

The Implications of the Fluctuating Oil Prices on the Corporate Sustainability of Malaysian Small and Medium Enterprises (SMEs) in the Oil and Gas (O&G) Industry

Ying Liu*, Li Mingzhu, Selvanathan Arputham

Centre for Post-Graduate Studies, City University, Malaysia

*Corresponding author: Ying Liu
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Abstract

Original Research Article

The depressed oil prices supply from supply demand imbalances have resulted in the major oil companies reducing their operational and capital expenditure budgets. This threatens the business survival of Malaysian O&G SMEs who depend on the major oil companies for exploration, development and production activities. This paper presents the findings of doctoral research on the impact of the oil price shocks on the Malaysian O&G SMEs with recommend for them to become more resilient and competitive in the challenging operation environment. **Methodology:** A mixed methodology was used to offset the strengths and weaknesses associated with quantitative and qualitative methodologies. However, the qualitative phrase was dominant to obtain a deeper understanding of the issues from officials in the O&G SMEs. The data collection instruments were a comprehensive literature review, personal interviews, focus group and a web survey. Content analysis and descriptive statistics were the data analysis technique. **Results:** The findings revealed that several Malaysian O&G SMEs were unable to survive the difficult business situation, and some had exited from the industry. Appropriate new strategies and business models are required to overcome the challenges of competitive pressures, revenue loses and cost curtailment. **Conclusion/- and Recommendations:** It is recommended that Malaysian O&G SMEs move away from the comfort zones and venture into new markets. They should also embrace IR 4.0 and use new technologies for innovation, and increased productivity to better position themselves for entering international markets. **Keywords:** Oil prices, Business survival, Business models, Strategy, Mixed methodology.

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INTRODUCTION

The O&G industry, a mainstay of the Malaysian economy is a major contributor to foreign exchange earnings and gross domestic product (GDP). Malaysia GDP growth declined from 6% in 2014 to 5% and 4.2% in 2016 due to sharply reduced oil prices [1]. Petronas, the Malaysian national oil company(NOC) as well as integrated oil companies (IOCs) including Exxon and Shell registered reduced revenues which compelled them to contain costs and reduce capital expenditures (CAPEX) in 2016 [2]. This impacted adversely on the O&G SMEs as they are dependent on contracts along the O&G supply chain. As the shrinking volume of contracts was in-sufficient to generate the necessary revenues to stay afloat, some have exited the industry [3].

This paper is structured as follows. Section 2 reviews the pertinent literature on i) the global O&G industry; ii) the Malaysian O&G industry; iii) the challenges faced by the Malaysian O&G SMEs; iv)

pertinent internationalization theories and prior research; v) the Malaysian Government's support programs and then vi) identifying the research issues for the crafting of the propositions for testing by this research. Section 3 outlines the research methodology including the design, the data collection tools and the data analysis procedures. Section 4 presents and discusses the results while the final Section 5 draws conclusions and offers recommendations.

LITERATURE REVIEW

The Global O&G industry

Over the period 2014-2016, oil supply growth outpaced demand growth resulting in oil prices plunging from a peak of USD125.90 per barrel (pb) in April 2011 to a low of USD35pb in January 2016 [1]. Other significant causes were oil substitution, increases in shale oil production and the shift in the automotive sector from petrol driven cars towards electric-driven vehicles [4]. Supply disturbances also stemmed from armed conflicts, new discoveries and extraction

technologies. The output reductions from members of the Organization of the Petroleum Exporting Countries (OPEC) in 2017 and the trade sanctions imposed by the United States on Iran reversed the trend. Although oil prices exceeded USD80 in October 2018 [5], they declined again to hover around USD50 in October 2018 [6].

The low oil prices compelled the NOC and IOCs to implement cost reduction measures and slash capital expenditures by about 40% between 2014 and 2016. Investments in the upstream segment were significantly reduced in 2016, and major projects that did not meet profitability criteria were either canceled or deferred [7]. There was a consolidation of some major players in response to the changed environment [8].

