SMEs' Multinationalization by Oil and Gas MNCs within the Business Internationalization Process for De-carbonization, Sustainability, Mutual Cooperation in the Carbon Market and Business Values: An Analytical Approach with a Model

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Abstract

This paper analyzes and presents the possibility of Small and Medium Sized Enterprises (SMEs) Multinationalization by Oil and Gas Multinational Companies (MNCs) for a mutual survival and cooperation within and for the business internationalization process. The research methodology relied on a relevant literature review and analytical approach with a designed model for both types of companies that help them cooperate in the carbon market. The findings shows that SMEs need the help and survival of MNCs to raise and leave the local market tights by entering the internationalization process. Oil and Gas MNCs may merge SMEs in their business internationalization process in their foreign locations by multinationalizing them especially if they are innovative SMEs. In conclusion, the mutual cooperation between them may help them work on the process of internationalization, de-carbonization, sustainable business and business values.

Key words: business internationalization, globalization, slowbalization, sustainability, fossil fuels, carbon market
J.E.L. classification: F20, F23, F60, F63, F66, P28, Q20, Q35, Q56, Q58

1. Introduction

The transition to sustainable actions is not only a reaction and reply to the regulatory economic social political technological cultural pressures but it is an opportunity for the Oil and Gas industry to reinvent itself and use the pillar or net-zero and CO2 emissions' capture and storage for the Oil and Gas production since they are important sources for many other things in other products and industry, starting from the fact that they are main commodities in the global economy. A company can overcome a recession by increasing productivity and reducing non-revenue-generating expenses without cutting staff at all costs. However, making the right decision requires a thorough review and evaluation of the entire structure (Benabed and Bulgaru, 2023).

Oil and Gas have been always main energy resources globally but the face various threats and risks, Oil and gas multinational companies that deal with their operations and business are moving towards another energy transition energy. Oil and gas may survive as important energy resources for the future generation since technological advances that capture and store the CO2 emissions may transform the captured CO2 into oil and from Oil natural gas will be extracted along with other components that highly important for various industries. Oil and Gas companies may choose to cooperate with the SMEs from their foreign locations especially if they are from the exporting oil and Gas economies to boost their business and help them grow but this needs to rely on such a model and efficient strategy that lead to long-term business values. For this reason, both MNCs may need to focus on the process of de-carbonization and sustainable business for a mutual survival. This paper is part of the doctoral research and one of the chapters of its main first author, One the goals of this full paper is to come up with the mutual business internationalization cooperation model between Oil and Gas MNCs and SMEs for de-carbonization and sustainable business.

2. Literature review

2.1. National and international oil companies for the climate change mitigation

Oil and Gas companies may become active participants in the climate change mitigation but they are already considered as large contributors to the rising climate change issue. (International Energy Agency, 2021b). Deloitte (2021a) identifies four different archetypes or roles of Oil and Gas companies in the energy system transformation: green followers, low-carbon producers, hydrocarbon stalwarts and zero pioneers. (Deloitte, 2021a). In general, there are two categories of oil companies that can be related somehow to re-globalization and de-carbonization. According to Beyazay (2015) these companies are National Oil companies (NOCs) that takes over boosting national economic development and securing energy supply for their domestic markets. In contrast, International Oil companies (IOCs) that maximize and intensify shareholder return and profits. (Beyazay, 2015). Due to the high importance of fossil fuels production for National Oil Companies (NOCs) and domestic economies, National Oil Companies (NOCs) may be slow in adopting the strategy of de-carbonization but many of them are already investing in renewable energy projects and trying to explore and come up with new business models regarding this point. (Lu et al., 2019).

However, IOCs face from time to time pressure from investors and shareholders to shift and move towards low carbon technologies and renewable energy, especially where the financial risks of the stranded assets and climate change are getting more apparent. (Vieira et al., 2023).

2.2. Globalization, AI, energy, the global economy, sustainability and sustainable business

Globalization drags out behind sustainability, energy deals and the time ahead economy (Benabed and Boeru, 2023a). Energy depends on the stability of the global economy since it is considered one of its main pillars (Benabed and Boeru, 2023a). In globalization customers consume more energy so that its demand remains higher, the thing that requires always more production to satisfy the needs (Benabed and Boeru, 2023a).

