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PROGRESSIONS IN CORPORATE SUSTAINABLE
DEVELOPMENT: KNOWLEDGE MANAGEMENT
CAPABILITIES IN PROCESS MANAGEMENT PRACTICES

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Abstract

At this present age of globalization, companies function as significant leads towards the environmental, economic and social security of societies. Thus, various companies are commencing numerous sustainable development measures to alleviate the undesirable social and environmental influences in their processes. Hence, various studies have been carried out on process management practices within companies because companies are alarmed and keen to overcome sustainability issues by altering their operation processes to dynamically participate in addressing the issues. Additionally, companies have realised that they ought to progressively transform into learning companies, to create and achieve desired sustainability results via new ways of thinking and actions. Hence, this study aims to identify the relationship of process management practices (process design, process improvement and process control) towards corporate sustainable development (environmental development, economic development and social development) also a moderating effect of knowledge management capabilities. This empirical research was conducted from the perspective of manufacturing companies with ISO 9001 certification in Malaysia. Results suggest that process design practices within such companies in Malaysia in general, has substantial relationship to their corporate sustainable development. These findings provided an assessment on the current standing of corporate sustainable development in Malaysia and pave the way for companies and policy makers to strategize to further enhance the current corporate sustainable development level.

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Keywords: Environmental development, economic development, social development, process design, process improvement, process control.



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1. Introduction

Nowadays, manufacturing companies are dealing with many serious responsibilities which considers the implication of Corporate Sustainable Development (CSD) and pushing for its execution at both the company and merchandise level. Overall, CSD is a notion specifically achieving significance and emphasizes a company as a self-governing organisation in the social and natural setting (Hahn & Figge, 2011). Therefore, much studies binding processes to sustainability has been established by numerous researchers, as well as Chee Tahir and Darton (2010) and Hall and Wagner (2012). Parallely, Hall and Wagner (2012) recognized, manufacturing companies that build their business model based on process management or an integrated tactic for solving complications have improved performance in their economic, social and environmental extents. Owing to this, there is an accumulative consciousness in companies that their processes are not exclusively sustainable for the future (Iasevoli & Massi, 2012). Equivalent to this notion, business process management practices is a concept that is attaining consideration, and various companies reflect on it as a manner for exhibiting their genuine obligation towards sustainability for their CSD. Therefore, there is a mounting number of ISO 9001 certified companies emerging over these past years.

1.1. Process Management Practices

On the whole, today's competitive forces has led companies to engage in high performance and competitive advantage attaining activities. Nevertheless, to effectively compete over time, companies must move away from their prior obsession of merchandises and commodities. Most companies have recognised that process management practices does function as a manner to help attain and endure competitive advantage with varied achievements. In general, process management can be described as the process design, process improvement and processes control (Jones & Linderman, 2014). Quality experts like Deming and Juran stated that process management is unanimously valuable to all companies. Moreover, based on Schmiedel et al. (2014), process management practices are vital for company revolution and transformation. Still, a study by Dave (2017) recognised that process management does not have an actual impact towards operations performance. Consequently, mixed results are available pertaining the influence of process management practices towards performance and sustainable methods. Generally, in this study, process management practices is inspected as an independent variable that leads to CSD.

1.1.1. Process Design

Process design is understood as, raising a new system of organized work accomplishments with the goal of addressing customer requirements and augmenting performance (Evans & Lindsay, 2005). There are fundamentally two stages: the higher stage which signifies the foundation of a specific process, and a lower stage that characterises routine operations. Additionally, business process design objectives are fundamentally of twofold: functional and performance. Functional aims postulate the deliverables while performance objectives meet the requirements of functional goals. The aims of a company, be it functional or performance, are only attained via effective configuration of functional and performance objectives inside the corporate process design of businesses (Padua & Jabbour, 2015). Yet, business process design does not only influence corporate performance but has an effect towards CSD in the long run (Aarnio,

2015). Also, the economic, environmental and social dimensions of CSD is vital to address the expansion of processes and to elude negotiating the necessity of forthcoming generations while addressing the needs of contemporary generation (Johannsen & Fill, 2017).

