

Analysis of construction disputes shows what decision is the most suitable to undertake^{1, 2}

Ugo Grahek

Abstract

In our days, construction projects are everywhere around the world, whether in depend on building a school, a building or even a house. However, this sector currently suffers from many big issues which are the disputes that occur in its very own project and contract management. The main objectives are to identify and understand the leading causes of disputes in construction projects. To do so, we will have to establish a root cause analysis, then identify and analyze the different alternatives solutions that are suitable to deal with the latter. At the end of those research and analysis, it will result in an indication on a clear understanding of the issues and on what solution to implement in project management such as the arbitration alternative or the prevention of disputes.

Keywords: Construction disputes, contractors, owners, contract issues, causes of disputes, alternative solutions, justiciable issues.

Introduction

We all one day asked ourselves "How long is it going to take?", "Is the construction not finish yet?" or even "Why is there anybody working on this site anymore?". In our society, Construction sites aren't uncommon nor unfamiliar to citizens and are now occupying a big part in the daily life of an inhabitant of a city. Whether it is concerning an urban renewal, a road development, and repair or the creation of a new building, constructions are now everywhere around us. But the three previously asked questions are not often answered the right way as the response lives in the contracts and the management of the construction project.

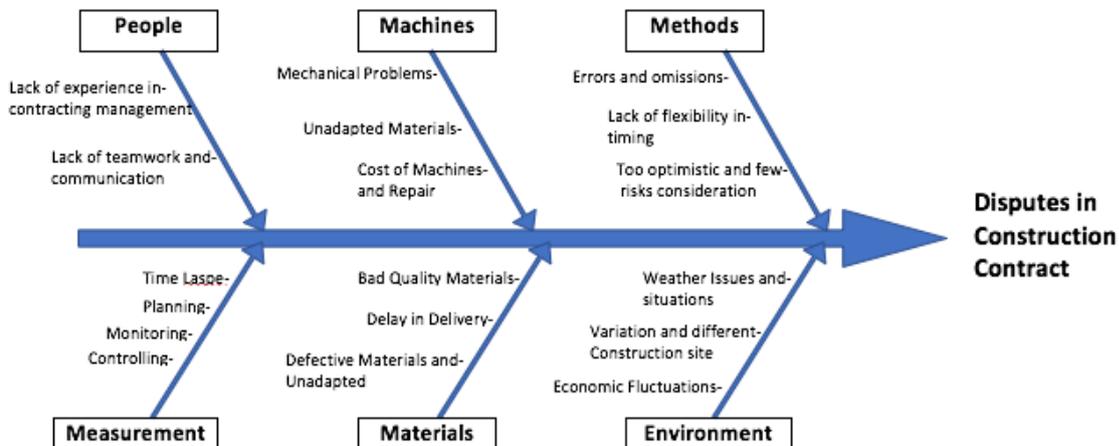
Numbers are indeed blatant as in France, the number of litigations in this field has increased and represented more than "80% in 2014 while the delays and the abortions of projects have seen

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² How to cite this paper: Grahek, U. (2019). Analysis of construction disputes shows what decision is the most suitable to undertake, *PM World Journal*, Vol. VIII, Issue II (February).

an increase of 20% between 2015 and 2017”³. However, when it comes to resolving issues to achieve constructions, it requires a lot of resources and time as in the USA, “it takes an average of 16.2 month and an average value of 29.6 million to resolve disputes”⁴, while “in the Middle East, 13.7 months are required in order to solve an issue.”⁵

In fact, it is important to know that working on a construction project will include many different parameters and criteria that are going to decide whether it keeps a good timing, a sufficient



budget and quality on what have been previously planned.

*Fishbone Diagram – Root cause of disputes in construction projects*⁶

However, construction is one of the sectors that is commonly facing a lot of issues on several aspects, especially when it comes to disputes, which will impede the achievement and success of a project. As in every construction project, it requires different parties such as the owner, the contractors and the subcontractors which can lead to plenty of disagreement, disputes and justiciable issues.

As the latter is closely linked with justiciable issues and dilemmas, it requires a solution which is usually brought by a 3rd party such as a negotiation arbitration or a mediator which will assist the owners and contractors.