Business holder and companies have to apply some sustainability strategy in order to reach sustainable values with competitiveness (Benabed and Boeru, 2023a). Companies and business holders decide to expand their business perspectives abroad through internationalization to reach a better income size and turnover (Benabed, 2023b). The company that operates in different points abroad, it becomes more trustful for customers due to its regular performance and presence for customers abroad (Benabed, 2023b).

Globalization has made markets and economies work together globally that is why it is very relevant for companies to move from an emplacement to another to internationalize their business (Benabed and Boeru, 2023b). Using artificial intelligence is very helpful and useful for the energy sector and precisely for the extraction and development of hydrocarbons. Smart grids are a rising type of artificial intelligence that helps control the level of supply and demand along with the ability to detect the level of energy consumption (Benabed, 2023c).

2.3. Multinational companies and Small and Medium Sized enterprises in globalization

Small and Medium Sized enterprises (SMEs) participate highly in local and global economies' perspectives with considerable annual turnovers and they are divers in globalization (Benabed, Miksik, Baldissera and Gruenbichler, 2022). Business resilience is highly essential as a strategy for companies and Small and Medium Sized Enterprises (SMEs) in a precise way so that they are able to cope with the risks and difficulties of local and international markets (Benabed, 2023a). Risks for companies could be geopolitical, operational, natural, political, financial, cybernetic and social. So, they affect the international process of companies in case they do not come up with resilience plans for the right moments (Benabed, 2023a). Multinational companies that make direct investments (FDIs) abroad have a direct economic influence on the economic level of the host economies in many ways including job creation, the balance of payments and the growth rates (Benabed, 2024a). Multinational companies (MNCs) may acquire Small and Medium Sized Enterprises (SMEs) in their locations (Benabed, 2024c) to convert them to some of their

subsidiaries, thus ensuring their survival or integrating them into their system (Benabed, 2024c) SMEs may grow by choosing and following the appropriate internationalization method, such as foreign direct investment providing that the three conditions of the Dunning (1988) OLI model that bases on the Ownership, location and internalization are met (Benabed, 2024c).

2.4. Global business and the move of globalization to slowbalization to the possible Re-globalization

Globalization has made markets and economies work together globally that is why it is very relevant for companies to move from one emplacement to another to internationalize their business (Benabed and Boeru, 2023b). Because of the challenges that occur in globalization, the labor market faces constantly changes and barriers that come from its dimensions that are economic, political, cultural, technological, social and environmental (Benabed, 2024b). Slowbalization can clearly be seen in the large difference between developed and developing economies (Benabed and Moncea, 2024). Besides, Slowbalization lies in the image of low-income economies that remain always weak (Benabed and Moncea, 2024). However, Re-globalization as a phenomenon is a strategy related to reshaping and expanding the global business landscape that is accompanied by the trends of globalization, decoupling and cross-border investments in the changing world. (Buckley and Ghauri, 2004; Williamson, 2021). De-carbonization is a strategy and behavior to tackle climate change and long-term energy transition in which renewable energy sources are slowly trying to replace fossil fuels. (Doh et al., 2021).

2.5. Oil and Gas companies for de-carbonization and re-globalization

Indeed, there are very few articles about the re-globalization and de-carbonization of Oil and Gas companies. Strange (1988) considers production, finance and knowledge three main aspects of internal environment and three aspects of external environment such as economic globalization, energy security and climate change and according to Bradshaw (2013) they are important aspects of the global energy dilemmas. (Bradshaw, 2013).

3. Research methodology and research questions

The research methodology started with the application of a related literature review in the study after setting the main research questions to start the research, the literature review base more on the keywords of the full paper and its content is chosen to show the compatible previous helpful published parts that are relevant to this study (see figure 6).

The analysis part has passed by illustrating the processed data in various figure for a statistic analysis that bases on data interpretation and a critical descriptive analysis for each where figure 2 illustrates the emergence of energy sources between the 15th and 21st centuries, figure 3 illustrates Global Oil and Gas employment by commodity type in 2023 in millions, figure 4 illustrates the Global demand for crude Oil from 2005 to 2024 with a 2025 forecast and figure 5 presents and illustrates Annual global CO2 emissions from 1940 to 2024 (in billion metric tons). To answer well the questions in a coherent original way I created the model and framework in figure 6 that illustrates the business internationalization model between Oil and Gas MNCs and SMEs for de-carbonization and sustainable business to present how to apply, reach and get involved successfully in the business internationalization (see figure 6) by going for foreign direct investments choosing the multinational strategy of MNCs to multionationalize the Small and Medium Sized (SMEs) of host country by either merging them or purchasing taking the case of Oil and Gas MNCs and SMEs for de-carbonization and sustainable business (See figure 6).

