

Research about Solving the Arrears Payment Problem for Subcontractors in the Chinese Construction Industry^{1, 2}

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ABSTRACT

Arrears payment and prolonged payment have considerably affected contractors, construction project completion and project quality in the Chinese construction sector for a long time. This paper sought to unravel the leading cause of this problem from the perspective of owners and give some appropriate alternative solutions by using Root Cause Analysis Diagram and Non-Compensatory Model. Then we use Muti-Attribute Decision Making model, Additive Weighting Technique to select the best solution. Absolutely, we also need to confirm that the alternative solutions do have impacts on the arrears payment problem, so we choose to use Pareto Analysis, which can help us have a clear understanding of this alternative solution. By giving these analyses and researching methods, we find that Subcontracting is the best way to avoid and resolve this problem and we cannot implement Advance Deposit and Adding Late Payment Penalties these two methods in China since they are not suitable for China in the current construction industry. In conclusion, we hope that these solutions would help in improving payments problems in China.

Keywords: Prolonged Payment/ Arrears Payment in the construction Project/ Project Management/ Chinese Construction Industry

INTRODUCTION

In recent years, the Chinese construction industry has been growing rapidly since 1978. A large number of infrastructures, industrial and civil construction projects launched. The National Bureau of Statistics (NBS) said that “The value-added output of the construction industry reached

¹ Editor’s note: Student papers are authored by graduate or undergraduate students based on coursework at accredited universities or training programs. This paper was prepared for the course “International Contract Management” facilitated by Dr Paul D. Giammalvo of PT Mitratata Citragraha, Jakarta, Indonesia as an Adjunct Professor under contract to SKEMA Business School for the program Master of Science in Project and Programme Management and Business Development. <http://www.skema.edu/programmes/masters-of-science>. For more information on this global program (Lille and Paris in France; Belo Horizonte in Brazil), contact Dr Paul Gardiner, Global Programme Director, at paul.gardiner@skema.edu.

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5.57 trillion yuan (about 816.6 billion U.S. dollars) in 2017”³. However, due to the imperfect legal system in the construction industry and weak regulatory measures, the the construction market was once seriously confused. Therefore, there are many problems raising in the Chinese the construction industry. Arrears payment & prolonged payment delays is one of the most serious one. As the report said that “Many reports have documented the massive scale of withheld wages and lack of payment. A 10,000 questionnaire survey by Little Bird, a Chinese labor NGO, concluded that over 75% of the construction workers received, or expected to receive, salaries less frequent than half-yearly. Most hoped to get paid eventually by year-end, despite legislation stipulating that salary must be paid on monthly basis”⁴. Laws and legislation cannot mitigate this situation since some government units are substantially involved in this unethical practice. As reported” Huang” (2004) the vice minister of the MOC, pointed out that 36.7% payment arrears were generated from the projects that were funded directly or indirectly by the government.”⁵Therefore, increasing payment issues have attracted much more attention.

Why arrears payment and prolonged payment problem are so serious in the Chinese the construction industry? As the report said that” the State Council provided an official interpretation in November 2003, there are five main reasons printed out”⁶. These are the deficiency of the credit system and legal system, unfair market environment, looseness implementing regulations, imbalance of the construction market, and local governments initiating projects without sufficient funding arrangement.

Indeed, besides the reasons mentioned above, in the construction project management, project owner and contractor also are responsible for this problem. For example, in China, because of extensive market competition, some contractors will promise that they can advance part of the payment in order to successfully bid. In this case, most owners will agree with this such decision. However, at the end of the project, owners will take advantage of contractors’ weakness risk awareness for arrears payment. Besides, some project owners are blindly launched without sufficient funds and financing channels, which directly lead that employees cannot receive their wages.

³ Yi, Y. (2018, September). China's the construction industry on rapid growth since 1978. Retrieved from: http://www.xinhuanet.com/english/2018-09/09/c_137455844.htm

⁴ Bengten, P. (2018, February). Hidden in plain sight: forced labor constructing China. Retrieved from: <https://www.opendemocracy.net/beyondslavery/peter-bengsten/hidden-in-plain-sight-forced-labor-constructing-china>

⁵ Wu, J. Payment problems and regulatory responses in the construction industry. Retrieved from: https://www.academia.edu/3690284/Payment_problems_and_regulatory_responses_in_the_the_construction_industry

⁶ Wu, J, Kumaraswamy, M, M.ASCE, Gary Soo. Payment problems and regulatory responses in the construction industry. Retrieved from: https://www.academia.edu/3690284/Payment_problems_and_regulatory_responses_in_the_the_construction_industry

