**An Investigation into the Green Supply Chain Management Practices in the Oil and Gas Industry**

1. Jasim Hasan (South Wales Business School, University of South Wales),
2. Owain Tomos (IBERS, Aberystwyth University),
3. Andrew Thomas (Aberystwyth Business School, Aberystwyth University),
4. Chris Lee (South Wales Business School, University of South Wales),

**Keywords:** Green Supply Chains, Sustainable Development Goals, Survey

**Introduction**

Sustainability reporting within the Oil and Gas (O&G) industry started back in the 1990s and has improved longitudinally since then. However, O&G companies when reporting their sustainability related practices and initiatives, seldomly mention the context of a “supply chain”. Concepts such as sustainable supply chain management (SSCM) and in particular green supply chain management (GSCM) are rarely mentioned and there is a lack of maturity within the sector on these topics and this forms the motivation of the research. The study aims to investigate the presence of GSCM practices adopted by the O&G sector and to categorize how they are integrated with the sustainability practices reported by the industry. The research validates the findings of the previous literature, provides a detailed list of GSCM sub-practices and identifies new research directions related to diversification of business model and investment of O&G companies in renewable energy and this has not been reported before.

**Background**

The concept of sustainability has received increasing interest since the last couple of decades (Busco, et al., 2018) with one of the most popular definitions on the topic published through the Brundland Report in 1987 (Busco, et al., 2018; Phatak & Sople, 2018). Since then the O&G industry is facing growing pressure from stakeholders to become sustainable and eliminate its footprint (Ahmad, et al., 2016; Raut, et al., 2018). Global and regional agreements like the Kyoto Protocol, Paris accords and United Nations Sustainable Development Goals (SDGs) have been implemented to drive organisations towards sustainability (Jagoda & Wojcik, 2019). Regulatory bodies and societal pressure have therefore played their role in moving the industry towards sustainable development. Researchers however have identified pro-active sustainable practices adopted by O&G companies to stay ahead of their competition (Jagoda & Wojcik, 2019). Firms have started sharing voluntary information publicly to improve stakeholder relationships and corporate brand value (Ahmad, et al., 2016). Researchers have deduced that sustainable reporting in O&G industry has improved longitudinally from 2 companies in 1998 to 40 companies by 2010 (Ahmad, et al., 2016), in both national and multinational companies.

However, there is still substantial area for improvement in sustainability reporting on-ground practices as they have been found to be focussed on social performance rather than on environmental performance (Ahmad, et al., 2016).

**Research approach**

This research adopted a single case study method of an international oil and gas company with its headquarters based in Europe. Primary data was collected by conducting 12 semi-structured online interviews of approximately one hour each via Teams (Microsoft 365). The interview participants were senior members of the procurement and supply chain function, while secondary data was obtained from the latest annual and sustainability report and internal documents related to sustainability. Thematic Analysis (TA) technique was used to systematically analyse the primary data obtained from the interviews.

**Results**

The findings validate the previous literature in terms of presence and maturity of GSCM practices such as Internal Environmental Management, Green Design, Green Logistics, Green Warehousing and Green Packaging, Collaboration with supply chain partners, and Investment Recovery practices adopted by O&G companies. However, the research identifies that the adoption of Green Purchasing practices are still in infancy stage whereas Green Production practices are more advanced compared to the academic literature on sustainability practices of the O&G industry. Additionally, new insights are obtained on how O&G companies are diversifying their business models and investing in the renewable energy business which has not been stated in the literature previously. Table 1 shows the typical practices employed

**Conclusion/implications**

Practitioners and organisations associated with the O&G sector or similar industries will be able to benefit from the GSCM practices in general and specifically insights on GSCM practices in the O&G sector. Practitioners will also be able to benchmark their current GSCM practices with the research findings, develop and formulate strategies to maximise implementation of GSCM practices to make their supply chains “greener” and their organisations environmentally sustainable.

Graphical user interface, text, application

Description automatically generated

**References**

Ahmad, W. N. K. W., Brito, M. P. d. & Tavasszy, L. A., 2016. Sustainable supply chain management in the oil and gas industry A review of corporate sustainability reporting practices. *Benchmarking: An International Journal,* 23(6), pp. 1423-1444.

AlNuaimi, B. K., Mazrouei, M. A. & Jabeen, F., 2020. Enablers of green business process management in the oil and gas sector. *International Journal of Productivity and Performance Management,* 68(8), pp. 1671-1694.

Busco, C., Giovannoni, E., Granà, F. & Izzo, M. F., 2018. Making sustainability meaningful: aspirations, discourses and reporting practices. *Accounting, Auditing & Accountability Journal,* 31(8), pp. 2218-2246.

Elsayed, N. & Ammar, S., 2020. Sustainability governance and legitimisation processes: Gulf of Mexico oil spill. *Sustainability Accounting Management and Policy Journal,* 11(1), pp. 253-278.

Florescu, M. S., Ceptureanu, E. G., Cruceru, A. F. & Ceptureanu, S. I., 2019. Sustainable Supply Chain Management Strategy Influence on Supply Chain Management Functions in the Oil and Gas Distribution Industry. *Energies,* 12(9), p. 1632.

Hassan, A. & Kouhy, R., 2015. From environmentalism to corporate environmental accountability in the Nigerian petroleum industry Do green stakeholders matter?. *International Journal of Energy Sector Management,* 9(2), pp. 204-226.

Jagoda, K. & Wojcik, P., 2019. Implementation of risk management and corporate sustainability in the Canadian oil and gas industry An evolutionary perspective. *Accounting Research Journal,* 32(3), pp. 381-398.

Phatak, S. & Sople, V., 2018. Drivers and Barriers of Sustainable Supply Chain: A Literature Review on Indian Perspective. *International Journal of Business Insights and Transformation,* 12(1).

Raut, R., Narkhede, B. E., Gardas, B. B. & Luong, H. T., 2018. An ISM approach for the barrier analysis in implementing sustainable practices The Indian oil and gas sector. *Benchmarking: An International Journal,* 25(4), pp. 1245-1271.