SOCIO-ECO-EFFICIENCY SCORE FOR BUSINESS SUSTAINABILITY DEVELOPMENT AND EVALUATION

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Abstract: The word sustainability was introduced in the 1980s to represent the main driver for viable development and responsible consumption. Developments of sustainable products, processes and business models are now embedded as the basic principles of company business perspectives. Several Sustainable Development Indicators (SDIs) and tools provide essential and reliable information which assists companies to balance objectives and judge success or failure. The use of SDIs offers enhanced results with improved and economically sound performance; however, the definition of each sustainability tool remains indistinct. To rectify this, the sustainability model covering financial, environmental and social perspectives requires re-designation. In this study, a new sustainability model that expected for solving the present SDIs limitations was created and tested for the linkage between individual factors. After eliminating the interfering factors and combining the advantages of each fashionable sustainability tool, a Sustainability or Socio-Eco-Efficiency Score (SEES) was created to quantify a company's ability to survive in the modern marketing environment. The result shows that SEES score allows a company to monitor and benchmark its positioning and sustainability performance regarding financial, environmental and social perspectives. The company can then identify which perspective is failing and take the necessary steps to rectify the situation.

KEYWORDS: Socio-Eco-Efficiency Score, sustainability tools, performance indicators, sustainable

Introduction

The word sustainability was introduced in the 1980s to engage, equip and mobilise businesses in a viable manner (World Business Council for Sustainable Development, 2008; World Resources Institute and Big Room Inc, 2010). The 2005 World Summit on Social Development classified the goal of sustainable development into three main aspects as economic, environmental and social. Extensive discussion and use of the concept now recognises these three aspects like the 'three pillar categories' that enhance company products or service processing in a sustainable way (United Nations General Assembly, 2005; World Business Council for Sustainable Development, 2008). The leading businesses of the future will be those with products and services that address sustainable challenges according to the three pillar categories. Sustainability Index and Sustainability Reports are both popular tools which play important roles in business strategies and deal with changing business circumstances, providing essential and reliable information to balance objectives and judge success or failure (Harris, 2000; Porter & Kramer, 2006; Karnani, 2007;).

The disadvantages of modern sustainability tools were also discussed. First, compared to financial, social and environmental indicators, SDIs are a relatively new phenomenon with no linkage between each pillar in terms of sustainability (Organisation for Economic Co-operation and Development, 2001). Therefore, for some sustainability tools, businesses are unable to predict the results of their development objectives (Guabiroba *et al.,* 2014; Lukas & Welling, 2014; Lorenzo-Toja *et al.,* 2015;). Second, most current sustainability tools do not consider the end result of development (Casadesús & Karapetrovic, 2005; Terziovski & Guerrero, 2014; He *et al.,* 2015). Moreover, the worldwide perception of sustainability is hard to define, with each company having their own understanding and concept (Sachs, 2012).

Due to the limitations of present SDIs, there are several researchers who have tried to create sustainability indicators or related tools to measure business sustainability development which cover the three pillar categories. There are previous studies used Emergy Analysis (EmA), Eco-efficiency (Eco-Ef), and the International Organization for Standardization (ISO) for sustainability analysis. The advantages of EmA is that EmA has the ability to assess all resources, goods and services under a single unit of measurement (Williamson *et al.,* 2015). However, in energy analysis, the economic issue is absent. The evaluation of GHG impacts alone is not sufficient for a complete analysis (Sha *et al.,* 2015; Chen, *et al.,* 2016; Lei *et al.,* 2016; Liu *et al.,* 2016; Zhe *et al.,* 2016). Studies on using Eco-Ef indicators for sustainability analysis has shown that Eco-Ef conceptual framework is flexible enough to be widely and easily applied. However, the disadvantages of Eco-Ef is that the resonance between the economic, environmental and social principles is absent (Govindan *et al.,* 2014; Guabiroba *et al.,* 2014; Mahlberg & Luptacik, 2014; Park & Behera, 2014). The studies on using ISO for sustainability analysis shown that ISO-certified companies significantly outperform non-certified companies (Anon, 2005; Motarjemi & Mortimore, 2005; Bilalis, 2009;). ISO standards, with their structure and requirements, significantly help companies in terms of identification, safety, and assessment and control of products (Psomas & Kafetzopoulos, 2015). However, there are significant gaps in the literature on empirical studies which test the strength of the relationship between ISO certification and innovation performance (Casadesús & Karapetrovic, 2005; Naveh & Marcus, 2005). Other studies also draw similar conclusions to this hypothesis that ISO9000 certification increases the improvement of internal processes and reduces innovation (Casadesús & Karapetrovic, 2005; Terziovski & Guerrero, 2014).

