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Developing a Strategy Process toward Sustainability for Leading Oil Corporates in a Developing Country:A Learning Organization Approach

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ABSTRACT:*Organizations, similar to humans, undergo stages of growth, maturation, probable decline, and eventually death. The aim is to avoid the latter two stages and prolong the healthy life of the organization as much as possible. As a result of large company size among successful companies, of which diversity has normally contributed to further success, the need for strategies to share the knowledge across the organization and utilize it for better performance has become a challenge. Failure to do so can lead to early decline in rapidly growing companies (due to the lack of communication between sectors, and in some cases, internal conflicts). An ideal company is expected to have a dynamic environment that promotes improvement in all human resources, even machines, by continuous learning. Internal and external training, brainstorming, and even outsourcing activities with technology transfer obligation are all aimed to maximize the utility of information in the respective organization. If properly implemented, these attempts can make the company a learning organization. As hard as it could be imagined, transforming a traditional management attitude into a progressive learning company is a big undertaking. Many companies fail during this stage, and although having adopted knowledge management approaches, but without utilizing the information, they face sever challenges to survive. The problem is even more complicated in oil and gas companies in the Middle East region, where in addition to traditional management style, bureaucracy damages performance as well. It is found that a company is at the peak of its lifespan when management and employees have a mutual understanding of major goals and share common values. These values can be economic profitability, social responsibility, or sustainability. This study examines results of quantitative survey conducted with managers and employees of selected companies to examine strategy of oil companies in this region with respect to utilizing information and knowledge sharing. First, indicators of a learning organization are defined, then statistical relationship between key indicators are examined to identify obstacles, and to obtain a universal solution to the dilemma of aristocracy or early death in oil and gas companies.*

KEY WORD*: Sustainability, Learning Organization, Oil Corporation, Developing Country, Middle East*

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I. INTRODUCTION AND LITERATURE REVIEW

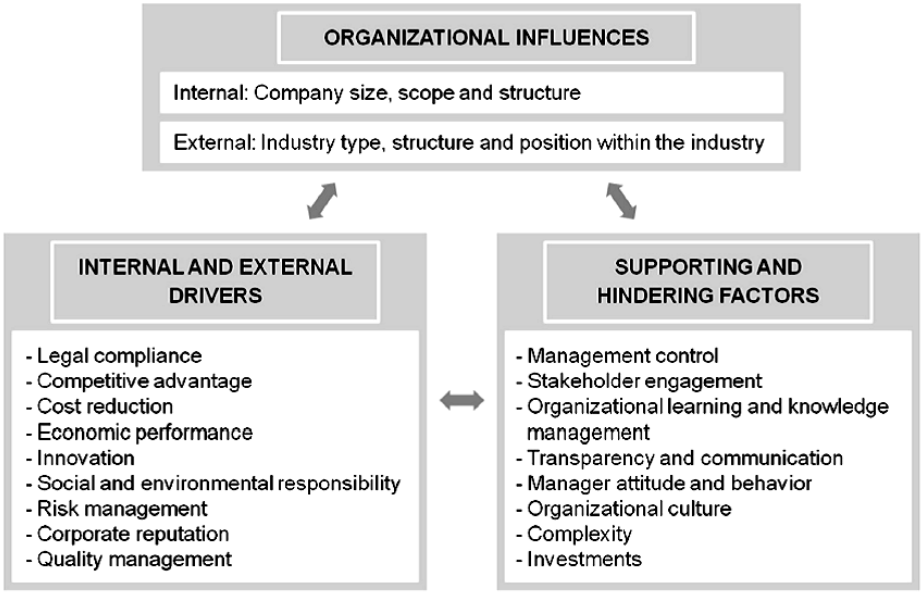
Oil and gas supply around 53% of the world's energy needs (BP, 2018). This percentage is not expected to decline in near future. Almost half of the world's proven oil reserves are in the Middle East. However, several countries in this region have not been able to utilize substantial revenues from fossil fuels to develop economy and infrastructure. A good example is Iran which holds fourth largest oil reserve totalling around 10% of the world's proven petroleum reserves, and second largest gas reserves with 17.8% of world's total reserves. Iran also has some unique conditions worthy of studying. The following two characteristics distinguishes Iran and many Middle Eastern countries from most of the western countries: a) dominance of State-owned firms; and b) developing countries based natural resources. In this region, many large oil and gas companies claim that they have significant social engagement programs in the areas where they operate, and many of these companies voluntarily provide sustainability reports detailing how they respond to the challenges of the communities. This entails significant investments to address the social challenges facing our world. But why sustainability hasn't been materialized in the organizational processes across the industry in this region? The answer requires a brief overview of sustainability and its requirements.

Benn, Edwards et al. (2014) introduced six phases on sustainability as: rejection, non-responsiveness, compliance, efficiency, strategic proactivity, and sustaining corporation. At a first glance, many companies reject or are non-responsive to the request for change. The change could be moving toward more sustainability

that may require fundamental changes in the organizational structure. Later on, when there are targeting regulations, companies tend to comply, but unwilling to adopt the spirit of sustainability. Further phases are improvement in the policies and governance of the entities to sustainably develop the business.

There can be internal and external influencers that affect how companies aim sustainability targets. Company size, scope and structure are among internal factors whereas industrial type, structure and position within the industry are considered external influencers (Engert, Rauter et al. 2016). Detailed list of factors and drives are listed in Figure 1.

