OVERHEAD COST ASSESSMENT OF CONSTRUCTION PROJECTS IN ERBIL GOVERNORATE

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Obtained Through Conducting Statistical Operations. Results Showed That Most Frequent Method Used Was Measuring In Details, With A Percentage (42.6%). And The Study Shows That The Most Important Overhead Cost Is Material Test Costs Which Scored (RII=0.76), Because Of Its Great Effect On The Construction Project Processes Generally And On Overhead Cost Especially.

Keyword: Overhead, Cost, Measurement, Method, Contractor, Company

INTRODUCTION

The Construction Sector Is Highly Influenced By Poor Business Cost Scheduling In Relations Of Budget Overruns, Which Have Crucial Negative Results For Projects. Cost Assessment Of The Project During The Planning And Design Phase Provides A Strong Foundation For The Process Of Financial Support Decisions And Cost Control. Also, Evaluating The Project Fund Is Considered The Major Important Issue For Both Of The Project Owner And Contractor (Ahmed &Ali, 2020).

Project Cost Or Total Project Cost Is Defined In Accordance With(FIDIC 1999 Edition Redbook) As Follows: "Cost Means All Expenditure Reasonably Incurred (Or To Be Incurred) By The Contractor, Whether On Or Off-Site, Including Overhead And Similar Charges, But Does Not Include Profit" (Clause 1.1.4.3)(FIDIC, 1999, Red Book).

Project Cost Or Total Cost Is Defined As All The Expenditure Required Executing The Construction Project In According To The Specification And Plan Required. Often It Is Classified Into Two Class Includes Direct Costs And Indirect Costs. Direct Costs; Consists Of: Labor, Material And Equipment Fixed As An Element Of The Work, And Construction Tools And Equipment. Indirect Costs; Are Those That Cannot Be Related To A Particular Construction Activity But Assist And Maintain The Project(Nunally, 2007).

Construction Costs Can Be Recognized In Term Of Cost Accounting Into Two Groups As Either Fixed Or Variable. Variable Costs Refer To The Cost Which Could Be Increment Generally Or Decrement Depending On The Quantity Of The Works. Fixed Costs Remain The Same Value Even The Quantities Of The Works Have Changed Either Increased Or Decreased (El-Riyati, 2013).

Overhead Or Indirect Cost Considers As The Essential Element Of The Total Project Costs. The Economic Strength Of Any Country Depends On The Activity Of Their Construction Industry, (Enshassi Et Al., 2008).

Overhead Is An Idiom Refers To The Costs Required To Operate A Business, But It Could Not Be Directly Attributed To Any Specific Business Activity, Product, Or Service. And So On, Overhead Costs Do Not Generate Profits Directly. Overhead Remainsimportant Since It Provides Major Support For The Generation Of Profit-Making Value,(Tool, 2018).

The Contractor's Expenditure On-Site To Support The Project Production Is Considered As Overhead Cost. It Is Opposite Direct Cost It Is Unconnected Directly With Any Particular Parts Of The Project, But It Is Necessary For Operating The Whole Project. Depending On The Experience Of Classification Costs, They Generally Consist Of Costs Of Supervision, Office Lease, Utilities, Services, Taxes, Insurance, Health, And Safety, Etc. Therefore Project Construction Costs Include The Sum Of Direct Costs And Project Overhead Cost; These Will Be Required For Completing The Project In Accordance With Specifications,(Chao, 2008).

A Little Common Concordant Definition Of Overhead Costs Find In Scientific Sources Worldwide. One Of Them, It Is Fit For Construction Projects, “Overhead Costs Are Defined As Those Costs That Are Not Considered As The Actual Construction Work But Are Incurred By The Contractor To Support The Work”.Generally, It Can Be Classify Building Contractor’s Overhead Costs Into Two Classes: General Overhead Costs Related To The Company And Overhead Costs Related To Project. Project Overhead Costs Consist Of The Expenditures Which Could Not Be Connected Directly To A Particular Branch Of Work, But Are Necessary To Operate The Project. General Overhead Costs Are Items That Represent The Cost Of Achieving Business And Usually Are Considered As Fixed Expenses That Should Be Paid By The Contractor, (El-Riyati, 2013)

However, There Are Two Types Of Overhead Costs In A Construction Project As Indicated By As (Patil And Bhangale, 2014) Below;

Company Overhead Costs.

Project Overhead Costs.