In this study, a new sustainability model, the Socio-Eco-Efficiency-Score (SEES) that is expected for solving the present SDIs limitations was created. SEES is defined as the sustainable development indicator (SDI) score covering financial, environmental and social aspects. SEES allows companies the ability to benchmark their positioning in current market trends and provides the focus for business planning and working processes. Due to each Thai company defines the meaning and concept of business sustainability differently. Some define sustainability as financial performance growth together with a smooth operation, thereby enhancing new clients while maintaining existing customer satisfaction levels. Moreover, many Thai companies use sustainability tools to manage and operate their businesses, but sustainable development in Thailand remains unmeasurable. Therefore, Various Thai companies from several business sectors were selected to analyse and test the usability of the SEES model to provide meaningful conclusions on (1) company sustainability, (2) suggestions for improvement in each aspect and (3) a potential contribution to business planning.

Methodology

To create enhanced sustainability to solve the restrictions and limitations delivered by current tools, sustainable indicators and sustainability criteria were gathered from several fashionable sustainable tools and reports and studied for advantages and disadvantages. The indices from fashionable sustainable tools included the Dow Jones Sustainability Index (S&P Dow Jones Indices, 2015)(DJSI), Global Reporting Initiative (Global Reporting Initiative, 2011) (GRI), International Organisation for Standardisation (International Organization for Standardization, 2009, 2010, 2011) (ISO), Energy Analysis (Liu *et al.,* 2012) (EMA) and other sustainability development guidelines (Andreas Jørgensen, 2007; Shang Gao, 2009; Porter *et al.,* 2012; Alexander, 2012). These were grouped into three categories like financial, environmental and social. Ten indicators expected to cover all sustainability aspects were selected and used.

Baseline Criteria and Analytical Indices

Three main aspects as financial, environmental and social were considered for business

sustainability development. The key performance indicators of each aspect in the SEES model were created based on the GRI, ISO, DJSI and the World Business Council for Sustainable Development (WBCSD) guidelines for business sustainability development. In the SEES model, each sustainability index was classified into 10 levels from -5 to +5. Ranking at each level represented company performance benchmarking with their competitors and/or demonstrated the evolving role of their business in a sustainable society.

In the environmental aspect, the criteria for indices in SEES was based on the Thai Government's submission to Nationally Appropriate Mitigation Actions (United Nations Framework Convention on Climate Change, 2009) (NAMAs). Criteria for the financial aspect were based on Thai business performance and survival in the marketplace. Basic sustainability indices covering three aspects were as follows:

1. Return on Assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA measures management efficiency in generating revenue through its assets. A higher ROA indicates a greater ability to utilise the assets to generate earnings.

   ROA = Net Income / Total Assets

2. Return on Equity (ROE) indicates the rate of return as a percentage of shareholders' equity. ROE represents a company's profitability generated from the money invested by its shareholders.

   ROE = Net Income / Shareholders'Equity

3. Return on Fixed Assets (ROFA) indicates the company's efficiency at investing fixed assets to return profitable investments. ROFA is a new financial ratio created and used in the SEES model. The difference between ROFA, ROA and ROE is that ROFA is mainly concerned about the profitability of the invested fixed assets.