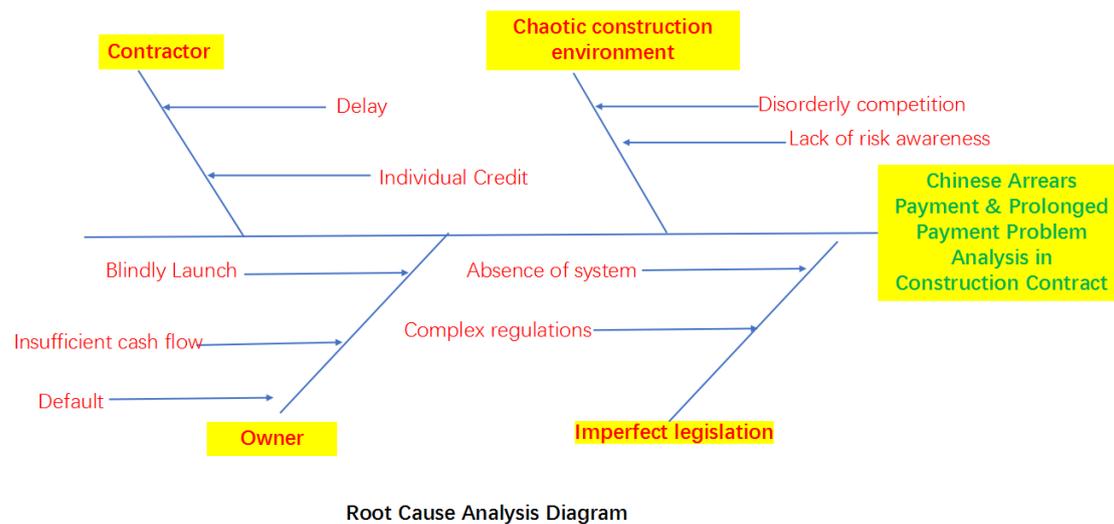


Figure 1 Root Cause analysis Why Payment is Late in China⁷

By the end of this paper, we would be able to understand:

- The leading causes for arrears payment and prolonged payment problem
- The possible ways which can be implemented to reduce the frequency of this phenomenon in projects.
- This paper focuses on analyzing project owners' duty and responsibility for this problem.

METHODOLOGY

Step 1: Summarize

As introduced, the main purpose of this paper is to solve the arrears payment problem in the Chinese the construction industry by focusing on the project owner's duties and responsibilities. In order to analyze feasible alternatives, firstly, we need to identify that the major responsibilities of the owner are the deficiency of credit system, public/ quasi-public projects and unreasonable demand for advancing funds.

- Project owner's deficiency of credit system, in particular the loopholes in the credit mortgage system.

⁷ By Author

The credit system is still in its initial stage of development, not to mention establishing a credit system for owners, in China. Some owners did not pay the workers without proper reasons. Even so, there is no credit “stain” being recorded on file, which actually encourages an unethical and illegal practice in this industry for default, or considerably delaying what is already due.

Loopholes in the credit mortgage system indeed exist. In article 199 of Real Right Law of the People’s Republic of China state that: “where a property is mortgaged to two or more obligee concurrently, the cash generated from the caution or sale of the mortgaged property shall be applied to paying debts in a particular manner.”⁸ Some owners took advantage of this article and mortgaged an on-going commercial project by three times to get funds. Due to lack of any supervision for the funds, it is not surprised that some funds are used in another project. When a client faced financial strain, payment problem arose.

- Blindly launch, especially happening when the owner is local government. It is not surprising that some key public project owners may use their status to default on payments. As we mentioned before, a large proportion of this payment problem originated from public/quasi-public projects.
- Unreasonable demand for advancing funds. Because of intensive market competition, some contractors have to promise owners to advance part of the project’s funds to obtain the bid. However, once problems arose during the construction process, owners would use it as an excuse to delay payment.

These three issues together have led to the big problem of arrears payment and default, however, through the research and analysis, we have found that three questions are interrelated. Thereby, the following alternative solutions are aiming at the big problem.

Step 2: Identification of alternative solutions

1. Offering Cash Discount: this alternative solution is beneficial for both parties(owner and contractor), since “everyone loves an incentive, and if you offer customers a discount if they pay their bills ahead of time, you’re creating a win/win situation for both of you. Getting the cash in early helps your cash flow, of course”⁹. Therefore, if contractors are willing to provide discounts to owners, it can help them receive their wages.

⁸ Hou, J. (2012, October). Real Right Law of People’s Republic of China. Retrieved from:
<https://wenku.baidu.com/view/648354fd0242a8956bece4b6.html?pn=50>

⁹ Dan, M. (2018, January). 10 Ways to Improve Cash Flow. Retrieved from:
<https://www.investopedia.com/articles/personal-finance/061215/10-ways-improve-cash-flow.asp>

2. Adding Late Payment Penalties: due to frequent arrears payment in the construction industry, this alternative provides the most basic guarantee for the contractor. “If your business has provided goods or services to a customer and you haven't received their payment by the agreed deadline, you are entitled to receive interest and compensation on the payment you're owed.”¹⁰
3. Rent or Leasing vs Purchasing Equipment: compared to purchasing equipment, renting equipment seems more beneficial to contractors and owners in terms of cutting costs and guaranteeing cash flows. Because “unless your company is flush with cash, you’re going to want to maintain a cash stream for day-to-day operations. By leasing, you pay in small increments, which helps improve cash flow”¹¹. So, owners can encourage contractors to use this method.
4. Advance deposit: this alternative is perfectly suitable for the construction industry, since “Companies whose product or service requires substantial cash or effort before they deliver are good candidates for asking clients for a deposit or milestone payment”¹². Actually, this solution is just at the opposite of the current situation in the Chinese construction industry since it is common to see that contractors promise to advance funding by themselves at the beginning of the project in order to get the bid. Such a situation is exactly one of the reasons of payment problem. Thereby, successfully implementing this solution may have a big influence on contractors and project management.
5. Just in time Deliveries: just in time management is “a supply chain management system designed to reduce carrying costs to a minimum.”¹³ This method can be used by contractors to manage their equipment and deliveries as precisely as possible, which can help them reduce costs and meet the owner’s requirements. Consequently, the project can be carried out on time. Thereby, owners should encourage contractors to use such a management method to reduce loose for both parties.