Because of the substitution factors and the increasing demand for clean energy there is a growing demand for liquefied natural gas (LNG), with volumes growing by 6.2% in 2014. Consequently, there is global over supply of gas [19] and this has resulted in reduced LNG prices. Several large IOCs and NOCs are delaying investment decisions on global LNG projects [10].

The Malaysian O&G Industry

Malaysia's mining sector, which includes the O&G industry, is the second biggest source of export earnings after electrical and electronic goods [7]. A mainstay of the Malaysian economy, the O&G industry contributed RM103.6 billion or 10.2% of GDP in 2014 [11]. Petroleum products, LNG and crude oil cumulatively made up RM127.7 billion or 16.4 % of total exports in 2015 [12]. Upstream O&G production including petroleum and gas peaked in 2014 and contributed RM87 billion in 2014, while downstream activities including refining contributed RM27 billion in the same year [13].

The Malaysian O&G industry has been impacted by the global oil market in 2014 and the depressed conditions generally remain [14]. Consequently, Petronas, adopted a policy of cost containment and reduced its capital expenditures (CAPEX) by RM50 billion as well as operational expenditures (OPEX) in 2016 [2]. Further expenditure reduction measures were introduced in November 2017 including reductions in jack-up rigs, marine vessels and floating offshore facilities. Petronas' spending for upstream activities in Malaysia peaked in 2014 when it set aside 71% of the RM39 billion in CAPEX. In 2016, it was down to less than 30% of the total RM41 billion and this is forecasted to trend lower over the period of 2018-2020 [2]. Petronas also reduced project awards and negotiated cost reduction from the services and the equipment vendors [7]. Petronas has advised its vendors, including Malaysian O&G SMEs, to address the challenging market environment by consolidating to provide economies of scale, integrated solutions and

acquiring expert capabilities [13]. Because of the bleak market conditions, the major IOCs including Exxon, Royal Dutch Shell and Chevron are emphasizing on cost efficiency and profitability. They are investing in new technologies such as 4D seismic imaging to business oil field to achieve increased productivity [8]. Digitization facilitates innovation that improves productivity and efficiency. Robotics are also becoming more commonplace in the industry as they can handle complex and repetitive tasks such as connecting pipes and replacing broken machinery [7].

The IOCs also capped capital expenditure and put projects on hold [15]. In Malaysia, Shell reduced its CAPEX from USD32.5 million in 2014 to USD22 million in 2016 while Exxon reduced its CAPEX from USD38 million in 2014 to USD23 million in 2016 [16]. These measures are resulting in fewer out sourcing contracts to the SMEs of the supply of services and equipment [17].

Industry report suggests that Malaysia's available total resources are approximately 15.86 billion bbl of oil and 24.19 billion BOE of natural gas [18], assuming ultimate recovery. Malaysia's proven oil reserves stood at 3.5 billion barrels or 0.2% of the world's total in 2016 [19]. The Government estimates that based on current production rates, the country's oil reserves will be depleted by 2040 and natural gas by 2061 [20]. Therefore, the Malaysian O&G industry sector can be considered to be a sunset industry with the prospect of a contraction rather than an expansion. It follows that the growth opportunities for Malaysian O&G SMEs challenged by the intense competition in a shrunken market with more competitors who are vying for the reduced contracts in the O&G supply chain.

Malaysia is the world's third largest exporter of gas and exported about 30.1 billion cubic meters (bcm) of gas in 2015. However, the emergence of a more competitive LNG market with greater exports from Australia and Papua New Guinea could result in reduced short term exports [21].

Challenges Impacting on the Malaysian O&G SMEs

SMEs which account for 82% share of Malaysia's O&G sector are dependent on the provision of services and equipment to the major oil companies in upstream, midstream and downstream activities. The upstream O&G supply chain comprises exploration, development, production and decommissioning segments in line with the life cycle of projects. In 2015, there were 1842 active O&G companies and of these, 1805 were SMEs engaged in manufacturing activities and the provision of services [22]. The cutbacks in CAPEX and OPEX have resulted in fewer contracts for equipment and services, and this has generated intense competition among SMEs. To address this, they have to adopt the latest technologies to improve productivity and reduce costs in the upstream, midstream and

downstream segments. Concurrently, they have to emphasize on innovation to address the depressed conditions in the domestic O&G industry [3]. However, The technology upgrading process is an expensive upfront investment for SMEs and they experience difficulties in securing financial support [23-25].

