



TOWARD UNDERSTANDING CONFLICTS BETWEEN CUSTOMERS AND EMPLOYEES' PERCEPTIONS AND EXPECTATIONS: EVIDENCE OF IRANIAN BANK

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Abstract. This paper aims to determine influence factors affecting bank service quality, calculate the relative importance of factors from viewpoints of bank customers and employees, and examine the gaps in customers and employees' perceptions and expectations of the quality of bank services. Accordingly, an empirical investigation was conducted in one of Iranian leading banks (Bank-e-Refah). For data collection, an adjusted SERVQUAL questionnaire was developed and distributed among 385 customers and 305 employees. The results show significant difference between customers and employees viewpoints. Understanding the gaps helped bank managers to develop more effective customer-oriented service plans and employees' training and development programs.

Keywords: bank service quality, customers and employees' evaluations, conflicts management, empirical investigation, perceptions, Iranian bank.

1. Introduction

During the past few decades, service quality has become a major area of attention to practitioners, managers and researchers. This attention is due to its strong impacts on lower costs, customer satisfaction, customer loyalty, business profitability and finally on performance superiority.

There have been many researches on the definition, modelling, measurement, data collection procedure, data analysis, etc., issues of service quality. For example, some researchers believe that the importance of service quality for business performance has been recognized through the direct effect on customer satisfaction and the indirect effect on customer loyalty. Quality, in service industries, is an important strategic factor that strongly affects customers' satisfaction, loyalty, retention, and finally firms' performance superiority.

This paper aims to answer the following five important questions in five steps:

Q1: What factors are affecting bank service quality?
(Factor determination step)

- Q2: What are the relative importance weights of each factor from viewpoints of customers and employees? (Factors' weights determination step)
- Q3: How do customers and employees score bank service quality? (Comparing bank service quality measurement step)
- Q4: What about the significance of difference between customers and employees' viewpoints on the quality of bank services? (Horizontal or comparative gap analysis step)
- Q5: What lessons do bank managers learn from understanding the gaps? (Improvement and development of action plan design step)

The rest of the paper is organized as follows. Section 2 reviews the literature. Section 3 explains research methodology. Results of an empirical investigation in one of leading and largest Iranian banks are provided in section 4. Finally, section 5 concludes the paper.

2. Literature review

It is wellknown that service quality, as a key strategic indicator in service industries, strongly affects a customers' satisfaction, loyalty, retention, firms' profit-

ability and performance superiority. (Horovitz 1990; Fitzsimmons, J.A. and Fitzsimmons, M. J. 1994). There have been many researches on the definition, modelling, measurement, data collection procedure, data analysis, etc., issues of service quality. In literature, common research objectives for services are as follows:

- To identify dissatisfied customers;
- To discover customers' requirements or expectations;
- To monitor and track service performance;
- To assess overall company performance compared to competitors;
- To assess gaps between customers' expectations and perceptions;
- To gauge effectiveness of changes in services;
- To appraise service performance of individuals and teams for rewards;
- To determine expectations of a new service;
- To monitor changing expectations in an industry;
- To forecast customers' future expectations.

Results of several researches in literature reveal that there is a significant positive relationship between the quality of services and customers' satisfaction and loyalty (Parasuraman *et al.* 1985, 1988; Oh 1999; McDougall and Levesque 2000; Sureshchandar *et al.* 2002; Wen-Bao 2007), there is a significant positive relationship between customers' satisfaction and customers' loyalty/retention. (Oliver 1993; Bloemer and Kasper 1995; Gremler and Brown 1996; Spreng and Mackoy 1996; Stank *et al.* 1999; Lasser *et al.* 2000; Caruana 2002; Sureshchandar *et al.* 2002; Papassapa and Miller 2007; Brady *et al.* 2002), and there is a significant positive relationship between customers' loyalty/retention and firms' profitability and performance superiority.

Fig. 1 explains the relationship between customers' satisfaction and loyalty. Fig. 2 shows the sequential relationships among service quality, customers' satisfaction, customers' loyalty and customers' retention with firms' profitability/performance superiority.

What is the quality and how it can be measured? Zeithaml *et al.* (1990) define it as the comparison of service expectations with actual performance perceptions (Gap Model). The central idea in Gap models is that service quality is a function of the different scores between expectations and perceptions. In other words, service quality is the customer's judgement of overall excellence of the service provided in relation to the quality that was expected. Fig. 3 shows an adjusted Gap model of Parasuraman *et al.* (1985).