¹⁰ European Union. (2018, September). Late payment. Retrieved from:
https://europa.eu/youreurope/business/finance-funding/making-receiving-payments/late-payment/index_en.htm

¹¹ Dan, M. (2018, January). 10 Ways to Improve Cash Flow. Retrieved from:
<https://www.investopedia.com/articles/personal-finance/061215/10-ways-improve-cash-flow.asp>

¹² Firm of Future Team. Retrieved from:
<https://www.firmofthefuture.com/content/10-effective-cash-flow-management-strategies-for-small-businesses/>

¹³ Just-In-Time Delivery. Retrieved from:
<https://financial-dictionary.thefreedictionary.com/Just-In-Time+Delivery>

6. Subcontracting: These days subcontracting is not unusual in the construction industry. This solution can help the main contractor reduce the costs to a large extent. Hence, the main contractors are able to pay for subcontractors.
7. Risk management: “The lack of knowledge retention and communication has always been a serious problem for the construction industry.”¹⁴ This alternative help both parties to pay more attention before starting the project and also during the construction process. Also, Correct risk management can “Implements responses to risks within the limits of own responsibility, and address any implications for the future, implementing the change control process where relevant.”¹⁵ This is an important issue for controlling projects, especially for construction projects, since there are many change orders during the construction process.
8. Establish clear supervision regulations and laws: this alternative contributes to “Further provisions and requirements for the use and supervision of the borrower's funds to prevent credit funds from being used for other purposes”¹⁶. Apart from this, the Chinese government has launched a specific law in terms of advancement of funds. The law named <Notice on strictly prohibiting the capital contracting projects> identifies the nature of capital contracting and prohibits this conduct. This solution has solved the problem caused by the advance payment of the project to a certain extent and guaranteed the construction project is legal.

To analyse and assess these alternative solutions, now we can deduce the attributes which can help us to rank these solutions and find the best one and the worst one. The following attributes are decided according to the current situation of the Chinese construction industry.

Feasibility: this attribute comes to the first that we need to consider since we need to take into account the current situation of the development of China's the construction industry, culture,

¹⁴ Junying, L; Binggaung, L; Binshan, L; Van, N.(2007, April). Key issues and challenges of risk management and insurance in China's the construction industry: An empirical study. Retrieved from: https://www.researchgate.net/publication/220672074_Key_issues_and_challenges_of_risk_management_and_insurance_in_China's_the_construction_industry_An_empirical_study

¹⁵ APM- Association for Project Management. Retrieved from: <https://www.apm.org.uk/resources/find-a-resource/competence-framework/>

¹⁶ Menghan, S. (2012, January). Problems and Risk Prevention in the Evaluation of the construction Project Mortgage. Retrieved from: <https://translate.google.cn/#zh-CN/en/%E5%9C%A8%E5%BB%BA%E5%B7%A5%E7%A8%8B%E6%8A%B5%E6%8A%BC%E8%AF%84%E4%BC%B0%E4%B8%AD%E5%AD%98%E5%9C%A8%E7%9A%84%E9%97%AE%E9%A2%98%E5%8F%8A%E9%A3%8E%E9%99%A9%E9%98%B2%E8%8C%83>

and the construction market environment. “Feasibility study is to determine the decisive work before the construction project.”¹⁷

Impact on society: this attribute is very important since we need to confirm that some regulations should be reviewed to assess whether they can have a positive impact in the long term. “The Tax Cuts and Jobs Act, approved in late 2017, should have a positive impact on design and the construction companies, as key provisions of the legislation will converge to drive business investment, employment and wages.”¹⁸

Cost-effectiveness: “Every owner wants a cost-effective building.”¹⁹ This attribute is crucial for both parties (project owners and contractors). As we mentioned before, some contractors promise owners to advance funding to get the bid, which can be easily used by owners to achieve the purpose of delaying payment.

Mandatory: due to the complex construction environment, it is impossible to demand owners to obey conventional terms if these terms are not launched by the government. “Compliance to them is mandatory by law whereas noncompliance is punishable”.²⁰

Risk assessment: this attribute plays an indispensable part in project management. And “risk assessment processes of the construction project describe the work of all project life cycle”.²¹

Step 3: Multi-attribute decision making

We choose these four attributes because they are should be considered when taking actions to resolve the arrears payment problem. In order to assess these four attributes, we are going to use non-compensatory model. This method uses a Pair-Wise comparison of attributes, “it

¹⁷ Feasibility study report. Retrieved from:
<https://baike.baidu.com/item/%E5%8F%AF%E8%A1%8C%E6%80%A7%E7%A0%94%E7%A9%B6%E6%8A%A5%E5%91%8A>

