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EXAMINING THE DIMENSIONS OF SERVICE QUALITY MODELS: AN OVERVIEW

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Abstract

Quality management is a fundamental concept that plays a crucial role in various fields, including manufacturing, economics, marketing, and operations management. This paper explores the multifaceted nature of quality by examining different approaches to its definition. Quality, as described by renowned scholars such as Juran, Crosby, and Garvin, is not a one-size-fits-all concept but rather a dynamic and context-dependent construct.

The transcendent approach to quality, as proposed by Juran (1974), emphasizes "innate excellence." In this view, quality represents uncompromising standards and high achievement, discernible only through experience. It is an abstract concept that transcends specific criteria or measurements. Conversely, the product-based approach, as highlighted by Crosby (1979), considers quality as a "precise and measurable variable." It contends that variations in quality can be attributed to differences in the quantity of specific ingredients or attributes, often leading to higher costs associated with achieving superior quality. In the user-based approach, quality is intimately linked to customer satisfaction. This perspective, widely embraced in economics, marketing, and operations management, posits that the highest quality corresponds to the optimal satisfaction of consumer preferences. Thus, quality is measured by its ability to meet and exceed customer expectations. In contrast, the manufacturing-based approach defines quality as "making it right the first time." Rooted in supply chain management and engineering practices, this approach prioritizes error prevention and efficiency in production processes.

Keywords: Quality, Definition, Transcendent Approach, Product-Based Approach, User-Based Approach, Manufacturing-Based Approach, Value-Based Approach.

Introduction

Quality is defined as “fitness for use” (Juran, 1974) in user-based approach and “conformance to requirements” (Crosby, 1979) in manufacturing-based approach. There are five main approaches that identify the definition of quality (Garvin, 1984): (1) the transcendent approach of philosophy; (2) the product-based approach of economics; (3) the user-based approach of economics, marketing, and operations management; and (4) the manufacturing-based and (5) value-based approaches of operation management.

According to the transcendent view, quality means “innate excellence.” It is a mark of uncompromising standards and high achievement, universally recognizable, and recognized only through experience. In product-based approach, quality is viewed as “a precise and measurable variable” and differences in quality reflect differences in the quantity of some ingredient or attribute so higher quality can only be obtained at higher cost. In user-based

approach, quality is compared with the satisfaction. The highest quality means the best satisfaction of consumers' preferences. In manufacturing-based approach, quality is defined as "making it right the first time." It is supply based and concerned with engineering and manufacturing practice. In value based approach, quality is defined in terms of cost and price. It is perceived as a function of price.

There are some major differences between services and goods. The nature of services is intangible whereas goods are tangible. Since services are intangible, measurement of service quality can be more complicated. Service quality measures how much the service delivered meets the customers' expectations. In order to measure the quality of intangible services, researchers generally use the term perceived service quality. Perceived service quality is a result of the comparison of perceptions about service delivery process and actual outcome of service (Grönroos, 1984; Lovelock and Wirtz, 2011).

Sweeney et al. (1997) analyzed whether service quality in service encounter stage affects perceived value and consumer willingness to buy. As a result of the study, they found that service quality perceptions in service encounter stage affects consumers more than product quality. Also, increasing competition in the markets has led many companies to consider quality as a strategic tool. Service quality has been becoming more important and service providers should improve their service quality to gain sustainable competitive advantage, customer satisfaction, and customer loyalty. The researches in the literature showed that customers who are dissatisfied with a service spread their experiences to more than three other people (Horovitz, 1990).

The techniques of measuring service quality and the dimensions of service quality have become a major area in the marketing literature during the past few decades because of the reasons above. This study focused on the service quality measurement models. The methodology of this study was to review the existing service quality models in the literature in chronologic order. In discussion part, the relations among models were shown. It was found out three main groups that consist of service quality dimensions.

These three groups' dimensions were associated the three elements of services marketing mix (7P) such as physical environment, people, and process. It was advised that service providers and practitioners should pay attention the services marketing tools and 7P to increase the quality of their services offered. The limitation of this study was that the existing service quality models which have been developed until 2000s were reviewed since the implementations of e-services have begun to increase newly and e-service quality models have just started to evolve in these years.

