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DRIVING TOWARDS A 'LOW CARBON' ECONOMY THROUGH GREEN INTRAPRENEURSHIP IN THE CORPORATE SECTOR OF SRI LANKA

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Abstract
The ideologies and functionalities of green intrapreneurship in Sri Lanka, and contribution of such practices on corporate sustainability efforts are explored in the study by reviewing public limited companies. The set hypotheses are tested primarily through structural equation modeling, and the sustainability report score model is used to identify and measure the level of sustainability of the selected companies. The model fit is verified by the results, and in the process validated the hypotheses. The suggested model is proven through statistical parameters, and the results indicated a strong relationship between green culture and corporate sustainability. The overall consciousness on sustainability among public limited companies is lower moderate, and there is an identifiable gap between the understanding of top management about the concept of green intrapreneurship and the commitment for such practices within the organisations. This paper will contribute key knowledge base in the use of green intrapreneurship as a sustainable tool for the top management who are the decision makers in the public as well as corporate entities in Sri Lanka, and caters to the growing interest in a 'low carbon' economy.

Key Words: Green Culture, Green Product Life Cycle Management, Performance Base Pay, Public Limited Companies

1. Introduction

There is a rise in attentiveness to 'low carbon' economies as a means of reconciling economic development and environment (Gibbs & O'Neill, 2012). Consequently, entrepreneurial contribution to global business sustainability has now become an increasingly discussed topic among many academics (Wankel & Stoner, 2008). Some academics claim that such efforts are directly connected to

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the study of the way of life, while another set of academics view it as an obligation that high income earning countries should fulfill towards the developing nations. Furthermore, scholars' view this practice of transferring entrepreneurial efforts from the developing towards the developed world would bring about sustainable development in developing countries (Thompson & Scoones, 2009). In a world where capitalist economic structures have become natural than the nature itself Fisher (2009), this phenomena is said to have a telling effect on the boost of social entrepreneurship and green entrepreneurship concepts around the world. Figge, Hahn, Schaltegger, and Wagner (2002), believe this approach would reduce the toll on environmental damage and increase the quality of life in many countries. The 'low carbon' environmental goods and services (LCEGS) sector has continued to expanded at nearly 4 percent per annum with a global turnover exceeding US$5.4 trillion in 2012 (Demirel, Li, Rentocchini, & Tamvada, 2019).

Renowned scholars view the Nobel Prize winner Muhammad Yunus as an entrepreneur economist, an entrepreneur whose decisions are based on economic intentions, and his role as an entrepreneur economist was viewed as pivotal in sustainable development. Nonetheless, many researchers argue that stability in growth cannot be achieved until companies employ business systems and innovation strategies to produce green entrepreneurship (Luchs, Naylor, Irwin, & Raghunathan, 2010). The technical waves like clean tech boom are clear indications of the need to improve and the significance of green energy. Further, the modern era economists believe that the solution for sustainability and green environment is not brought about by the policy makers, on the contrary, by the market structure itself, and the reason for the increase in the level of ecopreneurs in the world. Moreover, significant shift in customer taste from synthetic to green buying quenches can be noticed during the past decade, which has led the fueling up on importance of ecopreneurship (Warren, 2007). According to the Harvard Business Review the concept of ecopreneurship is not just a tool to achieve sustainability, but is also a new business opportunity that has provided profitable markets for the business expansion (Quinn, 1971). In another research finding, (Elkington & Burke, 1989), the authors argued that the eco concept can be used as an alternative strategy to tap difficult markets. It is further reasoned that practices like tax reliefs and subsidiaries need to be managed to a certain extent in order to improve the efficiency of ecopreneurship. While this concept is largely seen as a forward movement, many academics also believe that the concept of green entrepreneurship is a worthy strategy to break the numbness in corporate innovation cycle, and creation of such practices would boost the companies' corporate public image. However, according to Ashok-an international organisation that promotes social entrepreneurship- ecopreneurship is triggered by the efforts created through social entrepreneurs, where the profit and the social concern is of high importance (Ashok & Yamagata, 2009).

Why Intrapreneurship*?*

The concept of intrapreneurship is defined by researchers as corporate entrepreneurship or internal corporate entrepreneurship (Burgelman, 1983;

Schollhammer, 1981), and is popular among organisations as it motivates the employees to accomplish targets beyond their current scope resulting in innovation within the organisation (Stevenson & Jarillo, 1990). According to Schumpeterian, the concepts of innovation and entrepreneurship have highlightable characteristics that distinguish intrapreneurs among other management concepts, namely, developing or improving new or existing products range; strategising the future of the business; improving and inventing new processors; and creating new competitive advantage in the market place. As stated by Zahra (1993), technological advancement has both improved the industrial growth and the dependency on innovation inside organisations, requiring additional layer of internal entrepreneurship also known as *intrapreneurship*. Recent industrial analysis has proved that high tech external environment has intensified the internal bureaucratic structure to identify and practice the concept of intrapreneurship more intensely (Guth & Ginsberg, 1990). While another research reflect that the companies' experience on high market growth may be a direct result of the success in corporate startup which is essentially intrapreneurship (Hobson & Morrison, 1983). Zahra (1991) further mentions that the hostile environment has urged organisations to consider more on corporate intrapreneurship. Indeed, the unfavourable environmental conditions with high ambiguousness and high level of competitive rivalry have increased the importance of the corporate intrapreneurship (Jeffrey G. Covin & Slevin, 1989). A Slovenian researcher Antoncic (2007) has found out that the increased industrial rivalry; higher demand for techno logical products; improvement in customer dynamic and increase non-favorable conditions for the business, have a positive impact on the internal demand for the intrapreneurship both in Slovenia and in USA.