1.1.2. Process Improvement

To respond to various variations and endure in this complex business atmosphere, corporate companies are continually determined to progress and improve current business processes (Nadarajah & Kadir, 2014). The notion of Process Improvement (PI) is to document the best practice recognized for a process. Usually the improvements are accomplishments of methodical or constant development (Seethamraju & Marjanovic, 2009). Besides, based on (Bouranta et al., 2017) incessant improvement inside firms takes place through application of superior strategies, quality goals, audit outcomes, examination of data, corrective and preventive activities and management evaluation. Motivated by the vast improvements established, countless companies have undertaken process improvement approaches and identified that the utilization of process improvement procedures have led to substantial enhancements in operational extents (Bolsinger et al., 2015). Consequently, the aim of process improvement approaches is to set the required platform that ensures processes are working at its finest (Sallos et al., 2017).

1.1.3. Process Control

Process control is an established notion in operations management, of the three fundamentals, it is the utmost extensively researched. All processes have some intrinsic difference during the performance of duties and merchandise (Eyers & Potter, 2017). Consequently, companies put numerous controls in place to observe this variation. Process variation can have a substantial consequence on the consistency of merchandise quality and output, thus countless forms of controls are set in place (Gosling et al, 2014). According to Eyers and Potter (2017), Standard Operating Procedures (SOP) and procedures are utilised to homogenize how work is done in a company. Approaches and devices are applied to confirm that those SOPs are carried out and work is done steadily. So, process control is a vital feature of process management practices since once improving has been carried out, the process must be steady with only slight variation (Thomas et al., 2015). Therefore, companies highlight the organization of data, solidity, control, and endurance for sustainable development which are constant with the manufacturing practice of process control (Thomas et al., 2016).

1.2. Knowledge Management Capability

A growing quantity of companies have started transforming into more maintainable ones (Manfreda et al., 2015). Investments in sustainable observes are probable to raise both company effectiveness and operational superiority (Iasevoli & Massi, 2012; Schmid & Kern, 2014). To attain sustainability goals, Knowledge Management Capabilities (KMC) is viewed as vital (Ranjbarfard et al., 2013). There are numerous viewpoints to define KMC. One in particular is to see KMC as a methodical technique of producing, distributing and leveraging knowledge inside companies (Evangelista & Durst, 2015). This explains that KMC has a long-standing positioning and thus fits well with one of the fundamental expectations of sustainability and CSD, specifically, durability (Chow & Chen, 2012).

However, it is vital to quantify the influence of KMC grounded on existing process management practices in a company and subsequently define the returns which can be attained via suitable KMC exertions (Wang & Wang, 2012). But this method may both be time consuming and expensive since it needs countless test runs prior to the best knowledge competence being recognized and effective application is conducted (Evangelista & Durst, 2015). Parallel to mixed outcomes from past researches, this study refers to a past investigation by Lai et al. (2014) and employs KMC as the moderator of this study, due to the unpredictable nature of KMC towards CSD. Yet, grounded on previous studies, the nature of the moderator KMC is to positively affect and strengthen the relationship of process management practices towards CSD.

1.3. Corporate Sustainable Development

Largely CSD is agreed to be a comprehensive conception since it provides a more wholesome idea of normative matters connected to various functions of corporations within a community and towards the environment (Sharma & Ruud 2003). Nonetheless, the term is progressively being used in a business setting. While the term CSD has attained amplified attention over the years, at hand no common definition for the notion exist (Govindan et al., 2017). The overpowering matter of sustainability in company activities have over the last few years changed business objectives to cover larger expanses instead of narrow result expanses viewed as business forces previously. It has also caused broad corporate sustainability standards that applies across many disciplines of business deeds (Gopal et al., 2018). While the necessity for sustainable development at a business phase has been debated in previous literatures, the discussion is currently moving in the direction of how companies may employ strategies to put sustainable development to work via business processes excellence models (Siva et al., 2016). Presently, various researchers have debated that policies for incorporation of sustainable development into business processes should be established. This study defines CSD in terms of environmental, economic and social development based on their process management practices.

