Supply Chain Management Concepts Applied in the Oil & Gas Industry – A review of literature

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***Abstract*: The recent trends in the oil & gas have shown volatility in this market and the low oil prices has influenced this industry in a big way. The researchers and practitioners in this field have realized the importance of efficient Supply Chain Management (SCM) to have competitive edge in this industry. The dynamic nature of the supply as well as the demand has contributed to the unique challenges in managing the supply chain in this sector. The main objective of this study is to understand the application of different SCM concepts in the Oil and Gas industry. The study involved the systematic literature review of the various articles published by prominent researchers in this field in reputed journals and databases like Scopus, Web of Science (WOS). The findings have identified 52 different models of SCM which are used in the oil & gas industry. This study is a contribution to the body of knowledge regarding the use of SCM concepts in oil and gas industry. Future studies can use this as a reference to understand the existing SCM concept in this industry and base their empirical study the suitability and influence of these concepts on the efficient supply chain management in Oil & gas industry.**

Keywords: *Supply Chain Management(SCM), Literature Review, Oil & Gas Industry*

1. Introduction:

The Oil and gas **(**O&G) companies operate in special circumstances and situation where they are dealing with continuous challenges both in the supply as well as in demand. It affects the whole supply chain management process. The SCM of the O&G sector is thus more challenging in the comparison of other organizations. Therefore, technically, the traditional techniques cannot be directly applied to the O&G sectors. Secondly, in the current prices where the price of oil is it the lowest, it is better to re-evaluate the SCM practices to reduce this additional cost as well. A detailed study of the existing SCM models was conducted to understand the basic concepts and common practices in the O&G domain. This gives a basic understanding and knowledge of the O&G SCM domain processes, activities and concepts.

2. Methodology

The study follows our previous work [1]. It used the systematic literature review approach methodology to review and understand the different SCM models used in the Oil & Gas industry. The methodology followed as this is one of the widely used method in the review papers[2]. The first step in the study was to search for the relevant papers in this field. The literature review used the articles published between the year 2007 to 2017, so that it covers for one decade. The widely referred data base like the Web of Science, Scopus, IEEE Explore, Springer Links, and Science Direct was referred to search for the relevant research article. The searching keywords were “Supply Chain”, “Supply Chain Management” and then the results were refined by “O&G” term. This produced total of 90430 articles from whole databases. In this study the research articles and conference papers are considered while other type of documents was excluded from the analysis. Therefore, 89 articles were selected for this study that used different practices. The detailed of the search protocols are summarized in Table 1.

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Table 1: Systematic Review Protocols

Database	**"Supply Chain";" Supply Chain Management" and "O&G"**
Web of Science	13,130
Scopus	27,512
IEEE Explore	7981
Springer Links	25512
Science Direct	16295
After Removing Duplicate	1090
After removing Book chapters and other document types	856
After screening the abstract	351
After removing the articles discussing the O&G Structures	233
Total articles of SCM practices in O&G	**89**

3. Findings & Discussions

The systematic review of the final 89 articles revealed that identified the different models proposed by the researchers in the past years. These models addressed different angles of the SCM practices in the oil and gas industry. The next few paragraphs explains the different models proposed by the different authors with reference to the SCM practices in the oil & Gas Industry. The various concepts were explained in the chronological order in which the model was proposed.

Ross et al. (2007) [3] is among the first researchers to identify two sets of convergent strengths and emerging capabilities that will shape how supply networks will grow in the near future in the oil industry. Two questions are targeted in their research. The first problem is the rapid growth of third-party global logistics companies (3PLs) that manages all supply chains. The second question concerns how the process of change plan and estimate by supply chain organization. However, continuing a focus on supply chain cost process using a procedure called cost-to-pay (MSC) method. They compare the current design with the new optimum design and carry out cost-benefit analysis to demonstrate the advantage of our procedures.Trkman et al. (2007) [4] used a distinctive approach, knowns as simulation-based methodology. This methodology is applicable to measure the benefits of creating and modifying business process models that incorporate a process model development methodology with simulations with the simulation of the supply and application. Procurement processes in the petroleum trade industry are scrutinized in case studies. The process can be learned and stimulated by using the proposed methodology, and different business process models. The advantages of each company involved in the case presented are important and can be estimated by simulation. Substantial benefits in terms of cost, quality and time have been identified, but the distribution is not symmetrical.