¹⁸ Brian, G. (2018, March). Tax Reform's Positive Impact on the construction Industry. Retrieved from:
<https://theconstructionexec.com/article/tax-reforms-positive-impact-on--the-the-construction-industry>

¹⁹ WBDG Cost-Effective Committee. (2016, November). COST – EFFECTIVE. Retrieved from:
<https://www.wbdg.org/design-objectives/cost-effective>

²⁰ Vaibhav, B. (2014, December). Importance of Building By Laws or Building Regulations. Retrieved from:
<https://www.linkedin.com/pulse/importance-building-laws-regulations-vaibhav-bhati/>

²¹ Edmundas Kazimieras, Z and Zenonas, T and Jolanta, T. (2009, November). Retrieved from:
<https://www.tandfonline.com/doi/pdf/10.3846/jcem.2010.03>

compares each candidate in head-to-head contests, and the candidate with the most points after all the comparisons are finished wins.”²²

	Feasibility	Impact on society	Cost effectiveness	Mandatory	Risk assessment	Ordinal ranking
Feasibility		1	1	1	0	3
Impact on society	0		0	0	0	0
Cost effectiveness	1	1		0	0	2
Mandatory	0	1	1		0	2
Risk assessment	1	1	1	1		4

Figure 2 a Pair-Wise comparison of attributes²³

From this assessment, we can see that the most important attribute is the Risk assessment, and Feasibility is ranked at the second level, then we can see that attributes Mandatory and Cost-effectiveness are at the same level flowed by the attribute of Impact on society. Therefore, Impact on society is the worst attributes among them.

Step 4: Selection of criteria

Now we need to use the Muti-Attribute decision-making model to select the criteria in order to accept or reject the alternative solutions. This model is “ is to select an appropriate alternative from a finite number of feasible alternatives based on the features of each attribute with respect to every alternative.”²⁴ In the model, we used three colors:

- Blue: good
- Purple: medium
- Gray: bad

²² Maria, A. (2018, April). The Pairwise Comparison Method in Elections. Retrieved from: <https://study.com/academy/lesson/the-pairwise-comparison-method-in-elections.html>

²³ By Author

²⁴ Yonghuang, L; Pin-Chan, L; Hsin, T. (2008, November). Dynamic multi-attribute decision making model with grey number evaluations. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S0957417407003910>

	Offering Cash Discount	Adding Penalties	Rent equipment	Advance deposit	In time Delivery	Subcontracting	Risk managem	Laws
Feasibility	high	high	high	medium	high	high	high	high
Impact	medium	high	medium	high	fair	high	medium	high
Cost effectiveness	high	low	high	fair	high	high	medium	low
Mandatory	low	low	low	low	low	low	low	high
Risk assessment	medium	high	medium	high	fair	high	high	fair

Figure 3 Matrix analysis²⁵

	Offering Cash Discount	Adding Penalties	Rent equipment	Advance deposit	In time Delivery	Subcontracting	Risk managem	Laws
Feasibility	1	1	1	0.6	1	1	1	1
Impact	0.6	1	0.5	1	0.5	1	0.8	1
Cost effectiveness	1	0	1	0.3	1	1	0.9	0
Mandatory	0	0	0	0	0	0	0	1
Risk assessment	0.5	0.9	0.7	1	0.8	1	1	0.2
Total	3.1	2.9	3.2	2.9	3.3	4	3.7	3.2

Figure 4 Matrix analysis²⁶

Through this analysis, we can easily find that a score < 2.9 will be eliminated from the alternative solutions. Therefore, Advance deposit and Adding Late Payment Penalties will be eliminated. Subcontracting is the best solution among them and the figure is 4. Risk management and Just in time deliveries also have a relatively high score, so they are good solutions to prevent the arrears payment problem.

FINDINGS

Step 5: Summarize

Now, we are going to summarize the decision-making process that we did in step three and step four through using the method additive weighting technique. This method allows us to “ calculate an evaluation score for each alternative by multiplying the scaled value given to the alternative of that attribute with the weights of relative importance directly assigned by

²⁵ By Author

²⁶ By Author

decision maker followed by summing of the products for all criteria.”²⁷ Since we have already eliminated one alternative solution at step 4, we will focus on the remaining seven solutions.

	STPE 1	STEP 2	Cash discount		Rent equipment		In time delivery		Subcontracting		Risk management		Laws	
	Relative ranking	Normalized weight	(B)	(A)*(B)	(D)	(A)*(D)	(E)	(A)*(E)	(F)	(A)*(F)	(G)	(A)*(G)	(H)	(A)*(H)
Feasibility	3	0.3	1	0.3	1	0.3	1	0.3	1	0.3	1	0.3	1	0.3
Impact	0	0	0.6	0	0.5	0	0.5	0	1	0	0.8	0	1	0
Cost effective	2	0.2	1	0.2	1	0.2	1	0.2	1	0.2	0.9	0.18	0	0
Mandatory	2	0.2	0	0	0	0	0	0	0	0	0	0	1	0.2
Risk assessment	4	0.4	0.5	0.2	0.7	0.28	0.8	0.32	1	0.4	1	0.4	0.2	0.08
Total	11	1.1	0.7	0.78	0.82	0.9	0.88	0.58						

Figure 5 Additive Weighting Technique²⁸

Therefore, this method helps us to confirm that what we did in step 3 and step 4. Subcontracting is the best solution to avoid arrears payment problem in the Chinese construction industry followed by Risk management and In time deliveries.

