

Impact of Covid-19 on Construction Industry of Nepal

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Abstract

The paper aims to examine the impact of COVID-19 on the construction industry of Nepal. This research is based on primary data, and the nature of the data is qualitative. The sources of empirical data have been collected with the help of unstructured interviews with nine professional contractors who have been directly involved in the construction sectors for a long time. This study used a thematic analysis to examine the responses provided by participants in the research field. The major three themes and 12 sub-themes were generated from the study to find the impact of COVID-19 on the construction industry in Nepal. The study finds the three-level of impacts—financial, operational, and institutional on construction sectors. The government budget reduction, the deteriorating financial situation of the contractors, late payment, and over cost runs of the projects are the financial impact. Likewise, the operational level impact is related to delay in project completion, supply chain problems, difficulty in workforce management, and maintaining the health and safety of the workforce. The study finds no adequate support and special packages from the government, including professional associations. The government and regulatory authority should support the construction industry to build efficient, competent, and resourceful sectors. Once the issues and expectations of constructional professionals are addressed, that ultimately helps to enhance the construction industry's performance. Finally, the construction professionals, the industry, and the government will be benefited.

Keywords

Construction Industry, COVID-19, Professional Contractors

1. Introduction

Back in December 2019 world experienced the first case of COVID-19 from

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Wuhan city, China, rapidly spread across the globe, becoming a global pandemic in March 2020 (World Health Organization, 2020). After the public health emergency issued by the WHO, to slow down the increasing number of cases day by day, many countries have chosen to impose nationwide lockdown as a rapid action. Likewise, Nepal Government also decided to go for complete lockdown from March 24, 2020, to June 14, 2020, and continued the partial lockdown on different local states as per the cases seen (Neupane & Mishra, 2020). After the decline of COVID-19 cases for six months, the second wave of COVID-19 hit Nepal in April 2021, with the significant transmission of the delta variant (WHO, 2021).

Ministry of Physical Infrastructure and Transport had classified construction companies under four categories; class A, class B, class C, and class D. There are about 17,000 construction companies registered in Nepal under the above categories, among which there is the maximum number of a small construction company (The Asia Foundation, 2020). These sectors employed 1.5 million workers, where one-third are migrated workforce from India (CBS, 2018). COVID-19 affected every industry at worst; among them, the construction industry is highly influenced. Larger contractors may have different perspectives than small and medium enterprises (SME) contractors on the problems faced because of COVID-19, and other mechanisms are required to address the issues.

The extraction of raw material to the production of construction materials, the overall construction industry, transportation of materials, inspection, labour, etc., has been facing trouble. Many workers become infected, quarantined, and sick, labour shortages had arisen, and this caused delays and effects in construction projects. These industries had faced difficulties with supply chain disruptions and labour shortages even after the lockdown based on observed events. The closure of the international border between Nepal and India is the primary cause of the market's labour shortage and materials.

The construction industry plays a significant role in the nation's economic, societal, and political development (Donaldson, 2018). The gross domestic product (GDP) from construction in Nepal was 54,499 NPR million in 2019, which is likely to decrease in 2020, affecting the overall economy of the country and the contractors, too (CBS, 2020). The responsibility to pay the loan installment and interest, carriage installment interest, office rent, staff salary, workers, taxes, etc., are affecting the mental health of construction professionals terribly.

This research aims to undertake a deeper understanding of the lived experiences of construction industry professionals to develop a theme related to the impact of COVID-19 on small contractors in Nepal. This study focuses on how the small contractors are affected by the COVID-19, analyzing the challenges they face during and beyond COVID-19 in managing the construction resources such as workforce, construction materials, technology, capital, including its construction resources contributions to the society and nation.