What components create customers' expectations? Fig. 4 shows the main components which create customer expectations:

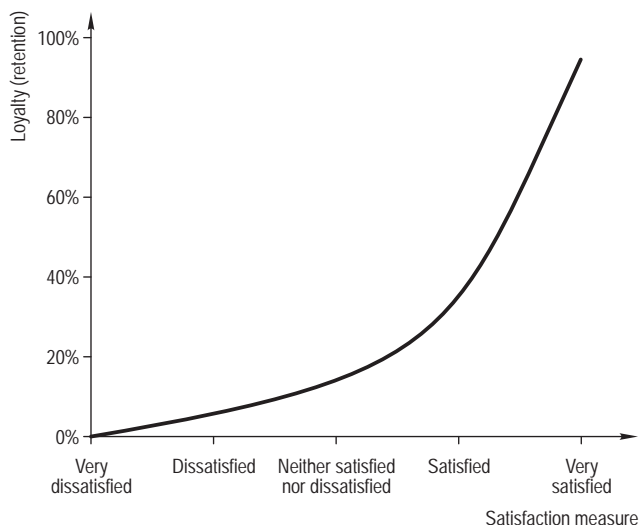


Fig. 1. The relationship between satisfaction and loyalty/retention. Source: Heskett *et al.* (1997)

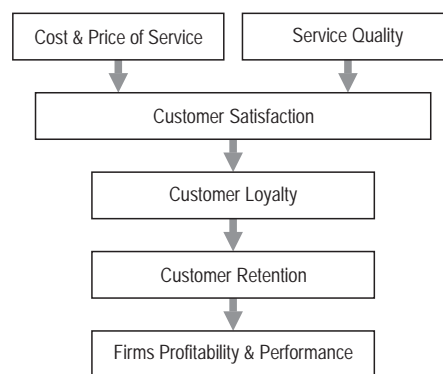


Fig. 2. The relationships among service quality, customer satisfaction, customer loyalty, customer retention with firms' profitability/performance superiority

- *Desired Service Level*: wished-for level of service quality that customer believes can and should be delivered;
- *Adequate Service Level*: minimum acceptable level of service;
- *Predicted Service Level*: service level that customer believes firm will deliver;
- *Zone of Tolerance*: range within which customers are willing to accept variations in service delivery.

What dimensions (components) create customer total satisfaction? The main components which create customer satisfaction are:

1. *Personnel*: including personnel skills and knowledge, responsiveness, communication and collaboration and friendliness components.
2. *Product*: including product variety, refund, special services and cost components.
3. *Image*: including credibility, technology excellence and ability to satisfy future needs.

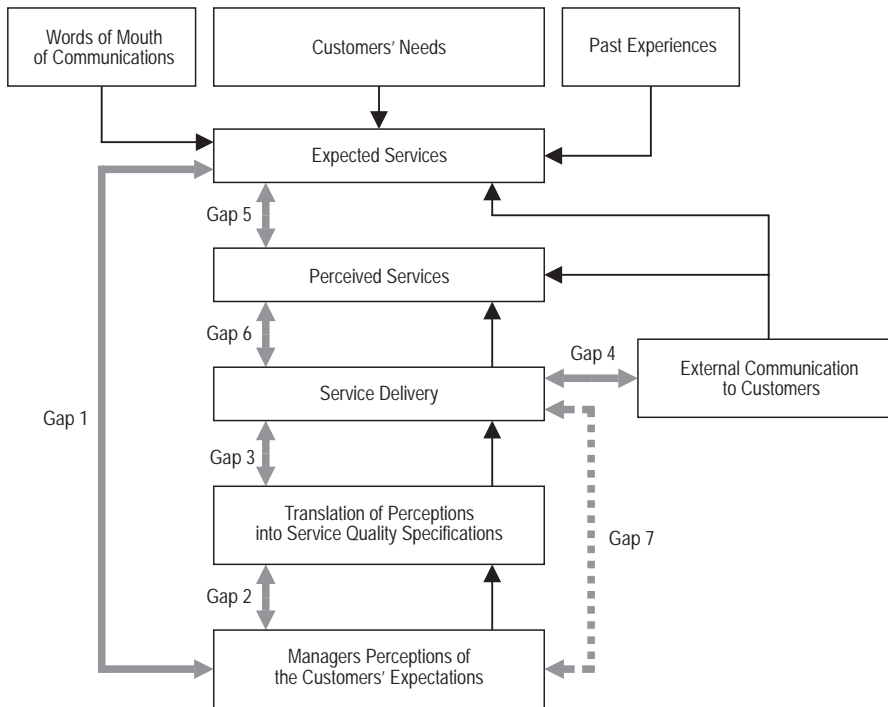


Fig. 3. Adjusted Gap model. Source: Parasuraman *et al.* (1985)

4. *Service*: including the appearance of the stores, service waiting time, services processes and service information.
5. *Access*: including network expansion, troubles in the services system and location of stores.

