CHALLENGES AND OBLIGATIONS FLOUNDERING IN THE JORDANIAN CONSTRUCTION SECTOR OWING TO COVID-19 PANDEMIC

[1]Ahmad Hardan, [2]Enas Al-Najjar
Doctor of Philosophy in Accounting, Al-Hardan Construction & Contracting Company, Amman, Jordan.[1]
School of Civil Engineering, University Science Malaysia, Nibong Tebal, Penang, Malaysia.[2]
Ahmad-al7rdan@hotmail.com[1], Enas_al_najjar@yahoo.com[2]

ABSTRACT

The construction sector has been facing tremendous pressure since the beginning of 2020 owing to COVID-19 crisis. The research is investigating challenges and obligations floundering plans faced by stakeholders or partners in the construction sector in Jordan. This study aims to find solutions to achieve the reduction of the financial obligations incurred by the contracting sector due to the Covid-19 pandemic in Jordan. Also, provide recommendations to help the industry to sustain during this period of crisis. A quantitative research method involving online questionnaires was distributed to a sample of the construction companies to achieve the aims and objectives of the research. Smart-PLS 3.2 software was used for the analysis of the data. The result reveals some challenges in the area of accumulation of financial obligations and workflow, new policy issues, and review of COVID-19 effect of the construction sector. However, this study is essential to paving the way for the development of additional contingency plans and a new working strategy in anticipation of an extension of the COVID-19 pandemic period over the coming years.

Keywords: construction sector, COVID-19, challenges, obligations, Jordan.

INTRODUCTION

At the beginning of 2020, the COVID-19 pandemic struck and influenced all construction sectors in an unprecedented way globally. At the beginning of 2020, the COVID-19 pandemic struck and influenced, all construction sectors in an unprecedented way globally. Report by Deloitte company (One of the top four auditing firms in the world) signaled high impact on business trading and cash flow, or at least significant disruption with high probability to financial loss for developers and construction sector in major developed countries, e.g. Canada, UK, Spain and Japan, has gotten high impact, whereas the USA and Italy have experienced significant disruption (Deloitte, 2020).

The prognosis for the growth of the construction industry has been reviewed downward to 0.7% with possibility of further cut if actions in the short-term are severely disrupted more than envisage by the COVID-19 (Global Data, 2020; Thomas, 2020).

Unprecedented measures to curb the spread of the COVID-19 will have a negative effect on countries' economies regardless of their integration into global value chains (Choudhury, Ghosh & Sindhi, 2020). A report by The International Monetary Fund (IMF) believes that world GDP will decrease by 3% by the end of 2020 - a much higher indicator than during the financial crisis of 2008–2009 A similar fall will make the current crisis worst since the Great Depression1 (Choudhury, Ghosh & Sindhi, 2020). It is noted that in the baseline scenario, anticipating a recession in the second half of 2020, expected 5.8% global growth in 2021 as economic normalization activity. Economically developed countries will be hardest hit by the crisis (Cheshire & Hilber, 2020). On average, the GDP of developed countries will decrease by 6.1% in 2020: in the USA will be 5.9%, in the countries of the Eurozone - 7.5%, in Japan - 5.2%.

Developing countries will be less affected by the current crisis: their economies, on average, decrease by 1%. In China, an increase of 1.2% is expected (compared with a growth of 6.1% in 2019), Brazil's economy will shrink by 5.3%, Mexico - by 6.6%, South Africa - by 5.8%, Russia by 5.5% (Cheshire & Hilber, 2020).

The drop in several sectors is one of the reasons slowdowns in economic growth. The shock of solvent demand and supply chains, supply chain gaps, reduction investments - all these factors negatively affect several sectors (Cheshire & Hilber, 2020).

Nevertheless, Asia and the middle east may still be able to show some resilience amidst the pandemic. Report from McKinsey indicated that Asia's growth to some extent was influenced by the growth of its large corporations, which contributed to shift the world's corporate landscape. To cater to COVID-19 pandemic, these large corporations will be forced to not only concern on growth but also productivity. Post-pandemic era will be determined by those who are resilient enough to adapt to the challenging business environment and "new normal" (Bradley, 2020).

In Jordan, the construction sector in the past decade as economic growth, but it is in a declining trend after 2017. However, in 2018-construction sector growth fell from 40%. In 2020 amidst the pandemic, Jordan's construction sector has experienced tremendous activity reduction in both private and public sectors (JEA, 2020).

The construction sector depends highly on the local environment and so do its challenges and opportunities. In this sense, as indicated by McKinsey, the constructions companies can still survive the crisis by acquiring new competencies, improving efficiency through the use of technology, venture real estate into service orientation and at the same time bracing the crisis time as an opportunity for consolidation (Bradley, 2020).