Step 6: Applying the criteria

Now, we can rank our alternatives from the best to the worst.

²⁷ Alireza, A and Majid, M and Rosnah Modh, Y. (2010, December). Simple Additive Weighting approach to Personnel Selection problem. Retrieved from:
https://www.researchgate.net/publication/285828294_Simple_Additive_Weighting_Approach_to_Personnel_Selection_Problem

²⁸ By Author

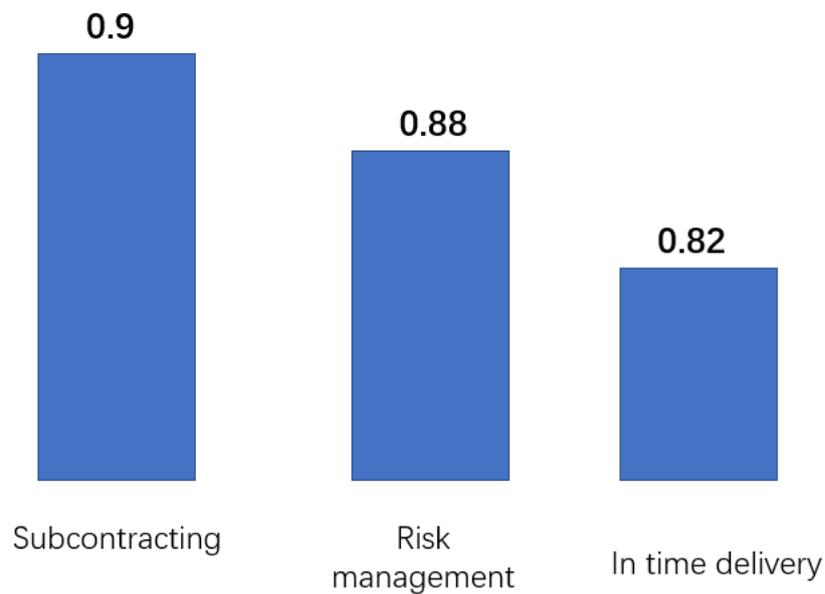


Figure 6: Ranking list²⁹

Thanks to the additive weighting technique and the ranking list, we now can clearly understand which solution is the best one, and which one has to be eliminated from our analysis. We eliminate the alternative of Advance deposit and Adding Late Payment Penalties. Although Advance deposit is perfectly suitable for the construction industry and provides contractors with guarantees. Nevertheless, it is difficult to implement this method in China due to the completely opposite market situation as we introduced before. For the solution of Adding Late Payment Penalties, actually, it is the same situation for the last solution. In China, “there are much more contractors than owners”³⁰, so not many owners will accept this treaty.

We recommend using the highest rated solution Subcontracting and the following three Risk management, In time delivery. These three solutions can be implemented relatively easily. And through using them, both owners and contractors can reduce costs and help to manage risks during the construction process.

The alternative of Subcontracting is a better choice by 108% compared to Risk management and 121.2% compared to In-time delivery.

Now, we are going to illustrate why subcontracting coming to the first solution. Subcontracting is to be the best way to avoid even resolve the payment problem. A complicated the construction

²⁹ By Author

³⁰ Liuwang, T. (2017, August). What are the reasons for the arrears of the construction? Retrieved from: <https://zhidao.baidu.com/question/621803352512684332.html>

industry has been made by a great number of traders from different specializations. “To overcome the demand on special expertise, advanced equipment, and huge investment cost, letting out work to subcontractors has been a norm in the construction industry”.³¹ what’s more, “Reducing costs is undeniably subcontracting’s greatest and most obvious benefit”.³²

We all know that cash flow is everything for the construction project. Subcontracting only occurs when you need it, which means that contractors do not need to pay for substantial wages, employment insurance and social benefits from their revenues, 12 months a year. So this method is cost-effectiveness for owners and also contractors can have enough cash flows to pay for employees. Apart from this, by the fact that contractors hiring experts, they do not need to worry too much about the equipment resources and the quality of the whole project. “you know the work you’re entrusting to the external resource person will be well done, without having to worry that you’ll need to redo part of the work afterward”.³³ Meeting clients’ quality requirement within the deadline is really important for receiving revenues.

Step 7: Demonstration

Now that we have made our choice about the best solution of arrears payment --- Subcontracting. Therefore, we can conduct a Pareto analysis in order to analyse the effect of Subcontracting when resolving the arrears payment problem. “conduct a Pareto analysis can measure and compare the impact of changes that take place in an organization.”³⁴

³¹ Yoke-Lian, L and Hassim, S and Muniandy, R and Teik-Hua , L. (2012, August). Review of Subcontracting Practice in the construction Industry. Retrieved from:
<http://www.ijetch.org/papers/406-P013.pdf>

³² Emilie, F. (2016, May). What are the Benefits of Subcontracting? Retrieved from:
<https://blog.cognibox.com/en/blog/benefits-subcontracting>