   ROFA= Net Income / Total Fixed Assets

4. Net Profit Margin (NPM) is the ratio of net profits to revenues and indicates the revenue remaining after all expenses have been deducted from the sales. It also represents the company's ability to managing the cost of goods sold, investments, operating expenses and taxes.

   Net Profit Margin = Net Profit / Revenue

5. Greenhouse Gas Emission per unit (GHGE) indicates the company's efficiency in terms of material consumption in their service and/ or production process at all stages of product life from cradle to grave. GHGE is used as an environmental indicator.

   GHG Emission per unit Reduction = current calendar year/baseline year

6. Electricity Energy consumption per unit (EEC) indicates the company's efficiency in terms of direct electrical energy consumption in its service and/or production process.

   Electricity Energy consumption per unit Reduction = current calendar year/baseline year

7. Environment and energy consumption are both issues of concern in Thailand. Fossil energy consumption per unit (FEC) was selected, as in Thailand fossil energy consumption is a national issue (Kochaphum *et al.,* 2013; Permpool *et al.,* 2016; Prasara & Gheewala, 2016). The rate of fossil energy consumption in Thailand has increased dramatically since 2012. Fossil energy consumption per unit indicates the company's efficiency in terms of the quantity of fossil energy consumed per unit. A high value encourages the company to switch from fossil energy to other energy sources thereby reducing fossil energy utilisation.

8. Net Promoter Score (NPS) indicates the loyalty level of the company's customer relationships. It represents customer satisfaction and significantly impacts on revenue growth.

9. Employee Engagement (EE) reflects the relationship between the employee and the company. It is also used as a tool to ensure that employees are committed to company goals and values and motivated to contribute towards organisational success. The concept of employee engagement measures how the company rewards and satisfies its employees in terms of job satisfaction, organisational commitment, job involvement and feelings of empowerment (AONHewitt, 2014).

10. Social Satisfaction Score (SSS) measures the satisfaction level of the inhabitants in the area in which the company operates.

Summary Tables of each index criteria related to Thailand's Department of Business Development (DBD), NAMAs, and the Thai market are shown in Table 1. The average NPS from Temkin Group and the Net Promoter Network for each industry are shown in Table 2.

Table 1: SEES index criteria summary.

	Level -5	Level 0	Level +5
Financial			
ROA	The ROA of the last in their business sector or 0 depending on which is higher	The average ROA of their business sector or 0 depending on which is higher	The ROA of the leading company in their business sector
ROE	The ROE of the last in their business sector or 0 depending on which is higher	The average ROE of their business sector or 0 depending on which is higher	The ROE of the leading company in their business sector
ROFA	The ROFA of the last in their business sector or 0 depending on which is higher	The average ROFA of their business sector or 0 depending on which is higher	The ROFA of the leading company in their business sector
Net Profit Margin	The Net Profit Margin of the last in their business sector or 0 depending on which is higher	The average Net Profit Margin of their business sector or 0 depending on which is higher	The Net Profit Margin of the leading company in their business sector
Environmental			
GHGE	0% or more	-7%	-20%
EEC	0% or more	-12.5%	-25%
FEC	0% or more	-12.5%	-25%
Social			
NPS	0	Mean of NPS in that business sector	Maximum of NPS in that business sector
EE	50%	59.22%	80%
SSS	Not available	Not available	Not available

Table 2. Average NPS for each industry.

Industry Sector	Score	Industry Sector	Score
Department/Specia lity store**	58	Cellular Phone Services**	30
Brokerage/Investments**	45	Insurance carriers*	30
Auto Insurance**	44	Retailers*	30
Home/Contents Insurance**	42	Software and Apps***	29.5
Tablet Computer***	40.5	Banking***	29
Auto dealers*	40	Major appliances*	29
Grocery Supermarkets**	39	Drug Stores/Pharmacies**	28
Online Entertainment**	39	Parcel delivery services*	26
Online Shopping**	39	Rental cars*	24
Smartphones**	38	Fast food chains*	23
Credit Cards**	37	Health Insurance**	18
Laptop Computers**	37	Wireless carriers**	18
Shipping Services**	35	Travel Websites**	16
Hotels***	34	Health plans*	14
Supermarkets*	33	Utilities*	12
Investment Firms*	32	Cable/Satellite TV Services***	3
Life Insurances**	31	Internet Service***	2
Airlines***	30.5		

Remarks: *The value from Tempin Group; ** The value from Net Promoter Network; ***The average value of Tempin Group and Net Promoter Network.