Figure 1: Emerged issues from exploring the integration of corporate sustainability into strategic management (Engert, Rauter et al. 2016)



Source: Engert, Rauter et al. 2016

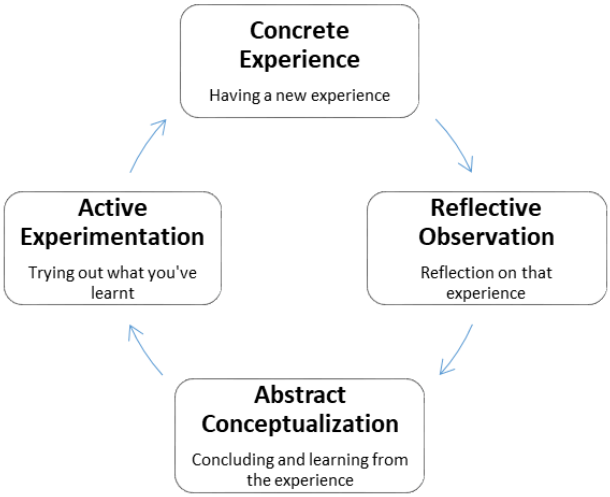
Any organization intending to move toward sustainability may need to redefine their relationship with the external economic, technological, social, and political environment. This can be pursued in various dimensions, of which the business case (economic), the natural case (environmental), and the societal case (social) are identified by Hockerts(1996), Hockerts(1999), Dyllick and Hockerts (2002). It is worth noting that any corporation that aims for sustainability must undertake holistic approach considering all three dimensions (Hart and Milstein 2003, Baumgartner and Ebner 2010, Baumgartner 2014, Lozano 2015, Engert, Rauter et al. 2016). This can pave the road for the integration of the corporate sustainability into strategic management (Kleine and Von Hauff 2009, Engert, Rauter et al. 2016). Ideally, sustainability can create a situation where neither firm nor society is better off while the other worsens off.

Once a firm starts walking in the direction of sustainability, there may be need for substantial changes both internally and externally. Huy and Mintzberg (2003) explained different mechanisms of applying changes in an organization. They stated that dramatic changes, which can incite revolutions and provide motivation, descend from the senior management. Systematic changes, capable of imposing reforms, are generated laterally. Finally, organic changes originate from the roots and can spur initiatives.

Organizations are similar to human societies with very complex network of relationships. A group of people get together at one place, sharing the resources, only when there is a common need or added value to all members of the society. In an ideal situation, members will assist improving values of each other (utility) by sharing the knowledge. This can lead to an upgraded standard of the life in the society. There is normally a similar sense of need for social interaction in organizations to address a concern or passion for something, and share the knowledge and learn how to do it better (Wenger-Trayner and Wenger-Trayner 2015). There are many benefits of this attitude in organizations, some listed by LEE and Valderrama (2003).

Learning is a continuous process which normally takes several stages of knowledge development (Figure 2) to be reinforced and settled in mind. In the case of an organization, knowledge affects policies and attitudes. Successful implementation of this agenda requires certain measures to integrate the organization into a sustainability focused organizational learning (SFOL) process (Seow, Hillary et al. 2006).

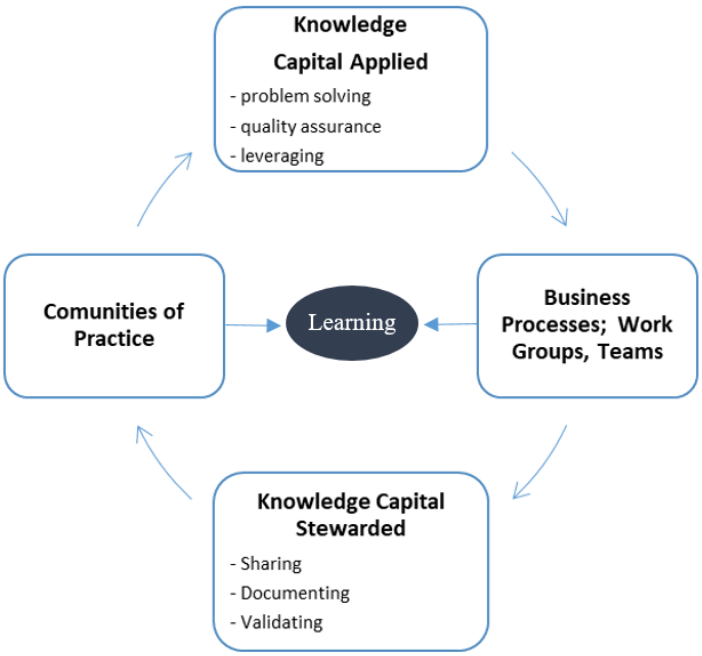
Figure 2: learning styles model introduced by David (1984)



Source: redrawn from LEE and Valderrama (2003)

Despite being well defined (although in many different ways), sustainability hasn't been appropriately understood in some companies where they are supposed to be leading sustainable organizations. Companies and individuals have different perceptions about sustainability, which creates a complex situation when conflicting ideas clash. Morioka and Carvalho (2016) listed a set of different sustainability indicators used by different individuals. That includes ethics, net income, health and safety, customer satisfaction, operating cost, impact on community, and …; the list goes on. For any sustainable organization, it is imperative to update knowledge within the entity, not only to resolve current challenges, but also to learn lessons from the past for upcoming situations (learning organization). Learning in a company requires proper setup, so the obtained knowledge can be used to improve quality of services/products as well as efficiency of internal procedures. A good overview of learning process in an organization is provided by Wenger, McDermott et al. (2002). A set of steps in multi-membership learning cycle is illustrated in Figure 3.

Figure 3:The multi-membership learning cycle



Source: redrawn fromWenger, McDermott et al. (2002)

This study aims to determine what strategy Iran's oil industry's corporates could follow toward reaching the upper levels of sustainability. There is an emphasis on the added value of information, and therefore, predecessors of becoming a learning organization are addressed. Detailed interviews were conducted with managers and employees of oil companies in this region, and quantitative evaluations of statistical results are interpreted to obtain a better understanding of how development is perceived in the studied companies.