With the above-mentioned introduction, the objective of this research is first to gather and analyze challenges and obligations floundering faced by the constructions companies owing to COVID-19 pandemic in Jordan.

LITERATURE REVIEW

According to Hook (2020) declared that the impact of this pandemic might force some of the Engineering and Construction companies to streamline debt, consider means of funding or risk bankruptcy. Looking ahead, Engineering and Construction companies will encounter a new dispensation which will include a change in the marketplace, investment in infrastructure by some of the "national government" to kick-start their recovery. In contrast, others may encounter limitations of resources. A survey conducted by Suiko (part of Turner & Townsend) on 45 projects completed during the pandemic, revealed the productivity losses of about 7% as a result of labor shortage and impact from social distancing (Construction Manager, 2020). Poor transfer of design information while working remotely also accounted for 1% lost in productivity while material unavailability and delivery led to 7%. In response to extraordinary government power on movement restrictions and total "lockdown globally," Australia also restricted travel both within and without to limit the spread of the virus. Due to this unexpected situation, Indonesia and China remained lockdown and inaccessible as well for export of equipment, goods and plants required by the infrastructure and construction sector. This will inevitably cripple the delivery of projects. All in all, good relationships among the parties of the projects with instance resolution of the dispute will enable a smooth transition to pass the immediate crises. The International Labor Organization (ILO) indicates the impact of the crisis on construction enterprises has been significant, with many

facing liquidity problems. Reduced spending and consumption capacity, operating restrictions and fear of contagion have all contributed to this.

Liquidity shortages threaten the sustainability of SMEs, especially in developing countries, and many may face bankruptcy if disruptions continue (IOE, 2020). Enterprises of all sizes are looking at ways to manage the impacts on their projects, businesses and employees. Measures can include general contractual provisions and legal principles excusing liability for non-performance (force majeure), as well as specific contractual provisions that allow for adjustments in time and financial resources (NLR, 2020). Some financial institutions are working to support construction enterprises in managing COVID-19 related risks, such as repayment delays, which are particularly relevant for SMEs (PWC, 2020). In the absence of stimulus or relief packages, these effects may have a long-term impact, as it will take time for construction activity to return to pre-COVID-19 levels in many countries (OECD, 2020).

Furthermore, Bailey et al. (2020) highlighted the impact of COVID-19 pandemic and how it is being managed. This pandemic is having a substantial effect on construction projects; however, the legal implication varies from contract to contract, nations to nations. Much focus was being given to a standard form of contract wordings, the likes of NEC and FIDIC. Although, the pandemic was not rendering projects to incomplete, but was slowing processes causing disruption and delay. Some of the projects have stopped completely to commence work at a later date. Health and safety risk assessments need to be considered to be consistent with scientific, medical and government guidelines; for instance, people working in an enclosed environment are at higher risk than people working outside. COVID-19 being an unforeseeable circumstance can be considered to be a force majeure occurrence. Force majeure under any standard form of contract, be it FIDIC, will usually afford contract extension of time for the delay during the pandemic and not compensation for cost.

Nevertheless, any new regulations given by the public authorities may have legal effect and override any contractual position/obligation initially laid down before the commencement of the projects. Given this restriction to movement during the pandemics 'locked down' is a modification of law which may attract extension of time compensation for the inevitable costs either way- "Sub-clause 13.7 of the 1999" and 2017 FIDIC Forms. Attention to the behavior of parties is required in future to ensure a symmetry of liability along the supply chain for projects.

Altogether, the construction industry has also been impacted by the pandemic in a number of ways. For example, like other industries, the number of construction jobs available reduced following the pandemic onset—with the lower number of jobs reported in April 2020 (BLS, 2020). These job losses are partly attributable to interruptions in work following work-related restrictions that were imposed to curb the virus spread, shortage in personal protective equipment (PPE) as it was prioritized for healthcare workers, and widespread market uncertainty. In addition, several construction projects were delayed and suspended; particularly in the oil and gas sector (e.g., West Loop Gas Pipeline, Liberty Pipeline, etc.), where the demand for oil dipped following travel restrictions (Pipeline & Gas Journal, 2020; S&P Global, 2020).

Although some preliminary surveillance data on the impacts of the COVID-19 pandemic in the context of the construction industry exist, there is much that remains unknown. Insights from industry stakeholders are particularly lacking in the broader literature. Accordingly, the reported effort focused on gathering information on the effect of the COVID-19 pandemic from the perspective of the construction workforce. The effort also focused on identifying new opportunities that may have been created and efforts that were undertaken to manage the challenges associated with the pandemic.

