Green capabilities and procurement practices: paving the way for environmental sustainability

Capacidades ecológicas e práticas de aquisição: preparando o caminho para a sustentabilidade ambiental

Capacidades y prácticas de contratación ecológicas: allanar el camino hacia la sostenibilidad medioambiental

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ABSTRACT
The significance of sustainability awareness in society has captured the attention of both scholars and professionals. The pursuit of environmental sustainability has transitioned from an aspiration to an urgent matter. Understanding the interplay between green capabilities and green procurement practices has become key to improving performance. This study investigated the nexus between green capabilities and the adoption of green procurement practices to improve their collective impact on environmental sustainability. Green capabilities and green purchasing practices were theorized. A conceptual framework was developed to address the sustainability problems in the supply chain. Quantitative research with a structured questionnaire was used to collect data from 203 respondents. The unity of analysis was the supply chain professionals working in fast moving markets in Oman. Validity and reliability of data was determined. A structural equation modelling was applied to analyse the data. The results show that the incorporation of green capabilities into green purchasing practices can lead to environmental sustainability. These findings provide supply chain managers with insights into implementing environmentally friendly practices within their respective entities. The government of Oman as a major purchaser of goods and services can lead by example by
incorporating green procurement principles into its own procurement processes. Thus, the government can stimulate demand for sustainable goods and encourage private sector adoption of green practices.

Keywords: sustainability, green capabilities, green procurement practices, environment, supply chain.

RESUMO
O significado da consciência de sustentabilidade na sociedade tem atraído a atenção de acadêmicos e profissionais. A busca da sustentabilidade ambiental passou de uma aspiração para uma questão urgente. Compreender a interação entre os recursos ecológicos e as práticas de aquisição ecológica tornou-se fundamental para melhorar o desempenho. Este estudo investigou a relação entre as capacidades ecológicas e a adoção de práticas de contratação ecológicas para melhorar o seu impacto coletivo na sustentabilidade ambiental. Capacidades ecológicas e práticas de compras ecológicas foram teorizadas. Foi desenvolvido um quadro conceptual para abordar os problemas de sustentabilidade na cadeia de abastecimento. A investigação quantitativa com um questionário estruturado foi utilizada para recolher dados de 203 inquiridos. A unidade de análise eram os profissionais da cadeia de suprimentos que trabalhavam em mercados em rápida evolução em Omã. A validade e a confiabilidade dos dados foram determinadas. Uma modelagem de equação estrutural foi aplicada para analisar os dados. Os resultados mostram que a incorporação de recursos ecológicos em práticas de aquisição ecológicas pode levar à sustentabilidade ambiental. Esses resultados proporcionam aos gerentes da cadeia de fornecimento conhecimentos sobre a implementação de práticas favoráveis ao meio ambiente em suas respectivas entidades. O Governo de Omã, como principal adquirente de bens e serviços, pode dar o exemplo, incorporando principípios ecológicos de contratação pública nos seus próprios processos de contratação. Assim, o governo pode estimular a demanda por bens sustentáveis e incentivar a adoção de práticas ecológicas pelo setor privado.

Palavras-chave: sustentabilidade, capacidades verdes, práticas de aquisição verdes, meio ambiente, cadeia de suprimentos.

RESUMEN
La importancia de la conciencia de la sostenibilidad en la sociedad ha captado la atención tanto de académicos como de profesionales. La búsqueda de la sostenibilidad ambiental ha pasado de ser una aspiración a una cuestión urgente. La comprensión de la interacción entre las capacidades verdes y las prácticas de contratación ecológica se ha convertido en clave para mejorar el rendimiento. Este estudio investigó el nexo entre las capacidades verdes y la adopción de prácticas de adquisición verde para mejorar su impacto colectivo en la sostenibilidad ambiental. Se teorizaron las capacidades verdes y las prácticas de compra verdes. Se elaboró un marco conceptual para abordar los problemas de sostenibilidad en la cadena de suministro. Se utilizó la investigación cuantitativa con un cuestionario estructurado para recolectar datos de 203 encuestados. La unidad de análisis fueron los profesionales de la cadena de suministro que trabajan en mercados de rápido movimiento en Omán. Se determinó la validez y confiabilidad de los datos. Se aplicó un modelo de ecuaciones estructurales para analizar los datos. Los resultados muestran que la incorporación de capacidades verdes en las prácticas de compra verde puede conducir a la sostenibilidad ambiental. Estos hallazgos proporcionan a los gerentes de la cadena de suministro información sobre la implementación de prácticas respetuosas con el medio ambiente.
ambiente dentro de sus respectivas entidades. El gobierno de Omán, como principal comprador de bienes y servicios, puede predicar con el ejemplo incorporando principios de contratación ecológica en sus propios procesos de contratación. Por lo tanto, el gobierno puede estimular la demanda de bienes sostenibles y alentar la adopción de prácticas verdes por parte del sector privado.