The emergence of free trade areas, which lower trade barriers between countries, creates more opportunities for Malaysian O&G SMEs to venture abroad [26]. Since the domestic market is relatively small, Malaysian O&G SMEs have to move to international markets and gain market share [27]. Globalization also presents opportunities for O&G SMEs to rethink and reshape their strategies to remain competitive in both domestic and cross-border activities [28, 29]. To succeed, they have to be internationally competitive, and this requires them to consolidate and scale-up to become bigger and stronger O&G players, with stronger balance sheets to better position themselves to compete for global high value projects in the upstream and downstream activities [30].

Pertinent Theories and Prior Research

Successful internationalization requires strategic decisions on foreign market selection and entry mode [31]. Foreign market selection is determined by various factors including the size of the market, the industry, the home country and the affluence of the target market [32]. The Uppsala internationalization model [33] proposes that the firm enters into an individual foreign market in stages and therefore internationalization is an incremental and gradual process [34]. The network model, a behavioral approach to the internationalization of the firm [35], postulates that a network structure is determined by interrelated and interdependent actors, activities, and resources [36]. A firm's successful entry into new markets depends on its position in the network as it characterizes its relationships with other firms [37, 23]. The model stresses that in the internationalization process of a firm alone, the external environment, networks and relationships which evolve over time to build trust result in market opportunities to internationalize [38].

Malaysian O&G SMEs have to adopt appropriate strategies and develop capabilities to become more resilient in a difficult business environment. The dynamic capabilities (DC) framework postulates that dynamic capabilities emerge when firms can sense opportunities and threats by environmental scanning which could cover domestic and international markets as well as technological advancements to identify new opportunities [19]. They can then seize or capture existing and emerging opportunities [40] through investments in research, development work and related activities [39]. They can then transform or reconfigure internal and external resources and

operating capabilities to create sustained competitive advantage [39], and to seize new market opportunities.

Research has been conducted on the critical success factors for internationalization [41] and the barriers to internationalization [42, 43]. The findings of the research study by Zahra, *et al.* [44] revealed that the global mindset is often seen as a prerequisite for successful internationalization that facilitates the identification and exploitation of emerging international opportunities [45, 46].

Lutz [47] conducted research on the internationalization in the Danish offshore O&G industry. The findings revealed a reduced pace of internationalization activity because of the low oil prices, the declining domestic production, investments and the expected decline in the total operating expenses. The scope and mode of internationalization also differed significantly between the micro, SMEs and the large enterprises. The principal barriers to internationalization were (1) knowledge about the market potential in the export markets; and (2) knowledge about potential customer and competitors.

However, limited prior research has been conducted on the internationalization processes of Malaysian O&G SMEs. Abdullah and Zain [48] looked at the internationalization process of Malaysian SMEs and how they related to the internationalization theories. Their findings revealed that the Uppsala model, network approach and INVs or 'born globals' are still relevant in the context of Malaysian O&G SMEs' internationalization.

The Malaysian Government's Support Programs

The Malaysian Government has a wide range of policies to support SMEs. These relate to the adoption of innovation and technology, financing, quality of human capital, market and infrastructure [49]. However, SMEs face several hurdles and barriers to take advantage of the supportive programs. They experience difficulties in securing financial support [25]. Furthermore, many SMEs remain ignorant of the available assistance from the government agencies. Since much of the cited literature is dated, more recent research is required on the adequacy of the Government support programs to support Malaysia O&G SMEs.