Company Overhead Cost Is Usually Called General And Administrative Overhead Costs, Consists Whole Costs Achieved By Construction Operations In Maintaining The Organization In Business And Supporting The Production Process But Are Not Directly Connected To A Specific Project. Company Overhead Costs Change From Time To

DOI:http://doi.org/10.24086/aces2020/paper.248

Time, But It Is Percentage Range Is Between 8 To 15% Of The Total Construction Volume. Project Overhead Cost Is Usually Called Job Site Overhead Or General Condition, It Is The Cost Related To The Project, But Not Connected To A Trade Or Work Item. Project Overhead Costs Include The Contractor's Expenditure In Administrating The Project At The Job Site, (Patil And Bhangale, 2014)

According To The Chartered Institute Of Building (CIOB) Code Of Estimating Practice (1997), Project Overheads Mean, The Site Cost Running And Operating And Supply Required Plant, Facilities, Utilities, Operating Staff And Site Services And Other Unforeseen Miscellaneous. Also Widely Defines As Preliminaries, General Cost Items Or General Expenditure, (Chan And Pasquire, 2002).

Consequently, Construction Company's Overhead Cost Includes Items That Represent The Cost Of Doing Business And Often Are Considered As Fixed Expenses Of The Company. Overhead Costs Of Construction Company Directly Affect On The Management System, An Organization Of Business Activities And Use Of Available Resources As Well As Facilities, (Šiškina Et Al., 2009).

Overhead Is A Wide Term And Is Always Used Differently By Most Of The Contractors. It Is Significant For A Contractor To Recognize Between Different Kinds Of Overhead. For A Construction Contractor, Overhead Locate Into Two Vary Cost Categories. The First Category Includes Indirect Job Costs, And The Second Category Include Of General And Administrative Costs. Both Categories Of Costs Should Be Recovered To Be Profitable. Indirect Job Costs Are Costs Required For The Implementation Of The Job But Are Difficult To Define To A Restrictive Contract. According To Statement Of Position ((SOP, 2018),Clause 81–1): Indirect Costs, Allowed To Contracts Consist The Costs Of Indirect Labor, Contract Supervision, Device, Tools And Equipment, Supplies, Quality Control And Tests, Inspection, Insurance, Repairs And Maintenance, Depreciation, And, Support Costs, Such As Central Preparation And Processing Of Salaries, (Shelton And Brugh, 2002).

The Objective Of The Study

The Objective Of This Study Is To Explorecommon Methods Of Measuring The Overhead Cost Of The Project In Perspective Of The Contractors, As Well As To Show Important Types Of Overhead Costs Entire Measuring Cost.

Problem Statement

The Problem Of This Study Is To Give Overhead Cost Or Indirect Cost Importance And Taking Into Consideration As A Part Of The Total Cost Of The Project By The Contractors, Which Seems It Is Out Of Their Awareness. It Needs Enhancement To Avoid The Failure In Project Execution And To Minimize The Loss And Maximize The Profit.

Background And Literature Review

Cost Of Construction Projects Generally Includes Three Types Of Costs;

Direct Cost.

Overhead Cost.

Risk And Profit.

Overhead Costs Consist Of General And Administrative (GA) Functions, Such As Personal Resources, Admin And Finance, Information Technology, Public Services, Procurement And Purchase, Construction Management And Planning. Overhead Costs Which Our Research Study, Is Divided Into Four Major Categories: Head Office Expenditure (Such As Expenses Of Building Rent, Lease, Utilities And Proceeding Taxes And Fees), Common Use Transport Expenses (Costs For Borrowing, Rental, And Fuel, As Well As Taxes), Salaries Of Head Office Employees And Proceeded. Taxes, As Shown Below By Work Break Down Structure (WBS), (Šiškina Et Al., 2009).

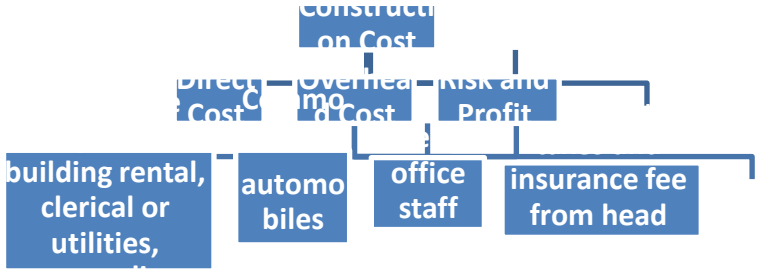

Figure (1)Structure Of Overhead Costs By Ala Šiškina

El-Riyati (2013),The Overhead Cost Can Be Divided Into Two Parts As Below:

Field Overhead Cost: Field Overheads Are Defined As The General Cost Or Direct Cost Of The Project For Providing General Plant And Site-Based Services Like Insurance, Site Accommodation…Etc. It Mainly Consists Of The Costs Spent To Run And Manage Anassigned Project (E.G., The Cost Of Providing A Job Site Office). In Other Words, It Is Used To Quantify Overhead Costs That Are Incurred In The Field. Below Table Show Items That Might Qualify As Field Overhead Costs.