COVID-19 pandemic is affecting the economy worldwide in every sector. The construction sector is one of the highly affected sectors after the tourism and

hospitality industry. This research is significant to develop a strategy to promote the construction sector. It may contribute good literature to the policy makers, academicians, researchers, and practitioners interested in the construction industry. Moreover, it may help to investigate the financial, operational, and institutional level of impact on the construction industry due to COVID-19. The study is limited to the critical professional contractors involved in the construction industry at the executives level of their professional association. Researchers have used the qualitative research method; however, further research can be conducted mixed-method with many respondents.

2. Literature Review

Many studies have been carried out to determine the impact of COVID-19 in the construction industry.

[Alsharef et al. \(2021\)](#) find the following impacts of COVID-19 on construction sectors in the USA: 1) material delivery delays and shortage, 2) delays in inspections and securing permits, 3) reduction in efficiency and production rate, 4) slowing of ongoing projects and delay in the start of new projects, 5) price escalations, additional costs, loss of revenue, payment delays, 6) safety concerns, workforce shortages, and 7) expected increase in disputes, litigation, and claims. They conducted a series of structured interviews with 34 construction professionals on the pandemic impacts on their work.

[Zamani et al. \(2021\)](#) identified the problems caused by the pandemic COVID-19 on the building construction industry. The operation is affected by project timelines due to shortening construction activities and late approvals by related authorities. In addition, shortage of skilled workers and supplies and logistic issues have affected project operation. The study established that COVID-19 is influencing the building construction industry by causing operational and financial matters. Most companies require financial aid to encounter them with economic issues. Therefore, the study suggests the government and banks help the companies by providing subsidies for their existence and deal with the lack of foreign workers tactfully.

[Amri \(2021\)](#) examines the economic impact of COVID-19 on the construction industry in Oman. The falling oil prices and supply chain disruptions have dealt a severe blow to the construction industry. Not only the construction industry has seen a fall in financial support and funding, but many players in the industry have also sustained hit that further increases the financial burden of Oman's construction industry. The construction sector needs to be alert on the future growth determinants of the industry and act accordingly rather than synchronizing the strategies at once ([Pathirana, 2020](#)).

The critical aspects of the impact arising from the COVID 19 in the GCC area are related to the delays of the construction projects, effective management of workforce, health and safety issues, and legal aspects. Construction delays are caused due to close of the borders, reducing the number of workers at construc-

tion sites, and disturbance in the supply chain management. In addition, the government should support businesses to sustain themselves during this period (Umar, 2021).

Baniya, Ghimire and Mahat (2021) reviewed impacts on COVID-19 on the world economy and SDGs practices in Nepal; the estimated and forecasted data shows that global GDP has declined, and the global economic recession had found extreme in 2020. With the economic slowdown on international and national scales, community instability and violence increase due to unemployment. The pandemic has challenged the developing world to meet sustainable development goals, affecting construction, as a significant part of the country's GDP is associated with the construction industry.

Thapa and Shrestha (2021) find the high impact of COVID-19 on the construction industry, causing a severe impact on supply chain disruption due to a halt in the entire transportation and aviation industry. The project cost and time increase due to uncertainty regarding the availability of subcontractors, suppliers, and labour. Materials and equipment procured from other countries could not be entered due to customs clearance. The shortage of steel and bringing labour from outside the construction territory was prohibited. Besides, government protocols caused an impact on the construction industry, increasing the cost of projects and time due to uncertainty regarding the availability of subcontractors.

Kabiru and Yahaya (2020) concluded that COVID-19 harmed the construction industry in Nigeria as it has obstructed site work, affect the bill of quantities, affect project completion, and affect the law of contract. This is capable of causing the force majeure event in the Nigerian construction industry.

Yadeta and Pandey (2020) summarized that the COVID-19 pandemic had left an enormous amount of uncertainty regarding contractual implications for those involved in the construction industry, resulting in merit in the parties considering the negotiation of some contract amendments. In addition, enactments are made to protect workers' health and safety, affecting construction projects, causing force majeure and project costing. Collaboration and good communication between government and contractors could be an essential solution to manage the impact and pilot projects through this period of uncertainty.