As an early observation, there are different perceptions about sustainability among individuals, where size and wealth of the company affects such perceptions (SadeghiMojarad, Atashbari et al. 2018). It is also found that unless employees share the same understanding and concerns about sustainability with managers, there is going to be no significant improvements. In the other words, no matter how serious managers are about any strategy, unless employees understand and agree with those values, implementing any such strategy seems unlikely.

This paper first provides a brief literature review of the studied topic, then explains the methodology and conducted survey. This will be followed by results and discussions where detailed analysis of findings are discussed.

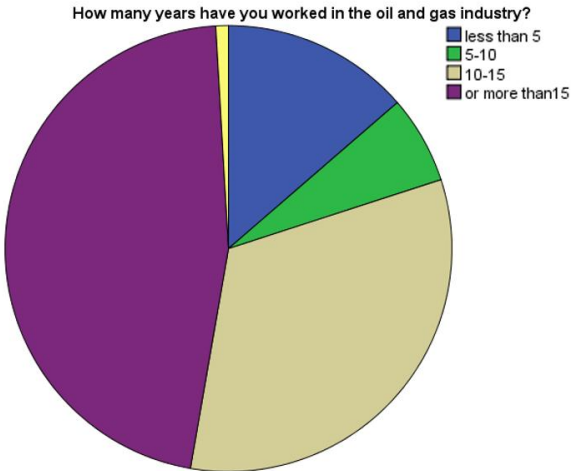
1.2 Research Objectives

The objective of the research is to examine the status of oil companies in the Middle East region with respect to sustainability and standards of learning organizations.

1.3 Methodology

Individual employees and managers of four major oil and gas companies are interviewed or the qualitative analysis. The four companies are PetroPars, PEDCO, OIEC, and IOEC. However, the main survey was conducted using a detailed questionnaire in which participants are selected based on their contribution to the oil and gas industry either within technical discipline or management position. Most participants in this study were senior employee and managers (Figure 4).

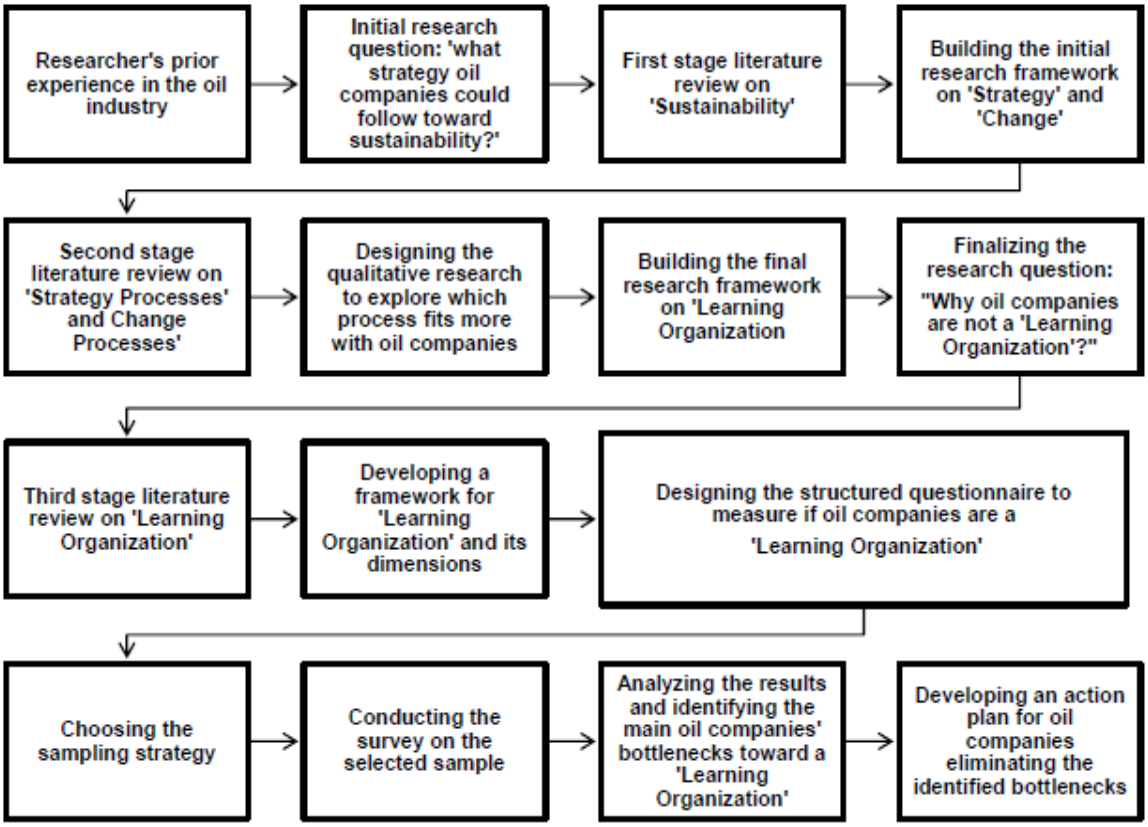
Figure 4: most participants in this study were senior employee and managers.



The main focus of this paper is on the results of quantitative survey based on the flowchart presented in

Figure **5**. To design the survey, primary research questions must be identified, and appropriate survey questions framed to investigate every item.