³ A.F - The Monitor, (25/08/2017) Case study - The number of disputes in construction has increased:
<https://www.lemoniteur.fr/article/le-nombre-de-litiges-par-travaux-a-explose-en-deux-ans-selon-une-etude-de-la-clcv.838634>

⁴ E. Misonzhnik - National Real Estate Investor, (29/05/2015) - 5 most common causes of construction disputes:
<https://www.nreionline.com/construction/5-most-common-causes-construction-disputes>

⁵ R. Nelson Williams - Arcadis, (09/05/2017) - What are the most common causes of construction disputes in the middle east:
<https://www.arcadis.com/en/middle-east/our-perspectives/2017/05/what-are-the-most-common-causes-of-construction-disputes-in-the-middle-east/>

⁶ Fishbone Diagram – Root cause of disputes in construction projects by Author.

Project management and managers in construction are facing major issues in terms of how to approach the problem. As it is concerning the contracting steps and different criteria of such a project, contract and project managers must be in constant awareness of risks, matters and causes of disputes. In fact, they must integrate into their work that non-consideration of those causes, can lead to a project delayed or even the end of it. On another hand, if the causes and risk are acknowledged and known by the project members, it is easier to prevent the consequences that can lead to disputes.

Additionally, as future project manager in this area, it is important to highlight the different cases that can occur during a project or in a contract to avoid them.

To understand the latter and the previously stated numbers, we have to go through the main causes of disputes and issues that are, in fact common and well-known in this industry. The main reasons for failure come from mainly people, environment and measurement.

Indeed, the lack of education, experience and knowledge between contractors and employees, especially managers are relevant causes of disputes and lead to errors and omissions in the contract document. Those are one of the most common and major disputes in the construction area.

Also, and as said before, the environment has also a big role to play in root causes, differing site conditions is included in major causes and is becoming a more and more important problem to take into account in this project.

Finally, and without forgetting the measurement that leads to the failure of understanding each criteria of the contractual obligations by each contractor and the failure to correctly handle all the parameter written in the contracts are both issues that are appearing in this sector.

The aim of this paper will be to have a complete understanding and a strong analysis of the major causes of disputes and justiciable issues in the construction industry that leads to delays and failure of projects and work field.

A second goal is to understand how to facilitate the project management in this sector by identifying issues that impede the updates, creation and acquirement and the achievement of organization project strategic and tactical benefits.

We can now easily establish the question that we will be able to answer through this paper: **How to understand the leading causes of construction disputes in project management?**

Methodology

Step 1: *Identification of Problems*

The main leading issues and disputes in construction projects come from different various mistakes that are commonly committed between contractors and during the contracting steps. In fact, the causes that are related to project and contract management can be stated as follow:

- *The constant omissions and errors in contract lead to misunderstanding, non-wanted or failed work deliverable⁷:*

Indeed, errors and omissions in contracts was a leading cause of dispute in 2014 and remain today a big issue. As the project managers nor the contractor in construction have the ability and experiences to perfectly handle the contracting steps this issue leads to misunderstanding, omissions in the process of the project or even the complete failure of a construction project.

- *The differing site conditions and its lack considerations from project managers is also an issue⁸:*

As project managers usually tend to forget or have a lack of risk consideration in terms of the latter. Whether it comes from weather, field or infrastructure conditions, it has become a real issue to take into considerations those changes. In fact, the construction bid is evaluated by the belief that conditions are reflected in the initial package, which is usually totally different.

- *The failure to correctly administer the contract⁹:*

Finally, in the heart of the contract issue, the lack of consideration of picking a strong, respected and agreed contract is a leading cause of disagreement.

Step 2: *Feasible Alternative Solution*

In order to have a dispute resolution, we can identify feasible and alternative solutions. In fact, as there is a lot of lack of awareness and consideration in terms of risks and disputes. Contractors of such a project should have guidance and formation through the different alternative that can be required to put an end to those issues, those are:

⁷ ScienceDirect, (2013) *Case Study - What are the most common causes of disputes in construction:*
<https://core.ac.uk/download/pdf/82573832.pdf>

⁸ By Matthew Devries, *Best Practice Construction Law (05/05/2010) - Top three causes of disputes on a construction project:*
<https://www.bestpracticesconstructionlaw.com/2010/05/articles/project-management/the-top-three-causes-of-disputes-on-a-construction-project/>

⁹ Wright & Greenhill PC, (Monday, May 8, 2017) - *What are the most common causes of construction disputes:*
<https://www.wrightgreenhill.com/blog/2017/05/what-are-the-most-common-causes-of-construction-disputes.shtml>

