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APPENDIX A

Associations/ authors	Role of QS
Royal Institute of Charted Surveyors [RICS](2014)	• Commercial management of construction or Design economics • and cost planning • Contract practice • Construction technology and environmental services • Procurement and tendering • Project financial control and reporting • Quantification and costing of construction works • Building information modelling (BIM) management • Capital allowances • Commercial management of construction or Design economics and cost planning (whichever is not selected as a core competency) • Contract administration • Corporate recovery and insolvency • Due diligence • Insurance • Programming and planning • Project evaluation • Risk management • Conflict avoidance, management and dispute resolution procedures • or Sustainability
Institute of Quantity Surveyors Sri Lanka [IQSSL], (2011)	AREA 1 – COST MANAGEMENT 1.1 Provide cost advice at pre-feasibility stage and provide input to the development of project brief. 1.2 Advise on cost and benefits of construction projects and prepare cost benefit analysis. 1.3 Collection of cost data, cost analysis, establishing data, storing system and implement updating procedure. 1.4 Establish objectives and parameters of cost planning, prepare and analyze required inputs and prepare cost plans. 1.5 Provide advice to Clients on estimate, cost alternatives and cost plan. 1.6 Prepare development budget for the project, coordinate client's cash flow and advice on financing of the project. AREA 2 – COST ESTIMATION 2.1 Cost data collection, storing and establish updating system required for estimation. 2.2 Preparation of procedure for estimation and preparation of estimates. 2.3 Advice on tendering including critical evaluation of various documents included in the tender.

	2.4 Assist and advice on accuracy of cost estimate and cost audit reporting. 2.5 Establish estimate review system and conduct reviews on estimates. AREA 3 – CONTRACT ADMINISTRATION 3.1 Interim valuation. 3.2 Prepare progressive financial reporting during construction phase and monitoring. 3.3. Variation process up to finalization of variation accounts. 3.4 Initiation of contractual correspondence and interpretation of contract. 3.5 Data collection, prepare contractual cost and time related claims, negotiation and finalization. 3.6 Prepare project implementation and procurement plan. 3.7 Final accounts and reporting 3.8 Advice on contractual and extra contractual claims. AREA 4 – COST REPORTING 4.1 Establish cost monitoring procedure including contractor's budget and analysis of pricing for cost value reconciliation and interpretation. 4.2 Turnover, profit and lost forecasting cash flow forecasting and coordinate with client's/ contractor's cash flow. 4.3 Control and management of sub contract accounts. 4.4 Advice on procurement or resource including materials, labour and plants. 4.5 Preparation of insurance claims, presentation, negotiation and finalization. 4.6 Resource analysis and management including resource usage, productivity reports, interpretation and reconciliation. AREA 5 – PROCUREMENT ADVICE 5.1 General advise on tender process considering constructability, delivery systems and time limitations. 5.2 Initiate, prepare documents, evaluation criteria and evaluation of pre-qualification process. 5.3 Recommendation and agree on all inputs required for preparation of Bills of Quantities 5.4 Prepare Bills of Quantities, undertake checking required and prepare necessary addenda. 5.5 Preparation of tender documents including compilation and tender action. 5.6 Tender evaluation, negotiation and award. 1.7 Specification writing AREA 6 – CONSTRUCTION TECHNOLOGY AND BUILDING SERVICES 6.1 Acquire knowledge of construction process, technologies, building materials, and its suitability to the project climate.