How could the quality of services be measured? In literature, many instruments and models have been developed to facilitate measuring the quality (Babakus and Boller 1994; Boulding *et al.* 1993; Cronin and Taylor 1992; Ghobadian *et al.* 1994; Heywood-Farmer 1988; Nitin *et al.* 2005; Parasuraman *et al.* 1991; Parasuraman *et al.* 1994a, 1994b; Philip and Hazlett 1997; Robinson 1999; Robledo 2001; Rosene 2003). Nitin *et al.* (2005) review 19 service models in the light of the changed business scenario. However, at an operational level, research on service quality has been dominated by the SERVQUAL instrument, based on the so-called Gap model (Rosene 2003). In Gap mod-

els, the central idea is that service quality is a function of the difference scores or between expectations and perceptions.

As shown in Fig. 5, service quality is naturally a multi-dimensional concept (Parasuraman *et al.* 1985; Parasuraman *et al.* 1988; Carman 1990; Teas 1993a, 1993b; Zeithaml *et al.* 1990). Five key dimensions of service quality are Reliability, Responsiveness, Assurance, Empathy and Tangibles. Reliability is defined as the ability to deliver the promised service dependably and accurately. Responsiveness is described as the willingness to help customers and provide prompt service. Assurance is the service quality that focuses on the ability to inspire trust and confidence. Empathy is described as the service aspect that stresses the treatment of customers as individuals. Finally, Tangibles focus on the elements that represent the service physically.

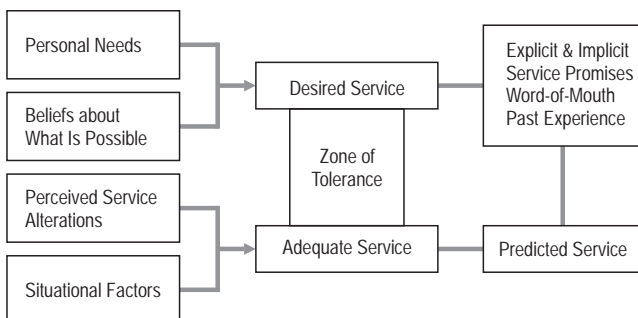


Fig. 4. Components of customer expectations

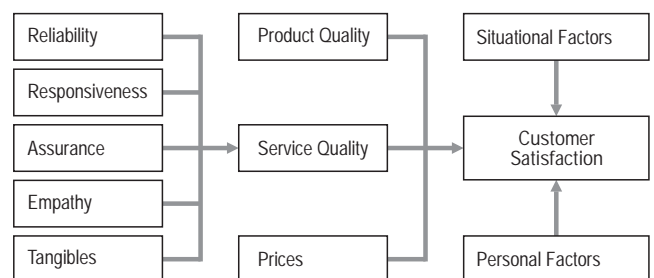


Fig. 5. Customer perceptions of service quality and customer satisfaction

In application area, assessing service quality is yet a hot subject for recent researches. For example, it is widely applied to different areas as:

- discount and department stores (Finn and Lamb 1991; Daholbkar *et al.* 1996; Stank *et al.* 1999; Miguel *et al.* 2004; Siu and Cheung 2001),
- hotel industry (Lewis 1987; Nash 1988; Barsky 1992; Tsang and Qu 2000; Wilkins *et al.* 2007),
- hospital industry and healthcare (Babakus and Mangold 1992; Youseff *et al.* 1996; Pagouni 1997; Sewell 1997; Camilleri and O'Callaghan 1998),
- education and university (Hill 1995; Galloway 1998; Orwig and Jauch 1999; Waugh 2002; Srikanthan and Dalrymple 2003),
- university library (Broady-Preston and Preston 1999; Nitecki and Hernon 2000),
- nursing homes (Curry and Stark 2000),
- physiotherapy services (Curry and Sinclair 2002),
- local authority's housing repair service (Donnelly and Shiu 1999),
- construction professional services quality (Hoxley 2000),
- financial services (Maddern *et al.* 2007),
- airline services (Pakdil and O'zlem 2007),
- purchasing (Stanley and Wisner 2002),
- information services (Philip and Hazlett 2001),
- public sectors and services (Donnelly and Dalrymple 1996; Orwig *et al.* 1997; Brysland and Curry 2001; Wisniewski 2001),
- local government (Donnelly *et al.* 1995), and
- banking industry (Avkiran 1994; Newman and Cowling 1996; Angur *et al.* 1999; Lasser *et al.* 2000; Blanchard and Galloway 1994; Allred 2000; Allred and Addams 2000; Allred 2001; Mihelis *et al.* 2001; Aldlaigan and Buttle 2002; Anvary Rostamy *et al.* 2005).