Table(1)Field Overhead Cost By (El-Riyati, 2013)

Possible Field Overhead Items	
Office Trash Removal	Airfare - Home Office Personnel
Office/Field Water Ice	Builders Risk Insurance
Portable Toilets	Cell Phones
Postage & Shipping	Engineers' Office Rent
Safety Supplies	Field Office Expenses
Telephones	Insurances Required By

DOI:http://doi.org/10.24086/aces2020/paper.248

	Contract
Utilities	Lodging - Home Office Personnel
Yard Rent	Miscellaneous Expenses
Yard Tools & Supplies	Office Security
Office Trailer Rental	

Home Office Overhead:

Home Office Overhead Includes The Costs Of The Activities Of The Contractor‘S Home, Or Corporate, Office Requirements To Manage The Business And To Support The Projects In The Field.General Overhead Costs (Main-Office Or Home-Office Expenses) Are Intended To Include All Those Expenses Incurred By The Home Office That Cannot Be Tied Directly To A Given Project Such As Home-Office Building Rental, Clerical, Or Utilities. Therefore, These Costs Are Distributed Over All Company Projects By Some Basis.

Methods Of Measuring Overhead Cost

El-Riyati (2013), In His Study, Mentioned; Researchers In (1994) Have Conducted An Interview With United Kingdom (U.K) Contractors, They Depend On Their Perceived Expectations Of The Architect, And They Don’t Depend On Specifications Of The Contract, During Measuring Overhead Costs.

Other Researchers Showed Contractors Measured Overhead Costs By Two Methods Either As A Percent Of The Executive Works Or As A Lump Sum Value. And Others Reported That Measuring The Project Overhead Cost Is A Time-Consuming And Inexact Task, And Therefore Contractors Always Measured A Percentage Of Direct Costs As An Estimate Of Overhead Cost. But Some Researchers Criticize That Some Contractors Multiply The Direct Cost By A Certain Percentage So As To Measure Overhead Cost. Anyway, The Measurement Accuracy Of Such Methods Will Be Often Inefficient; This Method Of Measuring A Fixed Percentage To The Total Project Overheads Value Is Especially Common For The Small Amount, Or Repetitive Works. However, This May Result In Under-Estimation, Likemost Ofthe Primary Items Have No Linear Relationship To The Value Of Works, (Chan And Pasquire, 2002).

Enshassi Et Al. (2008), The Overhead Cost Can Be Measured By Two Methods Either Measuring In Detail With Reference To The Contract Conditions Or By Measuring A Percent Of The Direct Costs For The Achieved Works. The Study Of (Chan And Pasquire, 2002), Shows That 94% Of The Responding Contractors Used Detailed Measurements, Whereas 6 Percent Of The Responding Contractors Measured Overhead Cost By Using A Percent Of The Total Direct Costs Value For The Achieved Works. In Another Research Conducted By (Assaf Et Al., 2001) Indicated That 83 Percent Of Respondents Measured Overhead Cost In Detailed, While 14 Percent Of Respondent Measured Project Over Heads As A Percent Of The Total Direct Cost Value.

Kim And Ballard (2002) Stated That All Resources For The Construction Project Have A Vary Code Cost, According To The Construction Engineer Or The Site Manager. They Deal With The Overhead Cost As An Independent Cost And Don’t Mix With The Site Work Like Earthworks Or To The Participant Represented By The Secondary Contractor. Anyway, They Measured Overhead Cost According To The Direct Labor Hours Or Direct Labor Cost, In Case The Overhead Cost Requested By The Owner. Such Volume-Based Allocation Results In Cost Distortion. Identifying The Actual Cost For Each Work And Those For Each Participant Like The Secondary Contractor Is The Problem Of Current Practice Concerning Overhead Measurements. In Case Of Company Doesn’t Care About This. Consequently They Don’t Know Where Is The Money, Has Been Spent And Lost, And It Is Clear That Each Payment For Any Part Of The Work Includes Overhead Cost, In Other Words, Management Shave Difficulty In Doing A Profitability Analysis.