The research discussed the problem of consolidating sustainable development based on the theory of complexity, risk management, stakeholder theory and the dynamics of innovation. The research concerned into the supply chain, particular the Life cycle Assessment Usability (LCA). The scholars have highlighted the significance of the LCA *"cradle"* approach in enhancing product design, and adjusting closed-loop supply chains [5] [6] developed a model that disrupted the supply chain for estimating macroeconomic costs. The study found that shortcomings or robustness in cyber bullying can not necessarily depend on the form of technology used. But the question arise is how technology is used to enable supply chain processes and types of attacks experienced. The authors find that the oil and gas supply chain can be affected by many cyber disorders.

Jaegersberg et al. (2007) [7] discusses regional groups at diverse phases in their lifecycle, providing different prospects for regional and transregional strategy comparison assessments for innovation and change management. It is a small portion of separate regional initiative to improve competitiveness and innovation by supporting SMEs in the process of supply chain. The recurrent

sociotechnology problems group are used as examples for highlighting Western Australia and the British North Sea oil and gas sectors. Yan-bin et al. (2007) [8] took the idea of "Competition and cooperation" as the key management of the supply chain is inevitable as an option. The flow of domestic services in the supply chain is unreasonable. Success Evaluation Objectives do not adjust the strategic supply chain management. They concluded that beneficial to create an effective supply chain system, oil companies need to restructure the flow of services, strengthen cross-sector integration, optimize strategic information systems, extend ideas, train and introduce extraordinary strategic management of supply chain talent, and set up new systems to assess achievement.

Rangnow and Govia (2008)[9] effectively provide the necessary change management, and hence, Greenfield opportunities offer the easiest and fastest ever success. They discussed the unique business processes of LNG's business model and the needs generated for the chain-to-supply supply chain interaction that is virtually achieved through real-time data usage and information technology. In addition, the paper will explore how smart strategies are vital in the industry due to the ownership structure.In addition, the paper also explored how smart strategies are vital in the industry due to the ownership structure.

The radio frequency identification (RFID) is another type which is used in the upstream oil and gas industry. The study examined key applications for mobile device (HHD) use and automatic identification, maintenance and operation in the SC process [10]. Further, Witt and Kirchof (2008) [11] focusd on two important international laws on chemicals: one that is sanctioned in the European Union, another in Canada. These law has greater impact on the oil and gas industry.They proposed a new SCM practices with the main focus on downstream phase to effectively address the new regulations. In Southeast Asia, Nogami and Watanabe (2008)[12] conducted case studies with the collaboration of six important Japanese companies and with the help of National Oil, Gas and Japan National (JOGMEC). The model offers a new option to catalyze small and medium chain gas fields, which are not developed with existing technologies due to low economic efficiency, and diversification of distribution methods will also help distribute gas naturally to remote areas of the current gas supply chain.

Aas et al. (2008)[13]notes that the evolution of the supply chain is increasingly complex to make logistical outsourcing decisions and the main reason is the increasing number of links between organizations emerging in the complicated supply chain. Wider considerations in supply chain management (SCM) seem to be permissible and dyadic approaches often used in outsourcing literature are insufficient to support adequate results in outsourcing decisions. The business case of the Norwegian oil and gas industry is used to describe and analyze the broad scope of problems and complexities related to the decision to outsource Supply Terminal Management (STM) Analysis of Transaction Costs (TCA) and SCM theory. As a result of empirical analysis shows that it is not beneficial to outsource functions when economic and organizational factors are taken into account.

Lakhal et al. (2009) [14] argued that oil and gas facilities have limited lifespan. When oil is depleted, several terms are used to describe the situation: neglect, disposal, disposal, disassembly, etc. Even the issue of demolition is now at the forefront of water drilling for many reasons. They have used the "Olympic" supply chain concept to provide feedback on the life cycle platform. Their approach starts from a platform development project in an ecological way, exploits it in an environmentally friendly way and has an effective decommissioning project. Kaufmann, Dees and Mann (2009)[15] highlighted that oil prices, inventory levels and consumption rates are influenced by horizontal and / or vertical transfers through the power supply chain. They define horizontal shipment as a change generated by the relationship between fuel at the same processing level, while vertical shipment is like a change generated by upstream / downstream links in the oil supply chain.

