AMBIDEXTROUS SUSTAINABILITY AND MANUFACTURING INDUSTRY PERFORMANCE: THE ROLE OF POTENTIAL NON-ECONOMIC BENEFITS AS MEDIATION PATHWAYS

Susanto F., Arafah W., Husin Z.

Abstract: Due to the tensions created between short term economic benefits with longer term nature of environmental and social benefits within sustainability management in organization, another convincing evidences need to be introduced as drivers to encourage managers in sustainability implementation. This paper aims to discuss the effect of implementing ambidextrous sustainability to organizational performance, through mediating role of organizational image, employee satisfaction, and sustainability performance as potential non-economic benefits obtained. Data were collected from web-based self administered survey in a quantitative approach and a cross-sectional setting. The main sample were chosen by purposive sampling method and consisted of 216 manufacturing organizations in Indonesia. SPSS 21.0 and LISREL 8.8 were utilized to analyze the data. The results showed that ambidextrous sustainability has a direct and positive significant effect on organizational image, employee satisfaction, and sustainability performance. Additionally, this research also found no significant direct relationship between ambidextrous sustainability and organizational performance. However, it was mediated by sustainability performance as the first pathway and altogether by employee satisfaction, organizational performance, and sustainability performance as the second pathway. This paper is one of the very few studies to empirically tested the influence of ambidextrous sustainability implementation in manufacturing organizations.

Key words: Ambidextrous sustainability, employee satisfaction, organizational image, organizational performance

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Introduction

Corporate sustainability management has been an important issue due to its function as a source of competitive advantage for organization itself (Kwarteng et al., 2016) and as a moral responsibility and accountability of the organization to the environment and society (NCSR, 2015). Higgins (2013) reported that aggressive growing of economy

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without responsible management of resources will posed numerous risks to the environment and quality of human life. Furthermore, it has been predicted that there may be an increasing amount of waste production to be approximately 68 million tonnes in year 2019 (Wahyuni, 2016) which may also be contributed from manufacturing industries, mainly from the packaging and industrial waste. Accordingly, the importance of corporate sustainability management needs to be given an utmost priority, specifically in developing country such as Indonesia. However, although considered as a crucial issue, the manager concerns on sustainability issue seem to lag behind the importance of sustainability itself (Kiron et al, 2013). This may be due to the tension created by the short term of economic benefits with the longer term nature of environmental and social benefits in which usually the managers prefer the former benefit as supported by McKinsey (2014). Venkatraman and Nayak (2015) also confirmed that economy, social, and environmental integration has been considered as an additional managerial burdens within the organization. The same study also added that Australian managers considered that there are no strategic advantages of sustainability implementation to their organization financial performance, therefore there has no use to pursue sustainability “beyond compliance”. Thus, there are urgent needs to introduce another potential non-economic benefits as strategic values in a comprehensive framework which may lead the managers to pursue corporate sustainability management, confidently, for example organizational image (Kwarteng et al, 2016; Branco and Rodrigues, 2006), employee satisfaction (Mory et al, 2016; Branco and Rodrigues, 2006) and sustainability performance such as social and quality, environmental, and innovation performance (Maletic et al, 2016).

Previously, Maletic et al. (2014) has introduced a promising model to explain the relationship between sustainability practices with organizational performance. In their report, Maletic et al. (2014) synthesized different dimensions of sustainability based on innovation management literature, called sustainability exploration, characterized by sustainability practices aimed to achieve sustainability efficiency through incremental improvements in processed and outputs, while sustainability exploration is more concerned with the sustainability innovation within the organization, for example acquiring new innovative technologies and building new competencies for sustainability related innovation. Basically, these two practices consist of stakeholder orientation, process management, product and services design, and learning orientation. Detailed explanation of these two different dimensions maybe found elsewhere on Maletic et al. (2014). When building this new concept, Maletic et al. (2014) elaborated that it is crucial to distinguish these two different dimensions due to each aspect importance with regards to quality management. However, we also argued that pursuing both practices simultaneously may also contributes to overall
organizational performance, namely *ambidextrous sustainability - the ability to balance between sustainability exploration and sustainability exploitation within the organization*. Our arguments were based on the previous research stated that pursuing organizational ambidexterity may have positive and significant impact on organizational performance, although it may creates tension between those two activities as demonstrated by Mardi et al. (2016), Jansen et al. (2006), Lavie et al. (2011). As soon as the organization has the ability to balance between those two activities, then it is arguably, the organization may have better organizational performance. Accordingly, this study aims to discuss the effect of implementing ambidextrous sustainability on organizational performance specifically for manufacturing organizations in Indonesia, and the mediating role of organizational image, employee satisfaction, and sustainability performance as potential non-economic benefits.