Service Quality Models

Sasser et al. (1978) defined the factors that raise the level of service quality such as *security, consistency, attitude, completeness, condition, availability, and training of service providers*. Besides this, *physical quality, interactive quality, and corporate quality* also affected the service quality level (Lehtinen and Lehtinen, 1982). Grönroos (1984) developed the first service quality model (Figure 1) and measured perceived service quality based on the

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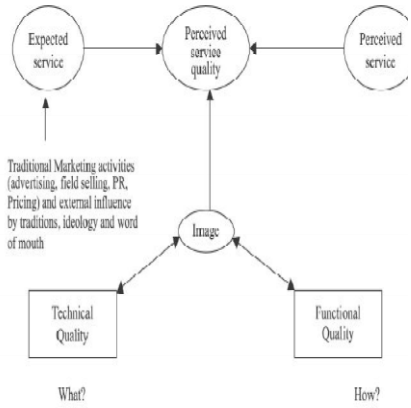
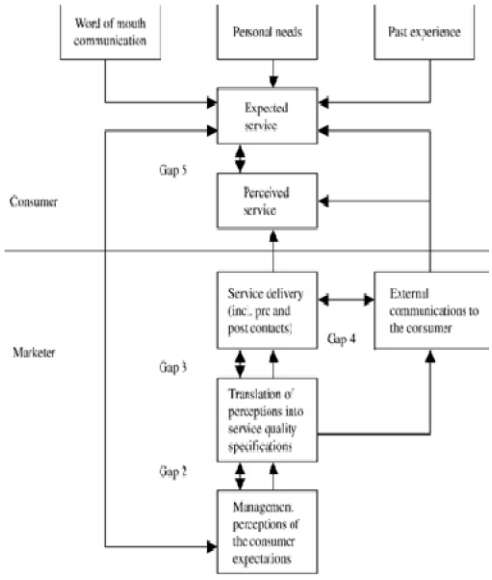
test of qualitative methods. *Technical quality, functional quality, and corporate image* were used in the model as the dimensions of service quality. Technical quality is about customer evaluations about the service. Functional quality which is more important variable for consumer perceptions and service differentiation than technical quality refers how consumers take the service. Technical quality is interested in what was delivered whereas functional quality is interested in how the service was delivered. Corporate image has a positive impact on customer perceptions.

Figure 1 Grönroos Service Quality Figure 2 GAP Service Quality Model Model





Source: Grönroos, 1984. Source: Parasuraman et al., 1985.

Parasuraman et al. (1985) analyzed the dimensions of service quality and constituted a GAP model that provides an important framework for defining and measuring service quality (Saat, 1999). They developed the GAP Service Quality Model (Figure 2) through the findings from exploratory research that contains indepth and focus group interviews. GAP Service Quality Model showed the key insights gained through the executive interviews and focus group interviews about the service quality concept. The gaps revealed by the executive interviews were shown in the marketer side (GAP 1, GAP 2, GAP 3, GAP 4), and the GAP 5 which was formed by the focus group interviews was in the consumer side of the model. The GAP relations and names were shown below (Parasuraman et al., 1985; Lovelock and Wirtz, 2011):

GAP 1: Customer expectation-management perceptions gap, *The Knowledge Gap*.

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GAP 2: Management perception-service quality specifications gap, *The Policy Gap*.
GAP 3: Service quality specifications-service delivery gap, *The Delivery Gap*.
GAP 4: Service delivery-external communications gap, *The Communications Gap*. GAP 5: Expected service-perceived service gap, *The Service Quality Gap*.
Lovelock (1994) added the sixth gap to the model as GAP 6: Service Delivery and Perceived Service, *The Perceptions Gap*. According to the responses of focus group participants, the judgments of high and low service quality depended on how consumers perceived the actual service performance in the context of what they expected, and GAP 5 showed the expected service-perceived service gap. After the gaps modeling, the determinants of service quality that consumers used when interpreting the quality were described. The ten service quality determinants and their descriptions have been identified below.

Table 1: Determinants of Service Quality

1. RELIABILITY: consistency of performance and dependability, accuracy in billing, keeping records correctly, performing the service right at the designated time.

2. RESPONSIVENESS: willingness or readiness of employees to provide service, timeliness of service such as mailing a transaction slip immediately, calling the customer back quickly, giving prompt service.