	6.2 Acquire knowledge of the principals of the design and the science of construction. 6.3 Acquire knowledge of the principals of construction. 6.4 Interpretation of drawings, specification and other documents. AREA 7 – SPECIALIZED AREAS 7.1 Financial auditing of construction projects. 7.2 Feasibility studies. 7.3 Life cycle cost analysis. 7.4 Provide value management services. 7.5 Use of computer application relevant to quantity surveying services. 7.6 Risk management 7.8 Acquire knowledge on regulations and guidelines related to construction in relation to government and local authorities, statutory bodies and donor funded projects
Australian Institute of Quantity Surveyors [AIQS](2011)	• Feasibility stage - use the knowledge of construction methods and costs to advise the owner on the most economical way of achieving his requirements. establish a project budget • Design stage - ensures that the design remains on budget through Cost Management. • Completion of design stage - prepare a Bill of Quantities, prepare tenders, and may price alternatives for consideration • Construction stage - Value progress payments at regular intervals, value changes to design or quantities, monitoring claims for progress payments and additional work • Completion stage - Produce depreciation schedules of the various project components and advise on realistic insurance replacement costs
New Zealand Institute of Surveyors [NZIQS](2015)	• Managing the finances for any kind of construction project. • Working to keep the project on time. • Working to keep the project within the budget. • Making sure that construction costs and production are managed as efficiently as possible. • Resolving disputes between contracting parties. • Preparing insurance replacement estimates for all kinds of buildings. • Provide cash flow data to client for arranging the finances needed for each stage of the project. • Prepare a statement of final account, which records the actual costs for all sections of the job
Canadian Institute of Quantity Surveyors [CIQS](2013)	• Establishing budgets from information provided at the feasibility stage, which may be limited to a schedule of net area requirements before any drawings are produced;

	• Controlling costs through the design stage to maintain the integrity of the established budget and to ensure that the owner receives the best value; • Evaluating the cost effectiveness of alternative building shapes, component specifications, and various materials and in addition the provision of cost checks at various key stages throughout the design process. • Reviewing a project using systematic and creative effort directed at analyzing the functional requirements of a project for the purpose of achieving essential functions at optimum costs. • Analyzing the proposed budget to ensure inclusion of items associated with a project of its kind, as well as confirming that the budget is adequate to complete the project; • Periodic progress draw reviewing of the request for funds to determine that it is reasonable and to confirm that the remaining budget is adequate to complete the project; • Advising on the budget for indirect costs such as design, legal, marketing, leasing etc. • Providing independent advice, including practical experience in many facets of the industry, as well as a working knowledge of the arbitration process and related law. • Assisting legal counsel and appearing as an expert witness at trial. • Life Cycle Cost Plans, Reserve Fund Studies, Property Conditions Reports, Risk Analysis, Insurance Replacement Cost Assessment, Project Management, Project Scheduling, Construction Management, Construction and Project Cash Flows, Material Take-offs
International Cost Engineering Council [ICEC], (2011)	• To provide independent, objective, accurate, and • reliable capital and operating cost assessments usable • for investment funding and project control • To analyze investment and development for the guidance of owners, financiers and contractors. • estimates of capital or asset costs including development costs • estimates of operating and manufacturing costs through an asset's life cycle • risk assessment and analysis • trending of scope and cost changes

	• decision analysis • financial analysis (eg. net present value, rate of return, etc) • project cost control • appraisals of existing assets • project analyses, databases, and benchmarking • planning and scheduling • productive and investment needs assessment • facility management needs assessment • project feasibility and budget assessment • cost management • procurement management • contract administration • whole-life appraisals • quality audits • value management • dispute resolution
Greeno (2013)	• **Estimating and cost advice** ✓ Estimates and cost advice during all stages of the development of a project are essential if the correct decisions with full awareness of their financial implications are to be made. ✓ Sophisticated techniques, extensive cost data banks and an intimate knowledge of building and construction economics enable quantity surveyors to provide reliable cost advice. • **Cost planning** ✓ Clients want to know that they are receiving value for money, not only with regard to the capital cost but also in respect of the running and maintenance cost of a project. ✓ Cost planning enables decisions on various design alternatives to be made with actual costs being constantly monitored against original budgets. • **Property development advice** ✓ A building should meet the functional dimensional and technological requirements for which it was designed, should be aesthetically pleasing and meet the cost limits of the client's budget. ✓ A quantity surveyor is able to provide pre-design feasibility studies involving technical and/or economic investigations thereby enabling a client to decide whether, and in what form, to proceed. • **Advice on tendering procedures and contractual arrangement** ✓ The choice of an appropriate form of contract for any given project will depend on the nature of the project, the circumstances under which the work is to be carried out and the particular needs of the client.