**Research Framework and Hypothesis Development**

Drawing upon the previous literatures, this study proposed nine hypothesis as shown in Figure 1 below as the research framework.

![Research Framework](image)

**Organizational image** is defined as an experience, impression, trust, feeling, and knowledge that embedded in an organization as a result from set of organization’s activities, products, or services provided by the organization (Arendt and Brettel, 2010). Luce et al. (2001) stated that whole level of CSR program within organization may directly contribute to the identification level of future employees, thus enhance organization attractiveness. Additionally, Branco and Rodrigues (2006) reported that a good CSR (*Corporate Social Responsibility*) implementation contributes to the
enhancement of organizational image, due to the communication with external stakeholders. Ambidextrous sustainability also involves stakeholder orientation as one of its dimensions. Furthermore, Roberts and Dowling (2002) has pointed out that organization with good organizational image may have a superior ability to defend their profits in the long terms. This also supported by Amores- Salvadó et al. (2014) who also concluded that organizational image management related to environmentally friendly image is crucial to obtain superior organizational performance, due to its mediation effect between green product innovation and organizational performance. On the contrary, Rose and Thomsen (2004) found out that organizational image does not have a significant impact on financial corporation performance. Nevertheless, there are only a very few studies have been dedicated to analyze the relationship empirically, mainly between ambidextrous sustainability and organizational image, thus the following hypothesis were developed:

H1a: Ambidextrous sustainability will positively influence organizational image
H2: Organizational image will positively influence sustainability performance
H5: Organizational image will positively influence organizational performance

Furthermore, Temminck et al. (2015) stated that employees strong perceptions on the environmentally friendly organization increase their commitments on green behaviour within the organization, which may lead to the increase of organization sustainability performance. Management process to be more efficient in the organization is one of the constructs in ambidextrous sustainability and Mory et al. (2016) reported that employee commitment to organization is increased if the CSR activities consider employee participation and have a high value of credibility. Hatane (2015) also found out that employee satisfaction leads to the betterment of organization financial performance. Accordingly, below hypothesis were proposed:

H1b: Ambidextrous sustainability will positively influence employee satisfaction
H4: Employee satisfaction will positively influence sustainability performance
H6: Employee satisfaction will positively influence organizational performance

Several studies have shown that pursuing organizational ambidexterity have a significant and positive relationship with the superior organizational performance (Mardi et al., 2016; Jansen et al., 2006). It is also found out that through sustainability practices, organizations have the opportunities to address sustainable issues while increasing innovation, improving efficiency, reducing cost, and aiming for better profitability (Koo et al., 2014). However, it is also debatable to argue that pursuing ambidextrous sustainability may not directly affect organizational (financial) performance, whereas through the mediation effect of sustainability performance (non-financial organizational performance such as social and quality performance, environmental performance, and innovation performance). Von Arx and Ziegler (2014) has also reported that there are relationship between social and environmental
Performance to the corporate financial performance. Another mediation effect of innovation performance to the relationship between corporate social responsibility with organizational performance also found out in Reverte et al (2016). To the author knowledge, there is currently no study empirically tested the relationship between ambidextrous sustainability to organizational and sustainability performance. However based on the previous studies, the following hypothesis were proposed:

H3: Ambidextrous sustainability will positively influence sustainability performance
H7: Ambidextrous sustainability will positively influence organizational performance
H8: Sustainability performance will positively influence organizational performance

Additionally, organizational image, employee satisfaction, and sustainability performance are treated as mediators in this research. Thus, another additional hypothesis may be proposed as follows:

H10: Organizational image, employee satisfaction, and sustainability performance mediate the relationship between ambidextrous sustainability and organizational performance

Research Methodology

This empirical research used a quantitative approach in a cross-sectional setting with the web-based self administered survey data obtained from 216 manufacturing organization across Indonesia, selected by purposive sampling method during the period June to August 2017. The questionnaire were in 6-point Likert scale ranging from “1-highly disagree to 6-highly agree”, consisted of total 39 statements. The criterias used to select the organization respondents are as follows (1) middle sized organization with minimum 20 employees/workers and the minimum organization’s age is 1 year. (2) Has a representative in LinkedIn social media with the minimum requirement is senior manager and voluntarily willing to fill in the questionnaire.