Significance of Green Intrapreneurship

While many research efforts are targeted at identifying the ecopreneurship impact on sustainability, some researchers emphasised the related dependency of the same concept on intrapreneurship. Wüstenhagen (2008) and Ruzzier, Hisrich, and Antoncic (2006) argue that the concept of ecopreneurship largely depends on the success of intrapreneurship inside the organisation as the environment is dynamic and technology bound, and internal mechanisms to create corporate entrepreneurship would determine the sustainable impact or green innovation within the organisation . Due to the increased awareness on environmental facts and changes in the attitudes on *green guilt*, many customers are willing to acquire green products with a small incremental cost component. Companies have learnt to identify and act based on institutional and social norms so as to attain legitimacy, and for the growth of the firm and its long-term survival (Demirel et al., 2019). Moreover, management skills and systems would stimulate this process of increasing the creativity of green intrapreneurship (Antoncic & Hisrich, 2001; Antoncic & Hisrich, 2004). Likewise, innovation can be stimulated through commitment of top management for green intentions, employee awareness, and rewards systems in the organisations (Li-Ru, Fu-Jung,

Lee, & DeMayo, 2005). In today's context intrapreneurship has been identified as one of the main characteristics of emerging organisations, along with the concept of green management which is also considered to be of growing importance (Jeffrey G Covin & Slevin, 1991). Pinchot (1985), explains that the concept is proven its effectivity on small businesses, even under hostile environment. The theorisation and practical application of green intrapreneurship seem to have implications due to a dearth of literature in Sri Lanka on green intrapreneurship, thus the research is focused on fulfilling the following objectives. This is the first study in Sri Lanka that examines the nexus between green intrapreneurship and corporate sustainability towards mainstreaming green economy in the context of public limited companies, and mainly aims at analysing the impact of green intrapreneurship on corporate sustainability. It also intends to fill the following research gaps that have been identified, (a) Existence of green intrapreneurship in Sri Lanka; and (b) Determine the significance of green intrapreneurship in corporate sector in Sri Lanka. The study also expects to identify other areas of improvements for future research.

2. Literature Review

This section has looked into the composition of intrapreneurship and attempted to identify related concepts that runs parallel to the same concept. In addition, it highlights the literature available in Sri Lanka on the aforementioned subject matter. The evolution of sustainable management has gone through many phases starting from pre-Stockholm, Stockholm sustainability until the World Commission on Environment and Development (WCED); and post-WCED (Mebratu, 1998). However, these development theories focus on the environmental factors as one of their main stated goals (Capra, 1982). Majority of the organisations consider the techno-optimisation as the main strategy in achieving sustainability goals, and when those strategies are directly endowed with environmental goals, they invariably emphasise on green intrapreneurship. Further Lélé (1991), suggested that sustainability comprise of three main dimensions, specifically, techno centric, eco centric and social centric, where the eco centric being the concern over the environmental paradigms. In another similar research the concept of sustainability was characterised with two perspectives, namely, positivism sustainability and normative sustainability (Popa, Guillermin, & Dedeurwaerdere, 2015). In positivism sustainability the focus is placed on the body of science and the logical approach to everlasting development, while in the normative sustainability, certain ethical parameters were put in to consideration.

Green Intrapreneurship and Eco Sustainability Goals

Gliedt and Parker (2007), has observed that aligning sustainable goals with profit goals will enhance the ecopreneurship paving the way to increased goal congruence. The study further claims that restraining green aims to Nonprofit Organisations (NPOs) and social entities other than business for profit activities would reduce green entrepreneurship practices. Moreover, in this approach

organisations would look in to social aspects and ecological means of achieving the company objectives. Since the universal justice is involved, both social and environmental means are equally utilised in this approach (Osorio, Lobato, & Del Castillo, 2005). In all these approaches, sustainable development parameters are directly connected to ecological means. Therefore, green business is considered to be the main component in all those definitions. As per Antoncic and Hisrich (2001), the modern era companies try to fulfill their corporate objectives through corporate entrepreneurship also known as intrapreneurship. Another research has pointed out that sustainability is being able to survive long run, for which the resources needs to be best utilised without wastage. Consequently, the eco effectiveness is always distinguished in the concept (Elkington, 1998), and it can be concluded that sustainable goals will trigger green entrepreneurship and green entrepreneurship cannot be succeeded without green intrapreneurship.

Green Enabled Culture, Intrapreneurship and Corporate Sustainability

According to Duarte and Cruz Machado (2017), appropriately streamlined sustainable goals will pave the way to create a green culture inside an organisation. The study further argues that sustainable performance indicators and measures would improve the companies' dependency on ecopreneurship. In another research it was found that the sustainable business goals would stimulate the business environment to produce ecofriendly products, while innovation system would generate greener ideas (Peattie & Crane, 2005). Byron (2006) has argued that the governments' interventions on sustainable climate of the business environment have increased the eco business activities in organisations. Charter, Peattie, Ottman, and Polonsky (2002) have argued that sustainable products need to be reliable throughout its product life cycle by being energy efficient; nonpolluting; and easily repairable. In addition, the study claims that such characters need to be included in the product design stage through proper green enabled system. Overall, most of the researchers argue that green enabled culture is created through sustainable business goals. Moreover, Samarasinghe, Wickramasinghe, Gamage, and Abeysekera (2015), state that there is a growing interest among top managers, stakeholders and academics on green marketing strategies, and are increasingly adhering to a triple-bottom line performance evaluation where the organisational performance is evaluated based on economic prosperity, versus profits; environmental quality versus the planet; and social justice versus people. Further, improved environmental performance has been linked to greater financial performance, competitiveness, and innovation benefits (Kassinis & Vafeas, 2006; King & Lenox, 2002; Klassen & Whybark, 1999; Majumdar & Marcus, 2001). Nonetheless, Demirel and Parris (2015) state that commonly obtainable form of finance, i.e. bank loans, discriminate against green ventures.