	✓ Quantity surveyors, in collaboration with architects are able to advise their clients on the most advantageous procurement methods available, including: Contracts incorporating bills of quantities, provisional bills of quantities and schedules of rates. ✓ Negotiated, lump-sum, managed and cost plus contracts, Package deals, turnkey offers, etc. While Bills of Quantities are generally regarded as the most economical and best method of obtaining a competitive price, the alternative methods and types of tender documentation available need to be carefully examined in consultation with the quantity surveyor, architect, etc. before a final decision is made • **Financial control over contracts** • **Valuation of work in progress** • **Cash flow budgets Final account in respect of the contract**. ✓ The quantity surveyor's duty is essentially one of cost control. They measure and value work in progress, determine the value of variations ordered by the architect or engineer and ensure that a fair and equitable settlement of the cost of the project is reached in accordance with the contract conditions. In conjunction with the architect and other consultants the quantity surveyor will ensure that the financial provisions of the contract are properly interpreted and applied. • **Act in disputes, etc.** ✓ Quantity surveyors possess knowledge and expertise in the fields of costs and contracts which equip them to prepare valuations for fire insurance, to advise in the settlement of insurance claims and to be called as expert witnesses or act as arbitrators in any court or arbitration on building disputes. • **Material list and values** • **Quantity surveying services in respect of civil, mechanical, and electrical work** • **Property economics** • **Project management** • **Fast track construction**
Ashworth et al.(2013)	**Traditional role** • Single rate approximate estimates • Cost planning • Procurement advice • Measurement and quantification • Document preparation, especially bills of quantities • Cost control during construction • Interim valuations and payments • Financial statements • Final account preparation and agreement

	• Settlement of contractual claims **Evolved role** • Investment appraisal • Advice on cost limits and budgets • Whole life costing • Value management • Risk analysis • Insolvency services • Cost engineering services • Subcontract administration • Environmental services measurement and costing • Technical auditing • Planning and supervision • Valuation for insurance purposes • Project management • Facilities management • Administering maintenance programmes • Advice on contractual disputes • Planning supervisor • Clients' agent • Programme management • Cost modeling • Sustainability Advisor
(Pheng & Ming, 1997)	**Feasibility study** Initial cost indications based on similar and recently completed buildings Cost implications of site conditions **Outline proposals** Preparation of rough estimates based on client's requirements Assist client in setting cost limit or budget **Preliminary design** Preliminary estimates and preparation of initial cost plan Group element cost targets established Comparison with client's cost limit or budget **Detailed design** Detailed estimate Preparation of elemental cost plan and amplified cost plan Elemental cost targets established Comparison with client's budget and earlier estimates Cost checks to obtain best solution in each element as drawings are produced **Final design** Preparation of tender documents Continue cost checks and obtain quotations from specialists Pre-tender estimate

	Tender period Attend to tenderers' queries Issue corrigendum **Tender evaluation** Evaluate tender Prepare reconciliation statement and compare tender sum with estimated costs Advise on course of action to be taken Prepare cost analysis **Award of contract** Prepare letter of acceptance after client has approved tender Compile documents and prepare for contract documentation **Construction** Prepare valuations for payments on account at the intervals stated in the contract and agree with contractor's quantity surveyor Plot payments on account on "rate of spend" graph and report to architect on any significant divergence Advice architect, if requested, on expenditure of provisional sums, measure and value work carried out by the main contractor against provisional sums (except where lump sum quotations have been accepted) and adjust Prepare estimates of likely cost of variations on receipt of copies of architect's instructions Later measure and value, check and price daywork voucher Advise architect, if requested, on expenditure of prime cost sums, check nominated sub- contractors' and nominated suppliers' final accounts and adjust contract sum accordingly Prepare financial reports for architect and client at the same time as interim payments Check main contractor's claims for increase in costs of labour, materials, levies, contributions and taxes, etc. if applicable. Alternatively, apply price adjustment indices to amounts included in interim valuations Measure projects based on schedules of rates or on bills of approximate quantities as the work proceeds, either on site or from architect's drawings, and value at contract rates Advise architect, if requested, on contractor's claims (if any) for loss and expense payments If accepted, negotiate claims with contractor **Completion of project & defects liability Period** Advice on extension of time and imposition of liquidated damages Finalize project accounts Feedback on cost data and prepare cost analysis of completed projects. Contribute to cost database for use in future project.