The findings are expected to be useful as the industry continues to combat the pandemic and grapple with preserving safety and maintaining productivity. The findings can also serve as a resource for the future if the industry encounters similar epidemics, pandemics, or emergencies.

METHODOLOGY

This research aims to explore the challenges and obligations floundering in the Jordanian construction sector owing to the COVID-19 pandemic. This was achieved with the desk study review of limited (due to the recent emergence of the pandemic) literature and a field study with the collection of primary data from construction companies in the building sector. With the fact that COVID-19 is a pandemic and there was limited literature to evaluate for generating information, the researchers decided to seek for information globally to understand the positive and negative experiences of professionals all over the world to serve as a pedestal for further research. They are in the following specializations; designer or consultants, contractor/construction, client, or work in the development authority. The size of the organization of the participants were identified as <10 personnel (micro), 10-50 personnel (small) 50-200 personnel (medium) and >200 personnel (large). The years of experience are 5 10 years, 11-15 years and >15 years. Above all this survey received responses from construction companies in Jordan. The generated primary data were then analyzed with Smart PLS 3.2 analytical tool.

The empirical data presented in this paper were collected by questionnaire survey sent to 333 construction companies. A survey of 333 participants consisting of stakeholders or partners of these companies (Spector 1992; Williams et al., 2004). The questionnaires used a online, hosted in Google drive and shared in a Google form and collected back: only 198 responded to this survey (Babbie, 2011). There were 56 questionnaires excluded from the sample because of incompleteness; the final sample consisted of 142 respondents. All data were based on a five-point Likert scale, which was considered as interval data (Vander Stoep & Johnston, 2008). The scale ranges from 1 strongly disagree to 5 strongly agree. The findings of this research were achieved through the analysis of the responded surveys using SPSS Version 22, and descriptive statistic was used to examine the perception of the different participant for this study. Smart PLS 3.2 was used to evaluate the relationship among the constructs by conducting the partial least square analysis (World, 1982; Hair et al., 2010).

DATA ANALYSIS AND RESULTS

PROFILE OF THE RESPONDENTS

The profile of respondents shows that in respondents' profession: civil engineering 36.61% (n=52), architect 15.49% (n=22), mechanical engineering 20.42% (n=29), electrical engineering 27.46% (n=39). In terms of level of education, the respondents are with diploma 7.74% (n=11), bachelor 62.67% (n=89), master 28.87% (n=41), doctorate 0.70% (n=1). In terms of company's specialization, the respondents are with construction 67.60% (n=96), designer or consultant 32.39% (n=46).

In terms of size of company, the respondents are less than 10 personnel 50.70% (n=72), 10-100 Personnel 31.69% (n=45), More than 100 personnel 17.60% (n=25). In terms of year of experience, the respondents are 5-10 years 25.35% (n=36), 11-15 years 61.97% (n=88), more than 15 years 12.67% (n=18).

DESCRIPTIVE STATISTICS ANALYSIS

According to Sekaran and Bougie (2010) maintained that the descriptive statistics of the dimensions through the mean, standard deviation, and variance could give the researcher a detailed idea of how the respondents in the study have responded to the questions in the questionnaire. Consequently, a descriptive analysis was conducted to describe and summarize the main characteristics of a data set from the respondents' perspective on every variable.

Table 1 shows the findings of descriptive statistics of the questions. Most of the questions have the mean above the average ranged from 3.361 to 3.9,21 and the standard deviation ranged from 0.366 to 0.855. Only two questions, have means below than the average, which is number 3 with a mean of 2.555 and number 2 with a mean of 2.433. The minimum and maximum responses on the questions are also presented in Table 1. As a result, it was found that on the basis of respondents' opinions most of the questions are above the acceptance level of implementation. In other words, almost all dimensions are above satisfactory level.

Table1. Descriptive Statistics of the Constructs (n = 142)

Questions	N	Min	Max	Mean	Std. deviation	Level of variable	Levels of Frequency Use
1	142	2	4.67	3.361	0.569	weak	Medium
2	142	2.17	4.83	2.433	0.412	V. weak	Low
3	142	2.67	4.33	2.555	0.366	weak	Medium
4	142	2.44	5	3.744	0.66	strong	Medium
5	142	2.4	5	3.819	0.72	strong	Medium
6	142	2.2	5	3.819	0.72	strong	Medium
7	142	1.67	4.67	3.971	0.653	strong	Medium
8	142	1.67	4.67	3.677	0.74	strong	Medium
9	142	2.25	4	3.382	0.443	weak	Medium
10	142	1.6	4.405	3.553	0.425	strong	Medium
11	142	2.33	5	3.921	0.855	strong	Medium
12	142	2.4	4.8	3.703	0.576	strong	Medium