Although many researchers have found the ability of green culture to stimulate green intrapreneurship within organisations, there remains clear gaps in literature on identifying the capability of green culture to stimulate corporate sustainable development.

Impact of Management Attitude on Intrapreneurship in Creating Corporate Sustainability

Harris and Crane (2006), ascertained that management attitude on the green products are mostly apathetic despite the high alert on green pressure. Another study observed that sustainable goals will trigger high level of green management practices inside the organisation creating a positive attitude on such practices. Many managers have utilised green practices especially in design and disassembly practices to assure less pollution. Further, the study highlights that these managers are willing to give priority to novel green ideas that arise among the team and facilitate individuals to implement these concepts (Ding, Wang, & Zou, 2016). Khastagir and Roy (2014) have observed that sustainable goals have a direct impact on the green innovation processes of the organisation. Moreover, the study claimed that this phenomena would increase task allocation and shared culture in the organisation. Furthermore, it highlights that, in order to prompt an innovation culture top management should reduce the hierarchy and delegate power to other levels so that decisions can be made. Above studies show that the attitude and commitment by top management to advance sustainable management is essential in creating a green culture; promoting green related innovation and allocation of power. Even though the top management attitude is mapped within intrapreneurship, a clear relationship between corporate sustainable development and positive attitude of managers has not been identified, nor developed.

Power Delegation and Resource Allocation on Green Intrapreneurship Practices

Trentin, Forza, and Perin (2015) have observed that resource allocation has a direct impact on the green management practices. The authors further explain that delegation of power will improve the understanding of customer perceptions on ecofriendly products. In addition, the study highlights that it would result in incremental innovation that would reduce the process errors, while promoting a culture of sharing. Another research was conducted on storm water management technologies in Africa, and has found that the community involvement, decision-making and idea generation is high when the projects are funded with financial and nonfinancial resources, and facilitated with proper infrastructure systems. Further, it claims that all these consequences are possible if the households who are involved in these project have the authority to make viable decisions (Baptiste, 2014). Roy and Khastagir (2016) have found that the innovation systems are a must have factor for green management practices, and that the delegation of decision making power need to be reinforced to do that.

According to the literature, delegation of power, resource allocation, and infrastructure arrangement of the company to improve the green management practices would have a positive impact on creating green intrapreneurship within the organisation.

The Mckinsey 7S Framework

Although the initial intention of this model was to identify the strategic implementation path of a company, it later evolved into identification of the sustainable development needs and environmental needs of a company, mainly, through utilisation of soft and hard approaches. The argument of this approach is that while identifying the resource base in view of an organisation, it is important to identify the soft factors that would lead to changes in the share value and necessary vision on green strategies, when developing related skills focused on the sustainable goals (Fowler & Hope, 2007). It was found that many American and Japanese companies have examined the successful combination of hard and soft components that have given companies competitive edge on sustainable development (Peters & Waterman, 1982). According to Boyle (2007), a company should be able to make the business process more flexible for the innovation to flourish. The author further explains that such practices would also allow a company to facilitate and adopt green innovation. Saeed and Wang (2013) have identified that the 7S framework is a more effective tool compared to other contemporary tools as Burke-Litwin. The authors also focus on similar areas, at times containing direct attributes like climate change. However, these models have proved less effective over the last few decades. This model is utilised by Saeed and Wang to accomplish sustainable goals. Further, according to this model any entrepreneur or corporate entrepreneur should be given proper strategic guidance, priorities, and human resources management with sufficient access to resources and power, to receive the maximum the benefits from McKinsey 7S framework.

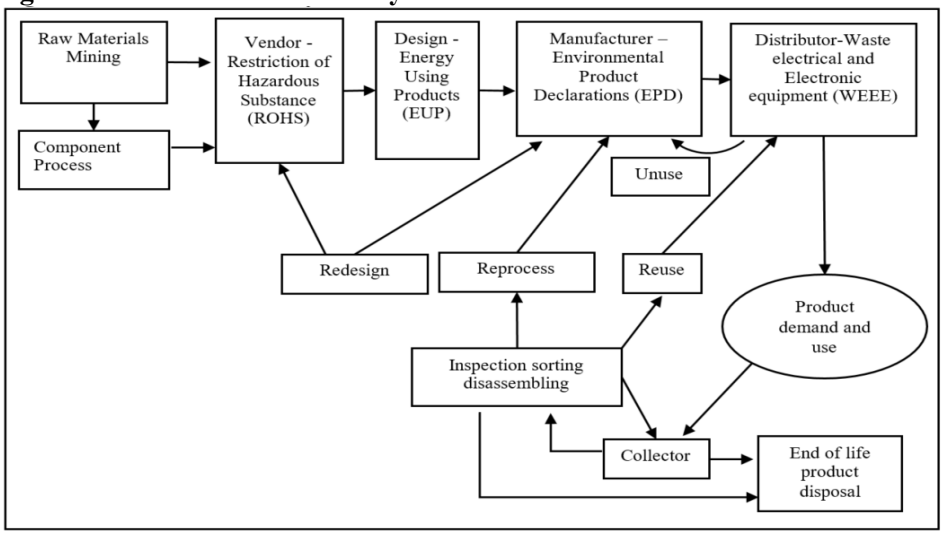
Green Supply Chain Management

Supply chain management practices can be considered as the procedure of inculcating supply chain practices of the organisation to the international political agenda with eco driven value addition (Jacoby, 2012). The concept is also viewed as total conversion and integration of value chain activities to a green inherited procedure (Wang & Gupta, 2011). According to the authors such green integrations would bring about better savings on natural resources, reduced wastage, decline in pollution, and increase in recycling efforts. Moreover, in the contemporary environment many organisations have a tendency of augmenting the efficiency of reverse logistics management cycle. In addition, the study describes the importance of insisting green supply chain management practices at the very beginning of the value chain and the due diligence that needs to be maintained throughout the cycle of product life.