However, Malaysian SMEs face several barriers for internationalizing their operations [48]. Recognizing this, the Malaysian Government implemented a policy framework for empowering SMEs to be globally competitive [50]. These are set out in the Malaysian SME Master Plan (2012-2020). Several Malaysian Government agencies provide policy support to Malaysian O&G SMEs. The Malaysian SME Corporation identifies potential SMEs to benefit from development. The Malaysian External Trade and Development Corporation (MATRADE) promotes the

internationalization of Malaysian SMEs while the MIDA provides incentives to support the development of SMEs [22], the SME Central Incentives System (SCENIC), a centralized database of beneficiaries of Government assistance was launched on 29th November 2017. The SCENIC serves to streamline the Government efforts to assist SMEs to avoid duplication as well as to optimize the use of resources [51].

Malaysia Petroleum Resources Corporation (MPRC), established in 2010, plays a lead role to promote, catalyze and globalize the country's O&G capabilities in the upstream, midstream and downstream segments [22]. The MPRC has a SME GROW program involving 165 medium SMEs to play important role for making Malaysia an O&G hub in the Asia Pacific region. These SMEs fall into the categories of exploration, development, production and decommissioning, which correspond with the various stages of a project lifecycle [22].

Research Issues and Propositions Development

The review encompassed academic journals, industry analysis and the Government reports on the role of SMEs in the Malaysian economy [52] and as the drivers of wealth creation, creating job opportunities and improving standards of living [52-54]. The Government's 11MP also highlights the national importance of the O&G sector [3]. However, pertinent research gaps emerged on the challenges that Malaysian O&G SMEs face in the troubled Malaysian O&G industry, and based on these, four propositions, which

are questions that are concerned with the relationships between concepts were crafted for testing through the collection of quantitative primary data. These were

- The fluctuating oil prices are adversely impacting on the growth and sustainability of Malaysian O&G SMEs
- The Malaysian O&G SMEs remain competitive in the domestic and international markets
- The Malaysian O&G SMEs have appropriate strategies to address the critical issues that impact on their corporate sustainability.
- The Malaysian Government has an adequate policy framework for supporting the growth and development of Malaysian O&G SMEs.

METHODOLOGY

The Research Design

This research design, as presented in Figure 1 was based on a two stage approach with combining inductive and deductive approaches. The mixed approaches. The mix methodology approach and triangulation of theory with multiple theoretical perspectives offset the strengths and weaknesses of adopting just quantitative and qualitative techniques [55]. The first stage was exploratory with the aim of gaining insights about the research problem and to identify the key research issues and the crafting of the research propositions [56]. The aims of the second stage which was descriptive and quantitative were to ascertain and describe "the characteristics of the variables of interest in a specific situation [57].

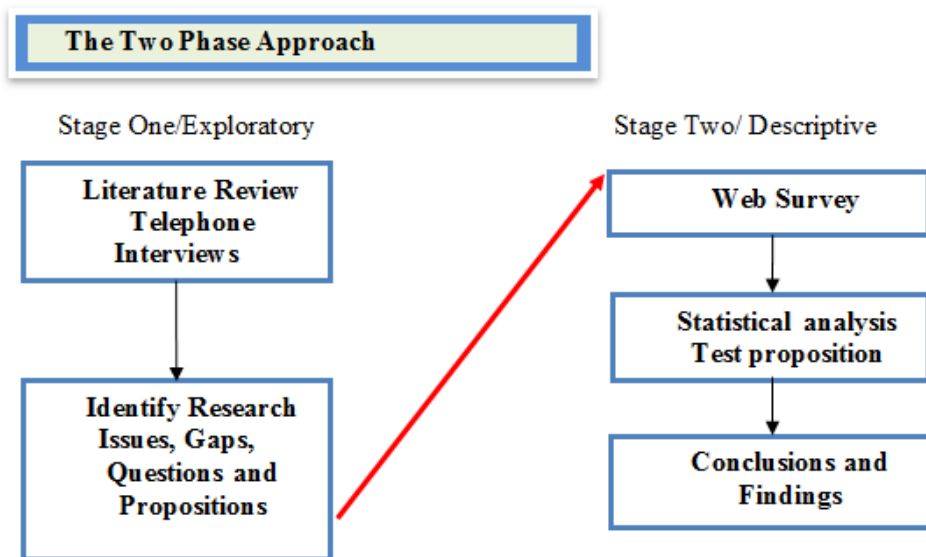


Fig-1: The Research Design
Source: Developed for this Research

The Data Collection Instruments

Qualitative and quantitative data were collected. The qualitative data instruments were (i) a literature review; (ii) eight (8) telephone interviews with representatives of the Malaysian O&G industry,