1.3.1. Environmental Development

Up to date, the awareness of manufacturing companies' regarding the worldwide environmental issues are growing (Martinez-Jurado & Moyano-Fuentes, 2014). Environmental development signifies the business's exertion to optimize their processes in a manner that the completed merchandises contributes minimum harm to nature, including the atmosphere, water and land. A basic of environmental development within the company is being practical within the boundaries of their environment by decreasing biological contamination and decreasing materials application within the company's environment protection trail (Heras-Saizarbitoria & Boiral, 2013). In this study, the structures of existing dimensions are recognized and environmental development is analysed from a comparatively extensive and crucial viewpoint. Some categorizations define environmental development, as a reactive to a proactive progression (Govindan et al., 2017). Generally, these actions are prominent to reduce the essential procurements of non-renewable assets, compounds, constituents also to reduce energy usage (Nguyen et al., 2018). Parallel to this view, this research targets to recognize various stages of environmental development existing within all ISO 9001 certified manufacturing businesses in Malaysia towards CSD.

1.3.2. Economic Development

Sustainability is a vital aspect and presence of all companies that has changed the current perspective of sustainable development. Thus, many previous studies on economic development has been conducted to highlight current social and environmental matters (Holden et al., 2017). Most academicians previously anticipated, the points for economic development are predominantly by the company's monetary income. Such as, Porter (1985) specified, economic development incorporates both financial development and the incomes of a company over a prolonged time. Paradoxically Holm et al. (2015) proposes, that the goals for economic development persist to be established in advancement and share market yields. So, contemporary academicians are identifying economic development inside a company to be grounded on means that are focused at economic accomplishments contrary to simply financial advantages (McGovern & Klenke, 2018). Therefore, the possible manner to achieve economic accomplishment or competitiveness over time is via value creation (Wolf & Seuring, 2010). Equivalent to this opinion, this current study aims to recognise the extent of economic development existing in all ISO 9001 certified manufacturing businesses in Malaysia, towards CSD.

1.3.3. Social Development

The growing number of studies worldwide in social and environment recording is evidence regarding the unceasing debate concerning the important role of corporate entities' in leading for sustainable development (Montalban-Domingo et al., 2018). CSD has overall become a topmost importance for manufacturing companies because of force from the public that makes it overbearing for companies to accept sustainability practices inside their business processes and policy designs (Goyal et al., 2015). The implementation of sustainability practices originated from the reaction of a shifting business setting and the glitches that happened due to these variations (Akenroye, 2013). So, companies now have two main duties, they are economic and social responsibilities (Aquilani et al., 2016). Therefore, manufacturing companies are heightening their business process management practices to meet the societal anticipations of moral behaviour (Hall & Wagner, 2012). Accordingly, companies that engrossed on their social development has enhanced cost-effectiveness and effectiveness approaches to resist and place themselves in a global marketplace (Ensslin et al., 2017). In this research, the emphasis is on Corporate Social Responsibility (CSR) while gaging social development via social justice and impartiality. Overall, the current research aims to recognize various stages of existing social development among all ISO 9001 certified manufacturing companies in Malaysia, being a part of CSD.

2. Problem Statement

At this age of globalization, to this end, various tactics, approaches, measures and also plans are being advanced throughout businesses to achieve CSD (Aras & Crowther, 2009). Thus, much initiatives are also taken by companies to disseminate quality schemes, performance management plans, and corporate excellence models which offers a cross-functional sight of the company for CSD (Iden, 2012). Likewise, amid ISO 9001 certified manufacturing companies in the contemporary biosphere, sustainability development initiatives are a vital component of their business strategy (Salwa et al., 2017). However, the

yet hindering issue in companies are to improve their processes and benefit the company, simultaneously edifying quality excellence ideals and addressing the needs of the public (Newman, 2011).

Furthermore, in the existing climate of growing global competition, no hesitation exist concerning the worth of knowledge and knowledge in cultivating CSD. It can be seen in learning companies that are continually growing their capabilities to generate and attain desired business effects by cultivating new means of discerning and predominant shared determinations. These companies inspire the formation of a learning organization by applying process management practices structures that spawn knowledge (Li et al., 2012). In this sense, many companies have accepted that knowledge management capabilities is a key resource for their competitiveness, and a resource that can be created and utilized to attain superior value and sustainable development (Meinlschmidt et al., 2016). Conversely, based on Al-Roubaie and Alvi (2014) only first world countries gains and provides respected contributions to CSD via KMC due to their reach to information approaches, latest technologies and plentiful assets. Emerging or underdeveloped countries instead, face difficulties to attain technologies and lack funds for investments in research and development. Consequently, some companies would not gain from the KMC of their company. Thus, this research aims to recognise the moderating effect of KMC towards process management practices and CSD.