Green Product Life Cycle Management

Wang and Gupta (2011) also have invented a model/framework that would enable green logistics and supply chain management. The concept is seen as a successful analysis of the product life cycle of the various companies and the product portfolio was also considered in this regard.

Figure 1: Green Product Life Cycle



Source: Wang and Gupta (2011)

Research done in industrial magazine in Canada has found that companies that have implemented such strategies would have reduced cost structures; improved value to operations; greater distribution of goods and services; and increased product and service differentiation (Industry Canada, 2013) Another research done in Canada identified that short and long term gains can be realised by using green supply chain management practices. Further, the study has evolved to observe the upstream and downstream activities, highlighting the necessity to convert those activities to greener means (Simpson & Samson, 2008). In addition, the study had been involved in an industrial analysis of the same concept. Dell has identified the importance of inter channel collaboration that would reduce the transport and storage cost. With HP reducing the size of the package, it had managed to slash the transport cost and to reduce the carbon foot print. Companies like Kodak and Coca Cola have largely improved their recycling efforts. All these initiatives are directly connected to green corporate entrepreneurship or green intrapreneurship (Jacoby, 2012).

All the strategies discussed above have a direct bearing on a company's overall strategy to enhance resource allocation and authorisation to improve green intrapreneurs in the organisation. It is to be noted that systematic management discipline and innovative culture would also stimulate such green strategies.

3. Methodology and Framework

This section presents the appropriate theoretical scope and lays the foundation on the discovery of a necessary platform and a framework on which this research should be carried out. Various research methods and tools will be reviewed before concluding on a selective research strategy and tools. Ontology of this study is a positivism based output where the contemporary practice of green

intrapreneurship is reviewed by the study. Therefore, the main research approach is quantitative base, and many researchers in the same field of studying entrepreneurship preferred this approach (Cukier, Trenholm, Carl, & Gekas, 2011; Phillips, Lee, Ghobadian, O'Regan, & James, 2015). Judgmental sampling was adopted as a non-random method since snow bowling and convenient sampling was said to have biases and tendency of leaning towards one clique, and the questions were a combination of semi-closed and closed-ended type. Further, the Likert type scales were utilised to identify the level of intrapreneurship activities, innovativeness and proactiveness of the organisation. In order to scan the environment of the organisation Miller and Friesen (1984) questionnaire method was utilised. The study also employed unstructured question (open ended) questions to get an in-depth understanding of the scope of the study, where the respondents are motivated and encouraged to tell their stories rather than answering questions (Smith, Eatough, Lyons, & Coyle, 2007).

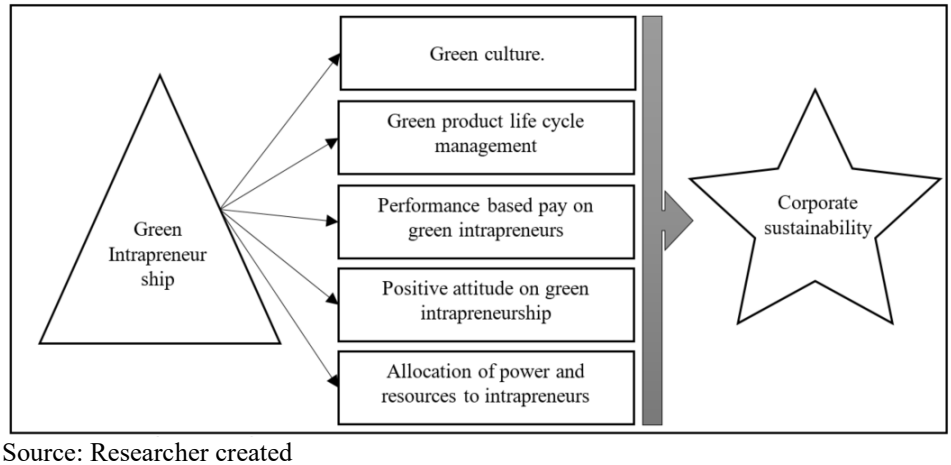
Sampling

Some researches argue that increasing sample size in a research does not always enhance the validity of the data set (Marshall, Cardon, Poddar, & Fontenot, 2013). However, Mayring (2007) argues that using a single case or a very small sample will reduce the validity of findings. Therefore, the number of respondents used in this case was 50 public limited companies and areas reviewed include, manufacturing, garments, telecommunication and banking public sector businesses. Main reason for the selection is the access to appropriate information.

Procedures

The study contained five main hypotheses that were tested through correlation and strucutural equation modelling, and the following conceptual framwork was used in the study.

Figure 2: Conceptual Framework of the Study (Green Sustainability Trigger Model)



Source: Researcher created

Hypotheses

H_1: There is a positive relationship between green culture and corporate sustainability.

H_2: There is a positive relationship between green product life cycle management and corporate sustainability.

H_3: There is a positive relationship between performance based pay on green intrapreneurs and corporate sustainability.

H_4: There is a positive relationship between positive attitude on green intrapreneurship and corporate sustainability.

H_5: There is a positive relationship between power and resources allocation to intrapreneurs and corporate sustainability.

