

# FEEDBACK APPLICATION FOR QUALITY IMPROVEMENT AND STRATEGY DEVELOPMENT IN CONSTRUCTION

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## Abstract

This paper deals with the importance of customer satisfaction customer orientation techniques for medium scale townships. Customer satisfaction can be seen either as a goal and customer feedback as a measurement tool in the development of the quality of construction process. Feedback learning is a process of detecting and correcting error. This feedback steers the operations of the parties and helps in attaining the common goals.

## Key words

Customer satisfaction, customer feedback, measurement tool, quality.

## Introduction

In the construction business, customer-orientation is gaining importance, and the industry has adopted new practices when striving towards closer co-operation with customers. The customers have become more demanding and they require more open co-operation, flexibility, and more transparent operations from the builders. Today, customer feedback along with customer satisfaction should be a part of the parameters used in measuring the performance in every construction project. It is indeed seen as one of the central success factors in construction business along with the traditional parameters such as quality and costs. Customer-orientation in construction is an on-going process closely related to all of the builder's operations. Then, it is not an unconnected success factor but it creates added value to the selection offered by the builder. Customer Feedback creates a competitive edge for a customer-oriented company: a company that is better able to satisfy its customers' needs than others, that is

improving its own competitive position and is able to form long-term customer connections.

In the construction industry, the quality of the end product and, thus, customer and end-user satisfaction is highly influenced through independent work done by the parties involved in the construction project and the co-operation between parties. Using the customer feedback system, the owner would establish goals in terms of performance quality. By monitoring the project team's progress in reaching these goals, team members can re-evaluate the processes necessary to reach them. A multifaceted feedback system also denotes the areas needing improvement and gives opportunities for setting benchmarks of customer satisfaction. In addition, a standard feedback system may be considered more objective than a contractor's own feedback survey because social interaction components do not exist in the standard system. Moreover, it is strong tool for mutual learning and continuous improvement. The field of construction needs versatile and systematic customer satisfaction information about the quality of building and construction process in order to act in a customer-oriented way and develop their operations.

## Research problem and objectives

In the multi-dimensional field of construction, the framework of customer feedback needs more structure and a great amount of research to unveil its central features. It is clear that in construction as well as in other fields of business, the significance of customer feedback and customer orientation is increasing. As stated earlier, the use of "soft" measurement tools, such as customer satisfaction and customer feedback, is still at an early stage of development in the construction. (Torbica and Stroh 2001). Soft measurement tools are focusing on

perceptions and attitudes rather than on more concrete objective criteria.

Customer feedback as a research subject is based on service quality, production, design and marketing research which showed that the traditional quality indicators cannot be used in measuring the quality of services. More and more companies are interested in gaining more comprehensive understanding of their customers' perceptions. (Hayes 1998).

The main goal of the study is to achieve better understanding and knowledge of customers through customer feedback and it examines widely the concept and of attributes of customer feedback & satisfaction in construction. Based on the goal of the study, scope was limited to medium scale townships and the following research questions for framing feedback questionnaire were studied:

1. What are the customer satisfaction factors and how they could be identified?
2. What are the interrelationships between factors?
3. How to utilize customer feedback in the organizations?
4. How the mutual performance in the construction feedback should be assessed?

By creating feedback systems and processes that support these activities, companies can manage their learning more effectively.

#### **Feedback-a tool of an organization:**

1. An ideal feedback system occurs through shared insights, knowledge and builds on past knowledge and experience – that is, on memory.
2. Feedback learning is a process of detecting and correcting error.
3. Feedback learning means the process of improving actions through beret knowledge and understanding.
4. An ideal feedback system is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights.

A feedback is an organizational tool dedicated to knowledge creating, collection and control. In the initial stage of the development project, interviews were conducted with the builders to know the sector in which they feel to have a feedback.

#### **Methods**

Data used herein is entirely a primary data.

- Meetings with five builders were held separately who had agreed upon feedback implementation methods.
- This data together with a literature review formed a basis for the questionnaire of feedback.

- A 22 item questionnaire was developed in consultation together with the builders and experts.
- The built questionnaire was finalized by the same team.