Conceptual Analytical Framework

Eight large companies from five different business sectors including one from oil and gas, one from food processing, one from tank terminal, one from the airline sector and four from banking were selected to test the usability of the SEES model. All financial data used was based on Thailand's Department of Business Development analysis. The environmental data was based on Thailand's production activity. The system boundary for financial aspects was set as annual company performance. The environmental and social data were presented in each company's annual report, sustainability report and the Thailand Quality Award Report. If important data was not available, then the company received -6 as the maximum penalty for lack of transparency in that index.

Counter Weight of the Indices

Realistically, each index in SEES does not have the same counterweight. The magnitude of each index was weighted through the analytic hierarchy process (AHP). However, for analysing the usability, constraints and limitations of the SEES model the counterweight of all indices was set equally.

Data Normalisation

To avoid redundancy and anomaly the obtained data of each company was normalised and categorised. The normalisation technique was used in each category. For the financial aspect, each company was categorised into three main groups depending on size as large, medium and small. Company sizing criteria followed the Department of Business Development. Once categorised, each company was segmented into different business categories depending on their market sector and core business values. In the environmental aspect, all data was translated into units of emission or consumption per product (per unit). For example, the core product of the tank terminal business is throughput delivered to storage tanks or customer plants. The unit of

GHG emission per unit of tank terminal business was expressed inCO_2eq emission per ton.

Regarding the social aspect, each company was segmented into different business categories depending on their market sector and business core values. Company social performance data were compared to the average value in their business sector. For example, airline companies were considered as air transportation services operating in Thailand. Regarding NPS, a company in the airline sector was compared with a company in air transportation. For employee engagement and social satisfaction, all companies were compared with the average value of corporate operation in Thailand.

Data Interpretation

All data were interpreted to different levels from-5 to +5 depending on individual company performance. Life Cycle Assessment (LCA) was used to analyse how the product or process affected life and the environment including GHG emission and energy consumption. Following this concept, each sustainability index

in SEES was classified into 10 levels from -5 to +5. The minus sign represented performance below standard and the positive sign indicated above average performance. The ranking in each level represented company performance benchmarking with their competitors and/or demonstrated the evolving role of their business in a sustainable society. The raw data gathered for each aspect were converted into a single unit less score through the key performance indicator (KPI) concept. The scoring range for each indicator depended on the average value of their business sector. After the scores in each aspect were determined, the total performance score was weighted and combined to give the final single unit less score or SEES that represented the business SDI.

Results and Discussion

After gathering all company data from DBD and the sustainability reports shown in Tables 3 and 4, the Sustainability Analysis for the eight selected companies are shown in Tables 5 and Table 6.

Table 3: SDIs Data of Companies A, B, and D.

	Company A				Company B				Company C			
	Min %	**Ave %**	**Max %**	**Actual %**	**Min %**	**Ave %**	**Max %**	**Actual %**	**Min %**	**Ave %**	**Max %**	**Actual %**
ROA	9.61	10.3	116.32	9.61	0	1.34	34	-8.85	0	6.54	23.24	5.72
ROE	13.51	15.4	49.78	13.51	0	4.07	46.93	-50.94	0	14.53	44.87	8.79
ROFA	0.18	0.26	0.75	0.30	0	0.02	11.51	-0.06	0	0.09	0.31	0.07
NPM	8.13	28.85	31.65	29.47	0	5.67	9.42	-6.35	0	22.09	54.05	33.79
GHGE				-8				-9				-3.01
EEC				-7				-7				-7.70
FEC				NP				NP				NP
NPS		NA		NA		30.5		-23		35	60	63
EE		59.22%	80%	54%		59.22%	80%	NP		59.22%	80%	91%
SS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81