Measurements

The study has employed factor analysis to estimate the impact of green intrapreneurship on corporate sustainability. The factor analyis was introdued by Louis L Thurstone (1931) and later developed by several scholers (Anderson & Rubin, 1956; Lawley, 1940; Rao, 1955; Louis Leon Thurstone, 1935, 1947). It is a statistical technique used to identify a relatively small number of underlying dimensions, or factors, which can be used to represent relationships among interrelated variables. The emphasis in factor analysis is the identification of underlying *factors* that might explain the dimensions associated with data variability (Bartholomew & Knott, 1999). At the same time strucural equation modeling was used to demonstrate the relationship between independent and dependent variables (Byrne, 2016). In addition, to support equation modelling, measurement method adopted by Hou, Al-Tabbaa, Chen, and Mamic (2014) was utilised. Five point likert scales consisted of options from strongly disagree to strongly agree opinions. The average coefficient was calculated after directing several questions to validate each variable. Moreover, in order to identify the corporate sustainability (dependent variable), Sustainable reporting scoring model was used. This model can be effectively used for public limited companies and the score varies from 0 to 4. Following Table 1 shows the components of that model to show the main conceptual framwork.

Table 1: Sustainability Reporting Score Model

Criteria	Score				
	0 (Lowest)	**1**	**2**	**3**	**4 (Higest)**
Experience	Do not include any disclosures or report in any year	NA	Report or disclosures in the current year	Report or disclosures in prior three or more years	Report or disclosures in prior years and current
Format	Do not have any format	NA	Sustainability disclosures of one or less pages containing derails of sustainability/ CSR activities carried out by the company	NA	Sustainability report must contain 1nore than five continuous pages and tide sustainability report" is not adequate
CEO statement	Do not include sustainability initiatives in the CEO statement	NA	NA	NA	Declaration of sustainability initiatives in the CEO statement in the annual report itself or within the sustainability report/disclosures
Stakeholder focus	Do not include any stakeholder group	Include one stakeholder group	Include two stakeholder groups	Include three stakeholder groups	include e four or more stakeholder groups
Sustainability aspect	Do not include any dimensions or sustainability	NA	Mention only one dimension or sustainability	Mention two dimensions of sustainability	Mention all dimensions or sustainability
Sustainability goals	Do not include sustainability goals for the current year or future years	NA	NA	NA	Presence of sustainability goals for the current year or future years
Sustainability goal achievement strategy	Do not include of any method or any means of achieving the listed goals	NA	NA	NA	Inclusion of any method or any means of achieving the listed goals
CRI guidance	Do not follow CRI guidelines or other guidelines	NA	NA	Follow other guidelines	Follow CRI guidelines
CRI application level	Do not have an application level	NA	CRI application level of C	CRI application level of B	CRI application level of A
External assurance	Do not seek external verification	NA	NA	NA	External verification of the sustain.lbility report by a third party

Source: Science Direct

4. Findings of the Study

Using the methodological procedure of Factor Analysis, Eigen values are analysed to aid in selecting the number of factors that have to be extracted as part of next step. The result of first factor are shown in Table 2 and factors from 2-6 are Shown in Table 3.

Table 2: The Results of Exploratory Factor Analysis of Factor 1 (Sustainable Development)

Environmental commitment of top management	Factor loading
Experience (D1)	0.72
Format (D2)	0.68
CEO Statement (D3)	0.73
Stakeholder Focus Sustainability aspect (D4)	0.75
Sustainability Goals (D5)	0.65
Sustainability Goals achievement strategy (D6)	0.79
GRI Application Level (D7)	0.80
Eigen value	**8.055**
Percent of variance	**80.60**

As depicted in the above table the Factor 1 remains to be highly influential with high Eigen value and the factor lading is significant, with the variance of the factors remaining to be high at 81 percent. However, the sustainable goals and format of the company supporting those goals remain to be less in an overall. In addition, the companies seem to adopt sustainable goal achievement strategy without understanding that those are sustainable goals. D_5 and D_6 have respectively 0.65 and 0.79 factor loading values. Nonetheless, the Global Reporting Initiative (GRI) Application Level remains to be a factor with high relevance with a value of 0.80.

Table 3. The Results of Exploratory Factor Analysis of Factor 2-6

Organisational efficiency outcome	Factor loading	Eigen value	percent of variance
Green culture			
Awareness about green management practices (gc_1)	0.76	1.213	21.45
Positive attitude on green management principles (gc_2)	0.61		
Motivation to achieve green enabled targets (gc_3)	0.70		
Green product life cycle management			
Number of green projects suggested (plm_1)	0.75	1.103	18.23
Existence of green products in portfolio (plm_2)	0.78		
Percentage of R&D spent on green products (pdm_3)	0.72		
Significance of recycling process (pdm_4)	0.69		
Performance based reward system			
Green KPIs Included (rs_1)	0.69	1.147	19.78
Inclusion of green management criterion on reward package (rs_2)	0.75		
Positive attitude on green intrapreneurship			
Tolerance Level on green product failure (pa_1)	0.69	1.168	20.07
Perception on the green intrapreneurship (pa_2)	0.70		
Level of trust placed on intrapreneurs in achieving sustainable goals (pa_3)	0.63		
Allocation of power & resources to intrapreneurs			
Level of decision-making power of intrapreneurs (ra_1)	0.67	1.103	17.54
Ability to involve in strategic decision making (ra_2)	0.72		
Easiness/Ability to fund self-driven green project (ra_3)	0.70		

According to the results presented in Table 3, all the factor loadings are in acceptable rang and the variance percentage is also significant in value. Table 4 shows the composite reliability and the factor loading validity of the selected factors.