The set research questions for this actual research and full paper are the following:

RQ1: Will Oil and Gas remain as main energy resources for the future as business sources and economic engines?

RQ2: May Oil and Gas MNCs and SMEs cooperate for mutual survival by getting both involved in the de-carbonization process and sustainable business?

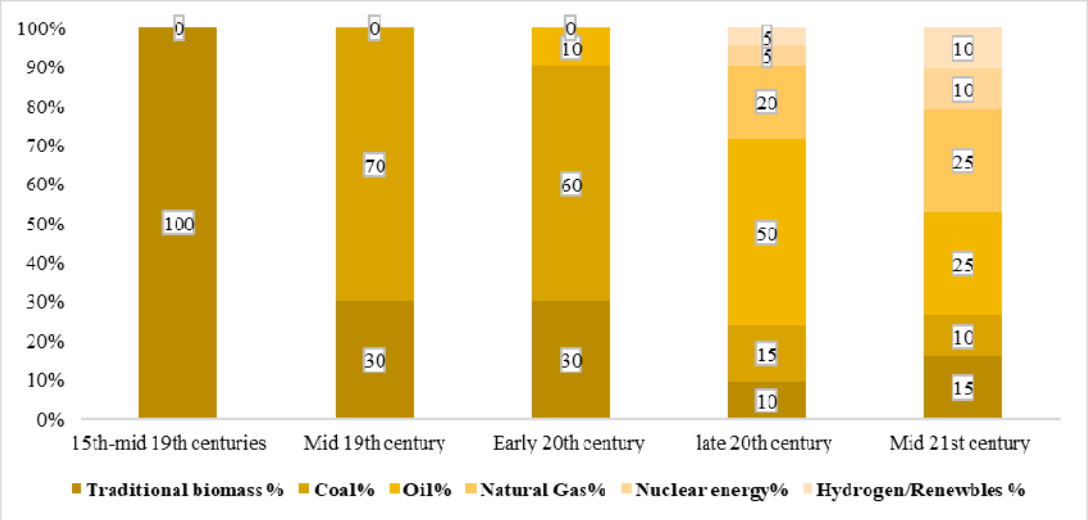
RQ3: May Oil and Gas MNCs survive the Oil and Gas business through the process of de-carbonization and sustainable business?

This full paper is one of its author's original actual doctoral research and PhD thesis' chapters in a relevant way. It is supplementary doctoral research and chapter to the previous papers by the same author and a complementary new article in international business, energy and other relevant fields where other authors had published. One of the goals of this full paper is to come up with the mutual business internationalization cooperation model between Oil and Gas MNCs and SMEs for de-carbonization and sustainable business.

4. Findings, analysis and the model

Figure 1 illustrates the emergence of energy sources between from the 15th centry to the 21st century. As illustrated in the fugure from the 15th to the mid-19th century traditional biomass energy was dominating the world of energy with 100% use based on woodfuels for heating and cooking (see figure 1). In poor countries, the biomass energy is still used and harvested unsafely for various reasons. Moving with time from the mid-19th century to the early 20th century, coal emerged as a new source of energy with 70% use and important whereas the use of traditional biomass decreased from 100% to 30% due to the domination of coal (see figure 1). From the early 20th century to the late 20th century Oil apeared as a new source of energy but with 10% existence and use compared to 60% of coal and 30% of traditional biomass, oil faced difficulties of extraction due the lack of suitable technology for its operation and extraction. From the late 20th century to the mid 21st century Oil raised in importance and domination to 50% worldwide but the traditional biomass and coal's energy dominiation decreasted to 10% and 15% each separtatly (see figure 1).

