



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 13, Issue 5, May 2024

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com

Preparation of Reporting Tool for Material Availability and Labour Wedges Management using Computerized Tool (Smart HRM Module)

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ABSTRACT: Effective management of material and labour resources is pivotal for project success, and Excel spreadsheets offer a versatile platform for developing comprehensive reporting tools tailored to this purpose. This abstract delineates the essential elements and objectives of crafting such a tool within the Excel environment.

Managerial communication is a vital aspect of organizational functioning, encompassing the exchange of information, ideas, and directives within a managerial context. This abstract explores the key elements of managerial communication, including its purpose, modes, challenges, and strategies for effective implementation. It emphasizes the importance of clear, concise, and timely communication in facilitating decision-making, fostering collaboration, and achieving organizational goals. The abstract also highlights the role of technology in modern managerial communication, as well as the significance of interpersonal skills and cultural awareness in overcoming communication barriers. Ultimately, effective managerial communication serves as a linchpin for organizational success, driving productivity, innovation, and employee engagement.

The proposed Excel spreadsheet reporting tool is designed to streamline the tracking and analysis of material and labour resources across various project phases. It serves as a centralized repository for data aggregation, enabling users to monitor resource utilization, identify trends, and make informed decisions in real-time.

KEYWORDS: Managerial communication, Resource Management, Material Management, Labour Management, Reporting tool, Excel

I. INTRODUCTION

Preparing a reporting tool for material and labor resource management in a small housing project using Excel involves, Identify Reporting Requirements by understanding the specific reporting needs of the housing project. Determine what information needs to be tracked, such as materials used, labor hours worked, costs incurred, project progress, and any other relevant metrics.

Design a structured layout for organizing data in Excel. Create separate sheets or tables for different types of information, such as materials, labor, costs, and project milestones. Define clear headers and categories to ensure consistency and ease of data entry. Data Entry and Tracking that is set up data entry forms or input sections where project managers or team members can enter data on materials purchased, labor hours worked, expenses incurred, and other relevant information. Implement data validation rules to ensure accuracy and consistency in data entry.

II. LITERATURE REVIEW

Efficient resource management is critical for the success of any project, be it construction, manufacturing, or service-oriented. Material and labor are two primary resources that demand meticulous management to ensure optimal utilization and cost-effectiveness. In recent years, with the advancement in technology, spreadsheet-based reporting tools have gained prominence due to their versatility, accessibility, and ease of use. This literature review explores existing studies and practices related to the preparation of reporting tools for material and labor resource management

using spreadsheets.

In conclusion, the preparation of reporting tools for material and labor resource management using spreadsheets offers a practical and cost-effective solution for organizations across various industries. By leveraging the flexibility and functionality of spreadsheet software, organizations can develop customized tools tailored to their specific needs. However, successful implementation requires careful planning, stakeholder involvement, and ongoing maintenance to ensure the accuracy and reliability of the reporting tool. Further research and development in this area are essential to explore emerging technologies and best practices for enhancing resource management efficiency and effectiveness.

III. METHODOLOGY

1. Requirement Gathering:

Conduct stakeholder interviews and workshops to understand the specific needs and requirements for material and labour resource management. Document the key objectives, functionalities, and reporting requirements identified during the gathering phase.

2. Data Identification and Collection:

Identify the sources of data relevant to material and labour resource management, such as procurement records, inventory databases, project schedules, and timesheets. Determine the format and structure of the data to be imported into Excel, considering compatibility and ease of integration.

3. Data Cleaning and Transformation:

Cleanse and preprocess the raw data to remove any inconsistencies, errors, or duplicates. Transform the data as necessary to ensure compatibility with Excel's data format and to facilitate analysis and reporting.

4. Excel Workbook Design:

Design the structure of the Excel workbook, including worksheets, tabs, and named ranges, to organize the data and reporting templates effectively. Determine the layout and formatting for each worksheet, ensuring clarity and ease of use for end users.

5. Formula Development:

Develop formulas and calculations to perform data analysis and generate key metrics related to material and labour resource management.

Implement formulas for resource tracking, inventory management, cost analysis, and other relevant functionalities based on the identified requirements.

6. Template Creation:

Create customizable reporting templates using Excel's features such as pivot tables, charts, and conditional formatting. Design templates for generating reports on inventory levels, resource utilization, project costs, labour productivity, and other relevant metrics. Incorporate user-friendly features such as drop-down lists, buttons, and input validation to enhance usability and minimize errors.

7. Testing and Validation:

Conduct thorough testing of the reporting tool to ensure accuracy, reliability, and adherence to the specified requirements. Validate the tool with sample data and real-world scenarios to identify any issues or discrepancies and make necessary adjustments.

8. Documentation:

Prepare comprehensive documentation, including user guides, tutorials, and troubleshooting tips, to support users in utilizing the reporting tool effectively.