Gamil and Alhagar (2020) find the most impacting factors are the suspension of projects, labour impact and job loss, time overrun, cost overrun, and financial impact. Contractors are also inevitably faced legal issues due to the nonconformity of contractual terms, which is caused by the suspension of the project and sudden fluctuation of material price. In contrast, projects that are still running due to the urgent need to expand medical facilities are also about to face many challenges such as shortage of workers, the rise of materials price, and shortage of materials and supply chains.

Neupane and Mishra (2020) find that house owners trust less on native labours and think migrated ones from India have good skills and expertise, which caused the scarcity of workforce. It is difficult to find more skilled labourers with

experience due to their migration to abroad countries to earn foreign currency. Fear of COVID-19 transmission also discouraged labours from involving themselves in reconstruction works. It has been difficult for contractors and workers to manage the PCR and isolation centres during the project. Hansen (2020) finds the construction industry is unforeseeable, unavoidable, and uncontrollable.

Timilsina et al. (2020) find 56 different causes for delay of bridge construction through the literature review and a pilot survey involved in constructing such bridges. The eight most important are lack of stakeholder analysis, poor portfolio management, lack of inadequate pre-execution planning and improper time management, lack of site management, inadequate budget allocation and delay in payment, lack of provision of reward and penalty, lack of detailed survey, improper soil exploration and preparing report without depth study, and contractor's excessive workload. The cost, quality, and schedule of bridge construction projects can be maintained by addressing the problem of unnecessary delay and enhancing the competency of the construction industry.

Most of the studies have focused on analyzing the impact of the pandemic on project performance and developing guidelines for safely executing projects. However, there has been little discussion on the perception of the professional association of the construction sector towards the financial, operational, and institutional impact. This research can provide significant insights into the perception of the professional association of the construction sector and helps to develop a strategy to promote the construction industry in the context of Nepal.

Based on a reviewing the numbers of literature related to the impact of COVID-19, the following theoretical framework has been developed (Figure 1).

3. Research Methodology

The research is based on qualitative research, a semi-structured interview with a framework of various themes to be explored, drawing on the lived experiences of research participants (Bryman, 2012). This research aims to undertake a deeper understanding of the lived experiences of construction industry professionals to develop a theme related to the impact of COVID-19 on small contractors in

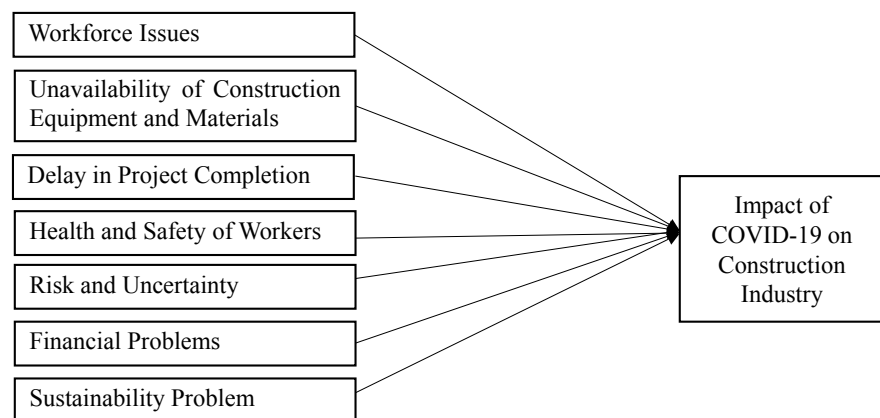


Figure 1. Theoretical framework.

Nepal. The construction industry professionals, known as contractors (having licensed as “A”, “B”, “C”, and “D” class) having two or more decade’s experience, are the respondents of the research. The fieldwork was carried out for data collection through in-depth unstructured interviews with professional contractors who have been directly involved in the construction sectors for a long time.