In addition, many papers in different countries around the world focused on the important and hot subject of service quality measurement and assessment (Berry *et al.* 1994; Newman and Cowling 1996; Hoxley 2000; Jannadi and Al-Saggaf 2000; Kandampully and Menguc 2000; Anvary Rostamy *et al.* 2005; Maddern *et al.* 2007).

In spite of high validity and reliability of SERVQUAL instrument, some researchers suggest that in some service firms it needs a considerable adaptation (Dabholkar *et al.* 1996). However, it still seems as the best alternative for cross-sectional research and industry benchmarking (Fitzsimmons, J. A. and Fitzsimmons, M. J. 1994).

Some researchers applied SERVQUAL concepts to measure internal service quality. They named this as

INTERSERVQUAL. (Frost and Kumar 2000; Kang *et al.* 2002).

Although the classical multi-dimensional service quality measurement methods have been widely used in several service industries, they have also been widely criticized (Asubonteng *et al.* 1996; Buttle 1996; Zeithaml *et al.* 1996). For instance, the validity and the reliability of the difference between expectations and performance have been questioned. Several authors have also suggested that perception scores alone offer a better indication of service quality (Cronin and Taylor 1992; Teas 1993a, 1993b; Orwig *et al.* 1997). One of the other critiques explained by GroËnroos (1993) is that it is required to take into account the role of expectations from a dynamic perspective. In addition, there are some critiques on the simple additive relationships between service quality dimensions (Cronin and Taylor 1992; Teas 1993a, 1993b). Zeithaml *et al.* (1996) have explicitly addressed several of these critiques.

Pakdil and O'zlem (2007) measure airline service quality based on data collected from a Turkish airline using SERVQUAL scores weighted by loadings derived from factor analysis. Their study shows that "responsiveness" dimension is the most important, while "availability" is the least important element of quality. They also concluded that passengers' educational level affects their expectations and perceptions.

Wen-Bao (2007) provides a nonlinear fuzzy neutral network model of customer satisfaction. He concluded that the interpersonal-based service encounter (IBSE) is better than the technology-based service encounter (TBSE) in functional quality, while the TBSE is better than the IBSE in technical quality. The study shows that the functional quality has a positive and significant effect on customer satisfaction; the service quality has a positive significant effect on service value; the service value has a positive and significant effect on customer satisfaction. The service encounter has a positive and significant effect on relationship involvement and the relationship involvement has a positive and significant effect on customer satisfaction.

Papassapa and Miller (2007) provide a picture of how relationship quality can influence customer loyalty in the business-to-business (BIB) context. They addressed three main following questions in Australian small to medium-sized enterprises: 1) Does relationship quality influence both aspects of customer loyalty? 2) Which relationship quality dimensions influence each of the components of customer loyalty?, and 3) Which level of relationship quality (employee level versus organizational level) has more influence on customer loyalty? Results of their study indicate that only the organiza-

tional level of relationship quality influences customer loyalty and the employee level of relationship quality does not play a significant role in influencing BIB customer loyalty.

Equipped with the literature, in the next section, we will provide our research methodology and the results of an empirical investigation in one of leading and largest Iranian banks.

3. Research methodology

3.1. Research questions and hypotheses

As mentioned earlier, this research aims to answer the following questions:

- Q1: What factors are affecting bank service quality? (Factor determination step);
- Q2: What are the relative importance weights of each factor from viewpoints of customers and employees? (Factors' weights determination step);
- Q3: How do customers and employees score bank service quality? (Comparing bank service quality measurement step);
- Q4: What about the significant difference between customers and employees' viewpoints of the quality of bank services? (Vertical or comparative gap analysis step);
- Q5: What lessons do bank managers learn from understanding the gaps? (Improvement and development of action plan design step).

To answer these five questions, the following five-step process was designed:

1. Influence factor determination step.
2. Factors' relative importance weights determination step.
3. Bank service quality measurement step.
4. Gap analysis (between customers and employees viewpoints step).
5. Improvement in action plans' priority design step.

This research investigates the following four research hypotheses:

- H1*: The relative importance weights of service quality factors are significantly different from viewpoint of bank customers.
- H2*: The relative importance weights of the service quality factors are significantly different from viewpoint of bank employees.
- H3*: There is a significant difference between the sets of relative importance weights of the service quality factors determined by customers and that of employees.