Figure 5: Survey and analysis flow chart



All of these ideas were materialized in the form of a questionnaire. Statistical results were analyzed using IBM SPSS suite, and results are investigated either as individual parameter or in correlation with other elements. To validate results, Cronbach's alpha coefficient was calculated using the following formula. This coefficient determines how likely anybody will get the same results if another survey is conducted under similar circumstances. The values closer to 1 suggests better reliability of the survey.

$$\alpha = \frac{k}{k-1}\left[1 - \frac{\sum {S_i}^2}{S_x^2}\right]$$

Where,

$$\alpha = Cronbach's\ alpha\ coefficient$$
$$k = number\ of\ questions\ in\ the\ survey$$
$$S_i^2 = variance\ of\ i^{th}\ question$$
$$S_x^2 = total\ variance\ of\ the\ survey$$

This coefficient is calculated for 67 variables which yielded 0.946, hence the research methodology is reliable.As another measure of data normalcy, Kolmogorov–Smirnov test was conducted to compare the cumulative distributions of two data sets. We have tested the null assumption of data being normally distributed on 5%. Any statistic less than this threshold means that the data are normally distributed, which was the case for all 67 variables in this study. The rest of the analysis is looking for a match between the questionnaire responses with the criteria of learning organizations and sustainability.

1.4 Results and Discussion

When the participants were interviewed on their opinion about the industry and pertaining issues, sustainability was a common concern (Figure 6). Qualitative study is not provided in this article, but a few points from the responses worth noting herein. When participants were asked: "what is the overall approach of the oil companies selected for this study regarding the six sustainability phases?",all stated that oil companies are in compliance. "The main target of our company is to increase profits" they stated. They believe that top

management is under pressure of shareholders to minimize costs, hence implicitly, managers expect project teams to accomplish the projects under minimum acceptable standards just to keep the lights on. The participants argue that the minimum standards are an optimum point, meaning that companies will just comply by the minimum requirements set by the government, and will not go beyond that.

Figure 6: Word Frequency Visualization - Increased size of words in the picture indicates an increased number of times the word was used during the interview with expert panel participant

Figure 7 demonstrates how employees think about leadership's attitude in their respective organization. Majority of the respondents stated that the leaders don't consider moral and ethical consequences of their decisions. Protecting environment and sustainability concerns are often thought as moral and ethical commitments in an organization. From sustainability perspective, the lack of ethical commitment presents a concern in the management which is somehow conscious about what's going on in the organization (Figure 8). Not only this, but also how the leaders look for problems, welcome new ideas and incorporate them in resolving the issues are determining factors in company's degree of sustainable development. These figures can be subjective as no details were provided by the respondents about the desired frequency of evaluating work processes or internal assessments. However, these graphs are indicative of ongoing attempts to identify and solve issues.

Figure 7: Response to a question asking about senior leaders' consideration about moral and ethical consequences of decisions

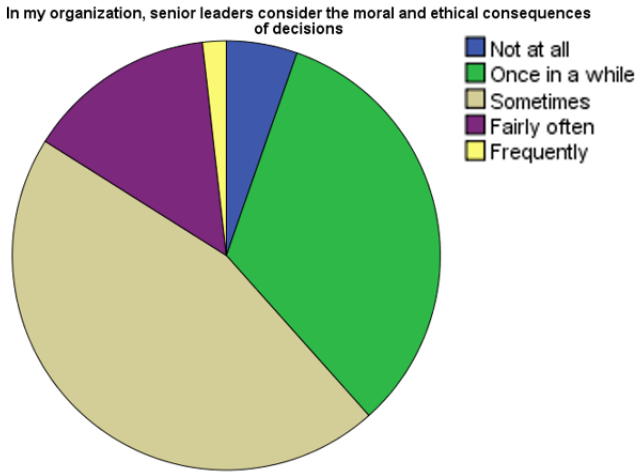
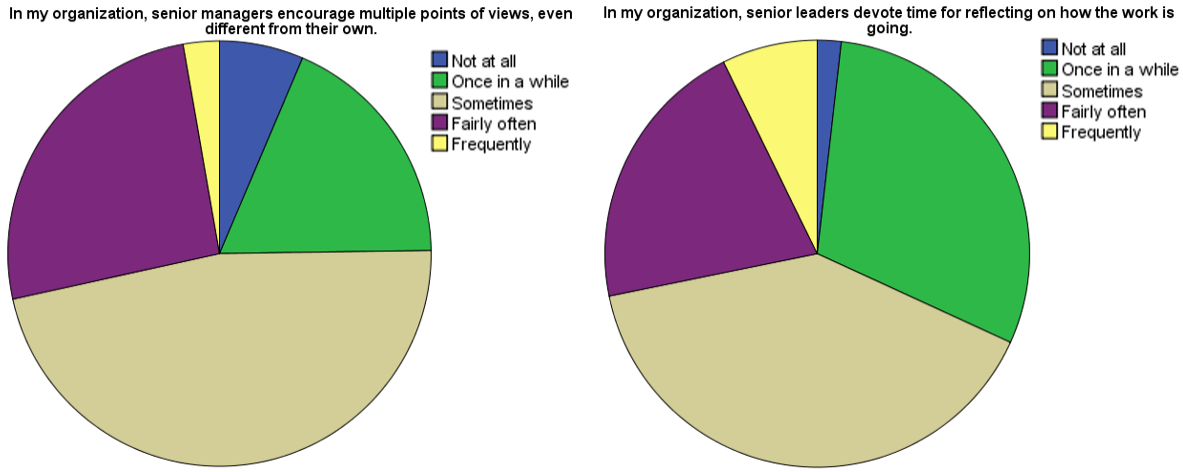
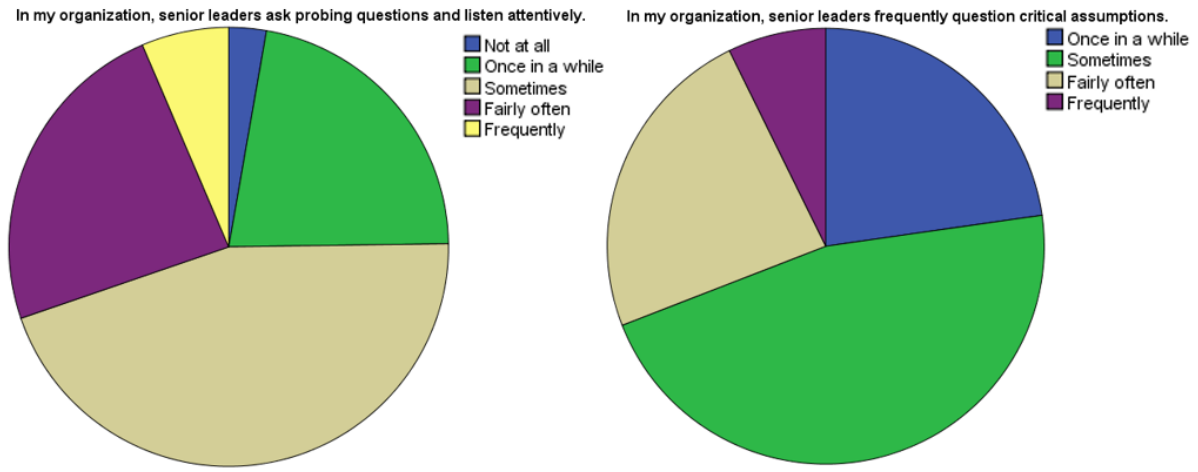


