

The Impact of COVID-19 Pandemic on the Civil Engineering sector VS The various economic and financial measures : Moroccan case

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Abstract—Since the beginning of the Coronavirus pandemic, many companies have had to adapt their working methods to several sectors such as the construction industry. Like many countries, the Moroccan economy is based mainly on sector construction. The problem of sources of financing of this sector is essential, Relaunching the machine with a national program on 100% state financing, for a wide range of projects in the field of public infrastructure and equipment, is it still possible in this period of austerity? The purpose of this study is to determine by a cross-sectional study based on an online questionnaire, the effectiveness of the various sources of financing in favor of construction sector managers and how they see the future of civil engineering and the construction industry.

Keywords—Finance, Civil Engineering, Construction, Morocco, COVID-19

I. INTRODUCTION

Engineering and construction industries are used to cyclical downturns, however, the strength and the speed which COVID-19 has struck is exceptional. Thus, many projects are being canceled or delayed. Supply chains are under threat. Subcontractor and employee labor health is a concern, and there are practical defies on social distancing on construction zones. Companies that have had to decrease workers might find the future skills and availability of those workers unclear. Also, due to many contracting and construction companies operate without risk of insolvency or substantial capital [1]–[3].

In Morocco, the COVID-19 pandemic, like all countries in the world is still going through an unprecedented health challenge with economic consequences [4]. Because of the inherent nature of the business activity, some industries may unwittingly prosper under the pandemic. Although the continuation of construction work has always been authorized by the government and administrative authorities during a state of a health emergency, the fact remains that several factors have contributed to the decline of the construction sector caused mainly by the unavailability of material due to the temporary closure of many production sites or, for those whose activity has always been maintained, were faced to the insufficient funds. Moreover, the ban on travel between the different cities amplifies the abyss by making it impossible to move workers who were willing to occupy construction sites amid a health crisis. According to the figures provided by the National Federation of Building and Public Works (FNDBT), the construction sector recorded a significant decrease of 75% in the Building sector and a 60% decrease in Public Works [5].

Thus, the purpose of this study is to determine by a cross-sectional study based on an online questionnaire, the effectiveness of the various sources of financing in favor of construction sector managers and how they see the future of civil engineering and the construction industry.

A. Civil Engineering Sources Of Financing

1) Public financing

Public investment is still under pressure and it will be difficult to escape the current austerity situation. Morocco will have to choose between operating and investment spending and promote certain sectors to the detriment of others; Relaunch the machine with national programs on 100% state funding, for a wide range of projects in the field of public infrastructure and equipment [6].

2) National Federation of Building and Public Works (FNDBT)

The FNDBT requires the interest-free deferral of loan repayment deadlines to banks and leasing companies as announced by the Monitoring Committee of all loans including those granted in the context of pledging contracts. At the same time, FNDBT wants to systematically introduce an advance of 10% to 20% for all public procurement, in addition to a national preference of 15% for all public procurement. The Federation wishes to encourage the banks to play their role and accompany the companies in difficulty and not to refuse to capitalize on the public markets [7].

3) Tax policy and administration (Economic Monitoring Committee)

Tax relief could be extended to small- and medium-sized enterprises and regions or industries most affected. Such relief measures could include income tax credits, rate cuts, and exemptions, deadline extension and deferral, extended loss carry-back rules, or limiting advance tax payments [8].

4) « Relaunch Very Small Enterprise (VSE) » and « Damane Relaunch »

To deal with COVID19, the economic vigilance committee established two mechanisms of loan guaranteed by the Fund Guarantee Center (CCG; Caisse Centrale de Garantie) " Relaunch VSB " and "Damane Relaunch"(Figure1). These two mechanisms help to finance the need for business funds with a maximum interest rate of 4%, which represents a key rate Bank Al-Maghrib+ 200 points. Repayment of these credits can be extended over seven years with a forbearance of two years [9].

The product "Relaunch VSB ", intended to guarantee loans from very small businesses with a turnover of less than 10 million DH, has benefited no less than

10,756 companies, totaling 2.4 billion DH of loans granted, for a commitment volume of 2.3 billion DH.

Concerning the " Damane Relaunch " product, it deployed for small, medium and large sized companies

with a turnover exceeding 10 million DH, has benefited 4,427 companies. Thus, this mechanism covered a close to 20 billion DH, for 17.4 billion DH of commitments [9].