5. These interviews could be summed up by stating that systematic utilization of project feedback has been poor in the construction business. Only 3 of the construction companies conducted customer surveys separately, and their quality and adopted measures were underdeveloped. In addition, the utilization of the information has been found to be sporadic and ineffective. Customer feedback is also mainly collected only late in the project, in which case the feedback that has been collected has no effect on operational procedures

As per the interviews, the feedback needed to cover:

1. Overall performance of the company including customer satisfaction, time frame and quality.
  2. The skills of both architect and the builder.
  3. The flexibility of the builder
  4. The issues during the production phase.
  5. The legal aspects.
- 7 occupants of a single project of each builder were interviewed personally.
  - The feedback was measured on 5 scales ranging from very satisfied to very unsatisfied.
  - Each question was allotted with the respective marks from 0 to 5. The questionnaire 1 has been shown in appendix A.
  - Each form was assessed and marking was allotted per form.
  - The 5 heads of each builder were calculated separately.
  - Graphs were produced.
  - Out of the 5 builders, 2 with poor performance. were identified:  
5 projects (townships) of each builder were selected to conduct interviews.
  - 5 occupants/tenements of different groups of each project ,right from bungalows, row houses and 2BHK and 1BHK flats, were to be interviewed.
  - Each form was coded .eg.BAP1O1-Builder A,project1,occupant1, BBP1O1-BuilderB,project 1,occupant1 and so on.

The approval and time of the interviews were finalized as per the telephonic conversation. The occupants were briefed about the objective of the feedback at the same time. Most of the interviews were conducted on the weekly off days in the morning hours

In the questionnaire1, it was observed that even an unsatisfied customer was marked as 1 which seemed to be unsatisfactory. The questionnaire 2 needed to be framed accordingly.

This problem was solved by the adoption of negative marking. This type of marking helped to bring all the 25 participants of a single builder on one ground.

Weight age of questions was also given due consideration. Feedback flows now provided the starting point for the development of feedback questionnaires.

The feedback questions were framed and finalized by concentrating on the matters as per the builder's importance. The tasks and requirements of various builders were grouped under similar heads. The evaluation areas found common to all builders were as stated below:

- Overall, Design, Flexibility, Production, Legal
- Questionnaire2 was framed accordingly
- Interviews were conducted and each form was assessed. Response to each parameter in the feedback form is quantified by Balanced Semantic rating scales
- All the scores were entered into a data sheet.
- All the data was collated to form a profile.
- Data profile was analyzed and interpreted
- Based on the collected data, a report was generated.

Computations were worked out; graphs and pie charts were plotted project wise and section wise. The graphs gave the exact area of concern for the project. This information could thus be used as the base for planning strategies in the future projects of the builder.

Client Feedback Form						
Client Name :						
Project for which feedback is being provided :						
Phase 1 : OVERALL						
Sr.No.	Question	Poor	Unsatisfied	Feedback Neutral	Satisfied	Excellent
1	Overall, how satisfied were you with this Construction company? Total Marks	-2	-1	0	1	2
2	How would you compare the value added to your home and lifestyle vs the cost of the project? Total Marks	-1	-0.5	0	0.5	1
3	How did you find the enthusiasm level of the team? Total Marks	-1	-0.5	0	0.5	1
4	How pleased were you with the time frame in which the project was completed? Total Marks	-2	-1	0	1	2
5	How likely are you to invest in the company again in the future? Total Marks	-2	-1	0	1	2
6	How likely are you to recommend the company to your friends and colleagues? Total Marks	-2	-1	0	1	2
7	How pleased were you with the quality of the finished project? Total Marks	-2	-1	0	1	2
Overall Comments :						

Phase 4 : PRODUCTION					
Sr.No.	Question	Unsatisfied	Feedback Neutral	Satisfied	Marks
16	Was the supervisor readily available? Total Marks	-1	0	1	
17	How was the explanation of any site-required changes to your project? Total Marks	-1	0	1	
18	How useful was the construction schedule for your project? Total Marks	-1	0	1	
19	Has the builder provided all the Utilities/Facilities/Amenities as assured? Total Marks	-1	0	1	
20	In case of Phase construction, what about the cleanliness on site? Total Marks	-1	0	1	
21	Has the company rendered prompt help for the following legal formalities:	Yes	No		
a.	Formation of apartment /society Total Marks	1	0		
b.	Ownership registration on property card Total Marks	1	0		
22	Following documents have been provided Total Marks	1	0		
a.	Clear title	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b.	Construction commencement certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c.	Completion Certificate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d.	Corporation sanctioned, sealed & signed drawings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e.	Search report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Phase 2 : DESIGN					
Sr.No.	Question	Unsatisfied	Feedback Neutral	Satisfied	Marks
8	How did you find the accessibility of the Builder? Total Marks	-1	0	1	
9	How did you find the builder's listening skills? Total Marks	-1	0	1	
10	Was the Builder's ability to provide solutions to your problems? Total Marks	-1	0	1	
11	How effective was the marketing or advertisement done for this project? Total Marks	-1	0	1	
12	How creative were the drawings presented for your consideration? Total Marks	-1	0	1	
13	How helpful was being presented with estimates of the project cost at various points in time? Total Marks	-1	0	1	
Comments on the Design Phase :					