3. COMPETENCE: possession of the required skills and knowledge to perform the service, knowledge and skill of the contact and support personnel, research capability of the organization.

4. ACCESS: approachability and ease of contact, the service is easily accessible by telephone, waiting time to receive service is not extensive, convenient hours of operation, convenient location of service facility.

5. COURTESY: politeness, respect, consideration, friendliness of contact personnel, consideration for the consumer's property, clean and neat appearance of public contact personnel.

6. COMMUNICATION: keeping customers informed in language they can understand and listening to them, explaining the service itself and its cost, assuring the consumer that a problem will be handled.

7. CREDIBILITY: trustworthiness, believability, honesty, company reputation, having the customer's best interests at heart, personal characteristics of the contact personnel.

8. SECURITY: freedom from danger, risk, or doubt, physical safety, financial security, confidentiality.

9. UNDERSTANDING/KNOWING THE CUSTOMER: understanding customer needs, learning the customer's specific requirements, providing individualized attention, recognizing the regular customer.

10. TANGIBLES: physical evidence and representations of the service, other customers in service facility.

Source: Parasuraman et al., 1985.

Haywood-Farmer (1988) discussed a service quality model including three basic attributes as *physical facilities, processes and procedures, people behavior and conviviality, and professional judgment.* The service quality attributes of Haywood-Farmer were associated to service quality determinants of Parasuraman et al. (1985). This model and its association with Parasuraman et al.'s Service Quality Determinants (1985) was shown in Table 2 below.

Table 2: Haywood-Farmer Service Quality Model

Haywood-Farmer Service Quality Attributes	Parasuraman et al.'s Service Quality Determinants
1.Physical facilities, processes and procedures: location, layout, size, decor, facility reliability, process flow and flexibility, capacity balance, control of flow, range of services	Tangibles
2. People behavior and conviviality: timeliness, speed, communication, warmth, friendliness, attitude, tone of voice, dress, neatness, politeness, anticipation, handling complaints, solving problems	Reliability, Responsiveness Access, Courtesy, Communication
3. Professional judgment: diagnosis, advice, guidance, innovation, honesty, confidentiality, discretion, knowledge, skill	Competence, Credibility, Security, Understanding consumer

Source: compiled from Ghobadian et al., 1994; Dotchin and Oakland, 1994.

The models mentioned above focused on the qualitative research more than quantitative research which is empirically and psychometrically tested. Parasuraman et al. (1988) developed SERVQUAL which is an advanced

model for measuring service quality. In SERVQUAL model (Table 3), there are 5 dimensions and 22 items presented in seven-point Likert scale. They measured especially functional service quality through empirical studies in banking, credit card, repair and maintenance, and long-distance telephone services.

Table 3: SERVQUAL

Dimensions	Items
Tangibles: physical facilities, equipment, and appearance of personnel	1. should have up-to-date equipment 2. physical facilities should be visually appealing 3. employees should be well dressed and appear neat 4. appearance of physical facilities should be in keeping with the type of services
Reliability: to perform the promised service dependably and accurately	5. should do things by the time they promise 6. when customers have problems, they should be sympathetic and reassuring 7. should be dependable 8. should provide their services at the time they promise 9. should keep accurate records
Responsiveness: to help customers and provide prompt service	10. should not be expected to tell customers when services will be performed* 11. not realistic for customers to expect prompt service* 12. employees do not always have to be willing to help customers* 13. is OK if they are too busy to respond to requests promptly*
Assurance: courtesy knowledge, ability of employees to inspire trust and confidence	14. customers should be able to trust employees 15. customers should feel safe in their transactions with these stores' employees 16. the employees should be polite 17. employees should get adequate support to do their jobs well

Empathy: caring, individualized attention the firm provides its customers	18. company should not be expected to give customers individual attention* 19. employees cannot be expected to give customers personal attention* 20. unrealistic to expect employees to know what the needs of their customers are* 21. unrealistic for them to have customers' best interests at heart* 22. should not be expected to have operating hours convenient to all customers*

* reverse coded

Source: compiled from Parasuraman et al., 1988; Finn and Lamb, 1991.