Figure no.1. The emergence of energy sources between the 15th and 21st centuries



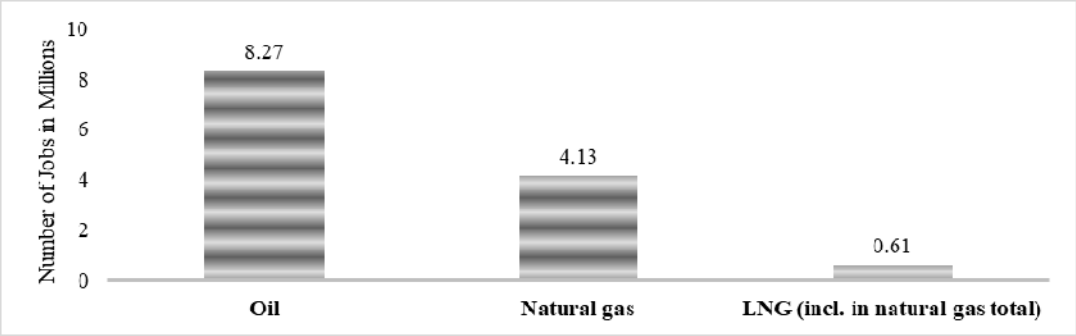
Source: Author's own design and research, 2023-2025

New resources appeared in the late 20th centured such natural gas that had a 20% energy domination, nulear energy with 5% along with hydrogen and renewable energies with 5%, the same energies has remained so far as energy resources. From the mid-21st until the present time the importance of Oil and gas equilazed together with 25% ech but Oil remains the major energy resource globally since from it we get get natural gas as well.

Coal's importance decreased due to its weak performance and benefits to 10%. Nonetheless, nuclear energy together with hydrogen and renewable energies equalized with 10% each (see figure 2). Figure 2 presents the global Oil and Gas employment by commodity type in 2023 in millions. As oil, natural gas and liquefied natural gas commodities, they have been for important for the labor market globally and locally. The larger number of employees in the global oil and gas industry comes from the oil sector. As for 2023, around 8.27 million individuals were hired

globally in the oil sector and this out of the total number of the three energy sectors 13.11 million individuals (see figure 2). If we take the natural gas sector globally, we observe that 4.13 million individuals were hired in the natural gas sector (see figure3). However, only 0.61 million people were hired in 2023 according to the available data mentioned in figure 2.

Figure no.2. Global Oil and Gas employment by commodity type in 2023 in millions

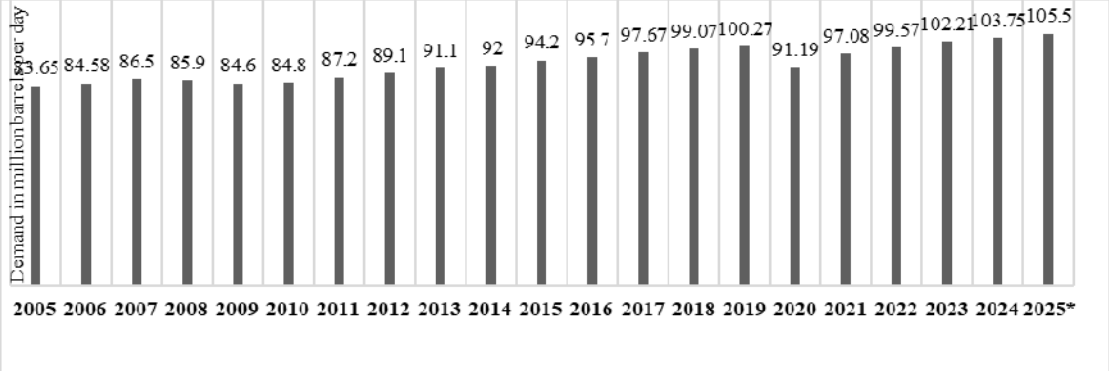


Source: Author's contribution 2024, International Energy Agency data 2023, Statista data 2023

Overall, the main energy sector of employees is the oil sector, and this is due to its high importance to the global economy, oil remains the main source of energy worldwide because it provides the world with different benefits from industry to business and vice versa (see figure 2).

Figure 3 illustrates the global demand for crude Oil in million barrels per day from 2005 to 2024 with a 2025 forecast using the available data (see figure 3). We observe that the global demand for crude oil in the mentioned period has been increasing constantly, back to 2005 it was 83.65 million barrels per day and this is a huge amount for the history of oil, for upcoming years it had been raising slightly until it reached 100.27 million barrels per day in 2019, then, it decreased a bit after the outbreak of the epidemic period caused by COVID-19 (see figure 3).