Factor Affecting Measuring Of Overhead

Chan And Pasquire (2002), Refers That 82 Percent Of The Respondent Indicated To The Risk As The Main Factor Affecting On Overhead Cost Measuring. Also,They Stated That The Other Important Factors That Have A Percent Of Increasing Overhead Cost Are The Complexity Of The Project, Location, And Size, Subcontracted Work Achieved, Payment Process, Work Requirements, Contract Type And Other Factors.

Another Researcher Gives Four Factors The Most Importance And Effectiveness On Construction Costs, Which Are: "Project-Specific Factors, Client-Contractor Related Factors, Competition And Market Conditions, And Finally Macroeconomic And Political Factors." According To The Studies, Increasing The Overhead Cost Is Obviously Appear Especially For The Last Years And Ongoing. (Enshassi Et Al., 2008)

Overhead Cost Increasing Or Decreasing Are Affecting By Some Factors Have Been Illustrated By Some Studies And Leads To Increase Total Tenders Price, Such If The Location Of The Small Project Is So Far, Probably Will Have A Big Tender Price, Therefore, Causes High Overhead Cost. Size Of The Project As Represented By Total Direct Cost Could Be A Factor. And The Charges For Several Items Of Overhead Costs Such As Office Rents, Utility Taxes, And Fees, And Thus Project Duration Is Probably Considered As Another Factor.(Chao, 2008).

7. Causes Of Increased Overhead Costs

Patil And Bhangale (2014), Indicated In Their Study To The Most Effective Factors Lead To Increase Overhead Cost In The Construction Industries As The Bellows:

Delay Payments:

DOI:http://doi.org/10.24086/aces2020/paper.248

It Has Two Affect Ways On Overhead Cost Of The Company, First; It Obliges Contractors To Find External Money Sources, Therefore Made Company Extra Overhead Cost, Second, Delayed Payments Affect The Bid/No Bid Decision.

Shortage Of New Project:

The Level Of The Competition Between Contractors Will Be A Rise Or Sharp Because Of Unavailability Of The New Project. This Makes Profit Decreasing, And Consequently, Contractors Will Not Be Able To Recover Overhead Cost As They Planned.

Cost Inflation:

Cost Inflation Is The Third Cause, From The Perspective Of The Contractors Is The Cost Inflation Because Continuously Contractor Has To Procure And Purchase Goods, Services…Etc. Therefore Inflation Cost Is Affected Directly On The Company Overhead Cost.

Government Regulation:

Legal Instruction And Regulations Are The Fourth Cause Increase The Overhead Cost Because Bringing Manpower From Outside Country Added Extra Overhead Cost To The Contractor Or Companies.

Firm's Growth;

Developing In Company Structure Including Both Expansion Or Contraction Have Deep Impact On The Overhead Cost, Because Any Expanding Construction Activities May Require More Manpower, More Equipment, And Materials, Required A Big Head Office. On The Other Hand, Any Contraction Required Getting Rid Of Unneeded Manpower, Reducing Head Office, Or Liquidating Equipment And Materials.

Client Related Requirements:

The Sixth Cause Lead To Increase Overhead Cost Is The Requirements Of The Client, This Includes Equipment Not Required Or Related To The Work Or Not Needed And Cannot Recover By The Project, In This Case, Such Costs Entered To Overhead Cost.

Increased Spending On Marketing

Effect Of The Spending On Marketing Is Coming In No. Seven, So The Companies Have To Keep The Relationship With Their Clients In Order To Avoid Spending Extra Cost On Finding New Construction Clients. Therefore Contractors Avoid Increasing Company Overhead Costs.

Wrong Management Decisions:

Bad Processes Of Managing The Business Create Wrong Decision And Will Be One Of The Causes To Increase The Overhead Cost.

Controlling Overhead Cost

Enshassi Et Al. (2008)Stated In His Study That The Main Step To Control And Manage The Overhead Cost Is Measuring The Overhead Costs By The Method Of Contract Document In Details.

Shelton And Brugh (2002), Refers To Make Sure To The Distinction Between General Or Administration Cost And Indirect Work Costs That Could Be The Best Technique To Control And Manage The Overhead Costs.