**Palabras clave:** sostenibilidad, capacidades verdes, prácticas de compras verdes, medio ambiente, cadena de suministro.

**1 INTRODUCTION**

Due to globalization and industrialization, environmental management has emerged as a concern for most companies. Awareness related to green environmental issues has emerged as a priority, thus capturing the attention of stakeholders (Wu, Liao, Tseng & Chiu, 2015). Today, society has confronted environmental challenges that pose a threat to the long-term sustainability of life on Earth (Hariram, Mekha, Suganthan & Sudhakar, 2023). The current increase in greenhouse gas emissions results in a temperature rise of 5 °C (Mikhaylov, Moiseev, Aleshin & Burkhardt, 2020). The role of environmental sustainability is crucial in fostering responsible and balanced practices to ensure the well-being of the planet and its inhabitants (Henderson & Loreau, 2023). It involves adopting measures that promote the conservation of natural resources, mitigate environmental degradation, and address the impacts of human activities on ecosystems. The role of environmental sustainability is integral to creating a resilient and thriving planet for current and future generations.

The cultivation of green capabilities within an organization reinforces its commitment to green procurement practices. Green capabilities focus on internal capacities and competencies that enable a company to integrate environmental considerations into its core business functions (Dzhengiz & Niesten, 2020). The incorporation of green capabilities within procurement practices enhances the overall environmental performance of a company (Khan, Yu & Farooq, 2023). Thus, the relationship between green procurement practices and green capabilities is a crucial aspect of sustainable business operations (Rane & Thakker, 2020). David *et al.* (2008) posited that firms need a range of capabilities to effectively engage with their supply base. According to Dosi *et al.* (2000), organizational capabilities empower firms to address organizational challenges in a manner specific to the firm. Thus, these capabilities shape
the identity and character that the organization embodies. The discussion surrounding purchasing is closely tied to theories of organizational capabilities. This is because the purchasing function possesses the strategic potential to contribute significantly as an integral part of the supply chain. The growing prevalence of outsourced parts and services in contemporary times has heightened the demand for improved proficiency in purchasing practices. This trend has resulted in an increased presence of purchasing professionals at the executive level in most companies. Barney (2012) added that green purchasing capabilities have the potential to serve as a competitive advantage.

The relationship between green capabilities and environmental sustainability is integral to fostering a business environment that prioritizes ecological responsibility. Organizations with green capabilities possess the ability to embed sustainable practices into their daily operations (Mohaghegh, Blasi & Groessler, 2021). Businesses with strong green capabilities are more inclined to invest in research and development, fostering innovation in sustainable technologies, processes, and products (Serrano-Garcia, Bikfalvi, Llach & Arbelaez-Toro, 2021). Thus, there is a relationship between green capabilities and environmental sustainability. However, only a few studies explicitly considered the links between green capabilities and environmental performance. Thus, it is key to explore if green capabilities positively affect environmental performance.

Research has shown that green procurement practices play a pivotal role in promoting environmental sustainability. These practices involve the intentional selection and sourcing of goods and services that have minimal negative impacts on the environment throughout their life cycle (Lăzăroiu, Ionescu, Uță, Hurloiu, Andronic & Dijmărescu, 2020). Close collaboration with suppliers can improve environmental performance (Ahmed, Ashraf, Khan, Kusi-Sarpong, Arhin, Kusi-Sarpong & Najmi, 2020). Thus, there is a relationship between green procurement practices and environmental sustainability.