Figure 8: senior leaders' attitude toward reasoning and assessment



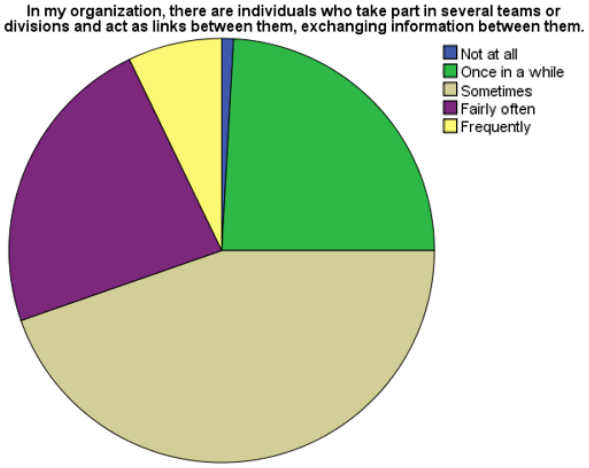
Leaders of the studied organizations seemed cautiously welcoming new ideas and opinions, which could require changes. However, having a desire to change may not necessarily mean intention to change. This can be examined by evaluating how often and how easily the managers question critical assumptions and investigate other alternatives. As seen in Figure 9, this attitude is there, but may not be popular. Without this mindset, companies may lag behind competitors. Conversely, a leaning organization must adopt the attitude of assessing the current situation and welcoming new ideas. This may require restructuring the business, or re-designing the procedures to benefit from diverse opinions and viewpoints. Indeed, successful implementation of this idea requires harmony between all functioning sectors of the organization.

Figure 9: Senior leaders' readiness to change



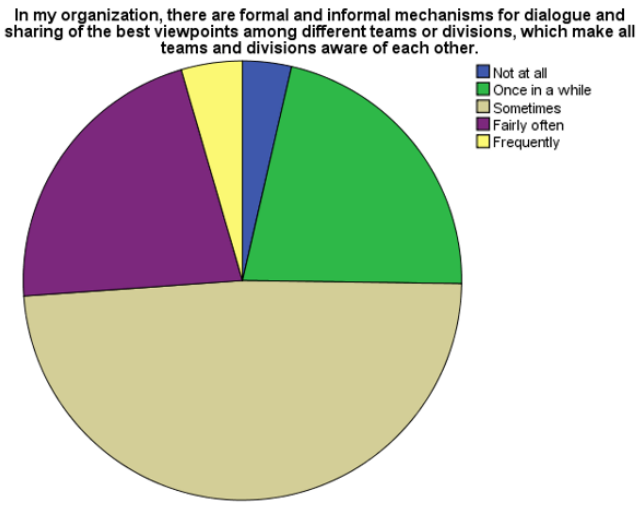
As a matter of fact, structure of large organizations in the studied region has some traditional elements, which if properly employed, can improve performance and synergy between teams (Figure 9). Members who are simultaneously present in different teams can play significant roles in tuning activities among individuals and respective teams. In addition to increasing efficiency by utilizing human resources in various activities, this also has benefits for sharing knowledge among employees and making the firm a learning organization. Figure 10 suggests that there are adequate number and instances of multi-faceted personnel involved in different teams, which in turn, improve communication and knowledge sharing between teams.

Figure 10: Communication between teams using multi-faceted personnel.