Since this research is based on qualitative research, an in-depth unstructured interview was applied with nine key professional members of the contractor association, including former and existing advisors, central members, president and vice-president, general secretary of the construction-related association of Nepal. The professional members of the contractors association represent the voice of the construction industry because they are nominated and elected from all registered contractors of Nepal. The questionnaires were not developed and administered in this study because of the qualitative nature of the data. The interview was conducted almost for one hour with each respondent during the period May-June 2021. After completion of data collection, the field data were translated from Nepali into English. This study used thematic analysis, examining the responses provided by participants in the research field (Braun & Clarke, 2006).

The semi-structured interview was focused on the area of the impact of the COVID-19 pandemic on construction business such as problems faced by the contractors, delay for project completion, price adjustment issues, contractors’ expectation and their role, the role of the state addressing the issues related to the construction industry, reform strategies to promote the construction business, etc. This study used a thematic analysis to examine the responses provided by participants in the research field. In this study, themes and sub-themes were thus generated to analyze field data about the impact of COVID-19 on the construction industry in Nepal. This study has been based on an inductive analysis of participants’ lived experiences by a qualitative research approach (Shank, 2006).

3.1. Reliability and Validity

Reliability indicates the stability of responses to multiple coders of data sets. Detailed field notes can enhance it by using recording devices and by transcribing the digital files. The responses were verified at the end of the respondents’ answers were over. The consistency in the answer was found in this research while summarizing their opinions at the end of the semi-structured interview related to the impact of COVID-19 on the construction industry.

Creswell and Poth (2013) refer to the accuracy of the results, a process of verification made by extensive time spent in the field, detailed description, and a close relationship between the researcher and the participants. This research attempted to focus on the validity of the research outcomes. The maximum efforts were made to understand the respondents’ intent related to the impact of

COVID-19 on the construction industry in Nepal. The respondents spent adequate time conducting in-depth unstructured interviews to collect their valuable experiences and views.

3.2. Data Collection

This research is based on primary data, and the nature of the data is qualitative. The sources of empirical data have been collected with the help of unstructured interviews. The in-depth unstructured interview was conducted with former and existing advisors, central members, president and vice-president, general secretary of the construction-related association of Nepal. The interview was conducted almost for one hour with each respondent during the period May-June 2021.

4. Discussion

This study examines the critical issues of the construction industry after the COVID-19 with the help of qualitative research. The semi-structured interview was conducted with nine respondents who have valuable experiences in the construction sector. The contractors, who represent the contractor association of Nepal, were interviewed to assess the impact of COVID-19 on construction industries. The experiences of the contractors have been presented.

Name	Responses of Unstructured Interview
Mr. J. B. Gurung (Former Advisor, The Federation of Contractor Association of Nepal)	<p><u>Res-1. MOV</u></p> <p><i>“In the first wave, society itself was made frightening and mentally weakened. In the second wave, we were not able to work due to a lack of time. After that, our mental condition was deteriorating. When we could not work, the workers returned to their native place. It was difficult to manage the workers during the period. The economic sector has become frightening. Personally speaking, the financial situation has deteriorated. Due to the economic crisis, even when COVID-19 has improved slightly, we cannot take off. The financial situation is weak. I even tried to take the help of the bank. While I am not able to pay the previous installment, how will the bank help? Due to this situation in COVID-19, the status of the construction sector is awful. The government should provide the subsidy, but a country like ours with a low economy would face many difficulties. That is why we have to do what we have to do ourselves. The only thing we can do now is to manage the workforce and money ourselves. There is no hope from the government. The ray of light is a bank; what the government has to do is facilitate the contractors for a more accessible loan and installment process in coordination with the bank. If the government could do this little too, we can work.”</i></p>
Mr. Jaya Kumar Dhakal (Central Member, The Federation of Contractor Association of Nepal)	<p><u>Res-2. MOV</u></p> <p><i>“The impact has been tremendous. Even though business people have been affected by the previous situations in the country, COVID-19 has affected even more. Out of the total 15,000 contractors, only 100 have decided where to go and what to do. In this case, the government should help the contractors to keep them motivated and alive in the construction industry. The government needs to pay attention to this because 65 percent of the development budget is worked through this construction industry. We are dependent on about 1.5 million workers. A large number of workers and their family infected from the COVID-19. The issues of all these workers are the critical concern. We are facing a big problem of workforce management in the construction sector. Besides, the industry was highly affected by workers health, lockdown, and supply chain problems. There is a delay in the completion of the ongoing projects. The government supports are essential to address many issues related to construction sectors.”</i></p>