In the context of the fast-moving consumer market in Oman, the relationship between green procurement practices, green capabilities, and environmental sustainability is significant. The study by Khan, Yu, and Farooq (2023) highlights a gap in understanding the role of green capabilities in shaping green procurement practices and their subsequent impact on environmental sustainability, and this gap is relevant in the Omani. In Omani, where the fast-moving consumer market is evolving, businesses need to develop and enhance their green capabilities to meet the growing demand for eco-friendly products and practices. Thus, this study sought to investigate how green
capabilities mediate relationship green procurement practices and environmental sustainability in fast-moving consumer market in Oman.

1.1 LITERATURE REVIEW

This section provides literature from previous studies concerning green procurement practices, green capabilities, and environmental sustainability. Additionally, it delves into the establishment of the theoretical framework and the formulation of hypotheses for this study.

1.1.1 Natural Resource-Based View

Hart (1995) developed the Natural Resource-Based View (NRBV) by extending the principles of Barney's (1991) Resource-Based View (RBV) theory. The NRBV is a strategic management framework that focuses on the role of natural resources in shaping a firm's competitive advantage and overall performance (Mishra & Yadav, 2021). The theory focuses attention on environmental practices concerning sustainable competitive advantage. The NRBV is a central concept in understanding how firms can achieve and maintain a competitive edge. Central to the NRBV is the idea that a firm's resources must be valuable, rare, inimitable, and non-substitutable (VRIN) to contribute to sustained competitive advantage. Incorporating environmental considerations as a central focus within the organization necessitates active involvement and engagement of employees. Environmental concerns can be of strategic value through incorporation of sustainable habits into the employee routines and processes (Dubois & Dubois, 2012). Thus, the institutionalization of such habits and practices within the organizational culture can contribute to the attainment of sustainable competitive advantage (Hart & Sharma, 2004; Michalisin, 2009).

1.1.2 Green procurement practices

Green procurement is characterized as a purchasing strategy that aligns with the environmental objectives of a firm (Zsidisin & Siferd, 2001). It involves making environmentally responsible choices throughout the entire procurement process, starting from product and process design, and extending to the disposal of the product (Yook,
Choi & Suresh, 2018). According to Humphreys et al. (2003), the ability of a company to develop environmentally sustainable products and processes relies on the capabilities of its suppliers. Similarly, Carter and Rogers (2008) added that environmental purchasing can lead to firm performance. Green procurement has emerged as a crucial domain which plays a pivotal role in the seamless integration of functions within the supply chain (Bag, Dhamija, Gupta & Sivarajah 2021). It manages the movement of incoming materials throughout an organization, thus serving as a link between internal and external stakeholders to generate value for the company.

1.1.3 Green capabilities

Green capabilities serve as the driving force behind the adoption of green supply chain management. Lee and Klassen (2008) characterized green capabilities as the resources, technologies, and proficiency that companies can leverage to address the varied environmental requirements of customers and other stakeholders. Chen and Chang (2013) asserted that a firm's ability to adapt to environmental concerns in the rapidly changing marketplace and develop green dynamic capabilities is rooted in their distinctive resources and knowledge. Thus, innovativeness, according to dynamic capabilities theory, can be considered an organizational capability (Barrales-Molina, Benitez-Amado & PerezArostegui, 2010). Green capabilities encompass taking the lead in environmental initiatives, fostering cross-functional collaboration for environmental enhancements, creating new products to minimize material and energy consumption, implementing environmental management systems, and establishing partnerships with suppliers and customers to collectively address environmental concerns (Zhu & Sarkis, 2004; Vachon, 2007).