SMEs and academia, a with seven persons drawn from Malaysian oil traders, Malaysian oil companies and Petroleum experts. A web survey which generated 102 completed error free responses from Malaysian O&G

SMEs, Petronas, International oil companies, Academia, Petroleum traders and Petroleum experts.

The qualitative data analysis process focused on the interpretation of the words, comments, beliefs, thoughts and experiences of the persons interviewed [58] and the following data analysis activities involved data reduction, coding, content analysis and drawing of conclusions.

Descriptive statistics were used to analysis the data generated from the web survey and the outputs included Group Cross-tabulations; Mean responses for each Proposition; Standard deviations for Group; Group responses for each statement for each Proposition.

RESULTS AND DISCUSSION

There were four discussion topics related to each of the four research propositions which were addressed by the participants in the telephone interviews and the focus groups. These also formed the basis for developing the questionnaire for the web survey. This subsection presents the results from the testing of each research proposition before discussing conclusions.

Proposition 1: The Fluctuating Oil Prices are adversely impacting on the Growth and Sustainability of Malaysian O&G SMEs

- The interview participants lacked optimism on the recovery and stabilization oil price. The CAPEX cuts have adversely impacted on Malaysian O&G SMEs and several are straddled with borrowings and a few faces bankruptcy.
- The focus group participants were of the view that Malaysian O&G SMEs face competitive pressures and incurring revenue losses. Oil prices would remain volatile and sluggish with prices ranging between USD50 –USD50 pb.
- The relatively high mean rating of 3.86 for this proposition indicated that the wqeb survey participants believed that the low oil prices had adversely impacted on Malaysian O&G SMEs. A large majority of them considered it is necessary for the SMEs to take appropriate measures to address the challenges they face.
- This proposition was accepted as it was supported by the outcomes of the web survey, the telephone interviews and the focus group meeting.

Proposition 2: The Malaysian O&G SMEs remain competitive in the domestic and international markets

- The interview participants generally agreed that there is very intense competition as Malaysian O&G SMEs are now competing for fewer available contracts. However, there are less competitive in regional and international markets as they have to compete with regional competitors that have the latest technology and processes. They therefore

have to emphasize on new strategies to reduce costs and to increase productivity to effectively compete with their low cost regional rivals.

- The focus group participants believed that Malaysian O&G SMEs should enhance their technological capabilities and competencies in order to provide integrated services support for the successful penetration of international markets.
- The survey data analysis revealed a main rating of 3.22 reflecting moderate agreement for the proposition. The modest sport levels suggest that SMEs have to improve their competitiveness, in both domestic and international markets to overcome the challenges they face.
- Although the web survey indicated modest levels of support for proposition 2, the outcomes of the telephone interviews and the focus group indicated that they have to become more competitive. Therefore on balance, the responses to this proposition were considered to be “mixed”.

Proposition 3: The Malaysian O&G SMEs have appropriate strategies to address the critical issues that impact on their corporate sustainability.

- The interview participants generally agreed that because of the difficulties that they faced, the Malaysian O&G SMEs have to review and change their current business strategies. They should emphasize on cost effective, shorter delivery schedules and fully meet the requirements of their clients without comprising on quality, health and safety issues.
- The focus group participants also agreed that the current strategies adopted by the Malaysian O&G SMEs are inadequate in view of the changed business land scale. They have to change their strategies by providing better quality work at lower prices and adopt new technologies, including artificial intelligence, to provide better services and to shorter delivery times.
- The majority of the survey participants were of the view that O&G SMEs should adopt new strategies to address the critical issue that impact on their corporate sustainability.
- This proposition was accepted by participants in the web survey, the telephone interviews and the focus group meeting.

