amul	6	8.00
	Nestle	6	5.00
	Total	18	

Test Statistics^{a,b}

	economic	environment	social	holistic	commercial
Chi-Square	2.824	6.369	13.118	2.066	13.531
df	2	2	2	2	2
Asymp. Sig.	.244	.041	.001	.356	.001

a. Kruskal Wallis Test

b. Grouping Variable: comp name

Sector	Sustainability characteristics	p, df	Hypothesis
Dairy	Economic	.244	Accepted (H ₀ 1)

	Social	.041	
	Environmental	.001	
	Multidimensional	.356	
	Commercial	.001	

Table 2: Summary of results for Kruskal Wallis H-test – interfirm differences in sustainability business components of Dairy sector

ECONOMIC CHARACTERISTICS

	Economic characteristics	Mother Dairy	Amul	Nestle
Structural attributes	External bodies that track performance of companies use a triple bottom line (TBL) approach	Does not use TBL approach	Does not use TBL approach	Use TBL approach and rated highly by external agencies
	Lobby industry and government for changes to taxation system and legislation to support sustainability	Lobbying with government for changes in legislation	Sometimes play role in legislation	Not played role in legislation
	Keep capital local: local shareholders and investment in local sustainability initiatives	Local shareholders and invest in local sustainability activities.	Local shareholders and invest in local sustainability activities.	Local shareholders and invest in local sustainability initiatives.
Cultural attributes	Profit is a means not an end	True	True	True
	Shareholders invest for social, environmental impact & financial reasons.	Sometimes	sometimes	Always
	Shareholders temper expectations for short-term financial returns.	True	True	True

Table 4: Economic Characteristics

Amul and Mother Dairy do not use *Triple Bottom Line (TBL) approach to measure organizational performance*. They do not produce sustainability report separately. However, Nestle produce sustainability report separately and share it with general public (as these companies sustainability reports are available online and Amul and Mother Dairy’s report are not available). Nestle uses TBL approach to measure organizational performance. These companies are rated by external agencies on the basis of their declaration on sustainability report and all are rated very high by them for their sustainability activities.

The select companies have played role in *Lobbying Industry and Government for implementation of sustainable business practices*. The Mother Dairy, as it is set up by National Dairy Development Board (NDDB) which being a government body played instrumental role in framing rules and regulations related to dairy industry in India. Amul was also involved with government during operation flood. Nestle has not played instrumental role in lobbying with government for sustainable business practices.

The select companies *keep capital local* which includes two things – local shareholders and investment in local sustainability activities. For Amul and Mother Dairy, Farmers are the shareholders while Nestle has many major local shareholders. These all companies invest in local sustainability activities.

In Nestle, the *ownership and control* is in private hand which report to their shareholders. Thus, the private profit motive and generating shareholder value would dominate. In case of Amul because of farmer ownership the organization continues to reinvest in the business and to offer a variety of necessary services and goods to the farmers to assist and improve their production performance. In the case of government driven model of Mother Dairy the ownership and control remains with the government, and this helps them bring in substantial capital and government support, but their performance remains dependent on government management and commitment which may vary.

In case of Mother Dairy and Amul, farmers are the shareholders and they all jointly invest their money for all business activities. However, since if the farmer has even one cow / buffalo, he becomes a part of village cooperative, therefore, it is difficult for them to invest their money or to think for environment impact reasons. They are generally poor and want money to earn their livelihood. Therefore in these two companies social objectives dominate. However, in case of Nestle, since it's a big company and have shareholders who can *invest for financial reasons as well as social and environment impact reasons*.

In all select organizations, *shareholders temper expectations for long term financial results* as they are educated and trained by the companies about good governance practices. And also, when shareholders invest their money in any company they look at the track record of the companies. Thus, they are aware that these companies adopt sustainable business practices which will help them getting long term gain.

In order to know the inter-firm differences in Dairy sector, we applied Kruskal-wallis test separately on the data of the companies. The results of the test are -

Interfirm differences in Economic characteristics with respect to Dairy Sector

The results of the analysis indicates that statistically there is no significant difference in the medians, $X^2(2, N=18) = 2.824, p = .244$ with a mean rank of 11.83 (mother dairy), 9.83 (Amul) and 6.83 (Nestle). Thus we can conclude that as far as economic characteristics are concerned all the three select companies under dairy sector are contributing almost equally with Nestle contributing little higher followed by Amul and Mother Dairy respectively. Therefore, interfirm differences are less in dairy sector under Economic Characteristics.