1.1.4 Environmental sustainability

Environmental sustainability refers to the responsible and balanced use of natural resources to meet the needs of the present without compromising the ability of future generations to meet their own needs (Moldan, Janoušková & Háč, 2012). It aims to conserve finite resources, such as water, energy, and raw materials, to ensure their availability for future generations (Owusu & Asumadu-Sarkodie, 2016). This may involve reducing waste, optimizing resource use, and promoting recycling and reuse.
Preservation of biodiversity is crucial for the health of ecosystems (Robertson, 2021). Sustainable practices work to protect diverse plant and animal species, thus recognizing the interconnectedness of all living organisms and their roles in ecological balance. Addressing and mitigating the impacts of climate change is a central component of environmental sustainability (Owusu et al., 2016). This involves reducing greenhouse gas emissions, transitioning to renewable energy sources, and adapting to changing climatic conditions. Environmental sustainability focuses on reducing pollution and its harmful effects on air, water, and soil. This may include reducing emissions, controlling industrial waste, and promoting the use of environmentally friendly technologies.

1.2 HYPOTHESES DEVELOPMENT

1.2.1 Relationship between green procurement practices and green capabilities

Green procurement practices and green capabilities are closely related concepts in the context of sustainability and environmental management within organizations. Green procurement practices refer to the integration of environmental considerations into the procurement process, including the selection of products and services that have a reduced environmental impact throughout their lifecycle. Green procurement practices can help organizations develop their green capabilities by fostering a culture of environmental awareness and responsibility within the organization. By regularly engaging in green procurement activities, employees become more attuned to environmental issues and develop the skills and knowledge necessary to support sustainable practices. Conversely, having strong green capabilities can enhance an organization's ability to implement effective green procurement practices. Organizations with well-developed green capabilities are better equipped to assess the environmental impact of products and services, identify environmentally friendly alternatives, and establish partnerships with suppliers who share their commitment to sustainability. Research studies have also shown a positive relationship between green procurement practices and green capabilities. For example, a study by Zhu et al. (2017) found that organizations that actively engage in green procurement activities are more likely to develop the internal capabilities necessary to support their sustainability initiatives.

H1: There is a relationship between procurement practices and green capabilities.
1.2.2 Relationship between green capabilities and environmental sustainability

The relationship between green capabilities and environmental sustainability is crucial in the context of sustainable business practices. Green capabilities refer to an organization's ability to develop, implement, and leverage environmentally friendly strategies, processes, and technologies to reduce its environmental impact. Environmental sustainability, on the other hand, refers to the ability to maintain or improve the quality of the environment over the long term. Organizations with strong green capabilities are better equipped to improve their environmental performance. They can develop innovative products, processes, and systems that are environmentally friendly and help reduce resource consumption and waste generation (Russo & Fouts, 1997). Green capabilities can provide organizations with a competitive advantage by differentiating their products and services in the market. Companies that invest in green capabilities can attract environmentally conscious consumers and gain a positive reputation for sustainability (Porter & van der Linde, 1995). Green capabilities help organizations optimize their use of resources, leading to cost savings and operational efficiency. By implementing sustainable practices, companies can reduce energy consumption, water usage, and waste generation, resulting in financial benefits (Shrivastava, 1995). Green capabilities drive innovation and adaptation in response to environmental challenges. Companies that prioritize sustainability are more likely to innovate and adapt to changing market conditions, emerging technologies, and evolving consumer preferences (Hoffman, 2000).

H2: Green capabilities influence environmental sustainability.

1.2.3 Relationship between green procurement practices and environmental sustainability

Green procurement practices play a significant role in promoting environmental sustainability by encouraging the purchase of goods and services that have a reduced environmental impact throughout their life cycle. By incorporating environmental criteria into purchasing decisions, organizations can contribute to reducing resource consumption, minimizing waste generation, and lowering greenhouse gas emissions. This, in turn, helps in fostering a more sustainable economy and environment. Several studies have demonstrated the positive relationship between green procurement practices
and environmental sustainability. Study by Pagell and Wu (2009): Pagell and Wu conducted a study that investigated the impact of green procurement practices on environmental performance. Their research found that organizations that implemented green procurement practices experienced improvements in their environmental performance indicators, such as reduced energy consumption, waste generation, and emissions. Research by Walker et al. (2012): Walker et al. explored the relationship between green procurement practices and environmental sustainability in the context of supply chain management. Their study revealed that integrating environmental criteria into procurement decisions led to enhanced environmental sustainability throughout the supply chain, including reductions in carbon footprint and waste generation. Analysis by Mollenkopf et al. (2010): Mollenkopf et al. conducted an analysis of the relationship between green procurement practices and environmental sustainability in the manufacturing sector. Their findings indicated that organizations that adopted green procurement practices not only achieved cost savings but also contributed to environmental sustainability by promoting eco-friendly products and processes.

