



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## A COMPUTER BASED PROGRAM FOR RESOLVING ISSUES BETWEEN CONTRACTOR & SUBCONTRACTOR

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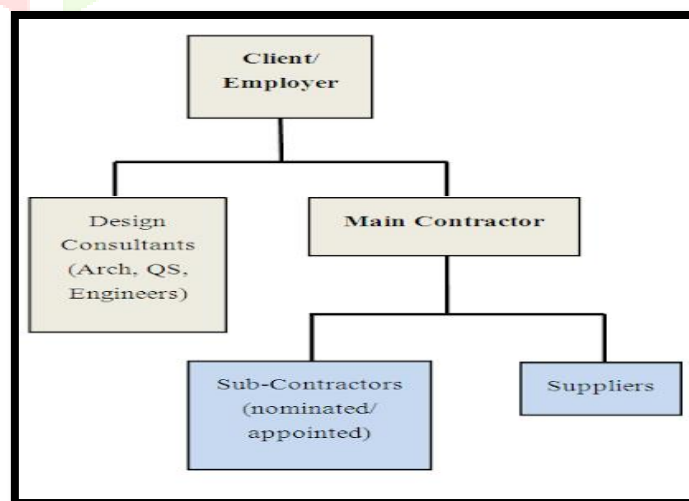
**Abstract:** This paper aims to provide a solution to resolve issues in subcontracting management by developing computer based system. The computer based system is a mobile application named **PRO CONTRACTOR MANAGER**. This mobile application will help improve relation between contractor and subcontractor. These computer based program or mobile application will have daily project tracking, daily work done by subcontractors, amount to be paid to the subcontractor depending on work done, quality of work can be known, the attendance of subcontractors can be marked. All the members related to project can be added so that each member can know the current status of the project. Due to this mobile application overall issues between contractor and subcontractor can be reduced. The other main objective of paper is to examine the major disputes between contractor and subcontractor. The research will include collection of primary data i.e. by preparing questionnaires and secondary data by literature review.

**Index Terms -** Subcontractor, Contractor, Computer based system, Pro contractor manager.

### I. INTRODUCTION

Construction projects have so much complexity and in those, raw materials, equipment's, technology, finance and the most important of all human resource are involved. Construction projects involve many parties like client, contractor, consultants, suppliers, subcontractors and so forth. The contractors normally sublet the work to the subcontractors for transform the risks. Subcontractors are specialist people who are doing their work with core competences, efficiency and completion in a timely by execution, supplying manpower, tools, equipment and designs.

A subcontractor is a construction firm that contracts with a general contractor to perform some aspect of the general contractor's work. In the usual case, the general contractor will perform the basic operations and subcontract the remainder to various specialty contractors. Subcontracting is used much more extensively on housing and building construction projects than on engineering and industrial projects.



**Fig1: Flowchart showing nomination of subcontractor**

## II. MAJOR REASON FOR ISSUES BETWEEN CONTRACTOR AND SUBCONTRACTOR

The table below will give the major issues between the contractor and subcontractor in form of rank from their respective point of view

Rank	Issues caused because of contractor
1	Payment issues: Timeless payment
2	Retainage held by the contractor
3	Bidding issues related to work
4	Giving work to the new subcontractor without informing the first contractor
5	Productivity issues form contractors point of view
6	Delay of the works (behind the time plan)
7	Giving low-quality of resources that outcome or hamper the substandard workmanship
8	Not giving safe environmental conditions for working
9	Not providing PPE kits
10	Not deciding the specifications before the work

**Table1: Shows the issues caused because of contractor**

Rank	Issues caused because of subcontractor
1	Delay of work
2	Neglecting safety measures
3	Low productivity of labor
4	Poor quality of work by subcontractor
5	Staffing related issues
6	Labors not available because of pandemic like situation
7	Shortage of skilled labor
8	Not co-operative with project manager and site engineer
9	Not maintain of the work
10	Reliability and Responsiveness

**Table2: Shows the issues caused because of sub-contractor**

## III. RESEARCH METHODOLOGY:

The primary data has been obtained by administering a questionnaire. The questionnaire survey has been prepaid by visiting various residential & commercial sites in Pune, a total 20 response were collected. The respondents are basically from such organization those who are engaged in constructing residential & commercial projects. All questionnaires mainly deal with issues between subcontractor and main contractor. The questionnaire also includes the general information of respondents, main contractor, subcontractor, site engineer and client.