Remarks: NP stands for not provided; NA stands for Not Available

Table 4: SDIs Data of Companies D, E, F, G and H.

| | Company D | | | | | | | Banking sector (Company) | | | |
| | | | | | | | | E | F | G | H |
	Min %	Ave %	Max %	Actual %	Min %	Ave %	Max %	Actual %	Actual %	Actual %	Actual %
ROA	3.16	6.12	15.96	8.67	0.54	1.51	2.11	1.3	1.87	2.11	1.12
ROE	4.16	13.25	199.97	17.88	6.25	15.55	21.74	16.3	19.61	21.74	7.37
ROFA	0.04	0.29	0.75	0.39	1.078	1.15	5.75	1.45	1.08	1.42	1.77
NPM	1.49	3.59	15.5	15.5	8.78	22.66	28.37	22.55	25.71	28.37	17.16
GHGE				0.2%				-4%	-13	-15	-1.29
EEC				2%				-4%	-10	-10	-2.26
FEC				NP				NP	NP	NP	NP
NPS		NA		NA		29		NA	NA	NA	NA
EE		59.22		NP		59.22		NP	62	NP	NP
SS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Remarks: NP stands for not provided; NA stands for Not Available

Table 5. SDI scores (SEES) for Companies A, B, C and D.

	Company A	Company B	Company C	Company D
Financial				
ROA	-5.00	-5.00	-0.63	1.29
ROE	-5.00	-5.00	-1.98	0.12
ROFA	0.36	-5.00	-1.02	1.09
Net profit margin	1.11	-5.00	1.83	5.00
Environmental				
GHG Emission per unit	0.39	0.61	-2.85	-5.00
Energy consumption per unit	-2.16	-2.26	-1.92	-5.00
Fossil energy consumption per unit	-6.00	-6.00	-6.00	-6.00
Social				
NPS	-6.00	-5.00	5.00	-6.00
Employee Engagement	-0.44	-6.00	5.00	-6.00
Social Satisfaction	-6.00	-6.00	5.00	-6.00
SEES (average score)	***-2.87***	***-4.46***	***0.24***	***-2.64***

Remark: *companiesnot providing data received-6 as themaximum penalty

Table 6. SDI scores (SEES) for Companies E, F, G and H.

	Company E	Company F	Company G	Company H
Financial				
ROA	-1.08	3.00	5.00	-2.01
ROE	0.61	3.28	5.00	-4.40
ROFA	0.32	-5.00	0.29	0.67
Net profit margin	-0.04	2.67	5.00	-1.98
Environmental				
GHG Emission per unit	-2.15	-5.00	2.96	-4.08
Energy consumption per unit	-3.37	-1.02	-0.99	-5.00
Fossil energy consumption per unit	-6.00	-6.00	-6.00	-6.00
Social				
NPS	-6.00	-6.00	-6.00	-6.00
Employee Engagement	-6.00	0.83	-6.00	-6.00
Social Satisfaction	-6.00	-6.00	-6.00	-6.00
SEES (average score)	***-2.97***	***-1.92***	***-0.67***	***-4.08***

Remark: *companiesnot providingdata received -6 as the maximum penalty

Oil and Gas Sector

Company A is from the oil and gas sector with the main core business as petroleum exploration and production. Over the past two years, Company A suffered from a global reduction in oil prices as a result of weaker economic activity and growth in the US. This impacted heavily on the oil and gas sector. Therefore, Company A revenue and net income were lower than expected and the stock price declined. Moreover, due to political issues in Thailand, Company A brand image was tainted by a lack of transparency arising from non-governmental organisations (NGOs). The company, however, acquired a high social satisfaction score from third-party surveying reports. When the transparency issue was raised, all negotiations regarding new projects were terminated.