APPENDIX B

Survey on Professional Practice of Quantity Surveyors and Need of Professional Indemnity Insurance for Quantity Surveyors

Dear Participants,

I am L.G. Manuja, student of the MSc in Construction Law and Dispute Resolution conducted by the Department of Building Economics, University of Moratuwa. As a requirement of the course it is mandatory to carry out a research and submit a report on a topic related to Construction Law and Dispute Resolution. I have chosen to study the professional practice of quantity surveyors, faults made the Quantity Surveyors and the possible mechanism of using Professional Indemnity Insurance to rectify the effects.

The survey consists of 19 questions and each question would take less than a minute to answer and completely anonymous. Therefore please take a few minutes of your valuable time to express your genuine views on or before 20th October 2017.
Your participation in this survey is highly appreciated.

Thank you for your support.

L. G. Manuja

Section A: General Information of Research Participants

1. **Indicate the major category of services provided by your organization**
   Mark only one oval.

   - ◯ Client
   - ◯ Consultancy
   - ◯ Contracting

2. **Please indicate your position/designation in your organization**
   Mark only one oval.

   - ◯ Contract Manager
   - ◯ Contract Administrator
   - ◯ Chief Quantity Surveyor
   - ◯ Senior Quantity Surveyor
   - ◯ Quantity Surveyor
   - ◯ Assistant Quantity Surveyor
   - ◯ Other: _____

3. **Indicate your level of education and/ or professional qualification**
   Check all that apply.

   - ☐ Certificate
   - ☐ Diploma
   - ☐ Degree
   - ☐ Post Graduate
   - ☐ Charter
   - ☐ Other: _____

4. **Please indicate the years of experience in the field of construction**
Mark only one oval.

- ◯ Less than 5 years
- ◯ 6 -10 years
- ◯ 11 -15 years
- ◯ 16 - 20 years
- ◯ 21 - 25 years
- ◯ More than 25 years
- ◯ Other: _____

5. **Indicate your experience related to quantity surveying in terms of location.**
Mark only one oval.

- ◯ Local
- ◯ International
- ◯ Both Local & International

Section B: Perception of quantity surveying profession

Note: This section of survey covers following aspects: Competencies/ duties of quantity surveying professionals, Common faults made by quantity surveyors, Causes for professional faults and negligence, Effects that could occur due to faults of quantity surveyors and Mitigation measures to address those effects.

6. **Followings are identified duties as per the established professional association for quantity surveying profession. Please indicate the degree of your involvement in the following duties of quantity surveying professions according to your experience.**
Mark only one oval per row.

	Not at all	Low	Moderately	Highly	Very highly
Preliminary cost estimates and advice	◯	◯	◯	◯	◯
Investment appraisal/ feasibility studies	◯	◯	◯	◯	◯
Cost planning	◯	◯	◯	◯	◯
Value management/ value engineering	◯	◯	◯	◯	◯
Advising on contract strategies and procurement systems	◯	◯	◯	◯	◯
Estimating contract price for use in benchmarking tenders	◯	◯	◯	◯	◯
Preparing tender documents	◯	◯	◯	◯	◯
Tendering for winning job	◯	◯	◯	◯	◯
Selection of contractors or sub-contractors or suppliers	◯	◯	◯	◯	◯
Negotiating contract prices and preparing contract documents	◯	◯	◯	◯	◯
Preparing budgets and cash flow forecasts	◯	◯	◯	◯	◯
Contract administration	◯	◯	◯	◯	◯
Interim valuations and payments	◯	◯	◯	◯	◯
Monitoring, and exercising cost control over the project	◯	◯	◯	◯	◯
Forecasting costs to complete and preparing financial statements	◯	◯	◯	◯	◯
Preparing of variation and claims	◯	◯	◯	◯	◯
Valuation of variations	◯	◯	◯	◯	◯
Evaluating and settling contractual claims	◯	◯	◯	◯	◯
Advice on cost limit & budget	◯	◯	◯	◯	◯
Subcontract administration	◯	◯	◯	◯	◯
Advice on contractual dispute	◯	◯	◯	◯	◯
Final account preparation and agreement	◯	◯	◯	◯	◯
Settlement of payment disputes and giving expert evidence in arbitrations and disputes	◯	◯	◯	◯	◯
Risk Management	◯	◯	◯	◯	◯
Project management	◯	◯	◯	◯	◯
Facilities management	◯	◯	◯	◯	◯
Property consulting and development services	◯	◯	◯	◯	◯
Due diligence auditing	◯	◯	◯	◯	◯
Asset valuation & management	◯	◯	◯	◯	◯
Insurance valuation	◯	◯	◯	◯	◯
Capital allowances	◯	◯	◯	◯	◯
Corporate recovery and insolvency	◯	◯	◯	◯	◯
Sustainability advisor	◯	◯	◯	◯	◯