Table 4: Results of Composite Reliability, AVE, and Factor Loading

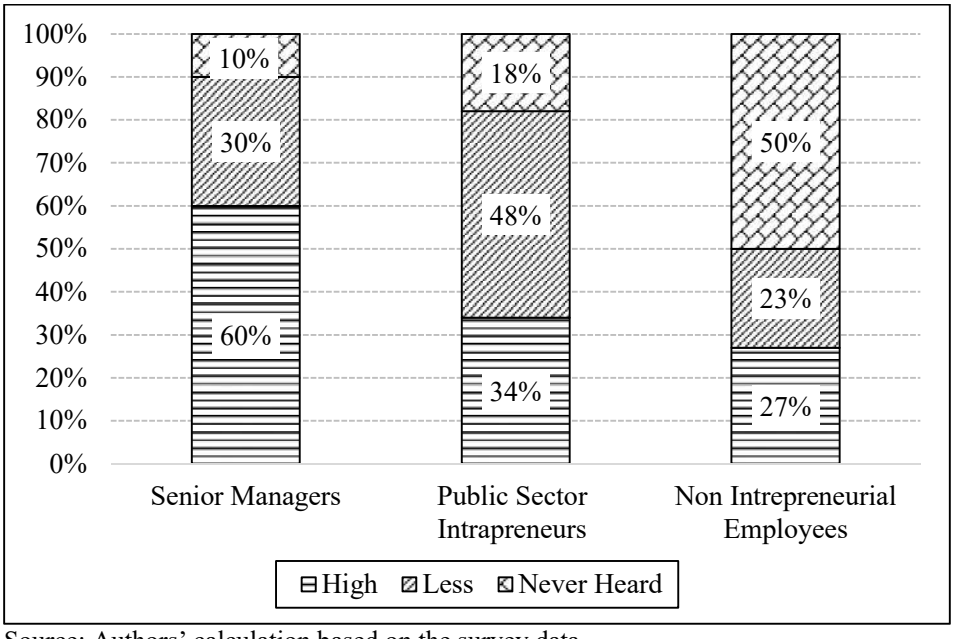
Items	Factor loading	Composite reliability	AVE
Green culture			
Awareness about green management practices (gc_1)	0.71	0.95	0.64
Positive attitude on green management principles (gc_2)	0.62		
Motivation to achieve green enabled targets (gc_3)	0.72		
Green product life cycle management			
Number of Green Projects suggested (plm_1)	0.71		
Existence of green products in portfolio (plm_2)	0.68	0.84	0.62
Percentage of R&D spent on green products (pdm_3)	0.70		
Significance of recycling process (pdm_4)	0.76		
Performance based reward system			
Green KPIs Included (rs_1)	0.74	0.83	0.60
Inclusion of Green management criterion on reward package (rs_2)	0.77		
Positive attitude on green intrapreneurship			
Tolerance Level on Green product failure (pa_1)	0.73		
Perception on the green intrapreneurship (pa_2)	0.69	0.79	0.58
Level of trust placed on intrapreneurs in achieving sustainable goals (pa_3)	0.77		
Allocation of power & resources to intrapreneurs			
Level of decision-making power of intrapreneurs (ra_1)	0.73	0.77	0.56
Ability to involve in strategic decision making (ra_2)	0.71		
Easiness/Ability to fund self-driven green project (ra_3)	0.67		

As shown in the above table, composite reliability value is high and Average Variance Extracted value (AVE) is also more than 0.5 in all the factors. Therefore, it can be concluded that the convergent validity of the construct is valid, and the implied Chi Square value is 223.456 and the normed fit index is reported 0.972 and the Comparative Fit Index of 0.983 is also supporting the fitness of the model. Moreover, the report also indicates the Root Mean Square Error of Approximation (RMSEA) value of 0.042 which is lower than the 0.05 margin. Thus, it can be concluded that the model fit is acceptable in this study.

5. Discussion

Intrapreneurs were identified by questioning top management who were chosen based on the decision making capacity and authority. The questionnaire on intrapreneurs to senior managers differed from top management, and were more targeted on identifying the attitude of intrapreneurs engaged in green marketing activities and to identify the motivational level of the organisation. The questions were focused in identifying the company's effort on maintaining the green product life cycle (Wang & Gupta, 2011). The sustainability embedded diagnostic model was also tested through questions to identify the green leniency of the organisation (Saeed & Wang, 2014). Although the top managers were not expected to know the complex and an in depth understanding of subject specific models, it was expected that they use the essence of those concepts if the systems are set in with proper green entrepreneurial activities. All the respondents gave the feedback, with majority of the respondents being males, with a few female respondents in the pool of sample. Study was not focused on scattering the sample test on demographic or geographic basis as the intrapreneurship concept was best built and maintained under the proper autocratic organisational structure, where most of the startups hesitate to allocate the authority to such practices (Burgelman, 1983). In analysing the content of the results, more qualitative descriptions were made by public limited company managers. Preponderance of the research work is concentrated in the Colombo district due to the availability of abundant of business cases with diverse business interactions and complexed business environments. Moreover, in-terms of adopting the new business concepts as a region, Colombo district remains on the top. The overall enthusiasm on responding on the topic was desirable. The reason for that was frequently explained as the inherent curiosity of the workers was considered special among top management. The Chief Operating Officer of a company importing mobile phones said, "*It is good to know new ways of doing business, plus it is interesting how this concept works out".* Another respondent stated, "*The subject area looks interesting, but how practical it is would be the question to post*". Hence, it can be observed that the interest on the topic is created mainly through potential future benefit on the management capability of the business. In another analysis it was found that the awareness level of the concepts like green intrapreneurship, green supply chain management varied according to the typology of the business organisation (Boons & Lüdeke-Freund, 2013). The following Figure 3 clearly demonstrates the scenario.

Figure 3. Awareness Level of the Concept of Green Intrapreneurship



Source: Authors' calculation based on the survey data.