Continued

Mr. Bhim Bahadur Saud

(Advisor, Federation of Contractors Association of Nepal and Mayor of Parasuram Municipality Dadeldhura District, Nepal)

Res-3. MOV

"COVID-19 has hit the construction business including tourism sectors, manufacturing and service industry, etc. The contractors had demanded that the government address the issues related to the construction industry. The demands extend the term of contracts for at least one year, bringing a special package to pay for the workers, subsidizing loans, and tax exemption. Since the construction sector plays a significant role, regularly pays taxes and other revenues, and supports the government to maintain a prosperous nation, the government should bring reform packages for the improvement of the construction sector.

Due to the involvement of the locally residing labour, we have done a lot of work. But the project is challenging to complete within the deadline due to the impact of COVID. The local level workforce is not sufficient in terms of skills and quantity. The construction industry needs skillful workers to do the building and bridge-related works. We have to manage the skilled workers from India, as there are limited qualified workers locally."

Mr. Deepak Gautam,

(Central Member, The Federation of Contractor Association of Nepal)

Res-4. MOV

"In my opinion, due to COVID-19, the construction business is the most affected. Based on that estimate, the first is tourism, and the second is the construction sector. We are the first Nepali company to receive the contract award from the U.S. Government. I had a good experience and opportunity to compare the two countries regarding the rules and regulations. The US government has provided adequate compensation to the construction industry. There is a need to extend the construction contract in such a situation. The government has not taken a step ahead to improve the construction industry by negotiating the contract. I have felt that it would be difficult to sustain the construction industry successfully if the issues are not properly addressed."

Res-5. MOV

"This COVID-19 has affected not only the construction business but also the entire business. Our construction business has been influenced a lot because we have not been able to work on time. Many workers are needed on the site, and we are not getting enough workers. Because of COVID-19, the government's annual budget has been reduced by the government and increased the size of the budget on health sectors. It has affected many professionals involving in the construction sector. The risk factors have been raised.

Besides this, the payment has not been made on time to the contractors. This has created a massive impact on the construction business. First of all, the deadline has to be extended. All the work that has not been done, now the deadline has been extended to early September. It is not possible to complete the work within the extended deadline. The job would be completed in three months at ordinary times, but it is not possible at this difficult phase. So, time is needed for the project even more, so when it comes to ADB and World Bank, it seems to be cautious about safety and difficulty to work and requested more time for the projects.

The construction work is affected by the tipper and excavator driver, including grader operators because they have not returned to the sites. The small contractor does not have any plant equipment, and only the big contractors have it. The small contract needs to hire plant equipment. You can imagine how terrified they must have been and how much they suffered is quite challenging to express.

The extension of the project and price adjustment is another issue. It is complicated to work without price adjustment. The inflation rate has become so high; how can we work in such a situation? The projects are over cost runs, and most of the construction professionals are facing the same issue. The government should address these issues on time."

Mr. Home Nath Koirala,

(President, Democratic Contractors Association of Nepal)

Res-6. MOV

"There is a massive impact. Those who have bought tippers, dozers, and excavators while taking a loan from the bank. The COVID-19 has created delay of project completion, non-payment issue, no cash flow, and difficulty paying the loan, installment, and interest. Moreover, low-cost contracts and unhealthy competition are common issues. The liabilities of the bank made the construction professional sell the house and land.