7. **Please specify any other you may feel that could be a role and responsibility of quantity surveyors.**

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8. **Consider the following common faults made by quantity surveyors and indicate the degree of making the faults according to your experience**

Mark only one oval per row.

	Never	Rarely	Average	Frequently	Very frequently
Misleading pre-contract estimate and advise	◯	◯	◯	◯	◯
Failure to take prompt action/ response (eg. Failure to notify the contractor on insufficient speed of work)	◯	◯	◯	◯	◯
Failure to keep client informed on matters with significant cost implication	◯	◯	◯	◯	◯
Inaccurate determinations made for price adjustment	◯	◯	◯	◯	◯
Inappropriate advice on selection of particular contractors/ sub-contractors/ supplies	◯	◯	◯	◯	◯
Absence of important clauses in conditions of contract	◯	◯	◯	◯	◯
Errors in bills of quantities i.e. errors in quantities, rates or description	◯	◯	◯	◯	◯
Loss of documents or data (eg. Preparation of a tender document with some important pages missing)	◯	◯	◯	◯	◯
Mistakes in Bid pricing	◯	◯	◯	◯	◯
Inaccurate information	◯	◯	◯	◯	◯
Fraudulent misrepresentation	◯	◯	◯	◯	◯
Misstatements	◯	◯	◯	◯	◯
Unfair treatment to contractors in tender negotiations	◯	◯	◯	◯	◯
Inadequate compliance with standards (eg. Non-compliance with government procedure guidelines)	◯	◯	◯	◯	◯
Lack of Information regarding Quality Assurance and Quality Control	◯	◯	◯	◯	◯
Arithmetic errors	◯	◯	◯	◯	◯
Incorrect valuation (for construction work, variations, claims, etc.…)	◯	◯	◯	◯	◯
Errors in claim assessment	◯	◯	◯	◯	◯
Unfair determination of variations and claims	◯	◯	◯	◯	◯
Inappropriate advice in contractual matters to client and contractor	◯	◯	◯	◯	◯
Late certifications and non-certifications	◯	◯	◯	◯	◯
Lack of monitoring or controlling the cost as work in progress	◯	◯	◯	◯	◯
Unfair treatment to contractors in final account negotiations	◯	◯	◯	◯	◯

9. **Please specify any other you may feel that could be a fault of quantity surveyors.**

10. **Consider the following causes for professional faults and indicate the degree of effect of this causes to commit the above faults of by quantity surveyor.**
Mark only one oval per row.

	Never	Low	Moderately	Highly	Very highly
Non-availability or lack of detailed information					
Inaccurate Data					
Professionals' inexperience					
Professional incompetence					
Lack of adequate documentation					
Poor cost control method					
Lack of quality management					
Negligence of professionals					
Insufficient planning and design work					
Design error					
Employing the wrong procurement method					
Inadequate time					
Human Error					
Fraudulent practices of professionals					
Working under pressure					

11. **Please specify any other you may feel that could be a cause for making faults by quantity surveyors**

12. **Please indicate the degree of following effects that could occur due to faults of quantity surveyors**

Mark only one oval per row.

