



Developing A Cost Indicators Model In The Early Stage of Residential Buildings Projects in Egypt

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**By
Ismael Amgad Elharony
(BSc)
Faculty of Engineering – Ain Shams University**

SUPERVISED BY

Prof. Dr.Ibrahim Abd El Rashid
Professor of Construction Management,
Structural Engineering Department,
Ain Shams University.

Dr.Mohamed Mohamed Tantawy
Assistant Professor of Construction Management,
Civil Engineering Department,
Helwan University.

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EXAMINERS COMMITTEE

1- **Prof. Dr. Adel Abo El-Yazid El-Samadony** (.....)
Professor of Construction Engineering and Management
Department of Civil Engineering
Faculty of Engineering Helwan University

2- **Prof. Dr. Manal Said Abdel-Hamid** (.....)
Head of Construction Engineering and Management
Housing and Building National Research Centre

3- **Prof. Dr. Ibrahim Abd El Rashid** (.....)
Professor of Construction Engineering and Management
Structural Engineering Department
Faculty of Engineering Ain Shams University

ABSTRACT

Over the last few years, Residential units prices in Egypt have risen at a higher rate. Construction prices, on the other hand, tend to have risen broadly in line with general prices. Although extensive research has been undertaken the factors influencing construction cost, limited research has been done to investigate the full cost of buildings.

The objective of this research is to study full cost of residential buildings regarding the effect of client cost and construction cost to predict the total cost per square meter of buildings during project planning phase.

This study identified 73 cost variables influencing both construction cost and client cost extracted from literature and field review. Data were collected from 126 residential projects in Egypt. Based on the information obtained, factors were verified as having direct impact on the cost performance of residential projects.

Two techniques were then used to develop models for predicting cost deviation: statistical analysis, and multiple regression analysis. Statistical analysis is used to extract the top influencing factors. Hence multiple regression analysis is used to develop a model for a relationship between top-ranked cost variable and residential buildings cost.

It is found that Type of client and Number of storeys above ground are the most significant variables affected the total cost of residential houses. Project location, Availability of community services are the most influential factors affecting land values, while other client costs items were affected by Architect, Structural and Electro-Mechanical consultant's and design fees and License fees existence.

All-over construction costs have been affected by Usable floor area, Type of main contractor, Project quality, however specific items have been affected by Columns spans, Upper floors systems, Walls crack types, External walls finishing's types, Architectural decoration items type and quantity, Foundation system, Retaining walls quantity, Soil type, External service installations Specification grade, Building lifts type and number, External elevations doors and windows type, External elevations doors and windows quantity, Lowest floor construction, Internal mortar and electrical pipes existence

The analysis establishes relationships between the most significant variables and items group elements costs. The function-based model has been developed to forecast residential buildings total cost. The cost model provides guidance for the client which, could be used at the early design stage of residential projects in evaluating the total building cost of buildings focusing on client alternative options.

Keywords: Cost Indicators, Residential Buildings, Total Cost

*In The name of Allah, the most gracious, the most
merciful*

*All praises and thanks to Allah, the lord for all the
universe*

And say: my lord, advance me in knowledge

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TABLE OF CONTENTS

Abstract	I
Acknowledgement	IV
List of Tables	X
List of Figures	XIV
Chapter 1: Introduction	2
1.1 General	2
1.2 Problem Statement	2
1.3 Aim and Objectives	3
1.4 Research Methodology	3
1.5 Thesis Structure	6
Chapter 2: Cost Variable And Modelling Techniques Trends - A Review Of Literature	9
2.1 Introduction	9
2.2 Classification of studies according to Project Phase	10
2.2.1 Studies Focusing On Cost Estimating Phase	11
2.2.2 Studies Focusing On Cost Overrun during Construction	19
2.3 Classification of studies according to Variable	27
2.3.1 Studies Focusing On General Construction Cost Variables	28
2.3.2 Studies Focusing On Specific Construction Cost Variable	33
2.3.3 Studies Focusing On Client Cost Variables	38
2.4 Ranking, Analysis and Modelling Techniques Trends	43
2.4.1 Ranking Top Influencing Factors Using Statistics	43
2.4.2 Clustering the variables into main groups using Factor Analysis	44
2.4.3 Investigate the correlation between the factors	45
2.4.4 Developing Cost Estimates Modelling Techniques	46
2.5 Summary	49
Chapter 3: Residential Buildings Cost Variable and The Egyptian Construction Industry: A Pool Application Survey	55
3.1 Introduction	55
3.2 Cost Planning Process and Design Stages	55
3.2.1 Ferry and Brandon's Cost Planning Process	55