H4: There is a significant difference between the sets of bank improvement in action plans' priority determined by the customers and that of employees.

3.2. The questionnaire

In order to test the research hypotheses and measure Bank-e-Refax service quality level, an adjusted SERVQUAL questionnaire was developed (See Appendix 1). The questionnaire included eight dimensions with 32 quality factors. The dimensions and their related question numbers are as follows:

1. Tangibles: questions 1–5.
2. Reliability: questions 6–9.
3. Responsiveness: questions 10–14.
4. Confidence: questions 15–17.
5. Empathy: questions 18–21.
6. Process: questions 22–26.
7. Responsibility: questions 27–29.
8. Organizational factors: questions 30–32.

To measure the reliability of the questionnaire, Chronbach Alpha was calculated. Chronbach Alpha value for the questionnaires was 0.91. Since in this research two statistical populations should be considered (customers and employees), using clustering random sampling method, 385 questionnaires were distributed among bank customers and 305 questionnaires among bank employees.

3.3. Quality measurement and weights determination method

In order to measure bank services quality, we applied the following four well-known models:

$$\text{SERVQUAL} : \text{SQ} = \sum_j (P_j - E_j), \quad (1)$$

$$\text{Weighted SERVQUAL} : \text{SQ} = \sum_{jw_j} (P_j - E_j), \quad (2)$$

$$\text{SERVPERF} : \text{SQ} = \sum_j (P_j), \quad (3)$$

$$\text{Weighted SERVPERF} : \text{SQ} = \sum_{jw_j} (P_j), \quad (4)$$

where SQ, P_j and E_j denote service quality, performance, and expectations, respectively.

In order to determine the relative importance weight of *j*th influence factor ($w'_j; j:1, 2, \dots, 32$), Shannon Entropy Method was applied (See Appendix 2). Because of existing two statistical populations in this research, we defined $w'_c : (w'_{1c}, w'_{2c}, \dots, w'_{32c})$ and $w'_e : (w'_{1e}, w'_{2e}, \dots, w'_{32e})$ as the weights of service quality factors determined by the customers and employees, respectively. In addition, to test research hypotheses, statistical Paired Test was applied.

4. Results of empirical investigation

To answer the questions and test the research hypotheses, a field research has been conducted to measure bank service quality in one of leading and largest Iranian banks, Bank-e-Refah (Anvary Rostamy *et al.* 2005).

The first research question is 'What factors are affecting bank service quality?' The answer is provided in column 1, Table 1.

The second research question is 'How do customers and employees evaluate the relative importance weight of each influence factor?' The answer is provided in columns 4 and 5, Table 1. In other words, column 4 and 5 provide the relative importance weights of service quality factors from viewpoints of the customers, λ_{jc} , and employees, λ_{je} , respectively.

The third research question is 'How do customers and employees score bank service quality?' Tables 2, 3, 4, 5 show the results.

The fourth research question (related to the first and second research hypotheses) is 'Is there a significant difference between customers and employees' viewpoints in terms of the weights of influence factors?' Using the data reported in columns 4 and 5, the first and the second hypotheses are statistically confirmed at 99% confidence level.

The fifth research question, which is related to the third and the fourth research hypotheses, is "What lessons do bank managers learn from these discrepancies and gaps?" Result of the statistical test at 99% confidence level confirms the third research hypothesis (existing significant difference). The fourth hypothesis implies that statistically there is a significant difference between the sets of action plans' priorities ranks defined by customers and that of employees. A key question is, how the action plans' priority ranks have been determined? We answer this question by defining a new measure $P_j = w'(9 - \mu_j)$, where P_j , w' and μ_j denote the value of indicator in terms of j th quality factor, the relative importance weight of the j th quality factor, and the average of actual performance score for j th quality factor, respectively. A higher value of P_j translates to a higher priority for an action plan. In turn, a higher priority denotes a smaller rank number. Number "9" is the highest value for a given quality factor in an ideal position. Then, we calculated P_j values and sorted them in an increasing order. Columns 8 and 9 in Table 1 show the ranks of 32 service quality factors from viewpoints of customers and employees, respectively. Using data reported in columns 8 and 9, the statistical

results confirm a significant difference between two sets of priority ranks defined by customers and employees at 99% confidence level.

In summary, we concluded that:

- Both customers and employees believe that the average relative importance weights of 32 different service quality factors are significantly different.
- Statistically, there is a significant difference between the sets of relative importance weights of the service quality factors defined by customers and that of employees.
- Statistically, there is a significant difference between the sets of ranks of action plans defined by customers and that of employees.