Proposition 4: The Malaysian Government has an adequate policy framework for supporting the growth and development of Malaysian O&G SMEs

- The interview participants generally agreed that the Malaysian Government was supporting the growth and development of Malaysian O&G SMEs to enable them to become more resilient and competitive. However, some participants were of the view that there was a need to improve and strengthen the current policies in view of the difficulties face by the Malaysian O&G SMEs.

- The focus group participants were of the view that the policies set out in the SMEs Master Plan were not specifically targeted to the Malaysian O&G SMEs. They suggested contingency programs to help the SMEs to overcome the challenges emerging from a depressed oil price situation.
- The survey data analysis revealed that only 39% of the participants agreed that the Malaysian Government had an adequate policy framework to support Malaysian O&G SMEs. More than 50% of the survey participants agreed that it was necessary for the Governments to introduce and implement more effective policies and measure to enhance the competitiveness of Malaysian O&G SMEs.
- Taking into account, the outcomes of the web survey, telephone interviews and focus group meetings, this proposition was marginally.

Discussion

Several key findings emerged from this research. First is the volatility of oil prices which ranged from a high of USD110 pb in 2014 to over around USD30 pb before making a moderist recovery to reach USD 80 in May 2018 only to drop again to USD53 in December 2018. This indicates oil over supply concerns caused by surging outputs from the United States, political instability in the Middle East and concerns about an economic slowdown in China the biggest oil importer.

Second, the reduced and fluctuating oil prices have created several challenges for Malaysian O&G SMEs and these includes cost pressures, declining revenues, rising competition and reductions in contracts for equipment and services. They therefore have to effectively address these issues by adopting appropriate competitive strategies and changing their business models. They also have to emphasize on innovation for competing with larger companies as well as move away from their comfort zones and venturing into new markets to take advantage of the opportunities emerging from trade liberalization.

The third relates to the policy framework of the Malaysian Government to support Malaysian O&G SMEs. The finding suggests that the Government should take additional measures to make the SMEs more competitive. These include training support to increase their knowledge capital and assistance to enter international markets through partnerships with global players. Since it is necessary for O&G SMEs to increase their investments on technology adoption. They should also benefit from financial assistance by way of development grants and soft loan packages.

CONCLUSION

This paper examined the corporate sustainability of Malaysian O&G SMEs that are now challenged by reduced and fluctuating oil prices. This study was considered to be significant as the Malaysian

O&G SMEs have to closely monitor changes in the industry both domestically and internationally in order to outperform their competitors [59]. They also have to emphasize on internationalization in view of the small size of the Malaysian market and to take advantage of trade liberalization.

Previous studies have highlighted the challenges faced by Malaysian SMEs from many dimensions. Salikin, Wahab and Muhammad [60] found that SMEs are challenged by financial constraints as well as non-financial constraints which include management skills and the marketing of SMEs' products or services which are factors that hinder SMEs' success [61, 62]. Previous studies have been undertaken on ICT and e-commerce adoption by Malaysian SMEs [63-65]. However, there is limited recent research on the challenges that now confront Malaysian O&G SMEs and the adequacy of the Malaysian Government's support policies to reshape the business models of Malaysian O&G SMEs to achieve target growth and profits.

The literature, largely Government publications, indicates that the policies set out in the 11MP and the SMEs Master Plan is aimed at enhancing the international competitiveness of the SMEs. The 11MP sets out clear strategies for SMEs to move into the international arena through enhancing their technological capabilities and negotiation skills. The question that arises is the preparedness of Malaysian O&G SMEs to successfully internationalize their operations.

It can be concluded that in order to address the difficult business environment, Malaysian O&G SMEs have to develop capabilities to become more resilient and competitive. They must acquire dynamic capabilities for sensing opportunities and threats for identifying new opportunities, and seizing emerging opportunities by transforming their resources and operating capabilities to create sustainable competitive advantage.

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