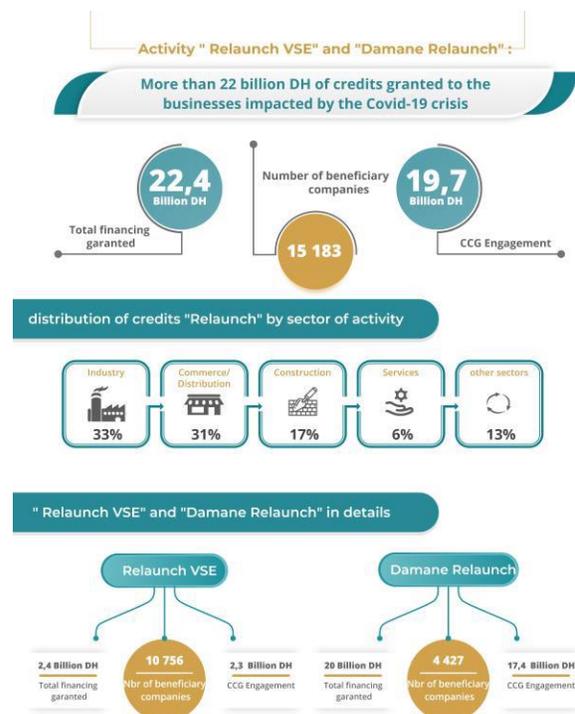


Fig.1. Activity « Relaunch VSE » and « Damane Relaunch »

B. Purpose Of The Study

The purpose of this study is to determine by a cross-sectional study based on an online questionnaire, the effectiveness of the various sources of financing in favor of construction sector managers and how they see the future of civil engineering and the construction industry.

II. METHODOLOGY

a) Study design

Given the new and unexplored nature of the research problem, our study is a cross-sectional investigation that was based on a self-administered online

questionnaire. The data will be analyzed using the SPSS software.

b) Questionnaire design and data collection

The questionnaire was designed using Google Forms, which is a free electronic medium offered by Google,

that can voluntarily collect information through the designed questionnaire.

The participated population in our study were selected based on a purposive sampling methodology. In fact,

we have identified through a few digital forums of entrepreneurs and engineers that we have contacted directly in private to solicit their participation. The choice of the participants was based on their activities in civil engineering. In total, 76 people have participated in our survey. Among those participants, 38 are managers, 18 are directors of the project, 14 are engineers and 6 are financial directors.

III. RESULTS AND DISCUSSION

Our results show that 22% of participants work in Small and Medium Enterprise (SME) and 78% in Small Enterprise (VSE). Concerning the impact of COVID19 on their activities, 96% indicated that their company was affected by COVID-19, and 4 % was not (as the design civil engineers were able to work from home). Furthermore, our study illustrates that 61,1% of projects are being delayed or canceled, 55,6% of supply chains are under threat, 69,4 % of employee and subcontractor labor health is a concern, and there are practical challenges around social distancing on construction sites and 56,9 % of companies that have had to furlough workers (Figure2). The effects of the covid-19 crisis in the civil engineering sector showed in our results can be illustrated as Domino Theory: Each effect is the result of the last one[10].

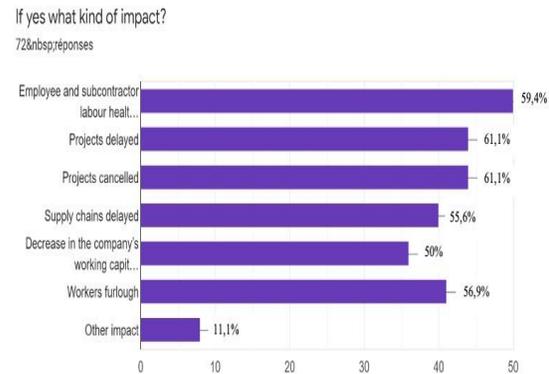


Fig.2. Impact type on the civil engineering sector.

The result of Figure 3 presents the answers to the question: what the sources of funding are to overcome the effects of the covid19 pandemic.

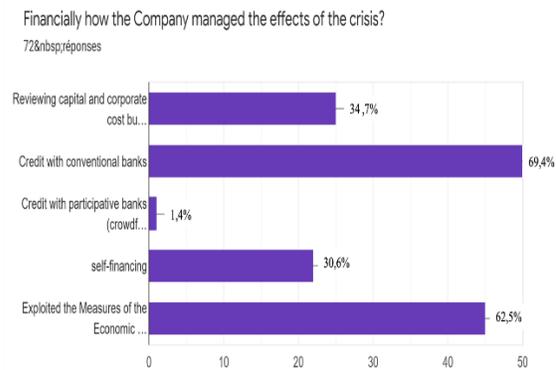


Fig.3. Finance sources.