ENVIRONMENTAL CHARACTERISTICS

	Environmental characteristics	Mother Dairy	Amul	Nestle
Structural attributes	Threefold strategy: offset, sustainable, restorative	Focus on offset and sustainable strategies	Focus on all three strategies	Focus on all three strategies
	Closed loop systems: responsible for products throughout its lifecycle	Do not follow a closed loop system	Follow a closed loop system	Follow a closed loop system
	Implement a services model	Rarely	Sometimes	Sometimes
Cultural attributes	Industrial ecosystems and stakeholders networks	Stakeholders networks but have not established industrial ecosystem	Stakeholders networks but have not established industrial ecosystem	Stakeholders networks but have not established industrial ecosystem
	Treat nature as a stakeholder	Sometimes	Often	Often

Table 5: Environmental Characteristics

The three-pronged strategies are *offsets, sustainable, and restorative*. Under the offsets approach companies compensates for the environmental damage that occurs throughout its whole manufacturing and distribution process, including its supply chain. Amul is following offset strategy The sustainable strategy aims to fix the problems at the source rather than offsetting the harm done by the supply chain, by developing new products and processes, and sourcing renewable raw materials. Companies aims to be restorative, or put back more than it takes, by influencing others to become sustainable-”restorative through the power of influence”. Amul, Nestle and Mother Dairy have included restorative as a strategy to achieve sustainable development.

All the select companies, with the mother dairy as an exception, follow *closed loop system*. They have shown impressive effort in the area of product recycling and waste management. The select companies follow a *services model* and deliver value to the consumers as flow of services by providing them with the solution and by delivering them what is demanded by them. All the select companies are working closely with stakeholders to implement sustainability business model. However, because of rivalry and competition they are not involved in industry or firm level networking for sustainable business activities. They *treat nature as stakeholder* by making continuous effort on implementing sustainability activities like recycling of products, waste management, green environment practices etc.

Interfirm differences in environmental characteristics with respect to Dairy Industry

The results of the analysis indicates that statistically there is a significant difference in the medians, $X^2 (2, N = 18) = 6.369, p = .041$ with a mean rank of 13.42 (Mother Dairy), 9.25 (Amul) and 5.83 (Nestle). Thus we can conclude that as far as environmental characteristics are concerned all the three select companies under Dairy Sector are not contributing equally with Nestle contributing more followed by Amul and Mother Dairy. Therefore, inter-firm differences are there in Dairy sector under Environmental Characteristics.

SOCIAL CHARACTERISTICS

	Social characteristics	Mother Dairy	Amul	Nestle
Structural attributes	Stakeholders engagement skills; understanding stakeholders skills and expectations	Engaged with Milk producers, government	Engaged with milk producers, govt., consumers	Engaged with all stakeholders
	Educate stakeholders; 'relentless communication'	Not all stakeholders but Farmers / milk producers training	Not all stakeholders but Farmers / milk producers training	Farmers / milk producers, consumers, shareholders etc.
	Implement stakeholder consultation programme	Often	Often	Sometimes
Cultural attributes	Get 'buy-in' from internal and external stakeholders	Buy in from internal and some external stakeholders	Buy in from internal and some external stakeholders	Buy in from internal as well as external stakeholders
	Stakeholder approach	Rarely	sometimes	Often
	Sharing of resources among stakeholders to achieve sustainable outcomes, relationship building.	rarely	sometimes	often

Table 6: Social Characteristics

Interfirm differences in social characteristics with respect to Dairy Industry

The results of the analysis indicates that statistically there is a significant difference in the medians, $X^2 (2, N = 18) = 13.118, p = .001$ with a mean rank of 15.00 (Mother Dairy), 9.25 (Amul) and 4.25 (Nestle). Thus we can conclude that as far as Social characteristics are concerned all the three select companies under Dairy Sector are not contributing equally with Nestle contributing little higher followed by Amul and Mother Dairy respectively. Therefore, inter-firm differences are there in Dairy sector under Social Characteristics.

The select organizations work in close coordination with their stakeholders. *Mother Dairy and Amul* works in close coordination with farmers/ milk producers. Nestle has worked for milk producers by training them about good farming and veterinary practices, it also work in close coordination with shareholders. Nestle has been involved in community development programmes since the beginning of its operations in India.

Mother Dairy works towards improving the standards of the farmers by educating them about better farming techniques, hygienic practices and modern methods of dairy farming. At *Amul*, Farmers are trained to give the right feed to cattle, and are also given access to veterinary expertise which helped marginal farmers produce more and earn more. *Nestlé* undertakes training and has manuals detailing good farm practices for each district.

Mother Dairy and Amul works in close coordination with milk producers and farmers as they are the shareholders of the company. Their feedback plays an important role in framing company’s policy. *Nestle* conducts stakeholders convening’s regularly in order to get feedback and suggestion from stakeholders. Nestle, being a private company is also involved in stakeholders consultation programme at various levels.