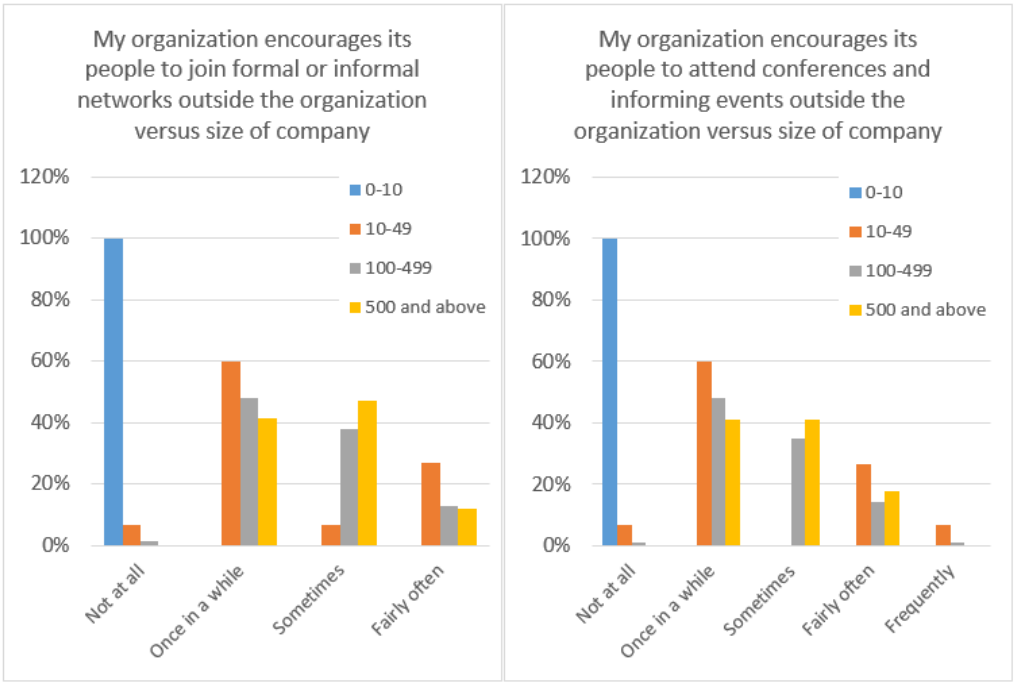
Intense inter-personnel relationship has so many benefits, but in some cultural domains it also comprises downside effects on achieving certain goals. Figure 11 demonstrates tendency of internal dialogue and knowledge sharing among companies. Formal or informal dialogue between teams enables every individual to be aware of concerns among other teams, hence matters can influence employee's perception. This also means that if some employees disagree with decisions of management, the word can easily spread across the company. An indirect insight from these statistics is that unless the employees believe in something, spirit of management's decisions and/or orders may not be fully implemented. This can be exacerbated if resistance among employees grow and find more support. This is the case for sustainability and environmental protection as some obligations are ethical, and if employees don't believe in them, they just comply with, but will not achieve mastery.

Figure 11: Survey on existance of formal and informal mechanism for dialogue among teams.



More communication brings the opportunity of knowledge sharing, which if utilized in proper manner, eventually leads to being a learning organization. A key question here is that whether studied companies can be considered as sustainability focused organizational learning (SFOL). Training is an integral part of a company's roadmap to maintain and improve knowledge sharing within the organization, as well as improving business processes using the experience of others (to move toward being a learning organizations). Typically, large organizations have professional development (training) budget for every employee, and plan relevant activities ahead of time. This provides an excellent knowledge sharing opportunity for employees. However, smaller size companies don't necessarily consider professional development as part of the employer's responsibility, which in turn, can result in losing competency in the market. The contrast between smaller size and bigger size companies with regard to training is demonstrated in Figure 12.

Figure 12: Company's attitude in training/professional development. Clearly, small-size companies in this survey don't provide much professional development opportunities for employees

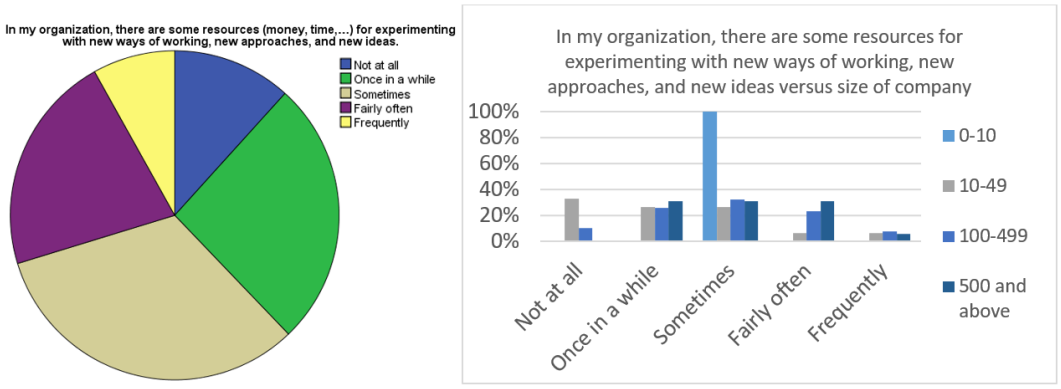


Nowadays, organizations are more and more tied with external stakeholders, and therefore, must develop outreach strategy, not only on occasional basis, but as a part of routine exercise by all departments. This is the only way that organizations can keep up with domestic and global trends in science and technology, and continue to carry the title of learning organization. Figure 13 demonstrates a clear difference in this attitude among companies with various sizes. Smaller size companies have less routine of reaching out to stakeholders, whereas larger size organizations normally have a plan.