5. Conclusions and final remarks

This research conducted a five-step procedure to answer the following five important questions:

- Q1: What factors are affecting bank service quality? (Factor determination step);
- Q2: What are the relative importance weights of each factor from viewpoints of customers and employees? (Factors' weights determination step);
- Q3: How do customers and employees assess bank service quality? (Comparing bank service quality measurement step);
- Q4: What about the significance of difference between customers and what are employees' viewpoints on the quality of bank services? (Vertical or comparative gap analysis step);
- Q5: What lessons bank do managers learn from understanding the gaps? (Improvement and development of action plan design step).

The first question was answered by a brief literature review. To answer the second and the third questions, an adjusted SERVQUAL questionnaire with 8 quality dimensions and 32 quality factors was developed and distributed among 385 customers and 305 employees. To answer the fourth question, four service quality methods (SERVQUAL, weighted SERVQUAL, SERVPERF and weighted SERVPERF) were applied. Moreover, in order to determine the relative importance weights of factors, Shannon Entropy Method was used. Finally, the fifth question was answered using Paired Test.

In summary, we found that:

- In all quality measurement models, both customers and employees scored bank service quality higher than average.
- In all models, customers' average scores were significantly higher than employees' average scores.

Table 1. Bank service quality factors, their relative importance weights and the priority rank of each factor from viewpoints of customers and employees

Bank Service Quality Factors	Relative importance weights of factors (calculated by Shannon Entropy method using questionnaire data) w_{jc}	Relative importance weights of factors (calculated by Shannon Entropy method using employees' questionnaire data) w_{je}	Relative importance weights of factors (determined by customers) λ_{jc}	Relative importance weights of factors (determined by employees) λ_{je}	Adjusted relative importance weights of factors (determined by customers) w_{jc}	Adjusted relative importance weights of factors (determined by employees) w_{je}	Priority ranks of the bank Service quality factors	From viewpoints of customers	Priority ranks of the bank Service quality factors
1. Employees who have a neat, professional appearance	0.0256	0.0143	0.03046	0.03218	0.02964	0.03291	24	24	26
2. Working environment being comfortable and attractive, visually appealing facilities	0.0251	0.0199	0.03099	0.03242	0.03069	0.0334	26	26	24
3. Visually appealing materials associated with the service	0.0336	0.0488	0.03165	0.03258	0.03201	0.03373	31	31	29
4. Easy to find a branch, easy to locate and contact	0.0265	0.0184	0.03157	0.03218	0.03184	0.03214	20	20	28
5. Material being visually appealing	0.0202	0.0162	0.03238	0.03226	0.0335	0.03307	28	28	25
6. Perform the service right and accurately especially at first time	0.0152	0.0126	0.03309	0.03269	0.03497	0.03397	29	29	27
7. Providing services at the promised time	0.0146	0.0141	0.03266	0.03322	0.03408	0.03508	25	25	3
8. Willing to help and correct the mistakes and errors	0.0158	0.0133	0.03223	0.03217	0.03319	0.03288	3	3	30
9. Dependability and the ability of employees in handling customers' service problems	0.021	0.0143	0.03268	0.03282	0.03413	0.03423	30	30	22
10. Being polite and kind especially when employees are very busy	0.0242	0.0188	0.03185	0.03139	0.0324	0.03132	22	22	32
11. Keeping customers informed about when services will be performed	0.022	0.0201	0.03067	0.03049	0.03005	0.02954	17	17	31
12. Willingness to provide advice and suggestions to guide customers	0.0182	0.0188	0.03095	0.03081	0.0306	0.03017	32	32	4
13. Easy to meet or have a session with bank managers or supervisors	0.0186	0.018	0.03146	0.03091	0.03163	0.03037	18	18	10
14. Prompt service to customers, respond quickly and efficiently	0.0229	0.0235	0.03097	0.03062	0.03064	0.02979	14	14	2
15. Employees who are confident and making customer feel safe in their transactions	0.0183	0.021	0.03232	0.03314	0.03337	0.0349	12	12	21
16. Employees who have the knowledge to answer clearly and understandably	0.0155	0.0179	0.03155	0.03307	0.0318	0.03477	19	19	9
17. Providing appropriate, accurate, clear communication and informing customers of their accounts changes	0.0192	0.0322	0.03187	0.0305	0.03245	0.02957	21	21	12
18. Employees devote enough time to their customers	0.0197	0.0222	0.03048	0.02942	0.02968	0.02751	10	10	5
19. Sincerely concerned about the problems and willing to help customers	0.024	0.0237	0.02945	0.02779	0.02771	0.02454	11	11	23
20. Providing services on holidays to remove customers' problems	0.0924	0.0951	0.02603	0.01955	0.02164	0.01215	23	23	19
21. Giving individual attention to customers, and having the customer's best interest in heart	0.0491	0.038	0.03003	0.02682	0.02881	0.02286	16	16	11
22. Using standard processes in providing banking services	0.0331	0.0318	0.03129	0.03072	0.03128	0.03	8	8	18
23. Employees who provide the services at an appropriate speed	0.0192	0.0165	0.03123	0.03195	0.03115	0.03243	27	27	14
24. Modern equipment and having up-to-date equipment	0.0725	0.0795	0.03232	0.0335	0.03337	0.03568	13	13	7
25. Reasonable waiting time	0.0389	0.0432	0.03153	0.03236	0.03175	0.03328	6	6	1
26. Enough number of employees to meet the demands	0.0772	0.0688	0.03219	0.03347	0.03311	0.03559	9	9	16
27. Being polite and kind and behavior rational	0.04	0.0251	0.03178	0.03328	0.03227	0.03519	15	15	8
28. Appropriate geographical distribution of the branches in different areas of the city	0.0467	0.0575	0.03043	0.0326	0.02959	0.03379	4	4	17
29. Willing to accommodate special requests of the special customers,	0.0485	0.0529	0.03028	0.03132	0.0293	0.03117	5	5	6
30. The reputation of the bank compared to the other banks	0.0327	0.0309	0.03116	0.03182	0.03103	0.03218	7	7	13
31. The ability to meet customers different needs and requests, service diversification	0.0259	0.0455	0.03116	0.03104	0.03103	0.03061	2	2	15
32. Balancing branch services to the different requested services	0.0235	0.0269	0.03129	0.0313	0.03128	0.03114	1	1	20