Phase 3 : FLEXIBILITY POINT					
Sr.No.	Question	Unsatisfied	Feedback Neutral	Satisfied	Marks
14	How was the responsiveness to questions and requests? Total Marks	-1	0	1	
15	How flexible was the builder regarding the changes in the design? Total Marks	-1	0	1	
Comments on the Flexible point :					

Are there any open issues that you would like to bring to our attention?  
 .....  
 Anyone you would like to acknowledge who did a great job?  
 .....  
 Anyone you'd like to mention that you were not happy with?  
 .....  
**OVERALL COMMENTS**  
 Any other feedback you'd like to provide?  
 .....  
 Anything that we did "good" that we could have done "great"?  
 .....  
 Anything we could have done differently to make this a better experience?  
 .....  
*Thank you for your precious time and suggestions*

	Bungalow A	Bungalow B	1 BHK	2 BHK	Total tenaments
A	15	22	136	19	192
B	10	24	110	24	168
C	15	28	125	20	188
D	9	18	99	18	144
E	15	30	110	20	175

Sampling Of 5 Builders

	Project 1	Project 2	Project 3	Project 4	Project 5
Overall	44	43	13	33	43
Design	52	30	28	27	23
Flexibility	35	25	45	14	83
Production	6	-8	14	12	26
Legal	92	98	83	57	96
Average	45.8	37.6	36.6	28.6	54.2

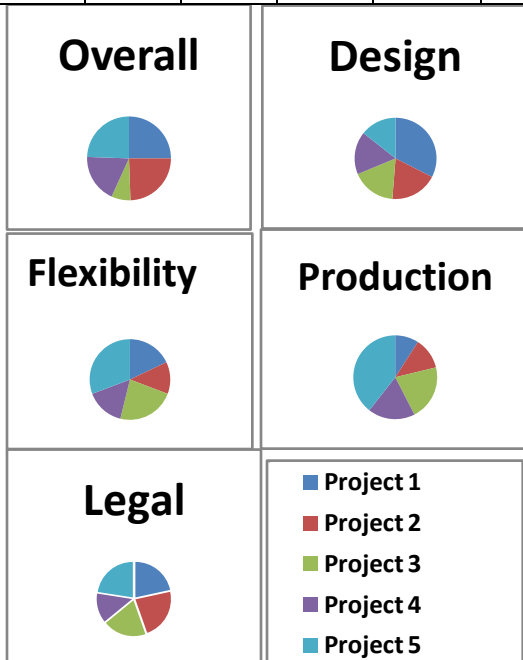


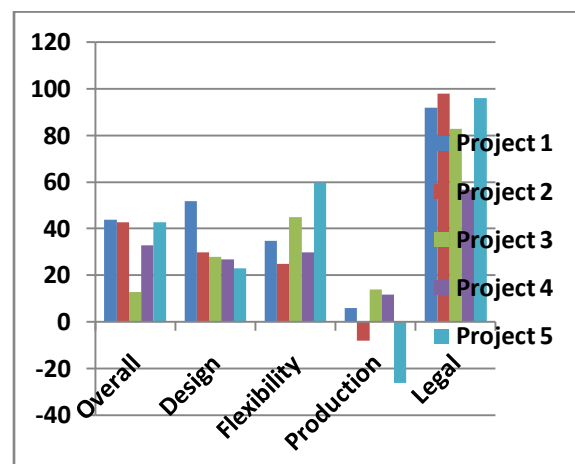
Figure 8.1. Builder 'A' Section Wise Pie Charts

The same methodology was adopted for builder B . But in this case, it was found that pie charts weren't possible as all the 4 sections went negative. Graphs were used effectively for builder B.