³³ Emilie, F. (2016, May). What are the Benefits of Subcontracting? Retrieved from:
<https://blog.cognibox.com/en/blog/benefits-subcontracting>

³⁴ Dora, D. (2017, September). What Are the Benefits of Pareto Analysis?. Retrieved from:
<https://bizfluent.com/list-6744752-benefits-pareto-analysis-.html>

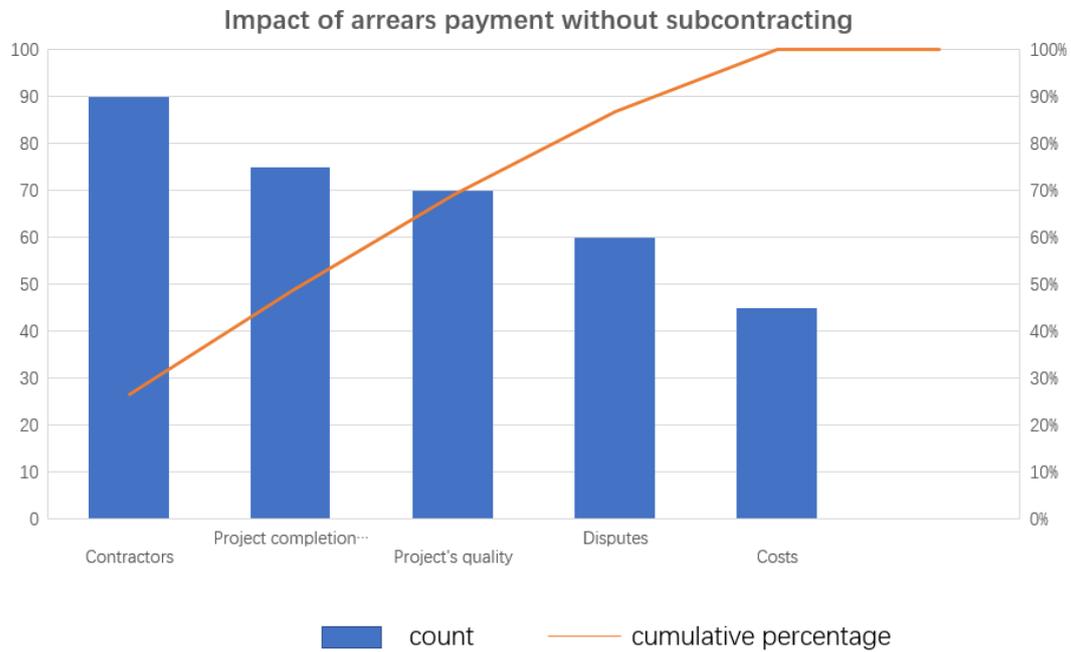


Figure 7 Pareto analysis without subcontracting³⁵

In the first analysis, we can see that without subcontracting, arrears payment caused highly impacts on contractors, project completion time, a project's quality, disputes, and costs. And there is no doubt that contractors are the main victim.

Now, we let's see the changes after implementing the alternative solution of subcontracting.

³⁵ By Author

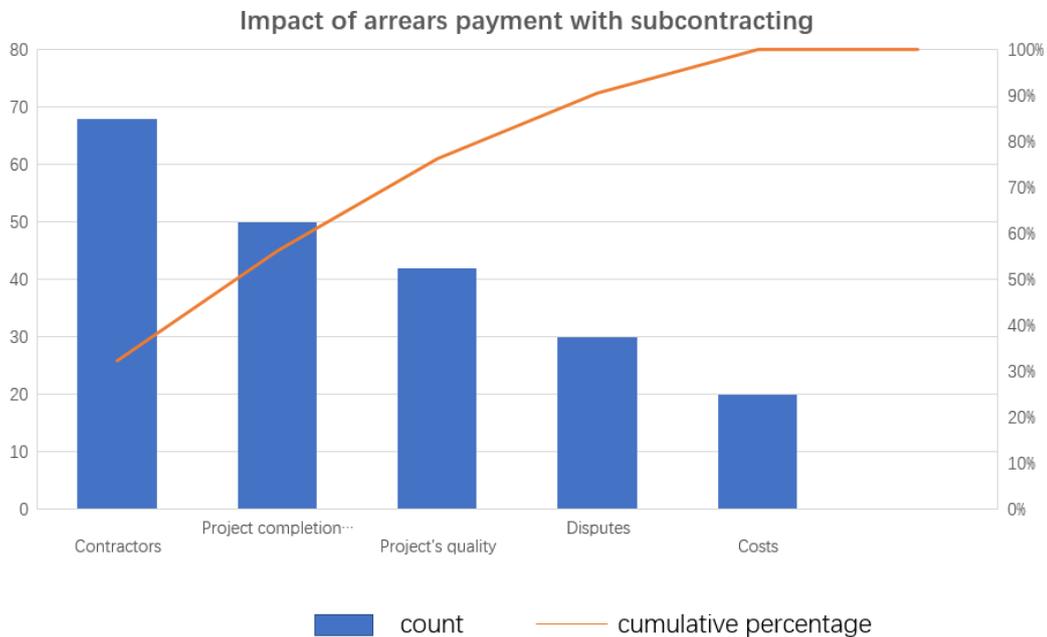


Figure 8 Pareto analysis with subcontracting³⁶

From the above picture we can see that when using Subcontracting, the impacts in terms of contractors, project completion time, project’s quality, disputes, and costs have dropped significantly. Professional staff and a large reduction in expenditures make the entire construction project go smoothly, and the costs of whole projects are declined a lot.