Ive (2009) [16] developed the concepts that oil and gas companies are adopting efficient and effective waste management strategies to increase profitability. The companies are accepting the duty of care by adopting acceptable methods for disposal on site as the fines for non-compliance cannot be ignored. An efficient wastewater management program focuses on remove, reduce, reuse, and recycle, which completely depends on supply chain purchasing protocols, worker behavior, storage and handling methods, and strict segregation of waste types. Meskanick (2009) [17] focuses on the Outsourcing process, an essential tool for hiring talents, staffing and recruiting leaders to succeed in a challenging environment of the oil and gas industry. Combining objective recruitment objectives with business unit objectives will provide a more holistic set of targets for outsourcing outsourcing programs. Recruitment

managers must work with human resources, strategic planning, business management and RPO partners to ensure the integrity of the process and strengthen the supply chain of recruitment.

Oliveira (2009) [18] worked on the SCM to improve their relations with their own local suppliers. This relation is build due to fall in petroleum prices and demand in the context of National oil companies (NOC) and international oil companies (IOC). They highlighted the need for innovative ways to induce investment that maximize local content and facilitate sustainable industrial development. They found that the oil and gas sector have to turn to their major suppliers, the oil field service (OFS) companies, renegotiating hiring rates for drilling rigs at 10-30% lower than previous levels.Fang (2009) [19] focuses on optimizing the overall process of managing the supply of drilling equipment, increasing profits and controlling costs. The idea of enterprise resource planning is combined with practical management in drilling companies to form a corporate resource drilling network model (NDERP). This model provides support to drilling companies to shorten the drilling rigs of drilling equipment, reducing inventory costs and achieving scientific management and network control of drilling equipment procurement processes.

Jacoby (2010) [20] identified several factors that contributed to recent oil price changes, including political crisis, financial speculation and high demand from developing countries. The volatility in capital investment by oil companies has led to greater volatility in equipment supply chains, resulting in the production of swings and inventory and deferred. The simulation shows that, over time, the cost of the supply chain is 10% higher due to the initial shock. Refiners and producers pay higher prices set when markets are overheated.Cigolini and Rossi (2010) [21] discussed the operational risk can cause environmental catastrophe and loss of life in the petroleum industry. While, there is limited studies focusing the relationship between operational risk and oil supply chain management. This study highlighted the model to evaluate and estimate the risk. This operational risk mostly confronted in transportation, drilling process, and the level of oil refining. In drilling stage the model proposed three procedures; (1) designing, (2) construction, (3) production. In the second phase of transportation, the two process of risk management proposed. These process are identification, and evaluation and control of physical components, processes, and procedures. While this allows the risk of failure of the pipeline to be confronted with it. Finally, for the filtration phase, the initial phase is recommended to give priority to each filtering equipment, and some of the techniques and tools proposed. Moreover Zayou (2014)[22] provides and model based on RFID to enable it to survive in the tough environment of the oil and gas industry. It solves the RFID-on-metal problem by setting it regularly or incorporating metal RFIDs.

De La Cruz-Soto and Gutiérrez-Alcaraz (2010)[23] discussed the O & G sector importance with respect to electricity systems. This system efficiently meet the demand of consumers. The study produced a supply chain model to analyze the acquisition of fuel contracts to produce units. Meredith (1993) [24] described the different methods and its implementation. The implementation of any specific event management system called Event Insight for a Distributed System. It is built by SAP to discourse the reliability problems confronted by SAP customers in different sectors such as oil and gas. The central key of this model combines the three core technology, namely, (1) event federation; (2) event processing series, and (3) complex event processing. This study uses the oil and gas sector to exemplify the practice of technology.

Denney (2011) [25] raised the question of whether oil and gas development companies are facing increasingly complexity in integrating local content supply chains. In many cases, performance guarantees with anticipated local content performance are thresholds for obtaining and / or maintaining a functional corporate license. This article describes the company's approach to leveraging local content as part of its supply chain strategy to increase capacity while managing and meeting stakeholders' expectations.Esteves and Barclay (2011)[26] pointed out that the important expansion in the concept of supply chain management is the intensive strength to incorporate small and medium-sized enterprises (SMEs) domestically into the supply chain multinational companies. While, domestic SMEs may impact negative in social aspects. They have shown that incorporating the social and economic impact assessment (SEIA) into a procurement strategy can be an operative instrument for enhancing project benefits within the local community.

Hall, Matos and Silvestre (2012)[27] explored why companies need to include sustainability considerations in the supply chain as a way to improve the social and environmental impact of the production system. Recognition of financial, social and environmental elements, however, creates greater complexity, making it impossible to optimize sustainable supply chain problems. They focus on interactions between financial, social and

environmental elements identified by empirical research conducted in Brazilian hydrocarbons and petroleum, sugarcane and biodiesel chains.