3.2.2	RIBA Cost Planning Process	57
3.2.3	AIQS Cost Planning Process.....	61
3.2.4	PMBOK Cost Planning Process.....	63
3.3	Early Design Stages Cost Variables.....	66
3.3.1	Client budget Briefing Stage Cost Variables	66
3.3.2	Outline design Preliminary estimate stage Cost Variables	69
3.3.3	Sketch design Elemental Estimate stage Cost Variables	71
3.4	A Need for Investigating Total cost Variables in Egyptian Residential Market	71
3.5	Exploration of Total Cost Variables in The Egyptian Residential Industry through Pool Application.....	71
3.6	Client-related Variables.....	72
3.6.1	Land Value parameters.....	72
3.6.2	Design and Consultant's Fees.....	79
3.6.3	Building license fees	80
3.7	Project related Variables	81
3.8	Design related Variable.....	86
3.8.1	Building Definition	86
3.8.2	Substructure.....	91
3.8.3	Super Structure.....	96
3.8.4	Envelope.....	97
3.8.5	Doors and Windows.....	108
3.8.6	Main Entrance Finishes.....	111
3.8.7	External Stair Finishes	114
3.8.8	Roofing System.....	116
3.8.9	External Finishes	119
3.8.10	Internal Apartments Finishes	122
3.8.11	Services Installations.....	123
3.9	Summary	125
Chapter 4: Towards To A Standard Egyptian Elemental Cost Analysis		131
4.1	Introduction	131
4.2	BCIS Elemental Cost Analysis	131

4.2.1	Project Information	131
4.2.2	Design Shape Information.....	132
4.2.3	Brief Cost Information	133
4.2.4	Detailed Cost Analysis	133
4.2.5	Amplified Cost Analysis	133
4.3	Investigating Current Practice of Egyptians Elemental Cost Plan.....	133
4.4	Developing Egyptian Elemental Cost Analysis for Residential Buildings .	134
4.4.1	Client Cost Elements.....	134
4.4.2	Site Mobilization	135
4.4.1	Site Works Elements	136
4.4.2	Concrete Works Elements	138
4.4.3	Masonry Works Elements	140
4.4.4	Thermal and Moisture Protection Elements.....	142
4.4.5	Doors and Windows Elements	144
4.4.6	External Walls Finishes Elements.....	145
4.4.7	Main Entrance Finishes	148
4.4.8	External Stair Finishes	150
4.4.9	External Finishes	152
4.4.10	Internal Apartments Finishes Elements.....	155
4.4.11	Services Installations.....	156
4.5	Summary of Elements Percentages Related to Building and Client Cost...	157
Chapter 5: A Need For A General Building Cost Index		161
5.1	Introduction	161
5.2	Types of Indices	161
5.3	Importance and Uses of Indices	162
5.4	How to Construct Index	162
5.5	International Published Forms	163
5.6	Egyptian Published Forms	164
5.7	Egyptian Forms Needs and Requirements	167
5.8	Comparison of Elements Percentages Related To Building and Client Cost After and Before Cost Index.....	167