- **Adjudication**¹⁰ – It is a process that brings into the dispute a neutral 3rd Party in order to give a final or complementary decision.
- **Arbitration**¹¹ – A process that requires a 3rd party. Both parties that are involve in the dispute will agree to the decision of the arbitrator.
- **Mediation**¹² – It is also a 3rd Party intervention but will only assist and will help the process of resolving disputes.
- **Expert Determination**¹³ – It is usually used to resolve disputes that are subject to a special kind or nature. It is also used where a specialist's opinion is required.
- **Litigation**¹⁴ – It is used if the parties can't reach to an agreement after having used other types of alternatives. It involves a trial.
- **Prevention**¹⁵ - An alternative that is to prevent the dispute from very first steps of contracting a project in construction.
- **Ignore the problem** – An alternative that is frequently used to deal with the dispute in construction is simply to do nothing and ignore the problem.

Step 3: Development of each of the feasible alternative

One of the first and preferable alternative solutions stated previously is the *Adjudication*, which is a solution that results of a quick process in order to maintain a sufficient and maintained cash flow during the progression of the construction project.

¹⁰ Tod Bottari, (13/02/2014) – Construction Project Disputes how to resolve them... and how to avoid them:
<https://www.aconex.com/blogs/construction-project-disputes-how-to-resolve-them-and-how-to-avoid-them-part-ii/>

¹¹ Peter Sherwin, Ana Vermal, Elizabeth Figuera – Proskauerguide: The Decision to Arbitrate:
<https://www.proskauerguide.com/arbitration/19>

¹² Construction Executive, (08/06/2017) – Six tips for successfully resolving construction disputes:
<http://constructionexec.com/article/six-tips-for-successfully-resolving-construction-disputes>

¹³ Nick Cook, (18/04/2016) – Different methods of dispute resolution in construction disputes:
<https://www.gdlaw.co.uk/site/blog/sectors-blog/construction-blog/different-methods-of-dispute-resolution-in-construction-disputes>

¹⁴ Construction Executive, (08/06/2017) - Six tips for successfully resolving construction disputes:
<http://constructionexec.com/article/six-tips-for-successfully-resolving-construction-disputes>

¹⁵ Planningplanet, (14/12/2015) – Formal Disputes Resolution:
<http://www.planningplanet.com/guild/gpcar/formal-disputes-resolution>

Also as the person in charge of the adjudication is neutral, it is not involved in the day to day activities of the project, so can bring a look over the latter. Moreover, this type of alternative process still brings the possibility to bring the dispute in front of a court in case of a non-respect of the decision of the adjudicator. Finally, using the latter is less expensive than bringing the dispute directly on a court process.

Another great alternative that has been stated is the *Mediation solution*. As said before, it brings an independent person that will facilitate and assists parties in their research and discussion on a solution. The final aim is to resolve the dispute with a fair decision of the parties. This unique method comes with 4 main aspects, which are:

- It is a quick process that usually takes 1 or 2 days
- It cost less than most of the other alternatives
- It can help maintain and pursuit operation and business relationship
- Everything stays confidential at the end of a mediation.

A third alternative solution would be the *Prevention* of future possible disputes in construction. As some of the leading aspect and issues are common disputes, project and contract managers can acknowledge the causes of the latter during the first steps of contracting. With good awareness of the causes, they will be able then to prevent any dispute related to their tasks.

Moreover, simply *Ignore the problem* is also an alternative to consider. In fact, as many of project managers decide to do nothing regarding a construction project disputes or issues, it is a solution that can save time and cost but remains risky in case of complaints from a party or another.

The *Expert Determination* maybe is a good but no the best alternative. It is used when a valuation dispute occurs. In fact and as said before, it is mainly used when it comes to the expertise of an individual. And as stated in the solution, the expert will determine the dispute and will fix the decision for both parties.

It is an economic and a cheap way to finally resolve disputes that require an expertise or a valuation. Also, it is less expensive than most of the alternatives and is a less formal methods of dealing with disputes and issues in construction projects.

The *Arbitration* is an alternative solution that can be benchmarked with the *Litigation*. In fact, even if the process is a quick process and stays confidential, the costs are high and so as similar. However, one of the main advantages when applying this solution is that arbitrators usually have a significant experience in the matter and knows how to find a consensus and how to handle such a dispute.

Finally, an alternative solution that should be to avoided is *Litigation*. Even if it is known as one of the most used and common way to solve a dispute in construction. It, however, bring the dispute in a court process and takes a long time to be solved. The claims and all the process will

be directly handled and managed by a judge. When issues are too complex for other alternatives, this solution will be suitable and will deal with.