The project wise and section wise average was worked out for each builder . This data gave an insight to the general level and group of customers to be satisfied.

	Overall	Design	Flexibility	Production	Legal
Project 1	44	52	35	6	92
Project 2	43	30	25	-8	98
Project 3	13	28	45	14	83
Project 4	33	27	30	12	57
Project 5	43	23	60	-26	96
Average	35.2	32	39	-0.4	85.2

Builder 'A' Section Wise Pie Charts



Graph: Builder 'A' Section Wise Comparative Builder 'A' Wise Comparative Charts

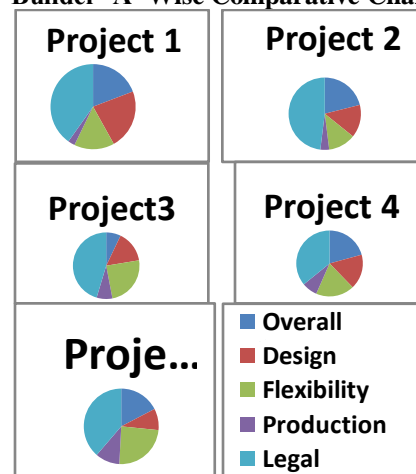
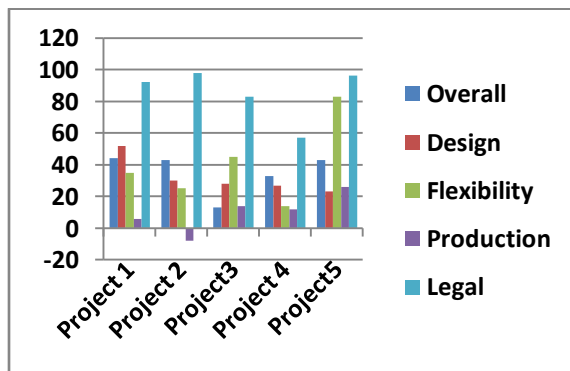


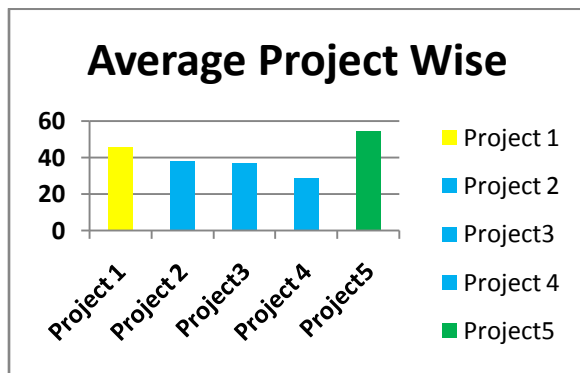
Figure 8.2. Builder 'A' project Wise Pie Charts

**Satisfaction Range**

10% and below	Extremely Dissatisfied	
11% to 40%	Dissatisfied with room for improvement	
41% to 60%	Satisfied	
60% and above	Extremely satisfied	



Graph: Builder 'A' Project Wise Comparative



Section Wise Average Marking of Builder 'B'

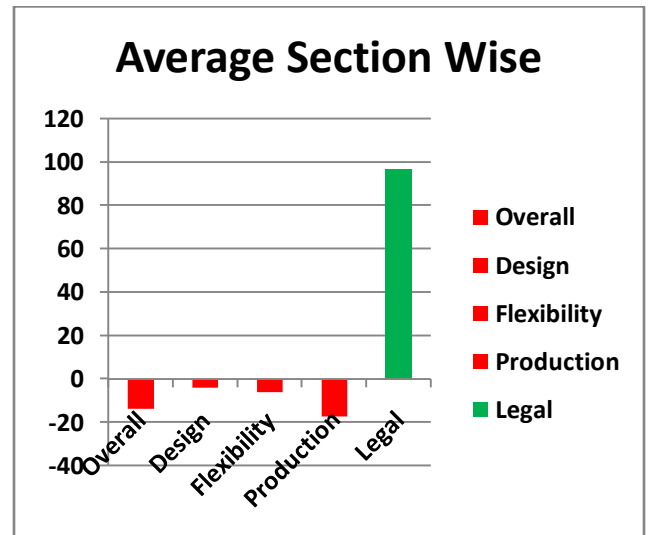
	Overall	Design	Flexibility	Production	Legal
Average	-13.8	-4	-6	-17.2	96.4