Figure 13: Role of company size on organization's attitude toward learning

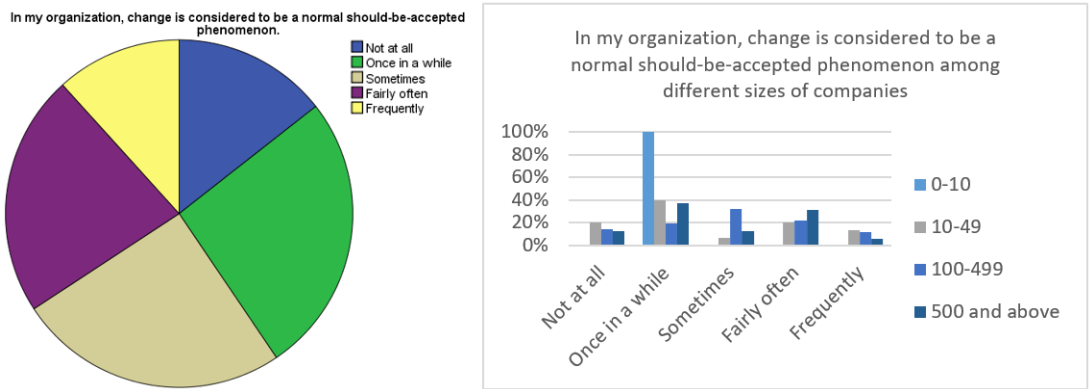
In addition to professional development of employee, the organization also needs to acquire and utilize new technologies. In thisperspective, larger size organizations tend to devote more resources for new ways of working, new approaches and ideas. If spending on new methods is indicative of a learning organization, then there seems a challenge among smaller size companies in this regard (Figure 14).

Figure 14: Having resources for experimenting new ways of working, new approaches, and new ideas.



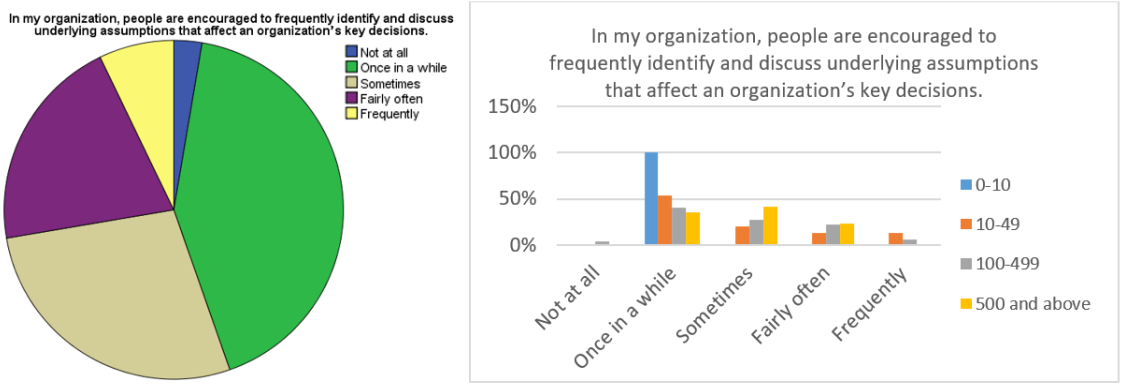
Maintaining the attitude of learning organization has a prerequisite of a dynamic environment within the organization that promotes change whenever needed. Not only technology must be updated on a routinely basis, but mindset also is expected to be open to new ideas and approaches. This matter must be studied on regional basis as intention to change varies among individuals from different countries who were raised with different traditions and cultures. In the Middle East, where traditional management methods still have many believers, there are several obstacles on the way of implementing organizational changes. This is a chronic problem with many routes to explore that goes beyond the scope of this study. However, something relevant to this work is whether size of the entity matters in how a company prepares personnel for change. It seems a problem in all sizes (Figure 15).

Figure 15: Considering change as a should-be-accepted phenomenon.



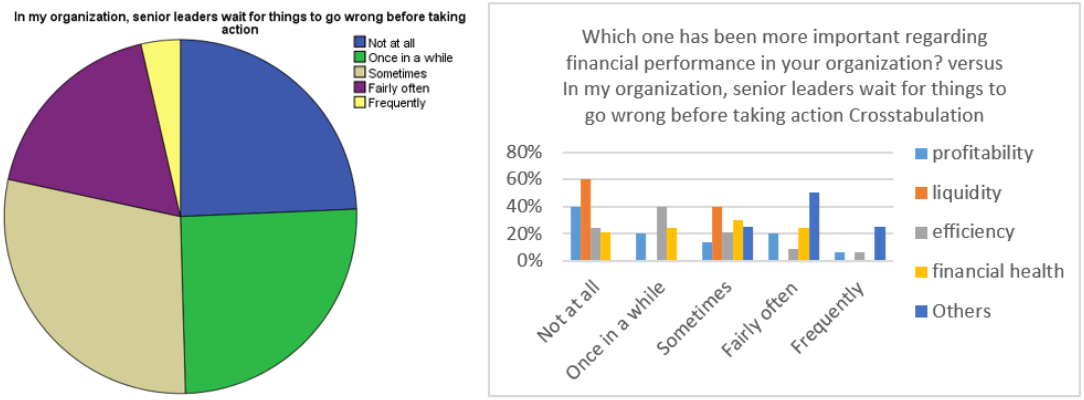
No decision may be ideal, but decision making is a process in which several factors must be considered to succeed. Nevertheless, over time some decisions may turn out to be wrong, but this doesn't void the values in following decision making procedures. What is important is to learn lessons and use them for improvement. To achieve this goal, employees should feel free to question decisions and discuss underlying assumptions. An organization that promotes self assessment will be able to continuously improve processes and upgrade them for better efficiency. Figure 16 demonstrates responses to a questions asking about the existence of criticism attitude in organizations. It seems that big corporations are behind medium-size or smaller organizations from this perspective. It is worth reiterating the note that this study is in the Middle East with its unique management style, and results are specific to this region. There could be a totally different trend in other areas of the world.