Operational definition to measure the research variables were adopted from several research, e.g. sustainability exploitation and sustainability exploration in ambidextrous sustainability were adapted from Maletic et al. (2014); social and quality performance, environmental performance, and innovation performance in sustainability performance and organizational (financial performance) were adapted from Kwarteng et al. (2016) and Maletic et al. (2014); organizational image and employee satisfaction were adapted from Barakat et al. (2016). Moreover, after the final data had been gathered, the statistical analysis were performed using SPSS 21.0 to analyze to descriptive characteristics and SEM (Structural Equation Modelling) using LISREL 8.8 was also conducted to evaluate the measurement model using CFA (Confirmatory Factor Analysis) approach, structural model, and hypothesis significance testing, including
mediation analysis. The demographic distribution were as follows: 56% non-food manufacturing organizations and 44% food manufacturing organizations; while based on the amount of employees, it was shown that 6.9% of the organizations had 20-99 employees. 13.4% organizations had 100-199 employees; 13.4% had 200-499 employees, 22.2% had 500-1000 employees, and the rest 44.0% employed more than 1000 employees. Most of the organizations in this research had been operated for more than 25 years (60.6%) while 20.4% had been operated for >10-25 years, 5.6% for around >5-10 years, and 13.4% for around >1-5 years. Furthermore, 100% respondents were considered in higher managerial levels, with 39.4% were general manager/head of division/head of business unit; 35.6% were senior managers; and 25.1% were board management level (C++, CEO, Country Director, or Deputy Director).

Results and Discussion

The result of validity reliability test were conducted using SPSS 21.0 and it showed that all the indicators and variables used within this study were reliable (with the Cronbach Alpha value > 0.60, ranging from 0.735 to 0.941) and valid (with the r-value or corrected item-total correlation > 0.361 for 30 samples used for validity test). However, when the measurement model of SEM were conducted, indicator SQP11 (related to employee turn over ratio level) and SQP12 (related to absenteism and injury rate) as parts of social and quality performance first order variable need to be excluded due to the low level of Standardized Loading Factor (<0.50). Finally, as shown in Table 1, all the GOFI indexes reflected good fitness (RMSEA is 0.078≤ 0.08; NFI 0.95≥0.90, NNFI 0.97≥0.90, CFI 0.97≥0.90; IFI 0.97≥0.90; RFI 0.95≥0.90) thus, it may be concluded that the data may be used for hypothesis significance testing. Furthermore, the result analysis found that there were 5 hypothesis supported while other 4 hypothesis were rejected in the study as showed in Table 1.
Table 1. Results of The Hypothesis Significance Testing

<table>
<thead>
<tr>
<th>No</th>
<th>Hypothesis</th>
<th>Path Coefficient</th>
<th>Std. Error</th>
<th>T-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁ₐ</td>
<td>Ambi.Sus → Org.Imag</td>
<td>0.93</td>
<td>0.17</td>
<td>9.42</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₁₆</td>
<td>Ambi.Sus → Emp.Sati</td>
<td>0.86</td>
<td>0.16</td>
<td>9.67</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₂</td>
<td>Org.Imag → Sus.Perf</td>
<td>-0.04</td>
<td>0.21</td>
<td>-0.17</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₃</td>
<td>Ambi.Sus → Sus.Perf</td>
<td>0.57</td>
<td>0.49</td>
<td>2.01</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₄</td>
<td>Emp.Sati → Sus.Perf</td>
<td>0.42</td>
<td>0.12</td>
<td>3.41</td>
<td>Accepted</td>
</tr>
<tr>
<td>H₅</td>
<td>Org.Imag → Org.Perf</td>
<td>0.13</td>
<td>0.28</td>
<td>0.48</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₆</td>
<td>Emp.Sati → Org.Perf</td>
<td>0.13</td>
<td>0.19</td>
<td>0.70</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₇</td>
<td>Ambi.Sus → Org.Perf</td>
<td>-0.27</td>
<td>0.70</td>
<td>-0.67</td>
<td>Rejected</td>
</tr>
<tr>
<td>H₈</td>
<td>Sus.Perf → Org.Perf</td>
<td>0.67</td>
<td>0.26</td>
<td>2.59</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