Eksteen And Rosenberg (2002), Illustrated That The Site Over Heads Could Be Checked And Monitored Monthly Against The Budget Taking Time, Progress, Resources And Other Relevant Factors. For The Dispute Cases If Appear Between Owner And Contractor, The Importance Of Separation Between Offices Overhead And Site Overhead Showing Clearly. The Importance Of The Separation Between The Office Overhead And Site Overhead Can Be Shown Clearly If Disputes Arise Between The Owner And The Contractor. Zack Jr (2001)Mentioned In Their Research Several Methods Which Indicate The Separation's Important To Measure And Recovers The Home Office Overhead.

Shelton And Brugh (2002), In His Study, Stated, In Order To Be In The Safe Side Of The Management Of Overhead Costs, Companies Should Check Continuously From Time To Time Cycle Nature Of The Construction Industry. Kim And Ballard (2002), Mentioned A New Method For Control Overhead Costs, Which Is Named Point Analysis (PPA), Applies To Activity-Based Costing (ABC),

MATERIALS AND METHODS STRATE

A Research Strategy Is Important To Define The Course Of The Research From Start To Finish. Research Strategy Connects Researcher To Specific Approaches And Methods For Collecting And Analyzing Data, (Denzin, 2000). Research Strategies May Be Categorized As Qualitative, Quantitative Or Multi-Methodology. The Following Sections Give An Overview Of Qualitative Methods, Quantitative Methods, Combined Qualitative And Quantitative Methods And Multi-Methodology. A Site Visit Has Been Conducted To Some Of The Erbil Governorate Construction Sectors And Construction Contractor's Office In Order To Interview With Some Engineers And Contractor So As To Take Their Perspective About The Overhead Cost In A Construction Project. Also, A Qualitative Questionnaire Form Has Been Designed To Survey And Collecting Information About The Method Used By Companies To Measure The Overhead Cost Of The Project, And Asking Information About The Type Of Project, Inquirer Experience Year, Inquirer Occupation, And Project Cost.

Methodology

The Research Method Has Been Conducted Is A Questionnaire Concerning Overhead Cost (OH)In Construction Projects In Erbil Governorate. The Questionnaire Consists Of Two Sections As Below.

Section One; The Inquirer Were Asked To Indicate The Method Used By Your Technical Sector Or Company To Measure Overhead Cost For The Project, With Choices As Follows; I. Measuring In Details For Each Item, Ii. Measuring As A Percentage Of Total Tender Cost, Iii. Measuring As A Lump Sum Value Added To Tender Cost, Iv. Vary From One Project To Another, V. Other Methods).

Section Two; The Inquirer Were Asked To Show The Overhead Cost Important In The Perspective Of The Company During Project Cost Measurements, With Indicating The Choices Of Assessment As Follows;(No Importance= 1, Low

DOI:http://doi.org/10.24086/aces2020/paper.248

Importance = 2, Moderate Importance = 3, Important = 4, Very Important =5).

Thus; The Total Of 70 Requests Has Been Distributed On The Respondents, 54 Questioners Responded. Excel Program Used To Analyze Information Obtained Through Conducting Statistical Operations.

RESULTS AND DISCUSSIONS

Reliability Test

Prior To Conduct The Statistical Analysis It Is Important To Check The Reliability Of The Questionnaire. Reliability Test For Questionnaire Is Conducted With The Pilot Survey Response. CRONBACH'S Alpha (A) Consider As The Most Common Measure Of Internal Consistency Or Reliability. It Is Most Commonly Used When There Are Multiple Likert Questions In A Survey/Questionnaire That Form A Scale And To Determine The Reliability Of The Scale. Cronbach's Alpha Will Generally Increase As The Inter-Correlations Among Test Items Increase And Is Thus Known As An Internal Consistency Estimate Of The Reliability Of Test Scores. As A Standard, A Questionnaire With A > 0.7 Is Considered Reliable. Through The Test Of Data, Which Consists Of 54 Respondents, The Cronbach's Alpha Value Is (0.913), And If We Compare With The Criteria, Our Result Is Very Good Which More Than (0.7). Therefore The Questionnaire Is Proved To Be Reliable.

Table (2) Shown Below Indicate To The Number Of Respondents Participated In The Overhead Cost Questionnaire With 22 Question Related To The Importance Of Overhead Cost And To The Value Of The Cronbach's Alpha (A) = (0.913).

Table(2) Reliability Statistics Test For Questionnaire

		N (Respondents)	%	Cronbach's Alpha (α)	N of Questions
Cases	Valid	54	100	0.913	22
	Excluded[a]	0	0		
	Total	**54**	**100**		

Overhead Cost Measurement Methods

Table (3) Shown Below Refers To The Frequency Of The Methods Used To Measure Overhead Cost By Respondents Either Engineers Or Contractors.