Figure 16: Encouragement to frequently identify and discuss underlying assumptions that affect an organization's key decisions



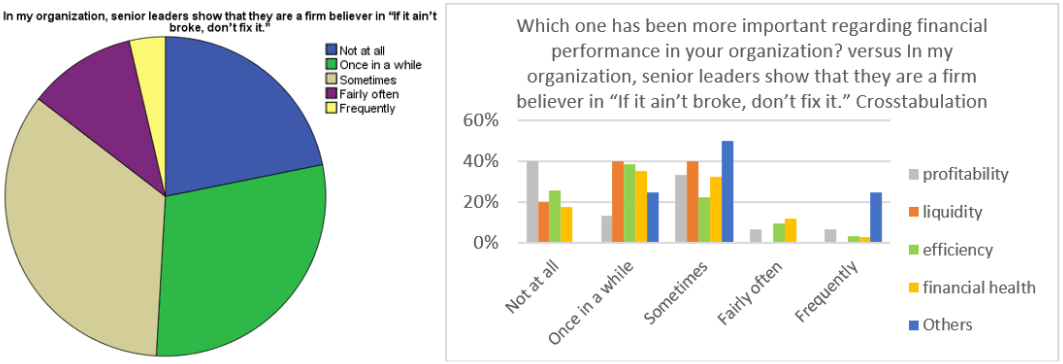
Once an organization realizes the need for internal change, and the body of the company is willing to take necessary steps, there could be another challenge from top management who might be used to the system as it is, hence not willing to change. This really depends on the mindset of the management, and can be identified as the willingness of management to change processes and procedures proactively before an issue arises. As shown in Figure 17, companies with more emphasis on profitability, liquidity, and efficiency tend to have more of this attitude (take action before anything breaks).

Figure 17: Financial performance indicator versus manager's attitude about fixing things before they break.



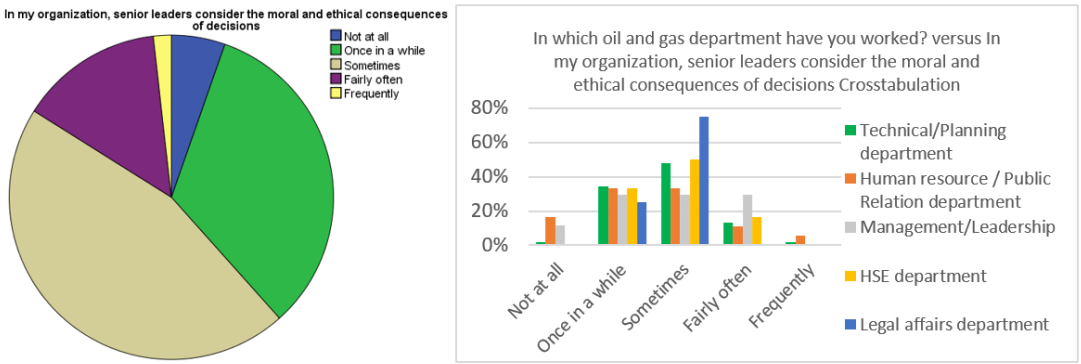
Likewise, we evaluated a similar attitude to assess the willingness and readiness of management to change (before being forced to fix broken things). In this case also, there is a correlation between performance and management attitude. Figure 18 suggests that leadership that are concerned about liquidity are more proactive in fixing issues before they occur. Interestingly, profitability doesn't seem to necessarily motivate leaders to take pre-emptive actions, which makes absolute sense when understanding that the management may care more about short term profits rather than longer term investment in fixing something that is still working.

Figure 18: Financial performance indicator versus manager's attitude about fixing things before they break.



In terms of management's role, it is crucial to evaluate how responsible leaders are when important decisions are made. This study asked a question from participants in the survey about leaders' consideration with respect to consequences of their decisions (previously discussed in Figure 7). An ideal organization is where management always attends to the consequences, and bear responsibility of the decisions. However, issues are persistent in areas like Middle East where traditional management mindsetstill persists, and management may not be obliged to justify decisions and report to employees as well as other stakeholders. An interesting finding from Figure 19below is that respondents from legal affairs department reported least attendance to consequences of decisions by their company's managers. Technically, responsibility is a legal term, but the survey question asked about commitments to moral and ethical consequences of decisions, hence a broader range of responses are evaluated. The notion of decision responsibility has different perception from various perspectives; i.e. for employees in technical departments decision responsibility can mean that managers put efforts in pursuing the goals of project, but for legal department, responsibility means a whole different, and bears legal considerations.

Figure 19: Senior leaders' commitment to moral and ethical consequences of decisions



This can also be viewed in the context of company size (Figure 20). None of the respondents working in large-size companies believed that their management cares about moral and ethical consequences of their decisions. The finding must be analyzed in the cultural context of where the survey is conducted. In this region, managers of large corporations feel some sort of protection by the corporation, and therefore, may not seriously worry about moral and ethical consequences of their decisions.

Figure 20: Senior leaders' commitment to moral and ethical consequences of decisions

II. CONCLUSIONS

This study undertook qualitative and quantitative analysis of employees and managers' understanding of sustainability with respect to their attitude towards learning and performing necessary changes. A company is at the peak of its lifespan when management and employees have a mutual understanding of major goals and share common values.One of the major weaknesses of oil corporates is that they can hardly match themselves with the challenges of accepting and implementing new idea or new experimentsin their respective fields. They don't have any trustable source. Hence, the most important and obligatory issue for them is designing a mechanism to define risks, new ideas, new experiments, etc. Leaders in this type of organizations are part of the problem. They are not good listeners, don't utilize the potential of their team, and rarely try to make a platform for talents to flourish, and they don't provide proper opportunities for employees to be seen, even if they have any new ideas. Therefore, when leaders are rigid about any changes, they cannot grow their organization. Moreover, the leaders do not attend to their decision consequences, no matter what will happen after their decisions. This results in limiting vision of managers for short term achievements, and may hinder the relationships with strategic partners. Oil companies must design mechanisms for making bilateral relationship between their organizations and outside sciences and knowledge resources. They must encourage to making connections with up-to-date network communities and consultants, and improve mutual communication with experts

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