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# **APPENDIX**

**Sudan University for Science and Technology**  
**Faculty of Engineering- Dept. of Civil**  
**MSc. Construction Management**  
**ADOPTION AND IMPLEMENTATION OF TQM IN**  
**THE**  
**CONSTRUCTION INDUSTRY**  
**Questionnaire 1**

**INSTRUCTIONS**

Please take a look at the following questionnaire and try to answer correctly and accurately, as many questions as possible. All the information gathered here will be kept strictly confidential and will be used only for research and analysis purposes without mentioning the person or company names.

**Company Information.**

Name of the company:

\_\_\_\_\_

Nature of company (prime contractor/sub-contractor/consultant/supplier/vendor):

\_\_\_\_\_

Size of the company (no. Of persons): \_\_\_\_\_ (admin) \_\_\_\_\_ (technical)

Age of the company:

\_\_\_\_\_

Ongoing/completed projects in Khartoum:

\_\_\_\_\_

\_\_\_\_\_

**• Your Knowledge of TQM**

**1. In your view, which of these words best define quality? (Not limited to one answer)**

- Expensive
- Satisfying internal customer (within the organization)
- Satisfying external customer (outside the organization)
- Appearance
- Increased profit
- Value for money
- Teamwork

**2. Do you think that TQM will (or does) work in your organization?**

- Very well
- To some extent

- Can't say

**3. If you implementing a TQM program do you think could be beneficial to your organization?**

- Yes
- No
- Can't say

**4. In your company, TQM would be used to improve:**

- Project design
- Cost estimating
- Reduce claims
- Increased market share

**• Your Perception of Quality**

**5. What is your organization's perception of quality?**

- Elimination of defects
- A tool to increase profits
- A competitive advantage
- Others (please specify)

**6. How would you rate the importance of product/service quality?**

- Very important
- Important
- Not important

**7. How would you rate the significance of customer satisfaction?**

- Very important
- Important
- Not important

**8. Please rate the potential for improvement within the following processes:**

**(Scale 1 to 5, 1: Low 5: High)**

	High	Low
<input type="checkbox"/> On-site supervision	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Redesign	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Testing procedures at job sites	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Certification of material	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Administration of change orders	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Close-out of projects	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> On-site safety	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Personnel management of employees	5 – 4 – 3 – 2 – 1	
<input type="checkbox"/> Coordination with other members of a project	5 – 4 – 3 – 2 – 1	

**9. Please rank in order of importance the following in the project (1, 2, 3, 4, 5):**

- Cost :\_\_\_\_\_
- Scope :\_\_\_\_\_
- Time (Schedule) :\_\_\_\_\_
- Quality :\_\_\_\_\_
- Safety :\_\_\_\_\_

**10. Do you set your quality goals to the level of?**

- The leading company in your field
- The competition in general
- To a level set internally
- Other (please specify)

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**• Data Acquisition Method**

**11. Do you collect data to measure the performance of operations?**

- Yes
- No

**12. How does your organization solve problems?**

- Assign individual to solve
- Set up a multi-disciplinary team for each problem
- A permanent team is available
- Other (please specify)

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**13. Do you have a system for gathering customer suggestion?**

- Yes
- No
- Can't say

**14. If yes, what system you have?**

- Not measured
- Questionnaire surveys
- By the number of complaints
- Other methods (please specify)

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**15. Do you have a system for gathering employee suggestions?**

- Yes
- No
- Can't say

**16. Are employees empowered to make significant changes to operations?**

- Fully empowered
- Only key personnel are empowered
- Empowerment is not needed
- Can't say

**17. Defects in services are identified and subcontractors are required to pay for or correct them:**

- Yes
- No
- Can't say

**• Quality in your Organization**

**18. Has your organization developed a clear definition of quality?**

- Yes
- No
- Can't say

**19. If yes, Percentage of employees who are aware of the importance of quality?**

0-20%      21-40%      41-60%      61-80%      81-100%

**20. Does your organization have a quality improvement program?**

- No
- Such a plan is under consideration
- A quality improvement program has been implemented recently
- A quality improvement plan has been a part of corporate policy for some time now

**21. What type of quality improvement program do you have?**

- Total Quality Management
- ISO 9000
- Quality Control / Quality Assurance

**22. Which of the following factors provided the motivation to start TQM?**

- Pressure from competitors
- Demanding customers
- Your company's Chief Executive
- Environmental issues/considerations
- Need to reduce costs and improve performance

**23. Your organization's quality improvement program can be described as:**

- There is no formal program
- Periodic short-range solutions or motivational program

- A formal program is underway with widespread employee awareness
  - Others (please specify)
- 

**24. Does your quality improvement plan have the full support of top management?**

- Yes
- No
- Can't say

**25. The major objectives of your quality programs are:**

- Increase productivity
- Cost reduction
- Involvement of employees in the quality building effort

**26. Steps taken in your quality improvement plan include:**

- Organized a multi-disciplinary team
- Data has been collected to measure the process
- An internal awareness program is underway
- An educational program has been implemented
- Quality problems have been identified
- Have defined benchmarks for improvement

**27. After the implementation of your quality improvement program, service/product quality has:**

- Improved
- Remained the same
- Decreased

**28. After the implementation of your quality improvement program, relationship with your customers and suppliers has:**

- Improved
- Remained the same
- Decreased

• **Training**

**29. Is formal training in TQM or other quality improvement philosophies given to employees?**

- No training is given
  - Some training is available
  - A formal training program is in effect
  - Other (please specify)
- 

**30. Training currently emphasizes:**

- Process control
- Statistical analysis

- Data gathering & analysis
- Team work
- Communication
- Customer satisfaction

- **Others**

**31. Obstacles in the implementation of TQM program**

- Changing behavior and attitude
- Schedule and cost treated as the main priorities
- Emphasis on short-term objects
- Lack of education and training to drive the improvement process
- Too much documents are required (Lack of documentation ability)
- Lack of top-management commitment/understanding
- Lack of employees' commitment/understanding
- Tendency to cure symptom rather than get to the root cause of a problem
- Lack of expertise/resources in TQM
- Current tendering/bidding climate