CONCLUSION

Form this study, it may be concluded that the deficiency of credit system, public/ quasi-public projects and unreasonable demand for advancing funds are the leading causes of arrears payment problem from the perspective of owners.

In order to avoid and prevent this situation, through analyzing we have highlighted some alternative solutions, including offering the cash discount, adding late payment penalties, rent equipment, advance deposit, in time deliveries, subcontracting, risk management and establish relative regulations & laws. We have explained each solution and assessed each of them. After the assessment, we have eliminated two alternatives (adding late payment penalties and advance deposit), which are not very suitable for current situations of the Chinese construction industry. Obviously, every alternative we chose is depending on the major reasons causing the

³⁶ By Author

payment problem, and the three ways we recommend are subcontracting, risk management and in time deliveries. "Payment has been referred to as the lifeblood of the construction industry due to contractors' inherent nature that takes relatively long durations and large amounts of money to complete"³⁷. therefore, when we consider alternative solutions we should take into account contractors' interests. After all, we can say that "efficient and timely payment in the construction industry is a major factor leading to a project's success"³⁸.

BIBLIOGRAPHY

1. Wu, H. (2007, April). The Solving Mechanism Research on the Payment Default in the construction Field. Retrieved from:
[http://kreader.cnki.net/Kreader/CatalogViewPage.aspx?dbCode=CMFD&filename=2007179715.nh&tablename=CMFD2007&compose=&first=1&uid=WEEvREcwSIJHSlDTTEYzVDhsOWkyUFpwRG1NWjJiSk1BWG5Qb0V4cmVqZz0=\\$9A4hF_YAUvQ5obgVAqNKPCYcEjKensW4IQMowwHtwkF4VYPoHbKxJw](http://kreader.cnki.net/Kreader/CatalogViewPage.aspx?dbCode=CMFD&filename=2007179715.nh&tablename=CMFD2007&compose=&first=1&uid=WEEvREcwSIJHSlDTTEYzVDhsOWkyUFpwRG1NWjJiSk1BWG5Qb0V4cmVqZz0=$9A4hF_YAUvQ5obgVAqNKPCYcEjKensW4IQMowwHtwkF4VYPoHbKxJw)
2. Shenzhen, F. (2018, May). The reasons for arrears payment.
Retrieved from:
<https://wenku.baidu.com/view/6b3d20174a35eefdc8d376eeaaad1f34793114f.html>
3. Jing H, Hongsheng Y. (2017, January). Viewing Some Defects of China's "Architectural Law" from the Legislative Status of the construction Industry Legal System and Its Perfection.
Retrieved from:
<https://wenku.baidu.com/view/24e21fec0342a8956bec0975f46527d3240ca6b4.html>
4. Jinghu T. (2017, November). Major problems in the construction market.
Retrieved from: https://www.sohu.com/a/204725256_574581
5. Wu, J. Payment problems and regulatory responses in the construction industry.
Retrieved from:
https://www.academia.edu/3690284/Payment_problems_and_regulatory_responses_in_the_t_he_construction_industry
6. G OFORI. Challenges of the construction Industries in Developing Countries: Lessons from Various Countries. Retrieved from: <https://www.irbnet.de/daten/iconda/CIB8937.pdf>
7. Dayanand, N, Padman, R. (2001, December). Project Contracts and Payment Schedules: The Client's Problem. Retrieved from:
<https://pubsonline.informs.org/doi/abs/10.1287/mnsc.47.12.1654.10242?journalCode=mnsc>

³⁷ Kwame Boateng, A. (2011, September). The Effect of Delayed Payment on Cash Flow Forecasting of Ghanaian Road Contractors. <http://dspace.knust.edu.gh/bitstream/123456789/4202/1/Kwame%20Boateng%20Thesis.pdf>