Table 2. Data for SERVQUAL Model

No. of Quality Dimension (1)	Quality Dimensions' Average Scores (Determined by Employees) (2)	Column (2)–9 (4)	Quality Dimensions' Average Scores (Determined by Customers) (5)	Column (2)–9 (6)
1	7.1143	-1.8857	7.7631	-1.2369
2	7.401	-1.599	7.8782	-1.1218
3	7.1003	-1.8997	7.5313	-1.4687
4	7.4348	-1.5652	7.6246	-1.3754
5	6.2214	-2.7786	7.0296	-1.9704
6	5.4179	-3.5821	7.1186	-1.8814
7	6.5458	-2.4542	7.5735	-1.4265
8	6.8871	-2.1129	7.1837	-1.8163
Average Quality Score	6/77	-2/34671	7/47	-1/537175

Table 3. Data for Weighted SERVQUAL Model

No. of Quality Dimensions (1)	Relative Importance weights of the Quality Dimensions (Determined by Employees) (2)	Average Dimensions' Scores Minus Ideal Average Scores or Number 9 (Determined by Customers) (3)	Relative Importance weights of the Quality Dimensions (Determined by Employees) (4)	Average Dimensions' Scores Minus Ideal Average Scores or Number 9 (Determined by Employees) (5)
1	0.16525	-0.16067	0.15768	-0.28268
2	0.13616	-0.15468	0.13637	-0.25043
3	0.15119	-0.27966	0.15532	-0.32384
4	0.09924	-0.11278	0.09762	-0.19461
5	0.08706	-0.11596	0.10784	-0.15459
6	0.16698	-0.17431	0.16066	-0.25155
7	0.10015	-0.0955	0.09116	-0.15367
8	0.09393	-0.11635	0.09334	-0.14968
	$\Sigma \approx 1$	Average Deviation from Ideals : 0.205493	$\Sigma \approx 1$	Average Deviation from Ideals : 1.54881
	Average Quality Score: 6.94507		Average Quality Score: 7.45119	

Table 4. Data for SERVPERF and Weighted SERVPERF Models

No. of Quality Dimension (1)	Relative Importance weights of the Quality Dimensions (Determined by Employees) (2)	Average Dimensions' Scores (Determined by Employees) (3)	Relative Importance weights of the Quality Dimensions (Determined by Customers) (4)	Average Dimensions' Scores (Determined by Employees) (5)
1	0.3264	6.3453	0.2895	6.9217
2	0.1606	6.24	0.1462	6.9768
3	0.1636	6.8548	0.1324	7.871
4	0.075	6.9676	0.0849	7.473
5	0.0837	7.1654	0.0849	7.5913
6	0.0972	7.2404	0.1098	7.7467
7	0.0485	7.2977	0.0604	7.8567
8	0.0449	7.4162	0.059	7.9495
	$\Sigma \approx 1$		$\Sigma \approx 1$	