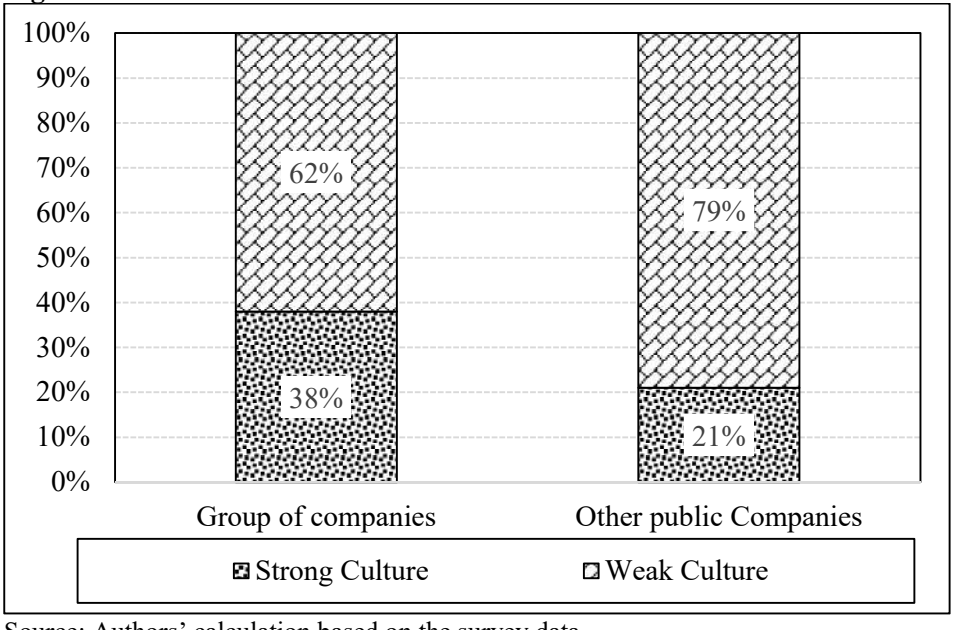
According to the data set it is identifiable that large private companies had the highest understanding on the subject matter as they are more competent and up-to-date on the business eco systems. Noticeably, their continuous professional development have direct impact on this. When questioned about the source of their knowledge most of them replied "*We got it covered at a management seminar/workshop*". In workshops industrial and academic experts would mostly conduct the sessions. The importance of the human resource development and continuous professional development is a prerequisite to implement green intrapreneurship practices. The study showed that the top management of public limited companies have a greater understanding and awareness of the concept. More than 34 percent of intrapreneurs in public sector were of high awareness about green intrapreneurship. Whereas the rest of the 64 percent of the intrapreneurs were either of less understanding or never heard of the concept before. The level of knowledge on the concept was related to their poor participation in strategic management training of employees, whereas the senior managers proactively participated in strategic management workshops. Another telling factor is that the nature of official conduct in the business typology. During a number of meetings and events held at corporate level most of the intrapreneurs were requested to suggest improvements to the ongoing process, and as a result they were compelled to self-study about the concept of green intrapreneurship and its practices. One intrapreneurs mentioned, "*I didn't know this concept but I got to know it while searching data to be presented at the meetings as on new* implementations modalities". Nonetheless, it can be concluded that awareness is

related to the nature of off the job training the company is delivering and their relatedness to the strategic management terminologies and the formalities of management structure.

Green Enabled Culture

Green enabled culture is a platform where ecofriendly goals and strategies are valued, shared, promoted and integrated to the usual business activities (Katsikeas, Leonidou, & Zeriti, 2016), and this research employed the same. Dean and McMullen (2007) and Esty and Winston (2009) note that investments into environmentally sustainable technologies are crucial to addressing environmental concerns and enabling the transition into a low carbon economy.

Figure 4: Green Enabled Culture



Source: Authors' calculation based on the survey data.

As depicted in the Figure 4, more than 30 percent of the private sector large organisations were evident with strong corporate green culture, one international bank senior manager said, "*We have Key Performance Indicator (KPI) set to initiate green project, be it paper being saved, energy, electricity, light being saved, or environmentally friendly Corporate Social Responsibility (CSR) projects and if we accomplish those there is a higher chance for promotions, foreign trainings, foreign tours and etc.…*"

In addition, corporate head in the industry of electrics and electronic appliances claimed, "*Our director board always welcome ecofriendly products, although most of our products contains bioplastic components that of less energy wastage, we see this as the future trend in the world*"

In both the cases green intrapreneurs were empowered to explore green projects as their top management attitude and support is high for such projects would lay the foundation to build a common value set among the employees of the corresponding entities.

Corporate Sustainable Goals

Most of the companies who do not witness all enabled green culture do not include sustainable goals in their missions and conduct. One ICT company's mission statement reads as, "*Coupling up services to easy access and fasten up the life with simple remedies of ICT products for both business and client*". The trend remains to be a constant in many export oriented businesses. Another company in tea export industry claims that there mission is to, "*Meeting the foreign client requirements through efficient management and maintaining quality product delivery*". Looking at these missions, albeit these companies are targeted at improvement of market share and increasing the productivity of the business, the mission statements were not directed at sustainable goals. This can be seen as a drawback in these type of businesses and main reason for not having the green enabled policies. Due to lack of interest on sustainable goals most of these companies are distant from green goals or green intrapreneurs' practices. Their main intention seems to be rotating around short term profit and long term survival.