	Overall	Design	Flexibility	Production	Legal
Project 1	44	52	35	6	92
Project 2	43	30	25	-8	98
Project 3	13	28	45	14	83
Project 4	33	27	30	12	57
Project 5	43	23	60	-26	96
Average	35.2	32	39	-0.4	85.2

Section Wise Average Marking of Builder 'A'

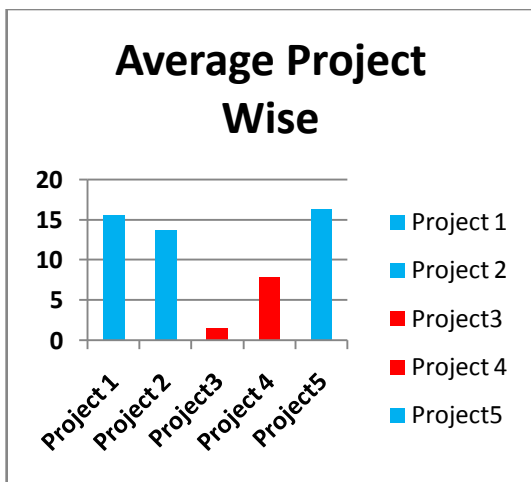
	Project 1	Project 2	Project 3	Project 4	Project 5
Average	45.8	37.6	36.6	28.6	54.2

Project Wise Average Marking of Builder 'A'



	Project 1	Project 2	Project 3	Project 4	Project 5
Average	15.6	13.8	1.6	8	16.4

Project Wise Average Marking of Builder 'B'



Graph Project Wise Average Marking of Builder 'B'

Overall	Scope	Feasibility	Production	Legal	Benefits
<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Building project for the building. (This is a provision aspect of each building)</p>	<p>Feasibility</p>	<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Legal</p>	<p>Benefits</p>
<p>Availability of resources and personnel. (This is a provision aspect of each building)</p>	<p>Building project for the building. (This is a provision aspect of each building)</p>	<p>Feasibility</p>	<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Legal</p>	<p>Benefits</p>
<p>Time to complete. (This is a provision aspect of each building)</p>	<p>Building project for the building. (This is a provision aspect of each building)</p>	<p>Feasibility</p>	<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Legal</p>	<p>Benefits</p>
<p>Time to complete. (This is a provision aspect of each building)</p>	<p>Building project for the building. (This is a provision aspect of each building)</p>	<p>Feasibility</p>	<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Legal</p>	<p>Benefits</p>
<p>Time to complete. (This is a provision aspect of each building)</p>	<p>Building project for the building. (This is a provision aspect of each building)</p>	<p>Feasibility</p>	<p>Clarification regarding the requirements involved. (This is a provision aspect of each building)</p>	<p>Legal</p>	<p>Benefits</p>

**Conclusions**

By developing the related strategies, customer satisfaction can be improved by removing the factors having a negative effect on customer satisfaction.

In construction business, mere routine and technical competence are not enough but alongside technical competence, co-operational skills and the importance of communication and information flow can be highlighted and a functioning communication system can be operated for success of an organization

Services will always emphasize interaction between parties, common procedures, and common goals. Hence, services should be seen as a perspective covering the entire company so that developing the strategies will focus on the entire

selection offered by the customer. This brings added value to the organization's core operations, and poses challenges especially to the management culture. Since it intertwines with all of the organization's levels both vertically and horizontally, the organization's operational systems should also be holistically developed.

In construction projects, satisfaction of the future end user depends on the actions taken by the builder as well as on the co-operation of the entire production chain. In the value production chain of construction, the ability of the builder to create value for the project impacts the value observed by the end user and is an essential factor of a successful project.

Due to the nature of construction, the goals of the project are not unambiguous to all parties but they form a complex entity. Each party in the project team observes the goals from his/her own viewpoint and each one may have their own bases of evaluation regarding the success of the project and attaining the goals. Therefore, attaining the project goals requires systematic evaluation or feedback of the operations of the project organization. This feedback steers the operations of the parties and helps in attaining the common goals.

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