5.9	Percentages of Materials Cost Used In construction Industry Relative to Building Cost after Cost Index	176
5.10	Summary of General Building Cost Index by Using Two Methods for the Last Five Years 182	
5.11	Comparison of Elements Weights after and before Currency Floats Year .190	
5.12	Comparing General Building Cost Indices with International Published Forms	199
Chapter 6: Cost Variables Ranking Using Correlation Score Matrix.....		203
6.1	Introduction	203
6.2	Correlation Coefficients Methods	203
6.3	Data Entering Phase and Variables Representation	204
6.4	Correlation Analysis Results.....	206
6.4.1	Client Cost Variables Correlations.....	206
6.4.2	Site Mobilization Variables Correlations.....	208
6.4.3	Substructure Variables Correlations.....	208
6.4.4	Super Structure Variables Correlations.....	210
6.4.5	Envelope Variables Correlations.....	211
6.4.6	Doors and Windows Variables Correlations.....	213
6.4.7	Main Entrance Finishes Variables Correlations.....	214
6.4.8	External Stair Finishes Variables Correlations	215
6.4.9	Roofing System Variables Correlations.....	215
6.4.10	External Finishes Variables Correlations.....	216
6.4.11	Internal Apartments Finishes Variables Correlations	217
6.4.12	Services Installations Variables Correlations.....	218
6.5	Moving Forward To Correlation Score Matrix.....	219
Chapter 7: A Function Based Model Using Regression Analysis.....		223
7.1	Introduction	223
7.2	Checking Model Accuracy.....	223
7.3	Implementing Regression Analysis Models.....	223
7.3.1	Model 1: Land Value.....	224
7.3.2	Model 2: Client Cost Excluding Land Value	226
7.3.3	Model 3: Site Mobilization	228

7.3.4	Model 4: Substructure	230
7.3.5	Model 5: Super Structure	232
7.3.6	Model 6: Envelope	234
7.3.7	Model 7: Doors and Windows	236
7.3.8	Model 8: Main Entrance Finishes	238
7.3.9	Model 9: Stair Finishes	239
7.3.10	Model 10: Roofing System	241
7.3.11	Model 11: External Finishes	242
7.3.12	Model 12: Internal Apartments Finishes	244
7.3.13	Model 13: Services Installations	246
7.3.14	Function-Based Model Forecasting Residential Buildings Total costs Using Top Ranked Variables.....	248
7.4	Summery	250
Chapter 8: Conclusions and Recommendations		256
8.1	Introduction	256
8.2	Research Findings	256
8.2.1	Objective 1	256
8.2.2	Objective 2	257
8.2.3	Objective 3	259
8.2.4	Objective 4	260
8.2.5	Objective 5	261
8.2.6	Objective 6	262
8.3	Research Limitations.....	263
8.4	Implications of the research	263
8.5	Recommendation to Future Work	264
References 265		
Appendix (A): Pool Application Form with Cover Letter		269
Appendix (B): BCIS Standard Elemental Cost Analysis		274
Appendix (C): Developed Egyptian Elemental Cost Analysis for Residential Buildings		282

LIST OF TABLES

Table 2-1 Cost- Cost estimates accuracy drivers Source: (Lim, 2016)	11
Table 2-2 Cost- Factors influencing cost estimates Source: (Akintola, 2000).....	12
Table 2-3 The 67 Cost- Factors influencing cost estimates Source: (Elhag T. B., 2005).....	13
Table 2-4 The 11 Orthogonal factor resulting from factor analysis technique Source: (Trost, 2003)	15
Table 2-5 The 7 Estimating Core–competency factor resulting from factor analysis technique Source: (Alroomi, 2012)	17
Table 2-6 Explanatory variables affecting project cost Source: (Chan S. a., 2005).....	18
Table 2-7 key cost - influencing factors Source: (Cheng, 2014).....	20
Table 2-8 Ranking of factors causing cost overrun Source: (Hameed Mem, 2013).....	21
Table 2-9 Ranking of factors causing cost overrun Source: (Doloi, 2011)	22
Table 2-10 Factor Analysis Clustered factors causing cost overrun Source: (Doloi, 2011).....	23
Table 2-11 Factors Extracted from Preliminary Field Review Source: (Attalla, 2003)	25
Table 2-12 Independent Variables Final List Source: (Attalla, 2003)	27
Table 2-13 Variables affecting office, industrial and residential buildings cost used by the user Source: (Soutos, 2011)	28
Table 2-14 Classification of input variable Source: (Lowe D. J., 2007)	29
Table 2-15 Ranking of variables Source: (Lowe D. J., 2007).....	30
Table 2-16 Cost-Influencing Factors Source: (Elhag T. M., 2004)	31
Table 2-17 Regression Analysis Results Source: (Stoy, 2007)	32
Table 2-18 Cost- Regression analysis variables affecting school project Source: (Arab, 2011).....	32
Table 2-19 Ranking of variables Source: (Chan C. , 2012).....	36
Table 2-20 Factor Analysis clustering of variables Source: (Chan C. , 2012)	37
Table 2-21 Literature Review Summary.....	49
Table 3-1 (RIBA) work stages in the plan of work and cost plan activities at each stage.....	61
Table 3-2 Early Design Stages Cost Estimation Process	66
Table 3-3 Classification of collected data according to market sectors	72
Table 3-4 Project location variable Percentages and Frequencies	73
Table 3-5 Land Area variable Percentages and Frequencies	74
Table 3-6 Land Shape variable Percentages and Frequencies.....	75
Table 3-7 Accessibility of major centres of commercial and cultural activity variable Percentages and Frequencies.....	76
Table 3-8 Availability of community services variable Percentages and Frequencies	77
Table 3-9 Environmental aspects of the location variable Percentages and Frequencies	77
Table 3-10 Supply of land variable Percentages and Frequencies	78
Table 3-11 Architect, Structural and Electro-Mechanical Design Quality variable Percentages and Frequencies.....	79
Table 3-12 Architect, Structural and Electro-Mechanical Design Fees variable Percentages and Frequencies	80
Table 3-13 License fees variable Percentages and Frequencies.....	80