## IV. FINDING OF RESEARCH:

The level of competence in decision making about subcontractor selection can enhance the performance of the Entire management. Getting the job done by the subcontractor is not an easy task. There are many challenges involved in subcontracting. Thus successful and timely completion, subcontracting is very much necessary. 25 factors emerged from primary and secondary data collection, which were the included in a questionnaire survey.

1. Delay of works
2. Shortage of skilled labor with subcontractor
3. Neglecting the safety measures
4. Low labor productivity
5. Non adherence to contractual conditions
6. Poor quality of work by subcontractor
7. Slow mobilization of resources
8. Scope of work not defined properly
9. Non adherence to construction schedule
10. Absence of labor a site
11. Change in cost of resources
12. Shortage in supply of labor, equipment's and spares parts
13. Variation in scope of work and change in specifications
14. Poor construction methodology
15. Frequent equipment breakdown
16. Late involvement of the subcontractor in the project
17. Efficiency in time management of the subcontractor
18. Subcontractor payment terms
19. Shortage of equipment's and machineries of subcontractor
20. Exhausting the plant and resources of the main contractor
21. Lack of approach towards modern technology/equipment
22. Involvement of stakeholders

- 23. Equipment allocation problem
- 24. Involvement of subcontractor in many projects at the same time
- 25. Lack of proper communication with subcontractor.

**V. Recommendations**

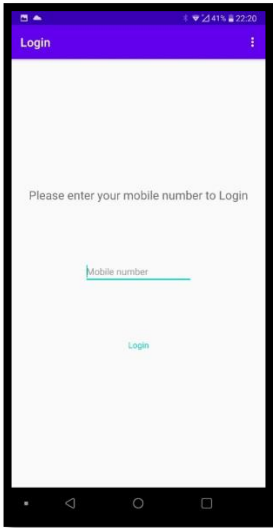
**Use of computer based system (PRO CONTRACTOR MANAGER)**

A computer program product is a system and method to provide field management and mobile inspection via an online platform by using application for use by construction and capital projects management and property management firms and their subcontractors/vendors.

The pro contractor manager includes multiple project adding and tracking, daily schedule of work, the amount of work done, number of subcontractors labor assign to it the work, remarks, and adding of subcontractors working timings and their wages and presenty etc.

**VI. Working of computer based program (PRO CONTRACTOR MANAGER)**

**Step 1: Login using mobile number-**



**Step 2: Upload the photos and remark of the site**



The site photos can be uploaded by the project manager of the work in progress in the quantity section the amount of work done today can be noted, in remark section any work pending material quantity remaining can be or required can be entered in complain section the complaints of site or subcontractor can be added.

**Step 3: After submit button the other members associated with project can track the progress**



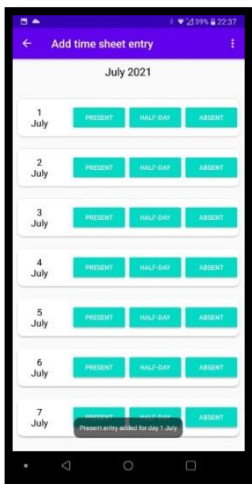
The above screenshot of app shows the pictures of work done today along with quantity and remark. It helps in tracking the project.

**Step 4: By clicking on + icon the subcontractor's basic information can be added:**



The Name of the staff along with mobile number his shift hours can be added in the app with his/her daily salary

**Step 5: Marking attendance of subcontractor**



## VII. CONCLUSION:

After reading literature reviews and some surveying done with contractor and subcontractors it was observed that timeless payment, scope of work not define properly, neglecting safety measure, unsuitable working conditions were the concern of subcontractors. But from the contractor point of view quality work and staff, reliability and responsiveness, communication gap, managerial competency, preconstruction services, meeting owners expecting were concern of the main contractor.

To overcome above problems and improve relation between contractor and subcontractor a computer based program will be produced. These program will have daily project tracking, daily work done by subcontractors, amount to be paid to the subcontractor depending on work done, quality of work can be known.

The pro contractor manger app will clear give idea to contractor that subcontractor is doing work as per scope of work and also the owner that contractor is completing project on time. The app will help improve relation between all the parties' owner, contractor and subcontractor

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