Service quality can be measured by the performance-based SERVPERF scale as well as the gap-based SERVQUAL scale. Cronin and Taylor (1992) developed SERVPERF which is a performance-only model for measuring service quality with empirical studies in banking, pest control, dry cleaning, and fast food sectors. They have developed a service quality scale in respect to the dimensions of expectation (22 items-same as SERVQUAL), performance (22 items-same as SERVQUAL), importance (22 items-same as SERVQUAL), future purchase behavior (1 item), overall quality (1 item), and satisfaction (1 item) which were measured by seven-point semantic differential scale. This study showed that service quality was measured as an attitude, the marketing literature supported the performance-based measures, and the SERVPERF explained more of the variation in service quality than SERVQUAL. SERVQUAL had a good fit in banking and fast food sectors whereas SERVPERF had an excellent fit in all four industries-banking, pest control, dry cleaning, and fast food. Brady et al. (2002) mentioned that SERVPERF was the most superior model among all service quality models and they performed a replication and an extension of SERVPERF and supported the results of Cronin and Taylor (1992) in different sectors such as spectator sports, entertainment, health care, long-distance carriers, and fast food. Stafford et al. (2011) assessed the fit and stability of service quality models, and emphasized that service quality can be measured using both expectations and perceptions (SERVQUAL) or perceptions alone (SERVPERF).

Rust and Oliver (1994) proposed a three dimensional non-tested model that included service product, service delivery, and service environment. The Service Quality Ring showed ten lessons that improve the service quality (Berry et al., 1994). These lessons are listening, reliability, basic service, service design, recovery, surprising customers, fair play, teamwork, employee research, and servant leadership. These factors should be developed by service organizations to improve the service quality.

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Retailers offer a mix of goods and services rather than pure service (Berry, 1986). Since retail stores offer products and services together, measuring service quality in retailers requires different models. Dabholkar et al. (1996) developed empirically validated multilevel model called Retail Service Quality Scale (RSQS) that has 5 dimensions, 6 subdimensions, and 28 items. The scale was viewed as a general model to measure service quality of retailers such as department and specialty stores. The details of the scale and the comparison of RSQS and SERVQUAL were shown in Table 4.

Table 4: Retail Service Quality Scale

Dimensions	Subdimensions	Items	SERVQUAL Dimensions
1. Physical aspects	1. Appearance	1-3, 4	Tangibles, NA
	2. Convenience	5-6	NA
2. Reliability	3. Promises	7-8	Reliability
	4. Doing it right	9,10,11	Reliability, NA, Reliability
3. Personal interaction	5. Inspiring confidence	12-14	Assurance
	6. Courteousness	15-17,18,19,20	Responsiveness, Empathy, Assurance, NA
4. Problem solving		21,22,23	NA, Reliability, NA
5. Policy		24-25, 26, 27-28	NA, Empathy, NA

NA = Not Available in SERVQUAL Model Source: Dabholkar et al., 1996.

Philip and Hazlett (1997) proposed a hierarchical structure model called P-CP for measuring service quality in service organizations. They adopted the scale of Webster and Hung (1994) one-to-five point scale from -2 to 2 and associated P-C-P model with SERVQUAL. The model was based on pivotal, core, and peripheral attributes. Pivotal attributes which were the most important attributes that affect service quality were seen as end product or output, whereas; core and peripheral attributes were seen as inputs and processes. These attributes were shown in a triangle. Pivotal attributes were at the top, core attributes were at the second stage, and peripheral attributes were at the bottom side of the triangle. The degree of importance decreased from top to bottom of triangle.