Table3 Overhead Cost Measurement Methods

Method No.	Method Descriptions	Respondents Frequency	Percent %	Cumulative Percent %
1	Measuring in details for each item	23	42.6	42.6
2	Measuring as a percentage of total tender cost	22	40.7	83.3
3	Measuring as a lump sum value added to tender cost	5	9.3	92.6
4	Vary from one project to another	4	7.4	100
5	Other Method	0	0	100
	Total	**54**	**100**	

Figure (3) Pie Chart Shown Refers To The Percentage Of The Method Used To Measure Overhead Cost By Respondents Either Engineers Or Contractors.

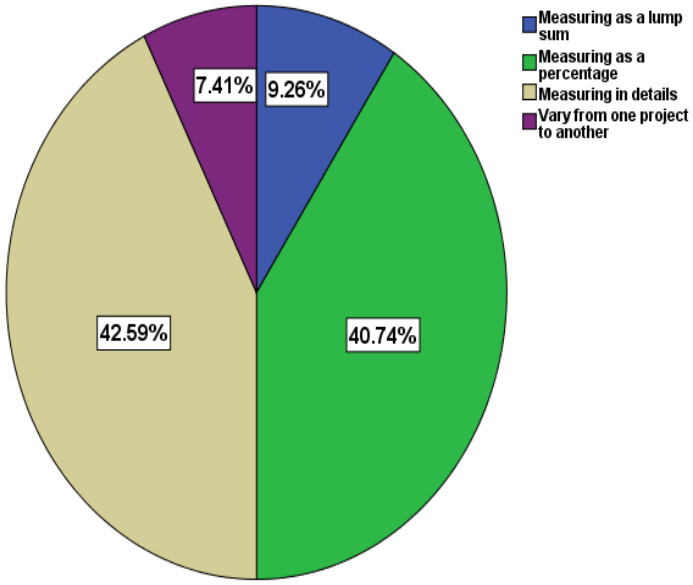

Figure (2) Pie Chart For Overhead Cost Measurement Methods

Figure4Bar Chart Shown Below, Illustrate The Type Of The Project Implemented By The Respondents Either Engineers Or Contractors, And It Is A Percentage.

DOI:http://doi.org/10.24086/aces2020/paper.248

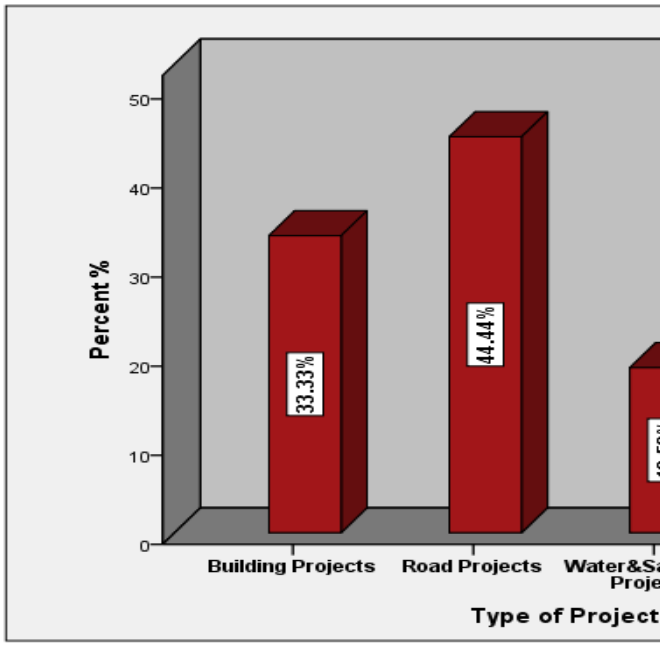

Figure (3) Type Of The Project For Respondents

Figure 5Bar Chart Shown Below, Explain The Project Cost Executed By The Respondents Either Engineers Or Contractors, And It Is A Percentage.