Figure no. 3. Global demand for crude Oil from 2005 to 2024 with a 2025 forecast

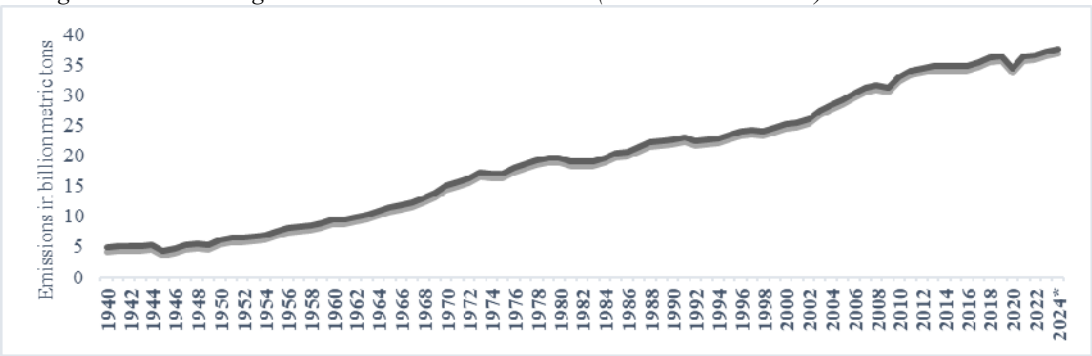


Source: Author's contribution 2024, OPEC data 2024, Statista data 2023

In 2020 the global demand was 91.19 million barrels per day and this year of the decline but not too much and that means that oil is the main global energy engine worldwide and it is like water, the global economy cannot do without oil (see figure 3). The global demand started to increase again during the 2021 year of recovery to 97.08 million barrels per day (see figure 3). The global demand for crude oil in 2024 reached 103.75 million barrels per day and it is increasing years due to its relevance and raising role global economy (see figure 3).

Figure 4 illustrates the annual global emissions of carbon dioxide from 1940 to 2024 according to the available data. So, the biggest contributors to global greenhouse emissions are mainly the US and China since are the largest economies on earth but this does not exclude all the advanced economies that produce their developing countries either in their territories or abroad through the business internationalization aspects of their multinational companies and other ones engaged in business and energy (see figure 4).

Figure no. 5. Annual global CO2 emissions 1940-2024 (in billion metric tons)



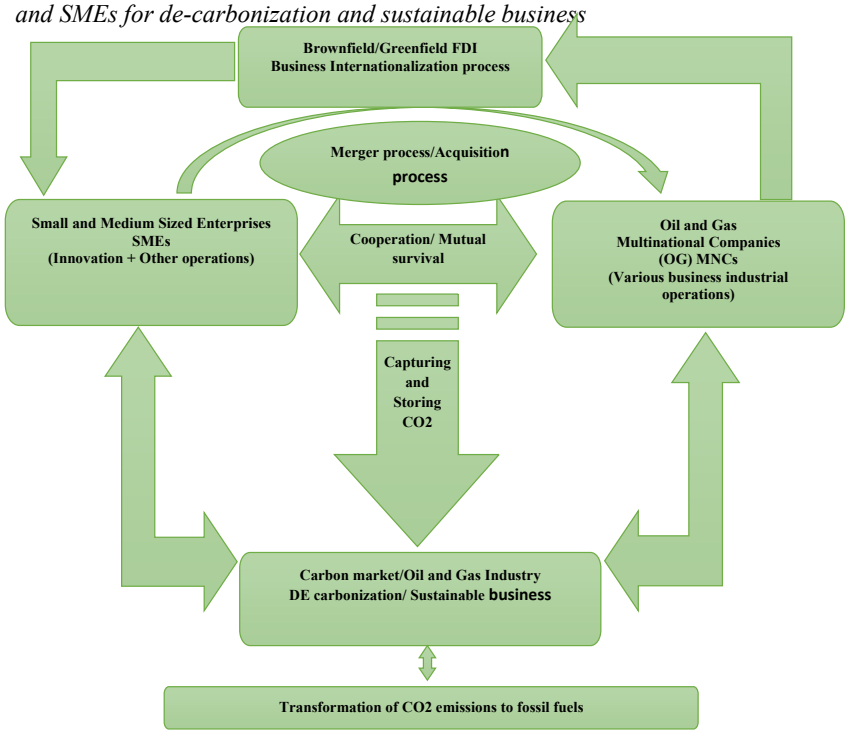
Source: Author's contribution 2024, Global Carbon Budget data 2024, Statista data 2024