3. Research Questions

This study emphasizes recognizing, also clarifying the connections of process management practices towards CSD. Also, the moderated relationship of KMC toward process management practices and CSD is explained. Accordingly, few research questions as follow are suggested in this study.

- Does process design implementation have a direct relationship towards CSD?
- Does process improvement implementation have a direct relationship towards CSD?
- Does process control implementation have a direct relationship towards CSD?
- Does KMC have a moderating effect on process management practices towards CSD?

4. Purpose of the Study

Looking at ISO 9001 certification, many academicians reason about the efficiency of this certification towards CSD (Hall & Wagner, 2012). This sight is acknowledged by Psomas et al. (2011), they stated that process management practices amongst ISO 9001 certified companies are supposed to be worth looking into, but it still is absent of empirical confirmations and supportive discoveries in companies to suggestively intensify gains. Likewise, based on Psomas et al. (2014), actual proof that ISO 9001 certification does lead to greater CSD in the manufacturing industry is lacking. Thus, this research aims to address this gap by detecting proofs that process management practices leads towards CSD (social development, environmental development and economic development) within manufacturing companies that have attained ISO 9001 certification at Malaysia.

5. Research Methods

A quantitative study method is utilized in this research. A close-ended questionnaire was utilized because it allows these questionnaires to be distributed across various firms. All variables under study are

analysed via a seven-point scale, that arrays from strongly disagree (1) to strongly agree (7) for the variables process design, process improvement and process control. Additionally, a five-point scale ranging from strongly disagree (1) to strongly agree (5) for the variable of KMC. On the other hand, for the variable CSD, a seven-point scale, with a range from a small extent (1) to a large extent (7) was utilized. The usage of Likert scale was utilized because it is easier to answer and it requires a shorter period to comprehend, compared to unstructured questions (Churchill, 1979). The questionnaire was pretested so that the questions in the questionnaire are understandable and reliable. Consequently, the information assembling stage started.

The assessment was carried out amongst all ISO 9001 certified manufacturing companies listed under the Federation of Malaysian Manufacturers (FMM) Directory which entails 996 certified companies (excluding 5 companies for pretesting). The unit of analysis of this study are human resource manager, operations manager, executives or other fitting officers in the respective companies. At the end of the 3 months specified time, a sum of 219 survey forms were attained that deciphers a response rate of 22 %. From the sum of survey feedback forms attained, 213 were retained because it was useful for further analysis. The other 6 questionnaires were discarded because they contained missing information of more than 50% of the survey items. The Smart PLS Version 3.0 investigation methods as recommended by Anderson and Gerbing (1988) is implemented to examine attained information.

6. Findings

Please replace this text with context of your paper. Firstly, to test for construct validity, the cross loadings of all particular loadings and cross loadings to evaluate in case of any issues associated with all item. The cutoff level for loadings of 0.5 and above is substantial (Hair et al., 2010). Intrinsically, in cases of items with loading values more than 0.5 on the factors, are considered noteworthy cross loadings. As seen in Table 01, none of the items were deleted because the cross loading for each item is above 0.5 and has significant crass loadings.

Next, to check for convergent reliability, the items specific to quantity a variable would cover and segment a great percentage of common variance. Based on Hair et al. (2017) recommended factor loadings, Composite Reliability (CR) and Average Variance Extracted (AVE) are pointers for evaluating convergence validity. Also, loadings notwithstanding any item under investigation surpassed Chin (2010) who suggested values of 0.6 or above. The composite reliability levels that describes all pointers for each variable indicates the latent construct which ranges from 0.886 to 0.900, it surpassed the suggested level of 0.7 (Hair et al., 2017). Additionally, the AVE value that depicts a general sum of the variance functions as pointers accounted by the latent constructs, are within the range of 0.532 and 0.642 this topped the minimum cutoff level of 0.5 (Hair et al., 2017). Table 01 below describes outcomes for convergent validity.