	Not at all	Low	Moderatly	Highly	Very highly
Put the target outcomes expected by clients, contractors, and consultants in the overall development process at risk					
Negative affect on the quality of the projects					
Cost and time overrun in projects					
Negative effect on the cash flow of the contractor					
Lead to project abandonment					
Capital flight, and huge economic loss in the form of additional cost of projects					
Additional costs for rework					
Dissatisfaction by project owners					
Lack of confidence in consultants					
Loss of reputation of consultant office					
Frustration on stakeholders					
Lack of concentration on other projects					
Discourages investment					
Loss of designer's profit					
Arising the contractual claims					
Increase on litigation					

13. **Please specify any other effects you may feel that could occur due to faults of quantity surveyor.**

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14. **Please indicate the most suitable mitigation measures that could be used to address the above effects.**

Mark only one oval per row.

	High unsuitable	Unsuitable	Suitable but risky	Suitable	Most Suitable
Internal quality assurance system (providing education and training)					
Institutional control over professional practice (Code of Conduct)					
Litigation					
Alternative dispute resolution methods (Arbitration, mediation, conciliation, etc.)					
Adequate contingency allowances					
Professional indemnity insurance system					

15. **Please specify any other measures you may feel that could be a way of addressing the above effects.**

Section C: Professional Indemnity Insurance as a mitigation measure for professional faults.

Note: This section of survey covers the need of a Professional Indemnity Insurance (PII) as a mitigation measure for professional faults of quantity surveyors.

16. **In your opinion, do you think that Professional Indemnity Insurance (PII) is required to indemnify the damages caused by the above faults of quantity surveyors.**
Mark only one oval.

- ◯ Not at all
- ◯ Sometimes
- ◯ Always

17. **If, your answer is "Sometimes" or "Always" please indicate the need of PII coverage for the following faults**

Mark only one oval per row.

	Not at all	Sometimes	Always
Misleading pre-contract estimate and advise	◯	◯	◯
Failure to take prompt action/ response (eg. Failure to notify the contractor on insufficient speed of work)	◯	◯	◯
Failure to keep client informed on matters with significant cost implication	◯	◯	◯
Inaccurate determinations made for price adjustment	◯	◯	◯
Inappropriate advice on selection of particular contractors/ sub-contractors/ supplies	◯	◯	◯
Absence of important clauses in conditions of contract	◯	◯	◯
Errors in bills of quantity i.e. errors in quantities, rates or description	◯	◯	◯
Loss of documents or data (eg. Preparation of a tender document with some important pages missing)	◯	◯	◯
Mistakes in Bid pricing	◯	◯	◯
Inaccurate information	◯	◯	◯
Fraudulent misrepresentation	◯	◯	◯
Misstatements	◯	◯	◯
Unfair treatment to contractors in tender negotiations	◯	◯	◯
Inadequate compliance with standards (eg. Non-compliance with government procedure guidelines)	◯	◯	◯
Lack of Information regarding Quality Assurance and Quality Control	◯	◯	◯
Arithmetic errors	◯	◯	◯
Incorrect valuation (for construction work, variations, claims, etc.…)	◯	◯	◯
Errors in claim assessment	◯	◯	◯
Unfair determination of variations and claims	◯	◯	◯
Inappropriate advice in contractual matters to client and contractor	◯	◯	◯
Late certifications and non-certifications	◯	◯	◯
Lack of monitoring or controlling the cost as work in progress	◯	◯	◯
Unfair treatment to contractors in final account negotiations	◯	◯	◯

18. **Are there any damages due to professional quantity surveyor's faults are covered by an insurance system in your Organization.**

Mark only one oval.

◯ Yes

◯ No

19. **If "No" Indicate the reasons.**

APPENDIX C

Subject Matter Experts' (SME) Interview

Research Title: A Study of Professional Liabilities and Need for Professional Indemnity Insurance (PII) for Quantity Surveyors.