In case of *Mother Dairy and Amul*, the companies integrate closely with some stakeholders, which are, milk producers/farmers and government but are not extensively integrated with the other stakeholders. At *Nestle*, Stakeholders, both internal and external are integral to the company’s business and include consumers, the workforce working at various locations across the country, and those associated across the supply chain. For *mother dairy and amul*, the focus of the business model remained milk producers so they prioritize shareholders expectations above other stakeholders. *Nestle* measures their performance on social, economic and ecological factors as they produce sustainability report based on these factors. So they try to have a stakeholders approach. However, as it’s a private organization, profit motive dominates.

All the select organizations try to share resources (people, time and money) with the stakeholders. Private organizations like *nestle*, initiatives are more as it’s a big organizations compared to *Mother Dairy and Amul*.

Mother Dairy and Amul have a strong relationship with producers, however, mother dairy lacks in maintaining good relationship with other stakeholders. *Nestle* relationship building initiatives includes regular and extensive stakeholder engagement for decades.

MULTIDIMENSIONAL AND HOLISTIC CHARACTERISTICS

	Multidimensional or holistic characteristics	Mother Dairy	Amul	Nestle
Structural attributes	Systems approach	Rarely	Sometimes	Often
	TBL approach to measure organizational performance	Does not use TBL Approach	Does not use TBL Approach	Uses TBL Approach
	Institutionalize sustainability in the business	Demand driven	Supply driven	Demand driven
Cultural	Demand-driven model	True	True	True

attributes	Medium to long-term focus	rarely	Sometimes	Often
	Reduction in consumption	Rarely	Sometimes	Often

Table 7: Multidimensional / Holistic Characteristics

Systems approach says the organization will be termed sustainable only when the whole system of which they are part is sustainable. To some extent all the select organization follow systems approach. There are, although, variations where one's system may be more sustainable than others. Like the organization which come up with Sustainability reports (Nestle) list down all the sustainability initiatives taken by them and they consciously do it also because they believe that it will increase their market image. The organizations like Mother Dairy, a government body, is not for profit organization but at the same time is not consciously involved in number of sustainable business initiatives. Amul has involved itself in sustainability activities, however, they are more towards social benefits and less towards environmental benefits.

Amul and Mother Dairy do not use *Triple Bottom Line approach* to measure organizational performance. Nestle, uses Triple Bottom line approach.

The select organizations *institutionalize sustainability in the business* through “relentless” communication, stakeholder education, leadership, champions, and align internal performance measures.

Except Amul, all the organizations follow *demand driven model*. Supply driven models such as AMUL; have to accept the produce of the farmers who are ultimately the owners of the enterprise. Although they take measures such as processing technology and advance practices to ensure quality in their product. They lag behind as compared to private demand driven models. However, for success, these models cannot ignore the market requirements.

Sustainability can only be achieved if the organizations have *medium to long – term focus*. If the focus is on short term financial gain then it would not be possible for the organizations to develop sustainability business model. All the select organizations focus on long term sustainability and not on short term financial gains.

The select organizations have done considerable effort to reduce the consumption. Nestle, being a private company, also have shown great interest in taking measures that lead to *reduction in consumption*.

Interfirm differences in Multidimensional/holistic characteristics with respect to Dairy Industry

The results of the analysis indicates that statistically there is not much difference in the medians, $X^2(2, N = 18) = 2.066, p = .356$ with a mean rank of 10.17 (Mother Dairy), 11.25 (Amul) and 7.08 (Nestle). Thus we can conclude that as far as Multidimensional / Holistic characteristics are concerned all the three select companies under Dairy Sector are contributing almost equally with Nestle contributing little higher followed by Mother Dairy and Amul. Therefore, interfirm differences are less in Dairy sector under Multidimensional / Holistic Characteristics.

COMMERCIAL / BUSINESS CHARACTERISTICS

	Commercial business characteristics	Mother Dairy	Amul	Nestle
Structural attributes	Marketing	fair	Excellent	Excellent
	Product innovation	Limited innovation	Considerable Innovation	Extensive innovation
	Ownership and control	Government run Business Model bureaucratic hurdles	Cooperative run Business Model	Private Business Model
	Marketing Position and Financial performance	Fair	Good	Excellent
Cultural attributes	Adoption of right technology and practices	Fair	Good	Excellent
	Overall Performance in terms of quantity, quality and cost	Fair	Excellent	Good

Table 8: Commercial / Business Characteristics

AMUL and Nestle show strong *marketing* performance, while Mother Dairy can be rated as fair as marketing performance of NDDDB's Mother Dairy is limited.

Product innovation is core to the strategy of select organizations. Mother Dairy has recently started introducing new products in market in order to compete with Amul and Nestle. Amul has introduced number of new products in market. Nestle invest large sums on research and development to bring out innovative products.