At last, both parties will obtain at the end of the latter a binding and an enforceable decision issued by a judge.

Step 4: Selection of the criteria

In order to have a closer look and a better analysis of each alternative solution that are suggested, we need to select the criteria that are going to show the efficiency and the effectiveness of each of the latter. Those are:

- The spared and saved time: As it is a major criteria that will strongly impact on the timing and delay of construction projects.¹⁶
- The cost and budget savings: It will also impact the type of alternative selected depending on the budget of the project and its size.¹⁵
- The possibility of failure of the solving process: As in fact, there are some alternatives that can result in a non-respect or a non-solved dispute, it will be called a failure.¹⁶
- The confidentiality is a major attribute to consider for the five alternative solutions for construction disputes.¹⁷
- The flexibility which will define if the process is ruled by rules or can be flexible depending on the will of the parties.¹⁸
- The need or possibility of court intervention since a certain type of alternative can requires the latter.¹⁹
- The neutral 3rd party that can be required by a certain type of alternatives.²⁰
- The formal or informal methods used during the procedures and process of each solution stated.²¹
- The enforceability of each solutions depending on the results given for each party.²²
- The absence of appeal in case of dissatisfaction of the result given by the solution.²³
- The limited discovery is a major attribute to consider for the five alternative solutions for construction disputes.¹⁷

^{16 15 16 17 18} Nick Cook, (18/04/2016) – *Different methods of dispute resolution in construction disputes*:
<https://www.qdlaw.co.uk/site/blog/sectors-blog/construction-blog/different-methods-of-dispute-resolution-in-construction-disputes>

^{16 17 18} Colin J Wall - *DISPUTE PREVENTION AND RESOLUTION FOR DESIGN AND BUILD CONTRACTS IN HONG KONG*:
<http://www.irbnet.de/daten/iconda/CIB12610.pdf>
^{19 20 21 22 23 24 25} Peter Sherwin, Ana Vermal, Elizabeth Figuira – *Proskauerguide: The Decision to Arbitrate*:
<https://www.proskauerguide.com/arbitration/19>

^{17 16 17} Peter Sherwin, Ana Vermal, Elizabeth Figuira – *Proskauerguide: The Decision to Arbitrate*:
<https://www.proskauerguide.com/arbitration/19>

¹⁸ *Multi-Attribute Decision Making Table* by Author.

- The language selection that will strongly impact the progression of each process. ¹⁶
- The place selection that can also impact the progression of each process. ¹⁷

| Attributes | Mediation | Arbitration | Adjudication | Expert Determination | Litigation | Prevention | Ignore the problem |
|---|-----------|-------------|--------------|----------------------|------------|------------|--------------------|
| Saved Time | Better | Better | Equal | Equal | Worse | Better | Better |
| Cost Saving | Better | Worse | Better | Better | Worse | Better | Better |
| Possibility of Failure | Worse | Equal | Equal | Worse | Better | Equal | Worse |
| Confidentiality | Better | Equal | Equal | Equal | Worse | Equal | Equal |
| Flexibility | Better | Better | Equal | Equal | Worse | Better | Worse |
| Needs for Court Intervention | Worse | Equal | Better | Worse | Better | Worse | Equal |
| Neutral 3 rd Party Requirement | Better | Better | Better | Equal | Worse | Worse | Worse |
| Formal method | Equal | Better | Better | Worse | Better | Worse | Better |
| Enforceability | Worse | Better | Better | Worse | Worse | Worse | Worse |
| Absence of Appeal | Equal | Equal | Better | Equal | Better | Worse | Worse |
| Limited discovery | Equal | Equal | Better | Equal | Equal | Better | Worse |
| Language Selection | Better | Better | Worse | Equal | Worse | Better | Worse |
| Place Selection | Better | Better | Worse | Better | Worse | Better | Worse |

Multi-Attribute Decision Making Table ¹⁸

This previously built table is subject to a color code:

- The Green box Better shows that an attribute has the best impact on the construction dispute.
- The Yellow box Equal shows that an attribute has a positive impact on the construction dispute.
- The Red box Worse shows that an attribute has a bad impact on the construction dispute.

This table already gives us a better understanding and analysis of which feasible alternative solution is going to be effective on a construction project dispute. By looking at it, we can now

and already eliminate several of them. It is the *Litigation* and *Ignore the problem* which collect the most of Red box in their attributes. It is translated as a bad choice in terms of an alternative solution.