H3: Green procurement practices influence environmental sustainability.

1.2.4 Green procurement practices, green capabilities, and environmental sustainability

Enhancing environmental performance in companies can be achieved through fostering close working relationships and collaborative efforts with suppliers. This collaborative approach involves forging strong working relationships with suppliers which emphasize open communication, and jointly addressing environmental sustainability. When working closely with suppliers, companies can optimize the use of resources, minimize waste, and reduce the overall environmental footprint (Ramanathan, Bentley & Pang (2014). Green capabilities which focus on the ability of companies to innovate and adopt environmentally friendly technologies have emerged as critical drivers of environmental sustainability (Mady, Battour, Aboelmaged & Abdelkareem, 2023). The relationship between green procurement practices, green capabilities, and environmental sustainability is integral to fostering environmental sustainability (Liu, Zhu & Seuring, 2017). These elements are interconnected and play a crucial role in improving environmental performance. Green capabilities also depend on the knowledge and commitment of employees (Cabral, & Dhar, 2019). Thus, green procurement
practices can involve training and engaging employees in sustainable practices which create a culture of environmental responsibility within the organization. Jabbour et al. (2014) and Zhu et al. (2018) indicate that innovation in products and processes in chain management minimize ecological footprints. These capabilities contribute to fostering a culture of sustainability within organizations. Sarkis et al. (2011) and Zhu & Sarkis (2016) suggest that green capabilities act as mediators between procurement practices and environmental sustainability outcomes. When seeking eco-friendly suppliers, fostering innovation, and enhancing supply chain transparency, green capabilities bridge the gap between sustainable procurement initiatives and environmental performance. Hence, the hypothesis is developed as below:

\[ H4: \text{Green capabilities mediate relationship between green procurement practices and environmental sustainability.} \]

1.3 CONCEPTUAL FRAMEWORK DEVELOPMENT

This study used the Natural Resource-Based View as the base for developing the theoretical framework. The literature supports the formulation of the research framework for examining the relationship between the green purchasing practices, green capabilities, and environmental sustainability. This study examined how green capabilities affect green procurement practice and environmental sustainability the fast-moving consumer goods sector in Oman. The study is grounded in the conceptual framework outlined in Figure 1.1.

The following hypothesis developed for the study.

\[ H1: \text{There is a relationship between green procurement practices and green capabilities.} \]

\[ H2: \text{Green capabilities influence environmental sustainability.} \]

\[ H3: \text{Green procurement practices influence environmental sustainability.} \]

\[ H4: \text{Green capabilities mediate relationship between green procurement practices and environmental sustainability.} \]
1.4 RESEARCH DESIGN

A quantitative research design was used given that the study aimed to establish the relationship between green capabilities, green purchasing practices, and environmental sustainability. The unity of analysis was organizations operating in the fast-moving consumer market in Oman. A list of organizations within the fast-moving consumer market was extracted from the Ministry of Industry and Commerce in Oman. Random sampling method used which ensures every organization within the population has an equal chance of being selected. This was done to reduce bias and increase the generalizability of the findings. 203 questionnaires were administered to respondents. This study developed a structured questionnaire based on the conceptual framework which included measuring items related to green capabilities, green purchasing practices, and environmental sustainability. The questionnaires were distributed to selected organizations via email. The validity and reliability of the questionnaire was ensured through pilot testing, expert review, and pre-testing. This identified and rectified issues with the questionnaire before full-scale data collection. The study used the SEM to analyse the relationships between variables in the conceptual framework. According to Chenini and Khemiri (2009), SEM allows for the simultaneous examination of multiple relationships. It provides insights into the direct and indirect effects of variables on each other (Smith & Langfield-Smith, 2004).
Table 1: Demographics