On behalf of the contractors, the contractor should be responsible for their work, and they should adjust as per the changing situation to complete work on time. Contractors must be accountable for their work on time without blaming others. If they are in a problem, they can seek help from their fellow contractors and government also."

Mr. Shubharan Neupane

(General Secretary, Contractors Association of Pyuthan, Nepal)

Continued

Mr. Pramod Lamichhane

(Central Member, The Federation of Contractors Association of Nepal)

Res-7. MOV

“Impact in China signifies an impact on the world, as China is an exporting country. It exports everything from raw materials to the final product. Due to the same reason, difficulty in import from China for 4 - 5 months, and almost all of Nepal was affected. After all, it had a direct impact on everyone, including the construction executives.

Despite the COVID-19 impact, the government tried to complete the construction work, but the construction executives and workers faced many obstacles. The cost of construction materials and labour costs has increased a lot. The price of raw materials hiked by 2 - 3 times during the lockdown period. Similarly, big national pride projects could not operate smoothly and caused a delay in completion. The cost increased, and contractors had to tolerate the loss. The government addressed the issue and extended the deadline by six months, but only two months are available due to the late decisions. Therefore, the time was running out in those two months.

The state should make the payment on time. The priority must be to make arrangements for paying all the construction work given by the government. Thus, a new tender should be opened only after the payment of the old work. The government has invested in bridges, roads, health posts, various multi-purpose buildings, and others. If it is not completed on time, this will be a massive loss to the nation. Contractors have not been able to carry out their work correctly due to non-receipt payment and non-extension of deadlines in many places. For that reason, the government should step forward to solve the problem and extend the term by one year without any demands.”

Res-8. MOV

“No doubt, a massive impact. It is one of the industries where many workers are engaged for their livelihood. The precautions and health guidelines should be adopted on the construction site. However, immensely challenging to manage the workforce in the construction industry after the COVID crisis. The government was forced to extend the term by six months. Workers from India have not returned yet to work, causing a shortage in the labour market.

In addition, the government imposes a fine for the delay in the project. We face problems in bank interest, machine interest, installments, workers' salaries, office expenses and rent expenses, and many other similar payments. The construction business has reached a critical stage. This has caused massive loss to the individual contractors and also affected to country's GDP.”

Res-9. MOV

“COVID-19's first case was seen on Jan 13, 2020, in Nepal. Soon after, we were in pain. It was a busy time for construction business people. Hundreds of workers were at the construction site. Of course, there was a rumour a month ago. With the sudden lockdown in Nepal, we could not send hundreds of workers from the construction sites to their homes. However, hundreds of people went to their home walkthrough 5 - 7 days. There is no provision of health insurance. The construction industry is facing a big problem. The first problem is financial issues. The second problem is that after eight months of our work stoppage, the government has not addressed the impact of the price hike adjusting the price.

On the other hand, the local people didn't allow to enter the outsiders in the construction sites because of the transmission of COVID-19. Locals were skeptical about the idea, saying that if COVID-19 came from outside people, the disease would cause problems. So, the construction work could not start on time. The monsoon started, and again, the works were halted. Again, starting work became a problem due to the festive season. Our work started only in November. During 7-8 months, all our works were paused, and our overhead expenses increased.

The government did not help us in this situation. As soon as the expenses for eight months went up, there was a problem of extension and non-payment. There was also a situation of contract expiration during the lockdown. The government also extended the deadline, but we had to wait until January to implement the decision entirely. As a result, the expiration date of 6 months was extended, but it took six months to extend the term altogether.”

Mr. A.D. Lama

(Vice-president, The Federation of Contractors Association of Nepal)

Source: In-depth unstructured interview, 2021.