Findings

Step 5: Development and outcome of each alternative

In a previous analysis made to identify the leading causes of dispute in construction that are related to project management and after having highlighted the alternative solutions. We can now determine if proceeding by the elimination of an alternative with the results previously stated was a good decision. To do so, a quantitative analysis is required.

To realize this next analysis, we will need to give to our attributes a weight depending on the score the latter have obtained:

| Attributes | Weight |
|------------|--------|
| Better | 1 |
| Equal | 0.5 |
| Worse | 0 |

With this weighted technique, we can now create a table that will represent the different solutions related to their attributes with the new score model:

| Attributes | Mediation | Arbitration | Adjudication | Expert Determination | Prevention |
|------------------------|-----------|-------------|--------------|----------------------|------------|
| Saved Time | 1 | 1 | 0.5 | 0.5 | 1 |
| Cost Saving | 1 | 0 | 1 | 1 | 1 |
| Possibility of Failure | 0 | 0.5 | 0.5 | 0 | 0.5 |

| | | | | | |
|---|------------|------------|----------|------------|----------|
| Confidentiality | 1 | 0.5 | 0.5 | 0.5 | 0.5 |
| Flexibility | 1 | 1 | 0.5 | 0.5 | 1 |
| Needs for Court Intervention | 0 | 0.5 | 1 | 0 | 0 |
| Neutral 3 rd Party Requirement | 1 | 1 | 1 | 0.5 | 0 |
| Formal method | 0.5 | 1 | 1 | 0 | 0 |
| Enforceability | 0 | 1 | 1 | 0 | 0 |
| Absence of Appeal | 0.5 | 0.5 | 1 | 0.5 | 0 |
| Limited discovery | 0.5 | 0.5 | 1 | 0.5 | 1 |
| Language Selection | 1 | 1 | 0 | 0.5 | 1 |
| Place Selection | 1 | 1 | 0 | 1 | 1 |
| Total: | 8.5 | 9.5 | 9 | 5.5 | 4 |

*Quantitative Table Analysis*¹⁸

The table above shows that litigation is still one of the worst alternatives solutions, while the arbitration is showed as the best one. With those results we can now determine a deeper analysis by developing an additive weighting model:

¹⁸ *Quantitative Table Analysis by Author*

| Attributes | Step 1 | Step2 | | | Mediation | | Arbitration | | Adjudication | | Expert Determination | | Prevention | |
|-----------------------------|---------------|---------------------|-----|----------------|-----------|----------------|-------------|-----------------|--------------|-----------------|----------------------|-------------|------------|--|
| | Relative Rank | Normalized weigh: A | B | A x B | C | A x C | D | A x D | E | A x E | F | A x F | | |
| Saved Time | 9 | 9/91 = 0,10 | 1 | 0,0989 | 1 | 0,0989 | 0,5 | 0,049451 | 0,5 | 0,049451 | 1 | 0,1 | | |
| Cost Saving | 12 | 12/91 = 0,13 | 1 | 0,13187 | 0 | 0 | 1 | 0,131868 | 1 | 0,131868 | 1 | 0,13 | | |
| Possibility of Failure | 13 | 13/91 = 0,14 | 0 | 0 | 0,5 | 0,07143 | 0,5 | 0,071429 | 0 | 0 | 0,5 | 0,07 | | |
| Confidentiality | 5 | 5/91 = 0,05 | 1 | 0,05495 | 0,5 | 0,02747 | 0,5 | 0,027473 | 0,5 | 0,027473 | 0,5 | 0,03 | | |
| Flexibility | 7 | 7/91 = 0,08 | 1 | 0,07692 | 1 | 0,07692 | 0,5 | 0,038462 | 0,5 | 0,038462 | 1 | 0,08 | | |
| Need for court intervention | 6 | 6/91 = 0,07 | 0 | 0 | 0,5 | 0,03297 | 1 | 0,065934 | 0 | 0 | 0 | 0 | | |
| Neutral 3rd Party | 4 | 4/91 = 0,04 | 1 | 0,04396 | 1 | 0,04396 | 1 | 0,043956 | 0,5 | 0,021978 | 0 | 0 | | |
| Formal method | 1 | 1/91 = 0,01 | 0,5 | 0,00549 | 1 | 0,01099 | 1 | 0,010989 | 0 | 0 | 0 | 0 | | |
| Enforceability | 11 | 11/91 = 0,12 | 0 | 0 | 1 | 0,12088 | 1 | 0,120879 | 0 | 0 | 0 | 0 | | |
| Absence of appeal | 10 | 10/91 = 0,11 | 0,5 | 0,05495 | 0,5 | 0,05495 | 1 | 0,10989 | 0,5 | 0,054945 | 0 | 0 | | |
| Limited discovery | 8 | 8/91 = 0,09 | 0,5 | 0,04396 | 0,5 | 0,04396 | 1 | 0,087912 | 0,5 | 0,043956 | 1 | 0,09 | | |
| Language selection | 3 | 3/91 = 0,03 | 1 | 0,03297 | 1 | 0,03297 | 0 | 0 | 0,5 | 0,016484 | 1 | 0,03 | | |
| Place selection | 2 | 2/91 = 0,02 | 1 | 0,02198 | 1 | 0,02198 | 0 | 0 | 1 | 0,021978 | 1 | 0,02 | | |
| Total: | 91 | 91/91 = 1,00 | | 0,56593 | | 0,63736 | | 0,758242 | | 0,406593 | | 0,55 | | |