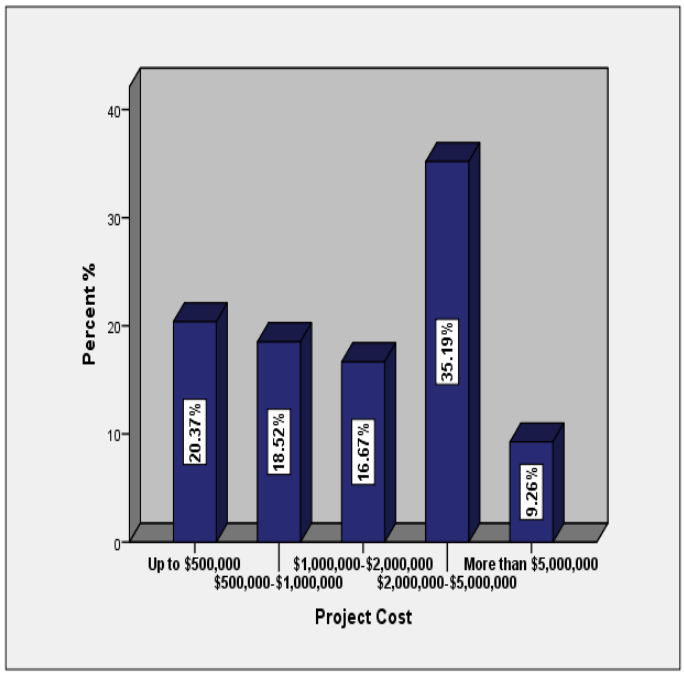

Figure (4) Project Cost Executed By The Respondents

Figure (6)Shows The Distribution Of Respondents As Per Number Of Experience Years.

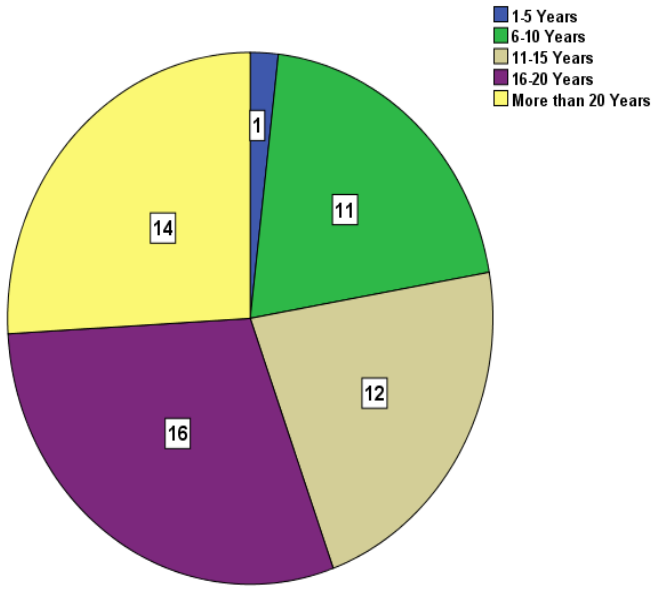

Figure (6) Of Respondent Experience Years Participated In The Questionnaire

Overhead Cost Important Assessment

Table (4), (5), And (6) Shows Relative Importance Index Of 22 Questions, And It Is Ranks Related To The Most Frequent Question, That Have Been Obtained From The Questionnaire Starting From Question Of; Tendering Process Overhead Cost, And Ended With Question; Final Clearance And Handover Overhead Cost.

Relative Importance Index Has Been Calculated By Using The Formula Below;-

Relative Importance Index (RII) = $\sum w/(A * N)$

W=Weighting Given To Each Factor By The Respondents And Ranges From 1 To 5

A = Highest Weight (I.E. 5 In Our Case)

N = Total Number Of The54sample.

Calculation Ex. Q1

Table (4) Calculating Of Relative Important Index

Q.#	Overhead Costs	Importance Assessment Frequency					N (Number of Respondent)	RII
		1	2	3	4	5		
Q1	Tendering process	6	21	12	9	6	54	0.56

RII=$\sum W/ (A*N)$

A=5, N=54

$\sum W= (6*1) + (21*2) + (12*3) + (9*4) + (6*5) =150$

DOI:http://doi.org/10.24086/aces2020/paper.248

RII =150/5*54, RII =0.56

Table (5)Indicates Relative Importance Index Of Overhead Cost Factors.

Table (5)Overhead Cost Importance Assessment And Relative Importance Index

Table (6) Indicates Overhead Cost Relative Importance Index Ranking For The 22 Types Of Overhead Costs. The Table Shows That The Material Test Is Occupying Rank 1, Which Is Most Important Overhead Cost, And Office Stationary Occupying The Last Rank 22, It Seems And Proves It Has Low Importance.