Table 3-14 Type of Client variable Percentages and Frequencies	81
Table 3-15 Type of Main Contractor variable Percentages and Frequencies	82
Table 3-16 Project Duration variable Percentages and Frequencies	83
Table 3-17 Project quality variable Percentages and Frequencies	83
Table 3-18 Contract Form variable Percentages and Frequencies	84
Table 3-19 Method of procurement variable Percentages and Frequencies	85
Table 3-20 Tendering strategy variable Percentages and Frequencies	85
Table 3-21 Arrangement of Building variable Percentages and Frequencies	86
Table 3-22 Building Shape variable Percentages and Frequencies	87
Table 3-23 Usable floor area variable Percentages and Frequencies	88
Table 3-24 No. storeys above ground variable Percentages and Frequencies	88
Table 3-25 Storey below ground variable Percentages and Frequencies	89
Table 3-26 Wall-to-Floor ratio variable Percentages and Frequencies	90
Table 3-27 Number of Apartments / Floor variable Percentages and Frequencies	90
Table 3-28 Soil Type variable Percentages and Frequencies	91
Table 3-29 Foundation System variable Percentages and Frequencies	92
Table 3-30 Lowest Floor Construction variable Percentages and Frequencies	92
Table 3-31 Basement Excavation Depth variable Percentages and Frequencies	93
Table 3-32 Retaining walls % Of Land Perimeter variable Percentages and Frequencies	94
Table 3-33 Substructure Water Proofing variable Percentages and Frequencies	94
Table 3-34 Slab on Grad Water Proofing variable Percentages and Frequencies	95
Table 3-35 Columns spans variable Percentages and Frequencies	96
Table 3-36 Upper Floors systems variable Percentages and Frequencies	96
Table 3-37 Walls Brick Types variable Percentages and Frequencies	97
Table 3-38 External Walls Finishing's variable Percentages and Frequencies	98
Table 3-39 Elevation Marble/Slate variable Percentages and Frequencies	98
Table 3-40 Elevation Marble/Slate Quantity variable Percentages and Frequencies	99
Table 3-41 Balconies Handrails Type variable Percentages and Frequencies	100
Table 3-42 Balconies Handrails Quantity variable Percentages and Frequencies	100
Table 3-43 Balconies Handrails Steel Weight variable Percentages and Frequencies	101
Table 3-44 Ventilation Void Finishing's variable Percentages and Frequencies	102
Table 3-45 Elevation Cornice Type variable Percentages and Frequencies	102
Table 3-46 Elevation Cornice Quantity variable Percentages and Frequencies	103
Table 3-47 Frames around Openings Type variable Percentages and Frequencies	104
Table 3-48 Frames around Openings Quantity variable Percentages and Frequencies	104
Table 3-49 Gypsum Groves Quantity variable Percentages and Frequencies	105
Table 3-50 Architectural Decoration Items Type variable Percentages and Frequencies	106
Table 3-51 Architectural Decoration Items Quantity variable Percentages and Frequencies	106
Table 3-52 Extended Steel Mesh Decoration Items Quantity variable Percentages and Frequencies	107
Table 3-53 Apartments Main Doors variable Percentages and Frequencies	108
Table 3-54 Entrance Main Door variable Percentages and Frequencies	108
Table 3-55 External Elevations Doors and Windows variable Percentages and Frequencies	109