In terms of sustainability, Company A was awarded A+ from GRI with a listing in the DJSI. The result from SEES contrasted with other fashionable sustainability tools. Company A scored -2.87 which was considered as no development in terms of sustainability and in the fully non-sustainable area. Company A also lagged behind its competitors regarding financial and environmental concerns. Company A reported many environmentally conscious schemes in its sustainability report, but operational results deteriorated.

Airline Section

Company B is from the airline sector and considered as the most productive airline company in Thailand. Its main core business is providing air transportation services. Over the past four years, Company B suffered from the global economic slowdown, intense competition from budget newcomers, climate change, the spread of disease and political and social instability in Thailand resulting in a net profit loss. Two years ago the company upgraded its fleet. This reduced CO_2 emissions but was an enormous burden on revenue and resulted in a net profit loss.

Company B was awarded a B grade from GRI with-4.46 and in the fully non-sustainable area. Company B fell behind their competitors in financial terms but gained a good score in environmental aspects. This indicated that the SEES model accurately represented the linkage between financial and environmental aspects. In 2014, Company B changed its traditional carriers to new eco-aircraft with less GHG emission and energy consumption. This resulted in reduced GHG emission per unit and energy

consumption per unit but reduced the financial performance.

Tank Terminal Sector

Company C operates in the tank terminal sector with the main duty of providing services to storage tanks, pipelines and jetties. The tank terminal business model signs long-term service contracts with customers. Thus, financial performance is stable and does not fluctuate due to world economic issues. Financial performance can improve through service agreements with new customers. Company C concentrated on reducing its operational costs to a minimum while maintaining maximum stakeholder satisfaction. The investment was mainly directed at energy efficiency improvement and corporate social responsibility (CSR). Over the past two years, Company C initiated no new projects but focused mainly on acquiring several ISO series. According to the SEES assessment, Company C was in a partially sustainable area.

Food Processing Sector

Company D's core business lines are livestock and aquaculture including chicken broilers, chicken layers, ducks and swine. A few years ago, Company D took over another large retail-based company and this was considered a big investment. However, the supply chain was enhanced by this strategy. Company D has its own livestock together with a vertically integrated business covering the feed for the animals, farms for breeding, farming and processing and retail food outlets for product distribution and sale. As a consequence, Company D has a monopoly on the nation's food processing business.

Company D was awarded a B from GRI and is preparing to be listed on the DJSI. It received a score of -2.64, considered as no development in terms of sustainability and was placed in the partially eco-efficiency area. Company D had a better financial ratio index, but a poor score in environmental aspects since its improved financial performance resulted in poor raw material consumption per unit and raised the greenhouse gas effect. SEES indicated that Company D's environmental concerns and other modern sustainability tools did not improve viable development.

Banking Sector

In this sector, four companies were analysed by the SEES model. First, Company E is a state enterprise with the main focus of responding to government policy. Over the past two years, Company E suffered from the political turmoil in Thailand and its brand image was tainted by a lack of transparency issues from NGOs resulting in people withdrawing their money. However, following government policy on energy consumption and green industry, Company E launched a campaign to reduce paper and electrical consumption which is the main raw material for its business. According to the SEES assessment, Company E was placed in a fully non-sustainable area.

Company F is considered the no.1 expert in consulting and crediting for SMEs in Thailand. Over the past two years, Company F turned the global economic slowdown crisis into opportunity by concentrating on market share, customer knowledge and brand awareness through both direct and indirect marketing. Environmental issues were backed by strong financial and social performance. The SEES assessment placed Company F in the partially eco-efficiency area.

According to DBD, Company G is a public company and a leader in the Thai banking sector. The political issues in Thailand and the global economic slowdown impacted badly with a tainted brand image arising from NGOs. As a consequence, Company G focused on recovering its brand image and regaining customer trust. Marketing and advertising were considered as the main expenditure. Company G also initiated a scheme to reduce costs by curtailing raw material, paper and electricity consumption. Cutting raw material utilisation reduced its carbon footprint. However, Company G did not provide any data related to social

aspects and scored-0.67. This was considered as non-sustainable development even though the company was outstanding in both financial and environmental aspects. According to the SEES assessment, Company G was placed in the partially eco-efficiency area.