The epidemic breakout and sudden appearance of COVID-19 led the CO2 emissions to plummet in 2020 due to the lockdown, global industrial economic activities and other restrictions. Another remarkable collapse of CO2 emissions is observed on figure 5 in 2009 during the global economic recession caused by the global financial crisis of 2008 but not with the same value (see figure 4). Back to the history and evolution of globalization even in 1980 there was a decline and low presence of CO2 emissions due to certain global events that had a notable impact on the CO2 emissions and led them to plummet (see figure 4). However, the largest and lowest annual reduction was at the end of the Second World War in 1945 (see figure 4). Therefore, the global collapse and reduction of CO2 emissions is well associated with the global and local economic activities that could be more industrial based on burning fossil fuels (see figure 4).

Figure 5 illustrates the mutual business internationalization cooperation model between Oil and Gas MNCs and SMEs for decarburization and sustainable business. This model is created by the author of this full paper and research for companies and business holders that choose the internationalization process to multinationalize their business across the borders. The model can be used for all types of multinational companies (MNCs) that choose to cooperate and merge the Small and Medium Sized Enterprises (SMEs) from their foreign locations for business values and extension within the internationalization process (See figure 5).

As illustrated in the figure, Oil and Gas multinational companies that choose to enter foreign markets or that deal with them within the internationalization process through foreign direct investments (FDIs) may choose any of the three types of FDIs of all of them depending on the compatible possibilities with foreign locations (see figure 5). Multinational companies may choose between Greenfield, Brownfield or the merger process of FDIs. If the MNCs chooses Greenfield FDI, it starts everything for zero by introducing its facilities and building up their business in foreign locations. If the MNCs choose the Brownfield FDIs, they may purchase through their headquarters or government entities existing facilities in foreign locations and join them to their business strategy and this is possible for the case of SMEs in case they offer their facilities to be bought by MNCs due to business losses or other reasons (see figure 5). The third type of FDIs that is very suitable for Oil and Gas multinational companies is the merger process where they may merge foreign companies for their foreign locations and they could be SMEs because they are the engines of many economies globally. MNCs may cooperate with them for a mutual survival that may work for both sides. In other words, MNCs many multinationalize those SMEs and help them survive through the merger process, while SMEs may help them to survive the business risks of foreign locations (see figure 5). Both MNCs and SMEs may collaborate in the carbon market within the business internationalization process in the carbon market in boosting the oil and gas industry through the process of de-carbonization and sustainable business. Innovative SMEs are more helpful in the merger process and may be multinationalized according to this research (See figure 5).

Figure no.5. The mutual business internationalization cooperation model between Oil and Gas MNCs and SMEs for de-carbonization and sustainable business



Source: Author's design and doctoral research, 2025

5. Conclusions

Oil and Gas multinational companies that choose to enter foreign markets or that deal with them within the internationalization process through foreign direct investments (FDIs) may choose any of the three types of FDIs of all of them depending on the compatible possibilities with foreign locations (see figure 5). Multinational companies may choose between Greenfield, Brownfield or the merger process of FDIs.

This full paper has answered all the set the research question in the section of methodology Oil and Gas will never end, they will remain as main energy resources for the future since they are business sources and economic engines, Oil and Gas MNCs may survive the Oil and Gas business through the process of de-carbonization and sustainable business, Both Oil and Gas MNCs and SMEs may cooperate for a mutual survival by getting both involved in the de-carbonization process and sustainable business. If the MNCs choose the Brownfield FDIs, they may purchase through their headquarters or government entities existing facilities in foreign locations and join them in their business strategy and this is possible for the case of SMEs in case they offer their facilities to be bought by MNCs due to business losses or other reasons (see figure 5). Otherwise, they merge them through the FDI merger process. Both Oil and gas industries and Co2 emissions have been impacted up to present especially during the period of Covid-19 and other periods mentioned in figure 4. Oil and Gas are drivers of the globalization process and business internationalization globally. Companies and business holders reply on their values to further in their business endeavors (See figures 1, 2, 3, 4 and 5).

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