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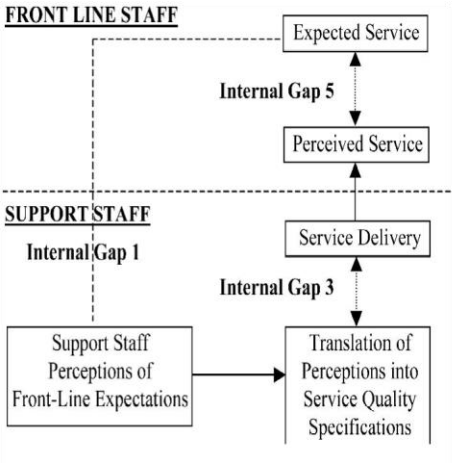
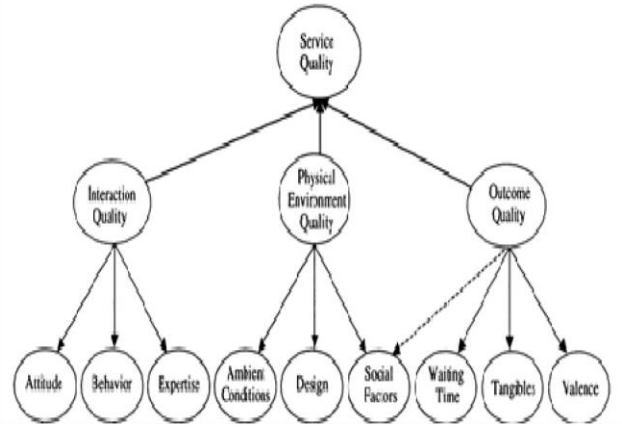
Frost and Kumar (2000) developed an internal service quality model called INTSERVQUAL (Figure 3) based on the adaptation of the GAP Model (Parasuraman et al., 1985) and the SERVQUAL (Parasuraman et al., 1988). The model measures the service quality of internal customers such as front-line staff and support staff in airline industry. As a result of the study, it was found that internal service quality was affected by responsiveness mostly, however; reliability was found as the most important influencer in SERVQUAL.

Figure 3: Internal Service Quality Model



Source: Frost and Kumar, 2000.

Figure 4: Brady and Cronin Service Quality Model



Source: Brady and Cronin, 2001.

Brady and Cronin (2001) developed a model for measuring service quality (Figure 4). According to the model; *interaction quality* that was formed by attitude, behavior, and expertise; *physical service environment quality* that was constituted by ambient conditions, design, and social factors; and *outcome quality* that was formed by waiting time, tangibles, and valence affect service quality. They used a seven-point Likert scale from to measure the consumers' attitudes towards the items under the dimensions. Martinez Caro and Martinez Garcia (2007) used this model in their empirical research for measuring perceived service quality in urgent transport service industry and they emphasized this hierarchical conceptualized and multidimensional model was a combining of Rust and Oliver model (1994) and Dabholkar et al.'s hierarchical RSQS model (1996).

Discussion

In this part, service quality models were analyzed in four groups (Table 5). The first group was formed by Grönroos (1984) and Philip and Hazlett (1997) models. They determined the service quality dimensions according to the classifying the services such as technical or functional services, and pivotal attributes having primary

importance that affect quality, core attributes having secondary importance, and peripheral attributes having significant tertiary.

Since the first group did not clearly reveal the dimensions of service quality, it was eliminated from the other parts of the study.

The second group represented the SERVQUAL model. Since Table 2 above showed the relationships among the dimensions of Haywood-Farmer Service Quality Attributes (1988) and Parasuraman et al.'s GAP Model (1985), Haywood-Farmer's model was included to the second group. In 1988, SERVQUAL model summarized all these dimensions in five dimensions such as *Tangibles, Reliability, Responsiveness, Assurance, and Empathy*. SERVPERF and INTSERVQUAL models have used the same dimensions of SERVQUAL.

Table 5: Dimensions of Service Quality Models

Study	Model	Dimension
Grönroos, 1984	Service Quality Model	Technical quality, Functional quality, corporate image.
Philip & Hazlett, 1997	PCP Model	Pivotal, Core, Peripheral attributes
Parasuraman et al., 1985	GAP Model	Reliability, Responsiveness, Competence, Access, Courtesy, Communication, Credibility, Security, Understanding/Knowing the Customer, Tangibles
Haywood-Farmer, 1988	Service Quality Attributes	Physical facilities, processes and procedures, People behavior and conviviality, Professional judgment
Parasuraman et al., 1988	SERVQUAL	Tangibles, Reliability, Responsiveness, Assurance, Empathy
Cronin & Taylor, 1992	SERVPERF	Same as SERVQUAL but with performance only statements
Frost & Kumar, 2000	INTSERVQUAL	Reliability, Tangibles, Assurance, Responsiveness, Empathy (SERVQUAL)

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Dabholkar et al., 1996	RSQS	Physical aspects, Reliability, Personal interaction, Problem solving, Policy
Brady & Cronin, 2001	Service Quality Model	Personal interaction quality, Physical service environment quality, Outcome quality

The third group consisted of Retail Service Quality Scale's dimensions which can be used for measuring department and specialty stores' service quality. It showed the service quality model for retail industry had another five dimensions such as
*Physical aspects, Reliability, Personal interaction, Problem solving, and Pol*icy.
The fourth group was comprised of Brady and Cronin Service Quality Model (2001). They developed SERVPERF dimensions and revealed three main service quality dimensions such as *Personal interaction quality, Physical service environment quality, and Outcome quality*.