Haider *et al.* (2013) [28] discussed the needs for finding oil and gas business in new regions. They considered the oil and reserves in Afghanistan despite of the security, infrastructure, and political instability issues. They proposed a step-by-step model that uses basic competency controls, decision-making, dashboard templates, cost equations, intelligent predictive tools and critical areas of critical management, ensuring that organizations make an informed decision about how the strategy and implementation strategy, in line with the various challenge. This model has been integrated into processes that identify the potential elements of risk across supply chains in Afghanistan as a base case, and determine steps to assess the potential impact of these risk elements. Gray at.al.[29] developed a distribution center model (DC) to display the best location to place the large and small filter mill transportation distance based on the cost of the filter mill construction and the costs associated with the stability of the channel quality filter plant pipe. This model has been modified to allow the use of different costs associated with the quality cost of the planning and maintenance status of the environmental dignity install. If used to prove the model is Indonesia's petroleum industry as how increasing efficiency and over capacity can be another viable nation to provide oil to the United States.

Cheng at.al. (2014) [30] reviews the supply capability of urban supply chain reliability and critical infrastructure (CI) processes. They describe the process of oil and gas supply chain in Houston's metropolitan area that controls the distribution of oil and petrochemical supply chain in the United States. The CI system considered in its research includes oil and gas refining facilities, inlet and outlet distribution pipelines, power plants and power generation systems, telecommunications systems and stakeholders' social networks. Tesfay (2014) [31] proposed the Statoil Norway oil and gas company to coordinate with a friendly, profitable and efficient maritime carrier. This study uses supply chain management theory such as model of industrial procurement process and strategic triangle model. The results show that Statoil's requirements for friendly shipping providers maximize the risk of suppliers. Thus, the partnership with the supplier is effective and the contract with the agreement to return the cost of adjusting the fuel price (increase climatic) is Statoil's cost-effective coordination.

Teixeira and Borsato (2018)[32] tacked the concept of an advanced enterprise formed by some partners, must be dynamically shaped, in order to be agile and customizable. They focus on the state of art at: Supply Chain Management, Enterprise Virtualization, Selling Development and Approval, Model Based Business and information; (ii) design of a dynamic supply chain training model; and (iii) model validation through its application in case studies in the oil and gas industry.Saad, Mohamed Udin and Hasnan (2014)[33] found that the supply chain (SC) is a dynamic process involving the flow of information, materials and funds continuously across multiple functional domains, within and between chain members to meet customer needs and maximize their profits. Such dynamic processes require immediate acquisition and continuous reevaluation of partners, technology and organizational structures. They identify and understand the process of dynamic SC capabilities. The oil and gas company in Malaysia was chosen as an example in understanding the dynamic SC's capability and performance of the SC. They provide a rich and bold description of the SC's dynamics, which results in the management's perspective and management theory of SC in the oil and gas industry.

Anatan (2014)[34]emphasized that project execution and successful business operations depend on the strong supply chain performance. They described the elements of the ConocoPhillips Supply Chain Sustainability Program to support better operational and management implementation through the strengthening of supply chains to sustainability drivers that have an impact on oil and gas activities. Saad, Udin and Hasnan (2014)[33] mentioned that oil and gas companies consider themselves highly complex and structured in the supply chain system, which requires dynamic practice. Oil and gas companies may face capacity issues related to dynamic supply chain practices in realizing and re-evaluating their counterparts in the supply chain. They have produced models to understand the real-world problems that need to be known about how supply chain practices are seen by players in the oil and gas industry.

Urciuoli, Mohanty, Hintsa and Gerine Boekesteijn (2014)[35] conducted five case studies to understand what exogenous security threats could disrupt the flow of oil and gas in Europe, how energy companies from the supply chain point of view are working to manage this threat, and how The EU can streamline energy security in collaboration with supply chain companies. Their results show that the oil and gas supply chain has provided a good mix of strategy interruptions,

including portfolio diversification, flexible contracts, transportation capacity planning and security stocks.Wagner, Mizgier and Arnez (2014)[36] have worked to connect a tight and tight supply chain that makes it a difficult task because connections and nodes close in the network lead to increased exposure to actual risks. They developed a model to study the supply chain complex of the oil industry in the Gulf of Mexico. Their results provide estimates of potential economic impacts and associated typhoons that can be used as a decision maker to manage the risk of supply disruption in a network of interconnected supply chains. Sueyoshi and Wang (2014) [37] have identified environmental assessment and protection as an important concern in modern enterprises. They suggest using Data Research Analysis (DEA) for such an assessment. This proposed model provides entrepreneurs and managers not only the size of the company's sustainability, but also information on how to invest in technological innovation to reduce unwanted revenue (for example, CO2). In demand, they use a proposed approach to measure the sustainability of oil companies in the United States.