Research Objectives:

- Review on the duties of quantity surveyors
- Identify the faults can be occurred due to the cessation of the liability of the quantity surveyors while performing the duties
- Ascertain the causes of professional faults and negligence
- Identify the effects of the faults to the client and the organization.
- Recommend the measures to be used to mitigate the effects with special weight emphasis to PII.

Section A: Participant's profile

a) Designation:

b) Nature of business:

d) Number of years of experience in the industry:

Section B: Views of the Participants

01. Based on your experience could you give your opinion regarding the answers arranged as per the descending order of the mean values which were calculated for the question of; "*Followings are identified duties as per the established professional association for quantity surveying profession. Please indicate the degree of your involvement in the following duties of quantity surveying professionals according to your experience.*"

Competencies/ duties of quantity surveying professionals	N	Mean
Interim valuations and payments	66	4.390
Valuation of variations	66	4.290
Contract administration	66	4.120
Monitoring, and exercising cost control over the project	66	4.080
Forecasting costs to complete and preparing financial statements	66	3.970
Preparing of variation and claims	66	3.950
Final account preparation and agreement	66	3.890
Preliminary cost estimates and advice	66	3.790
Evaluating and settling contractual claims	66	3.730
Preparing tender documents	66	3.710
Advice on cost limit & budget	66	3.700
Negotiating contract prices and preparing contract documents	66	3.650
Selection of contractors or sub-contractors or suppliers	66	3.610
Advice on contractual dispute	66	3.520
Preparing budgets and cash flow forecasts	66	3.440
Cost planning and cost checking	66	3.420
Estimating contract price for use in benchmarking tenders	66	3.380
Advising on contract strategies and procurement systems	66	3.290
Subcontract administration	66	3.200
Value management/ value engineering	66	2.950
Tendering for winning job	66	2.680
Project management	66	2.620
Settlement of payment disputes and giving expert evidence in arbitrations and disputes	66	2.440
Investment appraisal/ feasibility studies	66	2.380
Risk Management	66	2.330
Due diligence auditing	66	2.150
Insurance valuation	66	2.050
Sustainability advisor	66	1.920
Property consulting and development services	66	1.880
Asset valuation & management	66	1.770
Facilities management	66	1.670
Capital allowances	66	1.580
Corporate recovery and insolvency	66	1.500

02. What is your point of view according to your experience on the following faults made by quantity surveyors arranged as per the descending order of the mean values which were calculated from answers obtained for the question of;

"*Consider the following common faults made by quantity surveyors and indicate the degree of making the faults according to your experience*"

Common faults made by quantity surveyors	N	Mean
Errors in bills of quantities i.e. errors in quantities, rates or description	66	3.61
Late certifications and non-certifications	66	3.05
Misleading pre-contract estimate and advice	66	2.95
Lack of information regarding quality assurance and quality control	66	2.92
Failure to take prompt action/ response (eg. Failure to notify the contractor on insufficient speed of work)	66	2.91
Lack of monitoring or controlling the cost of work in progress	66	2.74
Absence of important clauses in conditions of contract	66	2.71
Failure to keep client informed on matters with significant cost implication	66	2.67
Incorrect valuation (for construction work, variations, claims, etc….)	66	2.67
Unfair determination of variations and claims	66	2.61
Errors in claim assessment	66	2.59
Inaccurate determinations made for price adjustment	66	2.58
Inappropriate advice in contractual matters to client and contractor	66	2.58
Mistakes in bid pricing	66	2.48
Inappropriate advice on selection of particular contractors/ sub-contractors/ supplies	66	2.42
Inaccurate information	66	2.41
Inadequate compliance with standards (eg. Non-compliance with government procedure guidelines)	66	2.41
Arithmetic errors	66	2.39
Unfair treatment to contractors in final account negotiations	66	2.38
Loss of documents or data (eg. Preparation of a tender document with some important pages missing)	66	2.23
Unfair treatment to contractors in tender negotiations	66	2.21
Misstatements	66	2.08
Fraudulent misrepresentation	66	1.58

03. The following causes of professional faults were found from answers obtained for the question of;

"Consider the following causes for professional faults and indicate the degree of effect of this causes to commit the above faults of by quantity surveyor."