Additive Weighting Table Analysis¹⁹

Step 6: Selection of the preferred alternative

Thanks to the previously stated table analysis, we can now easily see that the Litigation remains one of the worst alternative solutions with a score of 0.33. However, due to this analysis, the Adjudication becomes one of the preferred alternatives solutions to leading causes of disputes. While the first table showed that the best alternative was the Arbitration.

In order to verify which alternative is the best one, we can use a ratio that will demonstrate it:

$$(9.5/9) - 1 = 0.5056$$

$$0.056 * 100 = \underline{5.56\%}$$

Thanks to this result, we can see that the Arbitration is better than the Adjudication by 5.56%.

¹⁹ Additive Weighting Table Analysis by Author

Step 7: Performance monitoring and post evaluation

The previously stated steps lead to a conclusion that is to appeal for an arbitration when facing disputes in the construction sector. In fact, it is one of the best alternative solutions that the project management in construction has at their disposal.

In order to track and follow up the performance of the solution recommended through this paper, several strategies exist to do so. Such as:

- Consideration and identification of the effectiveness and suitability of the decision given by the arbitrator.
- Comparison of the time and cost saving of this solution with the others.
- An overlook of the decision process and the dispute-solving through the alternative.

Conclusion

Through this paper, we identified and understood the main leading disputes in a construction project and their causes, which were coming from the environment, measurement and education of managers. We also identified the close link between those issues and project and contract management in this sector.

Then, to respond to these disputes in those types of projects, we proceeded to a feasible alternative solution statement and analysis where we came up with 7 main alternatives and which were: The Litigation, the Arbitration, The Prevention, Ignoring the problem, the Adjudication, the Mediation, the Expert Determination. Finally, after a quantitative and a qualitative analysis, one solution seemed to be much more appropriate to deal with those kinds of dispute: The Arbitration.

One of the best recommendations this paper can bring to future or actual project managers would be to firstly define the scope, budget and timing of their project. As each project is different in its size, some of those previously stated solution can be more suitable to the context and project.

Secondly, if project managers are currently in contracting step for a construction project, they can consider the prevention solution which can be a useful way to prevent any type of dispute during the process.

Finally, to opt for the Arbitration in case of not having the time to consider other alternatives as it valued and determined as the best suitable solution to deal with disputes and issues in the construction sector.

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About the Author



Ugo Grahek

Paris, France



Ugo Grahek is a French student at SKEMA Business School in Paris. For his two first year as a college student, he studied economic and management in ESDHEM (Lille, France) before been enrolled in an exchange program for one semester in North Carolina State University (NCSU, North Carolina, Raleigh, USA) in the same degree.

Then he enrolled in SKEMA Business School (Lille, France) where he started to follow the business track "Programme Grande Ecole" and integrated an exchange program of one semester in Suzhou (China). He recently pursued his education by integrating the specialization "Msc Project and Program Management and Business Development" in SKEMA BS Paris.

After finishing his studies and graduating, his main objective is to continue his adventure and improve his experiences in project management. He is willing to integrate a company in the construction sector.

Ugo Grahek can be contacted at ugo.grahek@skema.edu or on LinkedIn <https://www.linkedin.com/in/ugo-grahek-a09701130>