According to this study, it is found out that ambidextrous sustainability has a significant positive influence on the organizational image (H₁₆ accepted). This is inline with the previous study performed by Luce et al. (2001). Stakeholder orientation is one of the constructs in the ambidextrous sustainability, thus this may explained the positive relationship between ambidextrous sustainability and organizational image (Branco and Rodrigues, 2006). They suggested that communication of organization CSR activities to the stakeholders increases the organizational image as the external benefit. H₁₆ were also accepted. Sustainability management process is also a vital part of ambidextrous sustainability, which aims to be more efficient and innovative in business processes. Thus, this dimension may have contributed in the positive relationship between ambidextrous sustainability to employee satisfaction. As suggested by Mory et al. (2016), environmentally friendly organization and socially responsible may increase employee commitments toward the organization, leading to the betterment of employee satisfaction. Furthermore, H₃ were also accepted, concluding that there was a positive relationship between ambidextrous sustainability and sustainability performance. Therefore, this research supports the initial study performed by Maletic et al. (2016), stated that innovation performance mediates the relationship between sustainability exploitation and sustainability exploration with financial performance. However, this study enriched the former study by showing that pursuing ambidextrous sustainability not only enhance innovation performance, but also environmental and social quality performance. Employee satisfaction has also shown to positively influence sustainability performance (H₄ accepted). As Lamm et al. (2013) argued, it is easier to achieve organization’s vision and mission if the employee has a higher level of satisfaction towards the organization. This phenomenon may also applied in organization that engage with sustainability management as supported by Temminck et al (2015) and Ostroff (1992). The last hypothesis supported in this study was H₈. This result helps to reduce controversies occurred between these variables.
because it supported study performed by Wagner (2010) and Reverte et al. (2016) while does not support the research performed by Wagner et al. (2002). Almost 90% of the respondents within this study were private companies, therefore the organizational image in this study maybe used primarily for another objectives e.g for recruitment as suggested by Branco and Rodrigues (2006) (H2 rejected). Organizational image also did not have a positive effect on organizational performance (H3 rejected), Inglis et al. (2006) concluded that if the organizational image between different competitors are perceived similar by the consumers, then the organizational image will not act as a differentiator, hence it needs to be managed strategically. Employee satisfaction also did not show a positive effect on organizational performance. Although most papers (Hatane, 2015) found that employee satisfaction affects organizational performance, this research did not support the relationship made in H6. Instead, this research supported findings by Bernhardt et al. (2000) and Chi and Gursoy (2009). The latter suggested that the type of relationship between these two variables are indirect and mediated by other variables, e.g by customer satisfaction. Moreover, this study suggested that there was no direct relationship between ambidextrous sustainability with organizational performance (H7 rejected). This may be due to the indirect relationship between those two variables, hence the relationship may be mediated by other variables. There were two different mediation effects found in this study. First, the mediation effect of sustainability performance with the value 0.38 and second, the mediation effect of sustainability performance, organizational image, and employee satisfaction altogether with the value of 0.83 as shown by the multiplication results of the path coefficient.

Conclusion and Implications

While other research has tried the other pathway to convince managers by explaining the risks of climate change on organization’s supply chain (Pineda, 2016), this research has shown another beneficial pathways to also reach the same objective, which is to deliver an understanding of the benefits of corporate sustainability. This paper has empirically showed that by engaging with ambidextrous sustainability, organization may acquire other non-economic benefits e.g employee satisfaction and organizational image, which may lead to the enhancement of overall organizational performance, consists of sustainability performance and organizational financial performance as shown by the longer dominant pathway.