IV. REPORTING TOOL AND RESULT

Organization Name : Phoenix Construction, Sangli

Director : Mr. Jaydeep Chendake

Site Engineer : Mr. Aniket Jadhav

Address : Gulmohar colony, Near Nayantara nursing center, Sangli 416416



Site 1

Address : Near Godrej Company, Miraj MIDC, Miraj, Sangli
 Owner Name : Dr. Naem Namadhi
 Labour Contractor (Centring) : Uttam
 Labour Contractor (Masonry) : Mahesh
 Labour Contractor (Department) : Mahadev

Site 2

Address : Near Udyog Bhavan, Sangli-Miraj Road, Sangli
 Owner Name : Suresh Sarada
 Labour Contractor (Centring) : Uttam
 Labour Contractor (Masonry) : Raju
 Labour Contractor (Department) : Mahadev

V. RESULT

Sample result for one Labour Contractor Uttam

Reffer fig No. 5.1

Sample Calculation

For Week 14 Jan – 20 Jan

Total L Pay for Week =

$$=SUM(L Pay week Namadhi, Lpay week Sarada)$$

L Pay week Namadhi =

$$=SUM(Mistri Wedge*800, Labour Wedge*700)$$

L Pay week Sarada =

$$=SUM(Mistri Wedge*800, Labour Wedge*700)$$

Link for Spreadsheet

<https://docs.google.com/spreadsheets/d/16eGao9D4egguRoKducZRMxfGOIamG0x1cW9UJYRYyw0/edit?usp=sharing>

SR. NO.	DAY	UTTAM									
		SITE LOCATION	MISTRI	LABOUR	L PAY	SITE LOCATION	MISTRY	LABOUR	L PAY	TOTAL L PAY	REMARK
1	14-Jan	NAMADHI-MIDC	0	0	0	SARADA BHAVAN	0	0	0	40300	
2	15-Jan		2	4	4400		1	2	2200		
3	16-Jan		2	3	3700		1	2	2200		
4	17-Jan		1	3	2900		2	4	4400		
5	18-Jan		2	4	4400		1	2	2200		
6	19-Jan		1	2	2200		1	2	2200		
7	20-Jan		2	5	5100		2	4	4400		
8	21-Jan	NAMADHI-MIDC	0	0	0	SARADA BHAVAN	0	0	0	39600	
9	22-Jan		2	6	5800		1	2	2200		



10	23-Jan		2	4	4400		1	2	2200		
11	24-Jan		1	2	2200		2	4	4400		
12	25-Jan		1	2	2200		2	4	4400		
13	26-Jan		2	2	3000		1	2	2200		
14	27-Jan		1	2	2200		2	4	4400		
15	28-Jan	NAMADHI-MIDC	0	0	0	SARADA BHAVAN	0	0	0	33200	
16	29-Jan		2	4	4400		1	2	2200		
17	30-Jan		1	1	1500		2	3	1600		
18	31-Jan		1	2	2200		2	4	4400		
19	1-Feb		2	3	3700		1	2	2200		
20	2-Feb		1	2	2200		1	2	2200		
21	3-Feb		2	4	4400		1	2	2200		

Fig. No. 5.1

Sample result for one site Namadhi Material Availability

Reffer fig No. 5.2

Sample Formulae :

Sufficiency for Aggregate =

IF(Sr.No,IF(CurrentStock>2,"SUFFICIENT","INSUFFICIENT"),0)

Link for Spreadsheet

https://docs.google.com/spreadsheets/d/1Gq1gD3Xjh2Sthm2AzqgsVwy6c_65_kd4y9LvxpDEWko/edit?usp=sharing

SR NO.	MATERIAL	SPECIFICATION	UNIT	NAMADHI- MIDC		VENDERS CONTACT NO
				CURRENT STOCK	REMARK	
1	AGREEGATE	> 4.75 mm	BRASS	3	SUFFICIENT	-
2	SAND	CRUSH	BRASS	2	INSUFFICIENT	-
3	CEMENT	PORT 43	BAGS	50	SUFFICIENT	-
4	BRICK	CONVENTIONAL	NOS	100	INSUFFICIENT	-
5	STEEL	8 mm	KG	10	INSUFFICIENT	-
6	STEEL	10 mm	KG	12	SUFFICIENT	-
7	STEEL	12 mm	KG	15	SUFFICIENT	-
8	STEEL	16 mm	KG	5	INSUFFICIENT	-
9	STEEL	20 mm	KG	12	SUFFICIENT	-

10	STEEL	22 mm	KG	0	INSUFFICIENT	-
11	STEEL	25 mm	KG	5	INSUFFICIENT	-
12	STEEL	32 mm	KG	0	INSUFFICIENT	-
13	CONC. BLOCK	LT. WT.	NOS	110	SUFFICIENT	-

Fig. No. 5.2

VI. CONCLUSION

In conclusion, the preparation of a reporting tool for material and labor resource management using Excel offers significant advantages in streamlining processes, enhancing efficiency, and facilitating informed decision-making. By harnessing Excel's capabilities, organizations can create customized, user-friendly reports that provide comprehensive insights into resource utilization, costs, and project progress.

Through the integration of relevant data sources and the use of dynamic formulas and functions, Excel enables the automation of reporting tasks, reducing manual effort and minimizing the risk of errors. Moreover, the flexibility of Excel allows for the adaptation of reporting formats to meet specific project requirements or stakeholder preferences.

Furthermore, the implementation of such a reporting tool promotes transparency and accountability within the organization, as stakeholders gain visibility into resource allocation and expenditure. This transparency fosters better communication and collaboration among project teams, leading to more informed resource planning and optimized project outcomes.

In summary, leveraging Excel for the preparation of a reporting tool for material and labor resource management empowers organizations to enhance operational efficiency, improve decision-making, and drive project success.

VII. SCOPE FOR FUTURE WORK

Looking ahead, the future scope for the preparation of a reporting tool for material and labor resource management using Excel is promising, with several avenues for further development and enhancement:

Integration with other tools and platforms: Excel reporting tools can be integrated with other software platforms and tools commonly used in project management, such as ERP systems, scheduling software, and BI tools.

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