By analyzing Figure 3, we note the absence of participatory banks (crowdfunding) to support construction companies during this period of crisis. However, the main support is based mainly on the traditional bank loans (69,4%) through the two products dedicated to overcoming this pandemic: credit daman relaunch 22,4 Billion DH distributed (the Engineering and construction organizations benefited with17%) and credit daman oxygen 7,2 Billion DH distributed (the Engineering and construction organizations benefited with 22%) [11]. In addition, 62,5% was simply using the Economic Monitoring Committee measures, this committee has set up different fiscal, economic and social measures to overcome this pandemic crisis. The fiscal measure such as the postponement of the filing of tax returns,

suspension of tax audits and Notices to third-party. The economic measure like Suspension of the payment of social charges, postponement of payment of bank without penalties or surcharges and social measurements are such as compensation of 2000 DH is paid to the benefit of employees reporting to employers affiliated to the Moroccan national social security fund with economic difficulties.

Other funding sources with no significant difference are reviewing capital and corporate cost budget and self-financing with 34,7% and 30,6% respectively as revealed in Figure 2.

Taken together, the results of this study will provide us information if a single source of finance will be sufficient to close this COVID-19 financing gap. Furthermore, it will give us responses across all sources of the finance mix to “stop the bleeding” and

possibly avoiding a collapse of financing for the development of the construction sector.

Many Engineering and construction organizations are confronting a financial shock, with an especially significant impact on their cash flow [12]. In the short term, they should conduct an extensive project-by-project forecast and source government financial support. In addition, management teams should consider contractual terms, the recoverability of receivables in a site shutdown, and the inevitable inefficiencies created by remote working and on-site distancing restrictions. In the medium term, many organisations will need to renegotiate lending arrangements and raise new equity.

At the point when the pandemic ends, engineering and construction companies will face a new world. The marketplace will change, as some national governments will be eager to invest in infrastructure to jump-start their recovery, and others may face new resource limitations. Cities will need to serve more residents who work from home — likely leading to greater investments in telecom and smart city initiatives.

REFERENCES

- [1] B. Debata, P. Patnaik, and A. Mishra, “COVID-19 pandemic! It’s impact on people, economy, and environment,” *J. Public Aff.*, vol. 20, no. 4, p. e2372, 2020.
- [2] M. Ogunnusi, M. Hamma-Adama, H. Salman, and T. Kouider, “COVID-19 pandemic: the effects and prospects in the

- construction industry.,” *Int. J. Real Estate Stud.*, vol. 14, no. Special Issue 2, 2020.
- [3] PricewaterhouseCoopers, “Engineering & Construction in a post-COVID world: weathering the storm,” PwC. <https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19/engineering-construction-post-covid-world.html> (accessed Jan. 31, 2021).
- [4] Z. Firano and F. A. Fatine, “The COVID-19: macroeconomics scenarii and role of containment in Morocco,” *One Health*, vol. 10, p. 100152, 2020.
- [5] “Covid-19 : Malmené par la crise, le BTP espère une relance d’urgence,” <http://boursenews.fnh.ma>. <https://www.boursenews.ma/article/decryptage/covid-19-malmené-par-la-crise-le-btp-espere-une-relance-d-urgence> (accessed Feb. 01, 2021).
- [6] W. A. Abbasi, Z. Wang, and D. A. Abbasi, “Potential sources of financing for small and medium enterprises (SMEs) and role of government in supporting SMEs,” *J. Small Bus. Entrep. Dev.*, vol. 5, no. 2, pp. 39–47, 2017.
- [7] “Perspectives d’activité pour 2018 | FNTF.” <https://www.fntp.fr/presse/conferences-de-presse/perspectives-dactivite-pour-2018> (accessed Feb. 01, 2021).
- [8] W. G. Gale and S. Brown, “Small business, innovation, and tax policy: A review,” *Innov. Tax Policy Rev.* April 8 2013, 2013.
- [9] B. E. I. Jalila and L. Salwa, “Relance économique pendant l’état de crise sanitaire COVID 19: Etude d’impact sur l’activité des entreprises industrielles au Maroc,” *Rev. Fr. Econ. Gest.*, vol. 1, no. 2, 2020.
- [10] P. T. Leeson and A. M. Dean, “The Democratic Domino Theory: An Empirical Investigation,” *Am. J. Polit. Sci.*, vol. 53, no. 3, pp. 533–551, Jul. 2009, doi: 10.1111/j.1540-5907.2009.00385.x.
- [11] “Tenue de la 11ième réunion du Comité de Veille Economique: 06/01/2021,” CCG, Jan. 06, 2021. <https://www.ccg.ma/fr/espace-media/actualites/tenue-de-la-11ieme-reunion-du-comite-de-veille-economique-06012021> (accessed Feb. 14, 2021).
- [12] Z. CHEN and L. WU, “Analysis of Cash Flow of Chinese Corporation: Based on the Shock of the Financial Crisis,” *J. Shanghai Lixin Univ. Commer.*, p. 3, 2010.