The supply chain of oil and oil upstream is complex and crushed with unique challenges. An E & P company brings various materials from the oil rig to the tie. The amount of imported equipment is widely transported in international waters and then transported to a work site using multimodal transport. All supply chain operations must comply with strict compliance with various provisions of domestic regulations, domestic law and high HSE standards. In addition, the industry needs flexibility and security. Ready from the shelf because hardware downtime can cost up to $ 1 million a day. During model development, couples potentially involved in several stages to validate practical implementation. This paper discusses the model in more detail, as well as the key risks associated with its implementation, performance and implementation. This acquisition approach is an important step towards improving the efficiency and effectiveness of the upcoming supply chain in the undeveloped geographical area. The success of this model can be easily replicated and its benefits can be realized by the industry in general (Singh, Tripathi, Srivastava and Iyer 2015) [38] .Valiullin, Andreeva and Belokhvostov (2015)[39] introduced the concept of "lowest" elementary concepts that can be used as a basis for the creation of a complete "chain" of production facilities that are modified and the definition of time and amount of planned investments. Owusu and Vaaland (2016)[40] identified and analyze their actors and their relationships in achieving local content goals in African oil and gas producer countries. They have developed a framework that integrates literature on local content with the theory of industrial networks. The framework classifies various key actors into realizing local content by suggesting that local content achievements require the development of commercial networking networks and resource coordination between local firms and institutions and foreign and institutional companies, in addition to multinational oil companies.

Modarress *et al.* (2016) [41] developed a methodological framework which substantiates or refutes the hypotheses based on the objectives: industry challenges are the driving forces behind outsourcing strategy; the potential risks of cost savings of outsourcing outweigh the consequential loss in control over the product or service, companies' safety and security of the region. Their results showed that oil and gas exporters have a mixed but positive and broad vision of outsourcing strategies. While outsourcing can generate savings in the supply chain, it also produces disturbing resistance due to unknown fears in complex sequences of cultural, infrastructure, and process networks. Wan Ahmad et.al. (2016) [42] developed a model to study the impact of SCM factors on the sustainability strategy of four major supply chain functions: supplier management, production management, and product and logistics management. The data analysis collected from the 81 companies survey showed that management readiness could enhance the sustainable supply chain strategy in the O & G industry more than a commitment. Preparatory measures include operational risk management in the supply chain, which is essential for the sustainability of all functions in the supply chain, except for production management practices. The results also emphasize the importance of vendor management and logistics to achieve sustainable S & G supply chains.

Reis et.al. (2017)[43] showed that the best practices and tools based on thinning methods can increase efficiency by reducing costs and waste in an oil and gas company. In their model, they are integrated into areas including visiting company warehouses, observing non-intrusions and roles of workers. The outcome of this article proposes low cost solutions, weakening waste performance to reflect the increase in production. The literature identified 52 different models that are using the Supply Chain Management practices in O&G sector in one form or another from[44],[45],[46],[47],[48],[49],[50],[51],[52],[53],[54],[55]. Table 2 summarized these models.