Table 3-56 External Elevations Doors and Windows Quantity variable Percentages and Frequencies ...	110
Table 3-57 Internal Entrance Wall Finishing's variable Percentages and Frequencies	111
Table 3-58 Internal Entrance Floor Finishing's variable Percentages and Frequencies	112
Table 3-59 Internal Entrance Ceiling Finishing's variable Percentages and Frequencies	113
Table 3-60 Stair Floor Finishing's variable Percentages and Frequencies	114
Table 3-61 Stair Wall Finishing's variable Percentages and Frequencies	114
Table 3-62 Stair Handrail Height variable Percentages and Frequencies	115
Table 3-63 Stair Handrail Steel Type variable Percentages and Frequencies	116
Table 3-64 Roof Water Proofing variable Percentages and Frequencies	116
Table 3-65 Roof Thermal Insulation variable Percentages and Frequencies	117
Table 3-66 Elevation Pan Tiles Types variable Percentages and Frequencies	118
Table 3-67 Elevation Pan Tiles Quantity variable Percentages and Frequencies	118
Table 3-68 Side Walks and Pathways Flooring variable Percentages and Frequencies	119
Table 3-69 Front Fence finishes variable Percentages and Frequencies	120
Table 3-70 Front Fence Railings Quantity Percentages and Frequencies	120
Table 3-71 Front Fence Railings Steel Weight Percentages and Frequencies	121
Table 3-72 Internal Mortar and Electrical pipes Percentages and Frequencies	122
Table 3-73 Internal Doors sub-frames Percentages and Frequencies	122
Table 3-74 External Electrical installations Specification Grade Percentages and Frequencies	123
Table 3-75 External Feeding and Drainage Specification Grade Percentages and Frequencies	124
Table 3-76 Building lifts Percentages and Frequencies	124
Table 4-1 Summary of Elements Percentages	157
Table 5-1 Materials costs Fluctuations percentages published from Central Agency for Public Mobilizations and Statistics	166
Table 5-2 Strategic Material and Workmanship contribution of Residential Building Cost	176
Table 5-3 Summary of Elemental Cost induces based on Factor cost index method	183
Table 5-4 Summary of Elemental Cost induces based on The Collected Historical Data	187
Table 5-5 Elements Weights after and before the Year 2017	190
Table 6-1 Variables Representation Types	204
Table 6-2 Land Value Strongest Correlation	207
Table 6-3 Client Cost Excluding Land Value Strongest Correlation	207
Table 6-4 Site Mobilization Strongest Correlation	208
Table 6-5 Sub-Structure Strongest Correlation	209
Table 6-6 Super Structure Strongest Correlation	211
Table 6-7 Envelope Strongest Correlation	212
Table 6-8 Doors and Windows Strongest Correlation	213
Table 6-9 Main Building Entrance Finishing's Strongest Correlation	214
Table 6-10 Internal Stair Finishing's Strongest Correlation	215
Table 6-11 Roof Covering Cost Strongest Correlation	216
Table 6-12 External Finishes Strongest Correlation	217
Table 6-13 Internal Apartments Finishing's Strongest Correlation	217
Table 6-14 Service installations Strongest Correlation	218