<table>
<thead>
<tr>
<th>Demographical Factor</th>
<th>Frequency</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>131</td>
<td>65</td>
</tr>
<tr>
<td>Female</td>
<td>72</td>
<td>35</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>25-30</td>
<td>51</td>
<td>25</td>
</tr>
<tr>
<td>31-35</td>
<td>74</td>
<td>36</td>
</tr>
<tr>
<td>36-40</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>&gt;45</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>143</td>
<td>70</td>
</tr>
<tr>
<td>Diploma</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>Degree</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Years of Experiences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>5-10</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>11-15</td>
<td>132</td>
<td>65</td>
</tr>
<tr>
<td>16-20</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>&gt;25</td>
<td>15</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Author (2024)

In Table 1 results show that the sample consists of 65% males and 35% females. This implies that there was a higher representation of males compared to females. Most respondents fall within the age range of 31-35 (36%), followed by those aged 25-30 (25%). There is a significant drop in participation for those ages above 40, with only a small percentage (2%) being above 45. Most of respondents (70%) have a secondary education level, followed by those with a diploma (20%) and a degree (10%). This implies that most of respondents have completed secondary education while some further pursued education up to either diploma or degree level. Most respondents (65%) have 11-15 years of experience, which indicates a significant presence of mid-career professionals. There is a drop in participation for those with 16-20 years of experience. This suggests a potential career shift or retirement around that point.

1.5 RELIABILITY AND VALIDITY

Table 2: Validity and reliability analysis

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's alpha</th>
<th>Composite reliability ((\rho_{a}))</th>
<th>Composite reliability ((\rho_{c}))</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Sustainability</td>
<td>0.873</td>
<td>0.879</td>
<td>0.914</td>
<td>0.727</td>
</tr>
<tr>
<td>Green Capabilities</td>
<td>0.804</td>
<td>0.853</td>
<td>0.883</td>
<td>0.716</td>
</tr>
<tr>
<td>Green Procurement Practices</td>
<td>0.829</td>
<td>0.842</td>
<td>0.886</td>
<td>0.660</td>
</tr>
</tbody>
</table>

Source: Author (2024)
A Cronbach's alpha of 0.7 or higher is considered acceptable for research. In Table 2, results show that all three constructs, namely environmental sustainability, green capabilities, and green procurement practices have Cronbach's alpha values well above 0.7. This suggests high internal consistency. Composite Reliability indicates the extent to which items in a scale are interrelated. Values above 0.7 are considered acceptable. Results indicate that all constructs had values above 0.7. This further indicates high internal consistency. Average Variance Extracted (AVE) assesses convergent validity, which is the degree to which a construct correlates positively with other measures of the same construct. AVE values should be above 0.5 for satisfactory convergent validity. Results indicated that all constructs had AVE values above 0.6. This indicates good convergent validity. Results indicate that the measuring scale used for environmental sustainability, green capabilities, and green procurement practices was reliable and valid.

1.5.1 Discriminant validity

This study used the Heterotrait-monotrait ratio (HTMT) to assess discriminant validity. The HTMT ratio should be less than 0.85 for discriminant validity to be established.

<table>
<thead>
<tr>
<th></th>
<th>Environmental Sustainability</th>
<th>Green Capabilities</th>
<th>Green Procurement Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Sustainability</td>
<td>0.249</td>
<td>0.476</td>
<td>0.177</td>
</tr>
<tr>
<td>Green Capabilities</td>
<td></td>
<td>0.476</td>
<td>0.177</td>
</tr>
<tr>
<td>Green Procurement Practices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Author (2024)

In Table 3, results indicated that the HTMT ratios for all pairs of constructs were less than the threshold value of 0.85. The discriminant validity is established between environmental sustainability, green capabilities, and green procurement practices. This means that each construct correlates strongly with its own indicators than with indicators of other constructs. This suggests that constructs were measuring distinct concepts.
1.5.2 Indicator reliability

According to Hair, Ringle and Sarstedt (2011), the outer loadings represent the strength of the relationships between the reflective construct and the measured indicator variables. A desirable criterion for outer loadings should be 0.7 or higher.