Company H is a multinational corporation bank which does not own its own business premises in Thailand. The company leases buildings in central Bangkok and in the economic area. Company H gained financial benefits from its business plan. The SEES assessment rated Company H in a fully non-sustainable area. Figure 1 shows the positioning of each company ranked by SEES. Results indicate that in comparison to ordinary sustainability tools SEES makes sense for sustainability development with superior performance. SEES allows companies the ability to monitor and benchmark their positioning and sustainability performance regarding financial, environmental and social perspectives. Companies can then identify which perspective needs improvement. Moreover, the single unit less score from SEES provides companies with the ability to benchmark against others in different business sectors. Every company can compare its performance as normalised and converted through SEES. For example, a company with below average ROA and ROE can manage and maximise their fixed assets to save expenses.

In terms of model evaluation, the results satisfy expectations on solving the lack of linkage between each indicator in sustainability tools. Linkages in SEES were demonstrated for the oil and gas, airline and banking sectors. However, investing in new technologies to improve carbon footprints will reduce short-term financial performance.
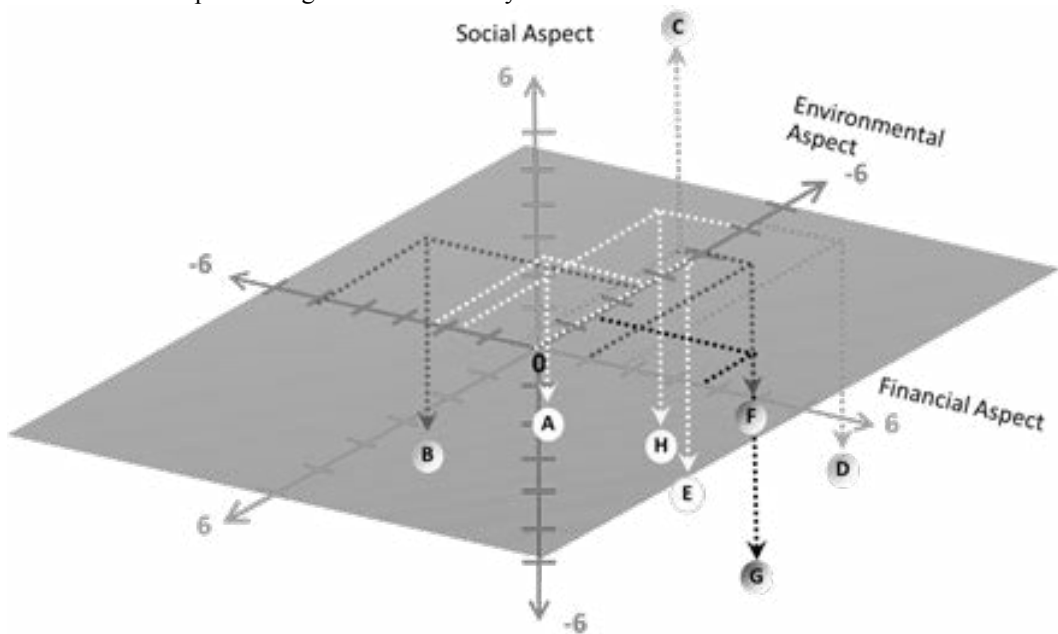

Figure 1: Sustainability development comparison based on SEES.

Conclusion

There are some limitations in this study require further analysis. These include lack of data and level of data accession which was considered a major obstruction. The evaluation of SEES from published reports alone is not sufficient for flawless analysis since most companies do not publish information that benefits their competitors. Data transparency was considered one of the main obstructions since all figures used were provided from company published

sources. A third party should be formed for data transparency validation. Moreover, a perfect interpretation of the social aspects, especially the criteria and definition for scoring the social satisfaction index, requires further analysis and there is currently no perfect solution for this indicator. The maximum penalty for failing to provide data should be increased to encourage companies to publish transparent details.

Acknowledgements

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