Table (6) Relative Importance Index Ranking

Q. #	Overahead Cost Factors	Percentage of Respondents Scoring					RII	Rank
		1	2	3	4	5		
Q6	Material tests	1.85	12.96	24.07	25.93	35.19	0.76	1
Q2	Staff salaries	3.70	9.26	25.93	35.19	25.93	0.74	2
Q5	Project insurance and taxes	1.85	14.81	25.93	37.04	20.37	0.72	3
Q21	Risk during construction phase	0.00	16.67	31.48	42.59	9.26	0.69	4
Q12	Technical devices and instruments	0.00	22.22	38.89	31.48	7.41	0.65	5
Q7	Transportation	0.00	24.07	38.89	29.63	7.41	0.64	6
Q22	Final clearance and handover	1.85	18.52	50.00	18.52	11.11	0.64	7
Q3	Office rent and leasing arrangements	7.41	22.22	40.74	18.52	11.11	0.61	8
Q13	Health & Safety	11.11	35.19	16.67	22.22	14.81	0.59	9
Q18	Temporary fence	12.96	33.33	22.22	22.22	9.26	0.56	10
Q20	Miscellaneous Services	7.41	38.89	27.78	16.67	9.26	0.56	11
Q1	Tendering process	11.11	38.89	22.22	16.67	11.11	0.56	12
Q11	Electricity consumption	12.96	33.33	25.93	22.22	5.56	0.55	13
Q15	Site Security	9.26	35.19	37.04	11.11	7.41	0.54	14
Q19	Hospitality and drinks	12.96	37.04	27.78	16.67	5.56	0.53	15
Q17	Projects sign boards	20.37	35.19	16.67	20.37	7.41	0.52	16
Q4	Bank finance charge	24.07	27.78	24.07	14.81	9.26	0.51	17
Q9	Office equipment (furniture, computers, printers, copy machines)	22.22	42.59	14.81	11.11	9.26	0.49	18
Q10	Water consumption	25.93	31.48	22.22	14.81	5.56	0.49	19
Q8	Communications	25.93	40.74	11.11	18.52	3.70	0.47	20
Q14	Training programs	42.59	11.11	25.93	12.96	7.41	0.46	21
Q16	Office Stationary	29.63	38.89	16.67	12.96	1.85	0.44	22

CONCLUSIONS AND RECOMMENDATIONS

According To The Results And The Data Obtained Through Analysis Process, The Following Conclusions Have Been Made: -

The Results Of Reliability Test Show That The Questionnaire Was Humorous And Homogenous With A=0.913> 0.7.

The Most Frequent Method Used By The Respondents To Measure Overhead Cost Is (Measuring In Details), And (Measuring As A Percentage Of Total Tender Cost), With Frequency (23, 22) With Percentage 42.6%, 40.7% Respectively.

No One Of The Respondents Mentioned Other Methods Than First Four Methods.

Most Of The Respondents Worked In The Building, Road And Water Projects, With Experience More Than 6 Years, And The Cost Of Their Projects Was Between $100,000-5,000,000.

The Study Shows That The Most Effective Factor On Overhead Cost Is Material Test Costs Which Scored (RII=0.76), Because Of It Is Great Effect On The Construction Project Processes Generally And On Overhead Cost Especially. The Other Factors Affecting Overhead Cost Are Staff Salaries, Project Insurance Taxes Came In The Second And Third Rank With Scores (RII=0.74 And 0.72) Respectively, These Shows Its Influence And Its Big Effect On Overhead Cost As Well.

The Study Shows That Public And Private Sectors Do Not Pay Attention To The Training Programs, And It Has Been Concluded Through The Face To Face Interview With Engineers And Contractors, There Is Few Training Programs Conducted In Both Centers.

Depending On The Above Conclusion The Following Recommendations Preferred To Be Taking Into Consideration: -

Construction Companies Must Improve And Test Their Over Head Allocations Periodically In Order To Keep Accuracy In Their Estimating.

The Overhead Costs Should Be Considered As One Of The Main Elements In The Construction Management Of The Company's Costs, Competitive Tendering Price, Developing The Operation Of The Management System In The Company, With Specifying And Controlling The Overhead Costs.

The Results Of This Study And Framework Can Help The Contractors To Increase The Competitiveness And Better Control Over The Overhead Costs.

Design New Technical Methods In Order To Manage A Measure Overhead Cost In Order To Get The Benefit And Make A Reference In Advance For The Future Projects.

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DOI:http://doi.org/10.24086/aces2020/paper.248