Please review these observations based on your experience.

Causes of Professional Faults & Negligence	N	Mean
Professionals' inexperience	66	4.23
Professional incompetence	66	4.09
Non-availability or lack of detailed information	66	4.06
Inaccurate Data	66	4.03
Poor cost control method	66	4.02
Inadequate time	66	3.97
Fraudulent practices of professionals	66	3.97
Lack of quality management	66	3.82
Design error	66	3.76
Insufficient planning and design work	66	3.71
Negligence of professionals	66	3.64
Lack of adequate documentation	66	3.61
Employing the wrong procurement method	66	3.3
Human Error	66	3.26

04. These are the effects that could occur due to faults of quantity surveyors, arranged as per the descending order of the mean values which were calculated from answers obtained for the question of;

"Please indicate the degree of following effects that could occur due to faults of quantity surveyors"

Please comment on this regard.

Effects that could occur due to faults of quantity surveyors	N	Mean
Cost and time overrun in projects	66	3.64
Arising the contractual claims	66	3.55
Negative effect on the cash flow of the contractor	66	3.47
Dissatisfaction by project owners	66	3.11
Put the target outcomes expected by stakeholders in the overall development process at risk	66	3.02
Loss of reputation of consultant office	66	2.91
Increase the litigation cost	66	2.89
Lack of confidence in consultants	66	2.85

Frustration on stakeholders	66	2.83
Additional costs for rework	66	2.79
Negative effect on the quality of the projects	66	2.68
Lack of concentration on other projects	66	2.65
Discourages investment	66	2.61
Capital flight, and huge economic loss in the form of additional cost of projects	66	2.52
Loss of designer's profit	66	2.47
Lead to project abandonment	66	2.33

05. What is your opinion about the following mitigation measures that could be used to address the effects arranged as per the descending order of the mean values which were calculated from answers obtained for the question of;

"Please indicate the most suitable mitigation measures that could be used to address the above effects."

Mitigation measures	N	Mean
Internal quality assurance system (eg. Providing education and training)	66	4.36
Institutional control over professional practice (Code of Conduct)	66	4.20
Professional Indemnity Insurance system	66	4.03
Alternative Dispute Resolution methods (Arbitration, Mediation,...etc)	66	3.77
Adequate contingency allowances	66	3.62
Litigation	66	2.44

06. According to your experience, do you think Professional Indemnity Insurance (PII) is required to indemnify the damages caused by the following faults of quantity surveyors? Could you comment on this? My finding in respect of this as follows;

Significant liabilities of quantity surveyors to be covered under PII	N	Mean
Errors in bills of quantities i.e. errors in quantities, rates or description	62	2.39
Misstatements	62	2.37
Inappropriate advice in contractual matters to client and contractor	62	2.21
Loss of documents or data (eg. Preparation of a tender document with some important pages missing)	62	2.19
Misleading pre-contract estimate and advice	62	2.16
Inaccurate information	62	2.16
Mistakes in bid pricing	62	2.15
Absence of important clauses in conditions of contract	62	2.13
Fraudulent misrepresentation	62	2.13

Arithmetic errors	62	2.06
Inaccurate determinations made for price adjustment	62	1.98
Late certifications and non-certifications	62	1.97
Failure to keep client informed on matters with significant cost implication	62	1.94
Errors in claim assessment	62	1.94
Inadequate compliance with standards (eg. Non-compliance with government procedure guidelines)	62	1.90
Incorrect valuation (for construction work, variations, claims, etc….)	62	1.90
Unfair treatment to contractors in final account negotiations	62	1.87
Lack of information regarding quality assurance and quality control	62	1.85
Unfair determination of variations and claims	62	1.85
Lack of monitoring or controlling the cost of work in progress	62	1.85
Inappropriate advice on selection of particular contractors/ sub-contractors/ supplies	62	1.66
Failure to take prompt action/ response (eg. Failure to notify the contractor on insufficient speed of work)	62	1.60
Unfair treatment to contractors in tender negotiations	62	1.52

Thank you for giving me this opportunity to interview you. Your views are highly appreciated.