One manager in a fabric manufacturing factory went on to say that, "*My company wants me to think new but it should always be highly cost effective, rather than innovative. In the sense they want me to innovate cost cutting*". This is a clear indication of goal overlapping and many companies' sustainable goals are highly motivated by short term objectives. However, companies with stated strategic goals have higher improvement in forming go green concepts, hence empowering the intrapreneurs to achieve sustainable goals. The above graph proves the same. According to the sustainable goals, there are is greater opportunities to include and practice the green intrapreneur concepts inside the organisations. Most of the banks, leading textile giants and the telecommunication service providers have enabled the green intrapreneurial activities. The manager of one of the electrical appliance company mentioned that "*I recommended LED bulbs 1 ½ years ago despite the poor reputation and high price at the time, and I took initiations to import and assemble the products took couple of months to pick up but at the moment it is our star product*". Another banking institution supervisor claimed that, "*Our Environmental Management system is the best in the country and we received the excellence awarded in the environmental footprint Management. Our Company always try to reduce carbon footprint by reducing paper usage electricity usage and less fuel usage. For this they are accept our ideas projects and allow us to implement those in our related fields. It's a huge benefit to the company, which will contribute to the positive PR, cost reduction and ultimately reduction of total cost long run".*

The same can be seen by the response of a manager of a leading ICT service provider in Sri Lanka. The study highlights the underling notion that most of the public limited companies are not ready for the concept of green intraprenuership. However, most of the companies have shown positive signs of change (Table 5).

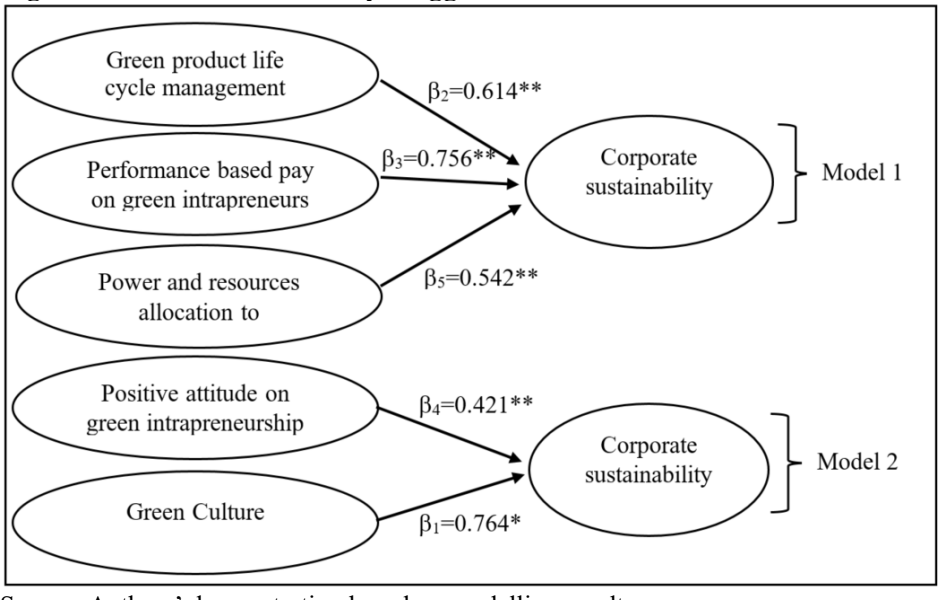
Table 5: Structural Equation Modelling Results

Paths	Estimate	p-value	Hypotheses
Green culture→ corporate sustainability	0.764	0.004	H1: supported
Green product life cycle management→ corporate sustainability	0.614	0.022	H2: supported
Performance based pay on green intrapreneurs→ corporate sustainability	0.756	0.001	H3: supported
Positive attitude on green intrapreneurship→ corporate sustainability	0.421	0.004	H4: supported
Power and resources allocation to intrapreneurs→ corporate sustainability	0.542	0.008	H5: supported

Source: Authors' calculation based on the survey data.

The hypotheses tests are positive on this occasion with statistically significant values in all the relationships identified in the study, and have been mapped with hypotheses that are proven comprehensively. The structural equation model results are summarised in Figure 5.

Figure 5: Green Sustainability Trigger Model for Sri Lanka



Source: Authors' demonstration based on modelling results.

Thus Above figures proves that the Model 1 and Model 2 in the structural equation model. The Model 1 includes factors that focuses on operations management. According to this analysis it is evidential that the Green Sustainability Trigger Model is a feasible model with statistical significance. Hence it can be argued that green intrapreneurship has a direct impact on the corporate sustainability in Sri Lanka.

6. Conclusion

The main objective of this study is to analyse the impact of green intrapreneurship on corporate sustainability and mainstreaming low carbon economy. Although green entrepreneurship has been studied, there still remains a dearth of research in Sri Lanka that have examined the nexus between green intrapreneurship and corporate sustainability in the context of public limited companies. Green intrapreneurship now plays a key role as drivers of change towards adoption of green business practices in Sri Lanka. It reflects the new paradigm of innovative and responsible business, and provides new opportunities for companies. Based on the empirical findings, it is evident that well established larger companies have adopted a green culture. Top management and senior managers are aware of the concept of green intrapreneurship, with large private companies having better understanding of the concept. It is noteworthy that there is a strong interest in further understanding and adopting the concept with the intention of contributing to a green economy. Albeit an understanding of green culture is observed, sustainable goals are not comprehensively looked at, and many public limited companies are far from attaining sustainable goals.

With Sri Lanka committing to Agenda 2030, engagement of private sector in the implementation of Sustainable Development Goals has now become part of official policies, where increased obligation of the private sector is expected. The Government of Sri Lanka commitment towards SDGs is also reflected through greater social and environmental friendly business strategies. Therefore, this creates an opportune time for public limited companies to expand their horizon of knowledge and become more socially responsible. Consequently, future studies could be further expanded to understand the underlying and limiting reasons for public limited companies to implement a green intrapreneurial culture.

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