Table 6-15 Top Ranked Variables using Score matrix	221
Table 7-1 Land value model summary	225
Table 7-2 Land value regression equation	225
Table 7-3 Land value Excluded Variables	225
Table 7-4 Client Cost Excluding Land Value model summary	226
Table 7-5 Client Cost Excluding Land Value regression equation	227
Table 7-6 Client Cost Excluding Land value excluded variables.....	227
Table 7-7 Site Mobilization model summary	228
Table 7-8 Site Mobilization regression equation	229
Table 7-9 Site Mobilization excluded variables	229
Table 7-10 Substructure model summary	230
Table 7-11 Substructure regression equation	230
Table 7-12 Substructure excluded variables.....	231
Table 7-13 Superstructure model summary	232
Table 7-14 Superstructure regression equation	232
Table 7-15 Superstructure excluded variables	233
Table 7-16 Envelope model summary	234
Table 7-17 Envelope regression equation	234
Table 7-18 Envelope excluded variables.....	235
Table 7-19 Doors and Windows model summary.....	236
Table 7-20 Doors and Windows regression equation.....	236
Table 7-21 Doors and Windows excluded variables	237
Table 7-22 Main Entrance model summary.....	238
Table 7-23 Main Entrance regression equation.....	238
Table 7-24 Main Entrance excluded variables	238
Table 7-25 Stair model summary	239
Table 7-26 Stair regression equation	240
Table 7-27 Roofing System model summary	241
Table 7-28 Roofing System regression equation	241
Table 7-29 Roofing System excluded variables.....	241
Table 7-30 External Finishes model summary	242
Table 7-31 External Finishes regression equation	243
Table 7-32 External Finishes excluded variables.....	243
Table 7-33 Internal Apartments Finishes model summary.....	244
Table 7-34 Internal Apartments Finishes regression equation.....	245
Table 7-35 Internal Apartments Finishes excluded variables	245
Table 7-36 Services Installations model summary.....	246
Table 7-37 Services Installations regression equation.....	246
Table 7-38 Services Installations excluded variables	247
Table 7-39 Total Cost model summary	248
Table 7-40 Total Cost regression equation	248
Table 7-41 Total Cost excluded variables	249

Table 7-42 Building and Design Cost Items Increase Checklist.....	251
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LIST OF FIGURES

Figure 1-1 Research Design.....	5
Figure 1-2 Thesis Structure	7
Figure 2-1 Literature Reviews Trends	10
Figure 2-2 Cost \$/m ² of gross floor area versus height (Hong Kong data) Source: (Blackman, 2010)	35
Figure 2-3 Cost \$/m ² of gross floor area versus height (Shanghai data) Source: (Blackman, 2010)	35
Figure 2-4 UK National average new house prices, construction Tender prices, and the retail price index 1950–1997 Source: (Meikle, 2001).....	39
Figure 2-5 UK Land price indices Source: (Meikle, 2001)	39
Figure 2-6 Trends of average housing and land prices in 4 Chinese Cities Source: (Du, 2011)	40
Figure 2-7 Comparison between House prices, Land Supply and Land Revenue in Hong Kong Source: (Tse, 2000)	40
Figure 2-8 comparison between the real cost index, mean and ENR index for Washington apartments Source: (Wheaton, 2007).....	41
Figure 2-9 comparison between the real cost index, mean and ENR index for Washington Offices Source: (Wheaton, 2007).....	41
Figure 2-10 construction cost index Vs. New apartments supply for Washington apartments Source: (Wheaton, 2007).....	42
Figure 2-11 construction cost index Vs. New offices supply for Washington Offices Source: (Wheaton, 2007)	42
Figure 2-12 Ranking, Analysis and Modelling Techniques Trends.....	43
Figure 2-13 Neural network model architecture	47
Figure 3-1 The conventional stages of the cost planning process (Kirkham, 2007)	55
Figure 3-2 Pathways to final cost checking Source: (Jim Smith, 2007).....	60
Figure 3-3 Australian (AIQS) Pre-Construction management.....	63
Figure 3-4 Inputs, tools and techniques and outputs of Plan Cost Management Source: (Knowledge PMBOK® Guide)	63
Figure 3-5 The inputs, tools and techniques, and outputs of Estimate Costs	64
Figure 3-6 Determine Budget: Inputs, tools and techniques, and outputs	64
Figure 3-7 Determine Budget: Inputs, tools and techniques, and outputs	65
Figure 3-8 Project location variable Percentages	74
Figure 3-9 Land Area variable Percentages	75
Figure 3-10 Land Shape variable Percentages	75
Figure 3-11 Accessibility of major centres of commercial and cultural activity variable Percentages.....	76
Figure 3-12 Availability of community services variable Percentages.....	77
Figure 3-13 Environmental aspects of the location variable Percentages	78