Table 2: SCM Model in O & G Sector

S.No	Year	SCM Model in O & G Sector
1	2000	Planning logistics operations in the oil industry (Dempster *et al.*, 2000)
3	2007	Optimizing 3PL service delivery using a cost-to-serve and action research framework (Ross *et al.*, 2007)
4	2007	Process approach to supply chain integration (Trkman *et al.*, 2007)
5	2007	Integrating sustainable development in the supply chain: The case of life cycle assessment in oil and gas and agricultural biotechnology (Matos and Hall, 2007)
6	2007	Economic costs of firm-level information infrastructure failures: Estimates from field studies in manufacturing supply chains (Dynes *et al.*, 2007)
7	2007	Trans-regional supply chain research network: Developing innovation strategies within and between regional oil and gas clusters (Jaegersberg *et al.*, 2007)
8	2007	Research on the strategic supply chain management countermeasures of the oil-gas enterprises in China (Yan-bin *et al.*, 2007)
9	2008	Intelligent strategies in LNG (Rangnow and Govia, 2008)
10	2008	"If Tesco can do it, why can't we?": The challenges and benefits of implementing RFID and mobile computing in upstream environments (Morris, 2008)
11	2008	Preparing for implementation of new international chemical regulations: REACH in the European Union and CEPA 1999 in Canada (Witt and Kirchof, 2008)
12	2008	Development of natural gas supply chain by means of natural gas hydrate (Nogami and Watanabe, 2008)
13	2008	Outsourcing of logistics activities in a complex supply chain: A case study from the Norwegian oil and gas industry (Aas *et al.*, 2008)
14	2009	An "Olympic" framework for a green decommissioning of an offshore oil platform
15	2009	Horizontal and vertical transmissions in the US oil supply chain
16	2009	Companies adopt efficient waste-management units
17		Critical success factors for recruitment process outsourcing (RPO)
18		Innovation urged in NOC, IOC relations with suppliers
19	2009	A study on the framework of Network Drilling Enterprise Resource Planning (NDERP) Model
20	2010	The oil price 'bullwhip': Problem, cost, response
21	2010	"The predictive organization"-How the defense sector improved asset availability and integrity
22	2010	Managing operational risks along the oil supply chain
23	2010	New developments: Tracking solutions for improved oil- and gas-industry traceability and accountability

S.No	Year	SCM Model in O & G Sector
24	2010	Optimal fuel and emission acquisition contracts using a supply chain model
25	2011	Insight into events: Event and data management for the extended enterprise
26	2011	Managing use of local content in upstream oil and gas
27	2011	Enhancing the benefits of local content: Integrating social and economic impact assessment into procurement strategies
28	2012	Understanding why firms should invest in sustainable supply chains: A complexity approach
29	2013	Intelligent integrated management for new ventures in high risk developing countries
30	2013	Utilizing pipeline quality and facility sustainability to optimize crude oil supply chains
31	2014	Research design for resilience of urban interdependent critical infrastructures and supply chain processes
32	2014	Environmentally friendly cost efficient and effective sea transport outsourcing strategy: The case of Statoil
33	2014	Semantic modeling of dynamic extended companies
34	2014	Dynamic supply chain capabilities: A case study in oil and gas industry
35	2014	Leveraging sustainability in the oil and gas supply chain
36	2014	Dynamic supply chain practices in Malaysia
37	2014	The resilience of energy supply chains: A multiple case study approach on oil and gas supply chains to Europe
38	2014	Disruptions in tightly coupled supply chain networks: The case of the US offshore oil industry
39	2014	Sustainability development for supply chain management in U.S. petroleum industry by DEA environmental assessment
40	2015	A supporting model for the dynamic formation of supplier networks
41	2015	Crude oil supply chain risk management with DEMATEL–ANP
42	2015	Evaluation of external forces affecting supply chain sustainability in oil and gas industry using Best Worst Method
43	2016	Green supply chain management performance: A study of Brazilian oil and gas companies
44	2016	Addressing supply chain configuration practices: Evidence from Italian best performer valve suppliers for the oil & gas industry
45	2016	Supply chain management strategy for an effective collaboration: A case study in Malaysia
46	2016	Outsourcing in the Persian Gulf petroleum supply chain
47	2016	The influence of external factors on supply chain sustainability goals of the oil

S.No	Year	SCM Model in O & G Sector
		and gas industry
48	2016	Commitment to and preparedness for sustainable supply chain management in the oil and gas industry
49	2017	Modeling systemic risk of crude oil imports: Case of China's global oil supply chain
50	2017	Improving coordination in an engineer-to-order supply chain using a soft systems approach
51	2017	To identify the critical success factors of sustainable supply chain management practices in the context of oil and gas industries: ISM approach
52	2017	Evaluation of the external forces affecting the sustainability of oil and gas supply chain using Best Worst Method

On the other hand, there are similar domains to SCM Oil and Gas, which have redundant and irrelevant models, processes, activities, concepts and tasks such as database forensic investigation domain, mobile forensic investigation domain, and database security domain. These redundant works make domain heterogonous, ambiguous and complex amongst domain practitioners.

4. Conclusion

The findings of this literature review have clearly highlighted the evolution of the concept of SCM over the last decade. Due to the dynamic nature of the oil and gas industry and the challenges in both the supply and the demand side has made the efficiency in supply chain crucial for the sustainability of the oil and gas company. Over the year the external factors have also been very crucial in the sustainability and SCM can be vital factor in the success of the organization. The future studies can empirically study the effect of various SCM models on the success of the oil and gas company

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