Table 01. Outcomes of Measurement Model

Model Construct	Items	Loadings	CR	AVE
Process Design	PD1	0.710	0.889	0.572
	PD2	0.743		
	PD3	0.693		
	PD4	0.735		

	PD5	0.835		
	PD6	0.810		
Process Improvement	PI1	0.708	0.886	0.566
	PI2	0.691		
	PI3	0.739		
	PI4	0.802		
	PI5	0.777		
	PI6	0.788		
Process Control	PC1	0.862	0.900	0.642
	PC2	0.802		
	PC3	0.801		
	PC4	0.772		
	PC5	0.766		
Knowledge Management Capabilities	KMC1	0.677	0.888	0.532
	KMC2	0.746		
	KMC3	0.643		
	KMC4	0.792		
	KMC5	0.782		
	KMC6	0.704		
	KMC7	0.753		
Environmental Development	END1	0.835	0.896	0.634
	END2	0.841		
	END3	0.795		
	END4	0.791		
	END5	0.712		
Economic Development	ECD1	0.624	0.875	0.586
	ECD2	0.780		
	ECD3	0.765		
	ECD4	0.846		
	ECD5	0.795		
Social Development	SCD1	0.798	0.890	0.622
	SCD2	0.786		
	SCD3	0.858		
	SCD4	0.881		
	SCD5	0.585		

Moving on, discriminant validity could be inspected by associating the squared correlations amongst variables and variance attained for a variable (Fornell & Larcker, 1981). As represented in Table 02 below, the squared correlations of all variables are lesser compared to the square root of the AVE of indicators determining that variable representative acceptable discriminant validity. All in all, the measurement model established satisfactory convergent validity and discriminant validity.

Table 02. Inter-construct correlation

Constructs	1	2	3	4	5	6	7
Economic Development	0.766						
Environmental Development	0.565						
Knowledge Management Capabilities	0.394						

Process Control	0.434	0.768				
Process Design	0.414	0.756	0.987			
Process Improvement	0.394	0.753	0.752	0.758		
Social Development	0.694					

The structural model specifies the underlying relations between variables, this is inclusive of approximations for the path coefficients, also the R² value that regulates the prediction power of our model. Altogether, the R² alongside the path coefficients specifies how sufficiently the information supports the hypothesized model (Chin, 1998). The R² value was 0.317 suggesting that this model has moderate levels of predictive accuracy. Process design ($\beta=4.431$, $p < 0.01$) designates that the corporate setting is suggestively linked and leads towards CSD. Table 04 displays the findings of the structural model based on the PLS output.

The findings of this investigation is parallel with a past study by Johannsen and Fill (2017) that process design in companies are developed to further incorporate the social and environmental concerns of a company and the environment in which they operate. Process improvement was identified to have an insignificant connection with CSD. It is constant with findings by Nadarajah and Kadir (2014) who identified that there is little actual work on the optimization of business processes improvement practices to achieve corporate objectives for their sustainable development in most companies. Lastly, process control was noted to have an insignificant relationship towards CSD. The findings are relate able with results attained by Thomas et al. (2015), they stated that process control requires the ensuring of longstanding steady processes at the face of a constantly altering constraints for the sustainable development of companies. This creates the need for a comprehensive and long term monitoring that most companies are unwilling to oblige.

Table 03. Summary of the structural model

Path	Description	Path Coefficient	T value	Supported
PD→CSD	Process Design → towards CSD	0.388	4.431**	YES
PI→CSD	Process Improvement → towards CSD	-0.180	0.492	NO
PC→CSD	Process Control → towards CSD	0.388	1.129	NO

Note: ** $p \leq 0.01$

7. Conclusion

This study of CSD in terms of process management practices has been commenced to achieve explicit goals. It includes expediting the description of process design, process improvement and process control in relation to CSD. This study identified that process design is a vital aspect that leads towards the CSD of ISO 9001 certified manufacturing companies in Malaysia. Grounded on findings of this research, companies in Malaysia should transform and heighten the implementation of process design within their operations. Also, companies need to pay closer attention to the skill requirements that are essential for the designing of new processes. Additionally, companies are required to work on preventing problems, rather than fixing them after they occur. Finally, companies ought to design quality into a product, rather than identifying defects after products are produced. That way companies stands a better chance at optimizing their reach for CSD.

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