The last three groups were attained from different service quality models such as SERVQUAL, RSQS, and Brady and Cronin service quality model. The dimensions of these models were classified according to the three elements of services marketing mix (7P) such as physical environment, people, and process (Table 6).

Table 6: Service Quality Dimensions and Services Marketing Mix

	Physical Environment	**People**	**Process**
Group 2: SERVQUAL Dimensions	Tangibles	Responsiveness, Assurance, Empathy	Reliability
Group 3: RSQS Dimensions	Physical Aspects	Personal interaction, Policy	Reliability, Problem solving
Group 4: Brady & Cronin Service Quality Model Dimensions	Physical service environment quality	Personal interaction quality	Outcome quality

The dimensions of each model were related to the three elements of services marketing mix. As a result; tangibles, physical aspects, and physical service environment were related to the Physical Environment element.

Responsiveness, assurance, empathy, personal interaction, and policy were related to the People element. Reliability, problem solving, and outcome quality were related to Process element.

Conclusion & Practical Implications

This study explained the measurement techniques of service quality. According to the literature review, it can be said that SERVQUAL was the most used model when measuring service quality. Although too many criticisms about SERVQUAL made in the past years (Carman, 1990; Babakus and Boller, 1992; Brown et al. 1993), it has become the most widely applied scale in researches. SERVPERF became an alternative measurement scale of SERVQUAL. SERVPERF was constituted with a different point of view and called perception only model.

However, it was mostly seen in the literature that both gap based and perception based models have been implemented for assessing of service quality. Moreover, there were plenty of models that were derived from SERVQUAL

(DINESERV - Stevens et al., 1995; INTSERVQUAL - Frost and Kumar, 2000) and SERVPERF (SQUAL - Karatepe et al., 2005; Brady et al., 2002) in the literature and they have been also used excessively in service quality researches.

Services marketing mix was created to meet customer needs profitably in a competitive service marketplace. It consists of the elements such as product, price, place, promotion, physical evidence, people, and process. In this study, only three elements of services marketing mix were used to establish the relations with service quality dimensions. The elements used in this study were: *Physical Environment*: Designing service scape and providing tangible evidence of service performances such as interior design, furnishings, vehicles/equipment, staff clothing. *People*: Interactions between customers, service providers, and also other customers. This element strongly influences customer perceptions of service quality. *Process*: How firm delivers services.

According to the exploratory findings of this study; tangibles, physical aspects, and physical service environment were related to the Physical Environment element. Responsiveness, assurance, empathy, personal interaction, and policy were associated to the People element. Reliability, problem solving, outcome quality were related to Process element.

Measuring the quality of service effectively requires understanding the nature of services. Services are distinguished from goods due to their natures and characteristics. Service providers should pay attention marketing tools to develop services offered and increase the quality of services. In order to manage services provided, practitioners need to pay attention on services marketing mix.

In this study, it was found out that to gain the optimal service quality that customers expect, practitioners should increase employee satisfaction and enhance interactions between employees and customers (People element), design physical environment tools according to the target market customer expectations (Physical element), manage the process in pre-sale, service encounter, and after-sale stages (Process element).

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Limitations & Future Research Directions

This study reviewed the service quality models that have been developed until 2000s. After the year 2000, the researches focused on electronic service quality more than traditional service quality. Hence, this study showed the common models from 1980s to 2000s.

A similar study can be developed for e-service quality models and their dimensions. Due to the distinctive characteristics of electronic services, measuring eservice quality differs from measuring traditional service quality (Ghorbani and Yarimoglu, 2014). E-service quality models have been analyzing the website characteristics and also internet marketing tools except services marketing. Defining the relationships among the dimensions of e-service quality models, services marketing, and internet marketing is a wide range of subject to research.

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