Table 4: Indicator reliability

<table>
<thead>
<tr>
<th></th>
<th>Environmental Sustainability</th>
<th>Green Capabilities</th>
<th>Green Procurement Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES1</td>
<td>0.765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES2</td>
<td>0.906</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES3</td>
<td>0.905</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES4</td>
<td>0.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC2</td>
<td>0.851</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC3</td>
<td>0.897</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC4</td>
<td>0.786</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPP1</td>
<td></td>
<td>0.847</td>
<td></td>
</tr>
<tr>
<td>GPP2</td>
<td></td>
<td>0.766</td>
<td></td>
</tr>
<tr>
<td>GPP3</td>
<td></td>
<td>0.837</td>
<td></td>
</tr>
<tr>
<td>GPP5</td>
<td></td>
<td>0.797</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author (2024)

Table 4 displays the outer loading results. The value of the outer loadings for each of the indicator variables has met the required threshold of 0.7. Therefore, there was no need to remove any indicator variable.

1.5.3 Model fit indices

The study used several indices to establish the fitness of the model. These include SRMR, Chi-square value and NFI value. Results are presented in Table 5.

Table 5: Goodness-of-fit statistics for the final modified model

<table>
<thead>
<tr>
<th></th>
<th>Estimated model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMR</td>
<td>0.070</td>
</tr>
<tr>
<td>d_ULS</td>
<td>0.326</td>
</tr>
<tr>
<td>d_G</td>
<td>0.123</td>
</tr>
<tr>
<td>Chi-square</td>
<td>294.598</td>
</tr>
<tr>
<td>NFI</td>
<td>0.854</td>
</tr>
</tbody>
</table>

Source: Author (2024)

SRMR assesses the average discrepancy between the observed and predicted correlations in the model. In Table 5, the SRMR value of 0.070 indicates a reasonably good fit. The Chi-square value of 294.598 was relatively high. This suggests a significant difference between the observed covariance matrix and the model-implied covariance.
matrix. The NFI value compares the fit of the hypothesized model to a null model with no relationships among variables. Results show the NFI value of 0.854 which indicates an acceptable fit.

1.6 DIRECT AND INDIRECT ANALYSIS

The study used structural equation modelling to analyze the relationship between latent variables. Structural path results are presented in Table 6.

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coefficient ($\beta$ value)</th>
<th>Confidence Interval</th>
<th>T-statistics</th>
<th>P values</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Capabilities $\rightarrow$ Environmental Sustainability</td>
<td>0.154</td>
<td>0.052 - 0.258</td>
<td>2.920</td>
<td>0.004</td>
<td>Significant</td>
</tr>
<tr>
<td>Green Procurement Practices $\rightarrow$ Environmental Sustainability</td>
<td>0.387</td>
<td>0.328 - 0.495</td>
<td>8.740</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Green Procurement Practices $\rightarrow$ Green Capabilities</td>
<td>0.156</td>
<td>0.033 - 0.268</td>
<td>2.598</td>
<td>0.009</td>
<td>Significant</td>
</tr>
<tr>
<td>Green Procurement Practices $\rightarrow$ Green Capabilities $\rightarrow$ Environmental Sustainability</td>
<td>0.411</td>
<td>0.004 - 0.052</td>
<td>1.926</td>
<td>0.054</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Author (2024)