This study can be summarized into major three themes and 12 subthemes. The impact of COVID-19 on construction industry has financial, operational and institutional support impact. All the three themes and their subthemes have been presented as:

The financial impact of the COVID-19 is one of the critical issues in the construction industry. The study finds the following five significant subthemes under the financial effects of COVID-19 on the construction industry:

- Government budget reduction
- The deteriorating financial situation of the contractors
- Late payment
- Over cost runs of the projects
- Difficult to sustain

The operational issues of the construction industry are related to the workforce, supply chains, and other routine problems faced by the contractors. The study finds major following major four subthemes under the operational impact of COVID-19 on the construction industry:

- Delay in project completion
- Supply chain problems
- Difficulty in workforce management
- Difficulty in maintaining health and safety of the workforces

The institutional supports consist of both government and professional associations. The study finds the following three subthemes of institutional support to promote the construction industry:

- No adequate support
- No special packages
- No support from professional association

Based on the above discussion, the following themes and subthemes can be developed on the impact of COVID-19 on construction industry (**Figure 2**):

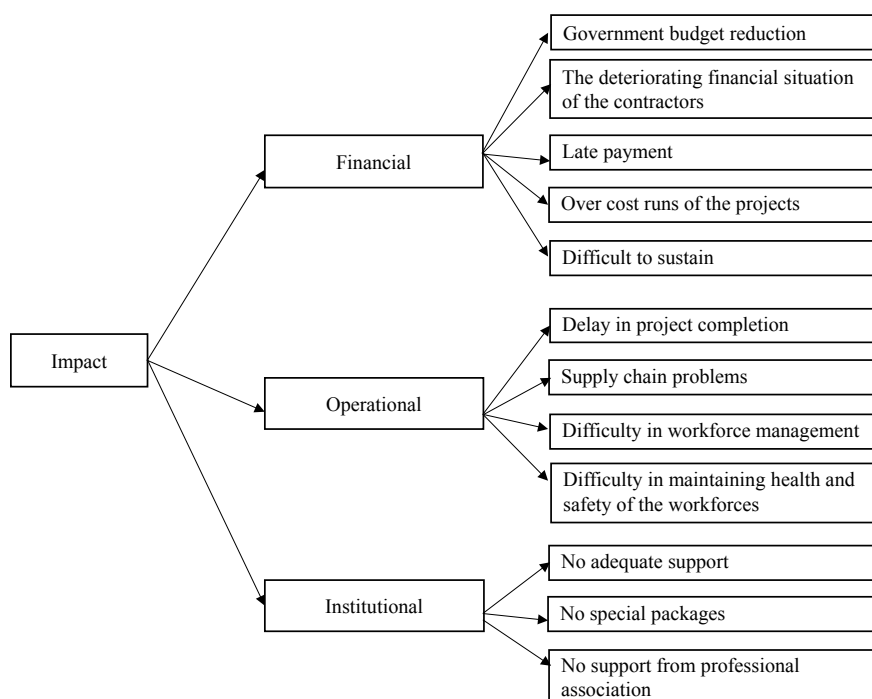


Figure 2. Impact of COVID-19 on construction industry.

5. Conclusion and Suggestions

The construction industry is one of the highly affected industries by the COVID-19 pandemic. The study finds three-level impacts—financial, operational, and institutional on construction sectors. The government budget reduction has minimized the number of construction projects due to COVID-19. There is a deteriorating financial situation of the contractors due to the poor financial performance of the industry. Moreover, contractors faced the problem of late payment and over cost runs of the projects. Likewise, the operational level impact is related to delay in project completion, supply chain problems, difficulty in workforce management, and maintaining health and safety of the workforce. There are limited qualified workforces at the local level in the construction industry. The study finds no adequate support and special packages from the government, including professional associations. The study finds the expectation of construction professionals to promote the construction industry: 1) subsidized loan; 2) special packages; 3) necessary to extend construction contract; 4) government adequate support. The government and regulatory authority should support the construction industry to build efficient, competent, and resourceful sectors. Once the issues and expectations of construction professionals are addressed, that ultimately helps to enhance the construction industry's performance. Finally, it will provide good benefits to the construction professionals, the industry and the government.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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