Table 5. Results of SERVPERF and weighted SERVPERF Models

Number of Quality Dimensions	Bank Service Quality Average Score Using Simple SERVEPERF Model	Bank Service Quality Average Score Using Weighted SERVEPERF Model	
8	6.940913	6.94507	Employees
8	7.548330	7.45119	Customers

- Results of four models were significantly stable. It means, changing the models did not significantly change the results.
- Both the customers and the employees believe that the average relative importance weights of 32 different service quality factors are significantly different.
- Generally, there is a significant difference between what customers value and what employees think the customers value. This result reveals a significant Gap in customers and employees expectations and perceptions. It means that “what customers value and consider important may not be considered important by employees” or “what we see we may not get in practice”.

Since bank customers' preference structures and expectations may not be stable over the time, bank managers should try to have dynamic understanding of customers' needs and expectations, determine and analyse continuously the Gaps and their causes in order to develop more effective customer-oriented action plans and improve bank service quality.

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APPENDIX 1

Bank Service Quality Measurement Questionnaire

Bank Service Quality Factors	Quality Factors Importance Weights (2)					Assess Bank Actual Performance (1)				
	1	2	3	4	5	1	2	3	4	... 9
	Dimension 1: Tangibles									
1. Employees who have a neat, professional appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Working environment being comfortable and attractive, visually appealing facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Visually appealing materials associated with the service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Easy to find a branch, easy to locate and contact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Material being visually appealing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 2: Reliability										
6. Perform the service right and accurately especially at first time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Providing services at the promised time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Willing to help and correct the mistakes and errors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Dependability and the ability of employees in handling customers' service problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 3: Responsiveness										
10. Being polite and kind especially when employees are very busy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Keeping customers informed about when services will be performed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Willingness to provide advice and suggestions to guide customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Easy to meet or have a session with bank managers or supervisors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Prompt service to customers, Respond quickly and efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 4: Confidence or Assurance										
15. Employees who instil confidence in customer, making customer feel safe in their transactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Employees who have the knowledge to answer clearly and understandably	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Providing appropriate, accurate, clear communication and informing customers of their accounts changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 5: Empathy										
18. Employees devote enough time to their customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Sincerely concerned about the problems and willing to help customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Providing services on holidays to remove customers' problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Giving individual attention to customers and having the customer's best interest in heart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 6: Process										
22. Using standard processes in providing banking services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Employees who provide the services at an appropriate speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Modern equipment and having up-to-date equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Reasonable waiting time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Enough number of employees to meet the demands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 7: Responsibility										
27. Being polite and kind and behavior rational	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Appropriate geographical distribution of the branches in different areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Willing to accommodate special request of the special customers,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dimension 8: Service Organizational Factors										
30. Bank reputation compared to the other banks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. The ability to meet customers' different needs and requests, service diversification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Balancing branch services to the different requested services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Numbers 1, 2, 3, 4, 5 in column (2) denote not important, relatively important, average importance, very important and highly important, respectively.

*Numbers 1, 2, ..., 9 in column (1) denote bank actual quality degree.

APPENDIX 2

Entropy is a major criterion of uncertainty. According to Shannon Entropy Method (SEM), having a given decision matrix, D , with n indices and m alternatives, the relative importance weights for n indices can easily be determined by using the following steps:

Step 1: calculate p_{ij} where $p_{ij} = \frac{r_{ij}}{\sum_{i=1}^m r_{ij}}$ for $\forall j$;

Step 2: calculate Entropy index for each criterion j , E_j where $E_j = -k \sum_{i=1}^m [p_{ij} \ln p_{ij}]$ for $\forall j$ and $k = \frac{1}{\ln(m)}$ (m is number of alternatives);

Step 3: calculate uncertainty index for each criterion j , d_j where ($d_j = 1 - E_j$ for $\forall j$);

Step 4: calculate w_j as the relative importance weight of each criterion j by $w_j = \frac{d_j}{\sum_{j=1}^n d_j}$ for $\forall j$;

Step 5: calculate the adjusted relative importance weight of each criterion j , w'_j , where λ_j and w_j denote the relative importance weight of each criterion stated by the customer and calculated by Shannon Entropy Method, respectively.

$$w'_j = \frac{\lambda_j d_j}{\sum_{j=1}^n \lambda_j d_j} \text{ for } \forall j.$$