³⁸ IBID

8. Kimms, A. (2007, December). On the amount and timing of project payments with hints to customary contracting in Germany. Retrieved from:
http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-530X2007000300002
9. Farid Maloni BEng. MEng. Project Management, Earned Value and Prompt Payment Practices Observed from the View of Islamic Syariah Law. Retrieved from: <http://www.mgmt-technologies.com/shariah%20law%20and%20EVM.pdf>
10. Liuwang, T. (2017, August). What are the reasons for the arrears of the construction. Retrieved from: <https://translate.google.cn/#zh-CN/en/%E6%8B%96%E6%AC%A0%E5%B7%A5%E7%A8%8B%E6%AC%BE%E7%9A%84%E5%8E%9F%E5%9B%A0%E6%9C%89%E5%93%AA%E4%BA%9B>
11. Shi, L. (2018, October). What are the legal provisions for arrears. Retrieved from: <http://www.64365.com/zs/705691.aspx>
12. Hou, J. (2012, October). Real Right Law of People's Republic of China. Retrieved from: <https://wenku.baidu.com/view/648354fd0242a8956bece4b6.html?pn=50>
13. Dan, M. (2018, January). 10 Ways to Improve Cash Flow. Retrieved from: <https://www.investopedia.com/articles/personal-finance/061215/10-ways-improve-cash-flow.asp>
14. European Union. (2018, September). Late payment. Retrieved from: https://europa.eu/youreurope/business/finance-funding/making-receiving-payments/late-payment/index_en.htm
15. Dan, M. (2018, January). 10 Ways to Improve Cash Flow. Retrieved from: <https://www.investopedia.com/articles/personal-finance/061215/10-ways-improve-cash-flow.asp>
16. Firm of Future Team. Retrieved from: <https://www.firmofthefuture.com/content/10-effective-cash-flow-management-strategies-for-small-businesses/>
17. Junying, L; Binggaung, L; Binshan, L; Van, N.(2007, April). Key issues and challenges of risk management and insurance in China's the construction industry: An empirical study. Retrieved from:
https://www.researchgate.net/publication/220672074_Key_issues_and_challenges_of_risk_management_and_insurance_in_China's_the_construction_industry_An_empirical_study
18. APM- Association for Project Management. Retrieved from:
<https://www.apm.org.uk/resources/find-a-resource/competence-framework/>

19. Menghan, S. (2012, January). Problems and Risk Prevention in the Evaluation of the construction Project Mortgage. Retrieved from: <https://translate.google.cn/#zh-CN/en/%E5%9C%A8%E5%BB%BA%E5%B7%A5%E7%A8%8B%E6%8A%B5%E6%8A%BC%E8%AF%84%E4%BC%B0%E4%B8%AD%E5%AD%98%E5%9C%A8%E7%9A%84%E9%97%AE%E9%A2%98%E5%8F%8A%E9%A3%8E%E9%99%A9%E9%98%B2%E8%8C%83>
20. Feasibility study report. Retrieved from: <https://baike.baidu.com/item/%E5%8F%AF%E8%A1%8C%E6%80%A7%E7%A0%94%E7%A9%B6%E6%8A%A5%E5%91%8A>
21. Junying, L; Binggaung, L; Binshan, L; Van, N.(2007, April). Key issues and challenges of risk management and insurance in China's the construction industry: An empirical study. Retrieved from: https://www.researchgate.net/publication/220672074_Key_issues_and_challenges_of_risk_management_and_insurance_in_China's_the_construction_industry_An_empirical_study
22. APM- Association for Project Management. Retrieved from: <https://www.apm.org.uk/resources/find-a-resource/competence-framework/>
23. Menghan, S. (2012, January). Problems and Risk Prevention in the Evaluation of the construction Project Mortgage. Retrieved from: <https://translate.google.cn/#zh-CN/en/%E5%9C%A8%E5%BB%BA%E5%B7%A5%E7%A8%8B%E6%8A%B5%E6%8A%BC%E8%AF%84%E4%BC%B0%E4%B8%AD%E5%AD%98%E5%9C%A8%E7%9A%84%E9%97%AE%E9%A2%98%E5%8F%8A%E9%A3%8E%E9%99%A9%E9%98%B2%E8%8C%83>
24. Feasibility study report. Retrieved from: <https://baike.baidu.com/item/%E5%8F%AF%E8%A1%8C%E6%80%A7%E7%A0%94%E7%A9%B6%E6%8A%A5%E5%91%8A>
25. Maria, A. (2018, April). The Pairwise Comparison Method in Elections. Retrieved from: <https://study.com/academy/lesson/the-pairwise-comparison-method-in-elections.html>
26. Alireza, A and Majid, M and Rosnah Modh, Y. (2010, December). Simple Additive Weighting approach to Personnel Selection problem. Retrieved from: https://www.researchgate.net/publication/285828294_Simple_Additive_Weighting_Approach_to_Personnel_Selection_Problem
27. KWAME BOATENG, A. (2011, September). THE EFFECT OF DELAYED PAYMENT ON CASH FLOW FORECASTING OF GHANAIAN ROAD CONTRACTORS. Retrieved from: <http://dspace.knust.edu.gh/bitstream/123456789/4202/1/Kwame%20Boateng%20Thesis.pdf>
28. PP, Admin. (2016, January). GUILD OF PROJECT CONTROLS COMPENDIUM and REFERENCE. Retrieved from: <http://www.planningplanet.com/guild/gpccar/introduction-to-managing-project-controls>

About the Author



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Qing WU is a second-year graduate student studying for Project Management and Business Development in SKEMA BUSINESS SCHOOL. Born in Sichuan, China. She received her Bachelor Certification of French language and literature major in Jincheng College of Sichuan University in China, before going to France to study abroad. Since 2017, she is an international student with a rigorous and serious learning attitude, who also devotes to receive academic developments and obtain professional certifications. Thanks to the studying aboard, she found the differences in students' learning methods and teaching methodology between her French friends and herself. Therefore, she began to absorb new knowledge and adjust her study habits and methods. Now, she has been exposed to many new courses, such as international contract management, global project management and leadership skills. By learning these courses, she has gained a deeper insight about some issues, such as arrears payment problem in the Chinese construction industry, and plan to deeply research by studying typical academic materials as well as the project case study. The learning experience has given her a deeper understanding of the Project Management and Business Development.

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