The private players run models are generally way ahead. Private models are more proactive and create niches and innovative products and develop the necessary technology.

In the case of government driven models of Mother Dairy and Safal, the ownership and control remains with the government, therefore, their performance remains dependent on government management and commitment which may vary. Professional management is very important for success of most models. The top management of AMUL is largely not professional and consists of elected representatives of farmers. However, strategic and operational management have been strictly professional so far. In private models: Nestle, the *ownership and control* remain is with the private company which report to their shareholders.

All the select organizations market leaders and have good *financial position in market* and are rated highly by professional external rating organizations.

Private players run models such as Nestle which is demand or market driven seem to do comparatively better in ensuring the *adoption of good technology and practices* by manufacturers/producers. For farmer or supply driven models such as AMUL make efforts but are often not able to do as well in ensuring adoption of right technology and practices by farmers. The adoption of right technology is not able to garner as much importance since there is inclination to accept the produce of the farmers who are ultimately the owners of the enterprise. However, for success, these models cannot ignore the market requirements. Mother Dairy not able to play much of a role here.

All the select organizations *performance in terms of quality, quantity and cost* is good. **Inter-firm differences in Commercial/Business characteristics with respect to Dairy Industry**

The results of the analysis indicates that statistically there is a significant difference in the medians, $X^2(2, N = 18) = 13.531, p = .001$ with a mean rank of 15.50 (Mother Dairy), 8.00 (Amul) and 5.00 (Nestle). Thus we can conclude that as far as Commercial / Business characteristics are concerned all the three select companies under Dairy Sector are not contributing equally with Nestle contributing higher followed by Amul and Mother Dairy respectively. Therefore, interfirm differences are more in Dairy sector under Multidimensional / Holistic Characteristics.

DEGREE OF CORRELATION AMONG VARIOUS CHARACTERISTICS

Correlations

		economic	environment	social	holistic	commercial
economic	Pearson Correlation	1	.262	.329	.438**	.037
	Sig. (2-tailed)		.123	.050	.008	.832
	N	36	36	36	36	36
environment	Pearson Correlation	.262	1	.233	.591**	.443**
	Sig. (2-tailed)	.123		.172	.000	.007
	N	36	36	36	36	36
social	Pearson Correlation	.329	.233	1	.266	.626**
	Sig. (2-tailed)	.050	.172		.117	.000
	N	36	36	36	36	36
holistic	Pearson Correlation	.438**	.591**	.266	1	.251

	Sig. (2-tailed)	.008	.000	.117		.140
	N	36	36	36	36	36
commercial	Pearson Correlation	.037	.443**	.626**	.251	1
	Sig. (2-tailed)	.832	.007	.000	.140	
	N	36	36	36	36	36

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9: Correlation among various characteristics

There is a high degree of correlation between commercial and social characteristics and commercial and environmental characteristics. The analysis of the correlation matrix indicates that few of the observed relationships were very strong. The strongest relationship was between commercial and social characteristics ($r=.626$) and commercial and environmental characteristics ($r= .443$) which indicates that the companies which are commercially successful are investing more on social and environmental impact reasons. The most successful commercially successful company in our case is Nestle. It is also pioneer on sustainability reporting and taking initiatives in sustainability activities. Thus, H_{03} is rejected, which shows, there is a high degree of correlation between commercial/ business characteristics and other sustainability characteristics especially with social and environmental characteristics.

Conclusion

Traditionally, Environmental considerations are very often viewed as barriers to profitability, as necessary evils, costs to be minimized or regulations with which to comply. Even if a company abandons the reactive approach to the environment, choosing to have a proactive attitude towards its challenges, these are rarely considered central to business strategy. However the present study indicates that this approach no longer remained core aspect of business strategy. Companies are changing and many have changed their approach towards environmental sustainability. Sustainability no longer remained compulsion or something to be done out of compliance. Companies are voluntarily doing and adopting approaches that not only help them not to pollute environment but also the measures that will make environment better place to live. This is not a burden to them as the organizations are aware of the fact that this will help them in long term. The select organizations in the present study have shown how they are using sustainability business practices and at the same time are very much focusing on their commercial objectives i.e., to earn profit. The select organizations (Mother Dairy, Amul, Nestle) are industry leaders. The annual growth rates of the organizations are quite impressive. Year-by-year the profit rates as well as market share of the select companies is rising as well as their contribution to sustainability activities is also increasing.

There are inter-firm differences in sustainability business activities of the select organizations. Amul is a co-operative body, Mother dairy is a wholly owned subsidiary of NDDB (a government body) and Nestle is a Multinational. Their objectives, mission and

objectives are totally different. The study discussed in detail the differences in the companies and the differences in sustainability characteristics..

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