This paper has also contributes to strategic management literatures by attempting to develop an unity model called ambidextrous sustainability, based on the initial concept introduced by Maletic et al. (2014). This study is one of very few studies to empirically analyze the effect of ambidextrous sustainability implementation to the organizational performance, specifically in manufacturing industry in Indonesia as developing
country. This paper also may help to provide a scientific evidence for managers to appreciate the values of implementing sustainability. Moreover, pursuing sustainability in an ambidextrous manner may help organizations to build a unique capability which contributes as a source of competitive advantage in the long run. Future research may also extend the framework in different industry such as non-manufacturing or investigating the effect of ambidextrous sustainability in different age or size of organization. Furthermore, it is also interesting to investigate the effect of ambidextrous sustainability implementation in different business units (structural ambidexterity domain) or in individual employee (contextual ambidexterity domain).

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WSZECHSTRONNY ZRÓWNOWAŻONY ROZWÓJ I FUNKCJONOWANIE BRANŻY WYTVÓRCZEJ: ROLA POTENCJALNYCH KORZYŚCI POZAEKONOMICZNYCH, JAKO ŚCIEŻEK MEDIACJI

Streszczenie: w organizacji, należy wprowadzić inne przekonujące dowody jako czynniki zachęcające kierowników do wdrażania zrównoważonego rozwoju, Z powodu napięć powstałych między krótkoterminowymi korzyściami gospodarczymi a długoterminowym charakterem korzyści środowiskowych i społecznych w ramach zarządzania zrównoważonym rozwojem. Niniejszy artykuł ma na celu omówienie wpływu wdrożenia wszechstronnego zrównoważonego rozwoju na wydajność organizacji, poprzez mediację rolę wizerunku organizacyjnego, zadowolenia pracowników i wyników w zakresie zrównoważonego rozwoju jako potencjalnych korzyści pozakeonomicznych. Dane zebrano za pomocą autorskiej ankiety internetowej stosując podejście ilościowe i przekrojowe. Głowną próbę wybrano metodą celową i składała się z 216 przedsiębiorstw produkcyjnych w Indonezji. Do analizy danych wykorzystano oprogramowanie SPSS 21.0 i LISREL 8.8.
Wyniki pokazały, że wszechstronny zrównoważony rozwój ma bezpośredni i pozytywny wpływ na wizerunek organizacji, zadowolenie pracowników i wydajność w zakresie zrównoważonego rozwoju. Ponadto, badania te nie wykazały również istotnego bezpośredniego związku pomiędzy wszechstronnym zrównoważonym rozwijem i wydajnością organizacji. Jednak za główną rolę w działaniach na rzecz zrównoważonego rozwoju uznano satysfakcję pracowników, wydajność organizacyjną i wydajność w zakresie zrównoważonego rozwoju. Niniejszy artykuł jest jednym z nielicznych badań, które empirycznie przetestowały wpływ wdrożenia wszechstronnego zrównoważonego rozwoju w organizacjach produkcyjnych.

Słowa kluczowe: wszechstronny zrównoważony rozwój, zadowolenie pracowników, wizerunek organizacji, wydajność organizacyjna.

無可爭議的可持續性和製造業表現:潛在的非經濟利益作為調解途徑的作用

摘要:由於短期經濟利益與組織可持續發展管理中長期的環境和社會效益之間的緊張關係，需要引入另一個令人信服的證據來推動管理者實施可持續發展。本文旨在通過調節組織績效、員工滿意度和可持續發展績效作為潛在的非經濟利益來討論實施雙元可持續性對組織績效的影響。數據是從基於網絡的自我管理調查中採用定量方法和橫斷面設置收集的。主要樣本是通過有針對性的抽樣方法選出的，由印度尼西亞的216個製造組織組成。SPSS21.0和LISREL8.8被用來分析數據。結果顯示，雙元可持續性對組織形象、員工滿意度和可持續發展績效具有直接和積極的顯著影響。此外，這項研究還發現雙手可持續性與組織績效之間沒有顯著的直接關係。然而，可持續發展績效作為第一條途徑，以員工滿意度、組織績效和可持續發展績效作為第二條途徑。本文是為數不多的研究實證檢驗在生產組織中實施雙元可持續性影響的研究之一。

關鍵詞:雙元可持續性，員工滿意度，組織形象，組織績效，可持續性表現，雙元性