In Table 6, results present the path coefficients, confidence intervals, t-values, p-values, and significance levels for each hypothesized relationship in the model. The path shows a significant positive relationship between the green procurement practices and green capabilities ($\beta=0.156; t=2.598; p=0.009$). Therefore, hypothesis H1 was accepted at 95 per cent confidence interval (t-value >1.96). This suggests that green procurement practices positively influence green capabilities. In Table 6, results indicate a significant positive relationship between green capabilities and environmental sustainability ($\beta=0.154; t=2.920; p=0.004$). Therefore, hypothesis H2 was accepted at 95 per cent confidence interval (t-value >1.96). This suggests that an increase in green capabilities leads to a positive but relatively modest increase in Environmental Sustainability. Findings show a significant positive relationship between green procurement practices
and environmental sustainability ($\beta=0.387; t=2.920; p=0.004$). This implies that green procurement practices have a substantial positive impact on environmental sustainability. This result shows an indirect path where green procurement practices affect environmental sustainability through their influence on green capabilities. The research found that there is a positive significant relationship between internet of things, perceived usefulness, and operational performance ($\beta=0.411; t=1.926; p=0.054$). This suggests that part of the effect of green procurement practices on environmental sustainability is mediated by their impact on green capabilities. The resulting structural model of the connections between green procurement practices, green capabilities, and environmental sustainability is shown in Figure 2.

![Final structural hypothesized model](source: Author (2024))

1.7 CONCLUSION

The study investigates the green procurement practices used in Oman fast food market. A survey was conducted to establish the effect of green capabilities on the relationship between green procurement practices and environmental sustainability. It can be concluded that green procurement practices positively influence green capabilities. This suggests that companies in fast consumer-moving markets in Oman can enhance their green capabilities by adopting and implementing effective green procurement practices. It was further established that green capabilities have a positive but relatively modest effect on environmental sustainability. This indicates that while having green capabilities is beneficial, it may not be sufficient on its own to substantially improve environmental sustainability in these markets. It was established that green procurement
practices directly contribute to environmental sustainability with a substantial positive impact. This suggests that companies in Oman can significantly enhance their environmental sustainability performance by implementing green procurement practices. There was an indirect relationship between green procurement practices and environmental sustainability mediated by the effect of green capabilities. This implies that while green procurement practices directly contribute to environmental sustainability, part of this effect is also realized through their influence on enhancing green capabilities. It can be argued that investments in improving green capabilities can amplify the positive impact of green procurement practices on environmental sustainability. Therefore, a holistic approach that integrates both green procurement practices and the development of green capabilities is key for achieving sustainable business operations in fast-moving consumer market in Oman.

1.8 IMPLICATIONS FOR RESEARCH

The study investigates approaches used by companies to promote environmental sustainability within their supply chains. This contributes to the growing body of literature on sustainable procurement practices. This study emphasizes the role of organizational capabilities in driving sustainability initiatives within supply chains. This study establishes the direct and indirect effects of green procurement practices on environmental sustainability. It provides evidence that implementing green procurement practices can significantly enhance environmental sustainability performance in fast-moving consumer markets in Oman. The study advocates for a holistic approach that integrates green procurement practices and the development of green capabilities to achieve sustainable business operations. This emphasizes the need for companies to invest in building internal capacities, while implementing environmentally friendly procurement practices. The study offers insights for companies operating in similar markets by identifying the linkages between green procurement practices, green capabilities, and environmental sustainability. It provides guidance on how firms can leverage their capabilities to maximize the positive impact of green procurement practices on sustainability outcomes. The findings of the study focus on the importance of promoting green procurement practices within business ecosystem in Oman. The government can use these insights to develop policies and regulations that incentivize
companies to adopt environmentally friendly procurement strategies. This may include offering tax incentives and subsidies to encourage the implementation of green practices.

1.9 LIMITATIONS AND FUTURE DIRECTION

This study used quantitative research in which a questionnaire was employed to collect data from respondents. Supplementing quantitative findings with qualitative research methods, such as interviews, could offer richer insights into the underlying mechanisms and contextual factors influencing the relationships studied. The reliance on self-reported data through structured questionnaires introduced response bias, where respondents provide answers, they perceive as socially desirable rather than reflecting their actual attitudes. The study used a cross-sectional design which captures a snapshot of the relationships between variables at a single point in time. Longitudinal studies could provide a comprehensive understanding of how these relationships evolve over time. While the study provides insights into the relationship between green procurement practices, green capabilities, and environmental sustainability in fast-moving consumer market in Oman, the findings may not be generalizable to other industries or regions with different socio-economic contexts.
REFERENCES