STRUCTURAL MODEL ASSESSMENT

It is well known that R2 (R-squared) of the endogenous variable accounts for the variance of a specific variable that is described with the help of predictor variables. The magnitude of the R2 of the endogenous variables was considered as an indicator of the predictive power of the model. Moreover, the sample reused technique implemented as developed by Geisser (1975) to verify the predictive validity of the model. Wold (1982) discussed that the sample's reuse technique to fit just fine using the PLS modeling approach (Götz, Liehr-Gobbers, & Krafft, 2011).

Result pertaining to the prediction quality of the model is illustrated in Table 2, which indicated that the Cross-validated Communality and the cross-validated redundancy of all questions were 0.604 and 0.260, respectively. These values were more than zero, indicating an adequate predictive validity of the model based on the criteria suggested by Fornell and Cha (1994).

Table 2. Predictive quality of the model

Questions	R square	Cross-validated communality	Cross-validated redundancy
All questions	0.603	0.604	0.260

DISCUSSION AND CONCLUSIONS

After answering the questions from the respondents, there were many challenges that the contracting companies faced, and some respondents indicated returning to work after the closure. In comparison, but others are still experiencing total lockdown on their projects. Because of some government decisions. On the other hand, other decisions could be the new development of work from home.

Unlike the 2019 situation, the year before the pandemic, the consequences of the COVID-19 pandemic could be significantly worse for several reasons. Firstly, a crisis may have greater reach, influencing company FDI and capital expenditures not only in developed but also in developing countries (Pachura, 2011). Secondly, the delay effect FDI may be less significant as consumer demand shock accompanied by the forced completion and postponement of investment projects. Thirdly, in the event of a crisis in the financial sector, enterprises will not be able to fulfill their financial obligations, which will result in a fall in global investment flows as a result of the "domino effect." Closure of commercial and manufacturing enterprises, as well as construction sites, immediately causes a delay in the implementation of investment projects (PricewaterhouseCoopers, 2020). Enterprises will continue to bear some investment costs (for example, fixed running costs), but there will be a rejection of costs on other points. The appearance of new investment projects is most likely will be delayed, and the processes of mergers and acquisitions will slow down in Jordan.

According to some forecasts, the number of unemployed due to the effects of quarantine measures in the foreseeable future may reach up to millions of people. In Jordan, most of the labor is utilized in the construction sector that shares the major burden of labor and unemployment (JCCA, 2018). Due to the rapid spread of the COVID 19, Jordan has added checkpoints and limits the major industrial supplies. Some of the construction projects are suspended, and the others are delayed, which results in heavy financial losses. Due to reduced construction, the rate of unemployment in Jordan will be increased. However, the construction industry is suffering from a lack number of skilled laborers (Al Amri & Marey-Perez, 2020).

Government support will be important to help businesses to sustain during this period. Since most of the infrastructure projects in Jordan are government-funded, the release of any pending payment and processing of other payment on priority will be a sign of relief for construction companies involved in the projects. Similarly, the government can also support the construction sector by providing loans on softer terms and conditions. It is also important, that the construction organizations ensure the safety and health of its worker, take the necessary steps to avoid the spread of the virus. In this regard, it is necessary to implement the WHO guidelines that include the daily temperature check with a thermal thermometer, ensure physical distances at the workplace, provide hand sanitizer, and disinfect the workplace at frequent intervals.

It is anticipated that the number of legal disputes in the construction sector will be increased due to the impact of COVID 19. Recommended some respondents that there needs to be a mechanism to investigate all the claims that will be arising from the current pandemic situation. The formation of a committee that has members from all the stakeholders of the construction projects will be helpful to process all such claims in a time-bound

manner. Such a committee should have access to the progress reports and the schedule of the work of the project that was submitted to the consultant or the client.

Some respondents confirmed agreed that construction managers need to play an active role, they need to understand the current provisions of the contracts and ensure they gather all the required information to support their claims. Such information can be helpful to resolve any dispute mutually and avoid the matter to reach the court of law which can further affect the progress of the project.

The sustainability of the construction sector is important so that it can play it vital role to reduce the impact of COVID 19 globally. the paper has considered the challenges and obligations floundering in the construction sector and explored the possible impact and solutions. It is anticipated that most of the factors that are affecting the construction sector in Jordan can be applicable to the construction in other regions and thus the findings of this paper can be valid and useful for the whole construction sector.

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