

A Conceptual Process of Implementing Quality Apparel Retail Store Attributes: An Application of Kano's Model and the Quality Function Deployment Approach

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Abstract

Retail store attributes play a significant role in customer satisfaction. It is important to identify the attributes, prioritize them and strategically focus on implementing important attributes that fulfill customer expectations. Very limited studies have been directed towards understanding the accurate roles of store attributes in customer satisfaction and effectively implement important store attributes in apparel retail store settings. Therefore, this study proposes a conceptual frame work for implementing quality apparel retail store attributes using an integrated method of Kano's model and the quality function deployment approach which ensures customer satisfaction.

Key words: Store attributes, Apparel retail store, Kano's method, QFD, Customer satisfaction

Introduction

Competition among U.S. apparel retailers has reached an unprecedented level of intensity. To drive profits and remain competitive, retailers must be able to attract and retain customers. Retail store attributes play a significant role in consumer store choice, purchase decision, and satisfaction (Berry, 1986; Leszczyc & Timmermans, 2001). Therefore, retailers' thorough understanding as to which store attributes attract customers is critically important. As such, a wide variety of store attributes (Birtwistle & Shearer, 2001; Chowdhary, 1999; Lindquist, 1974) and their importance have been identified (Berry, 1986; Leszczyc & Timmermans, 2001). While attributes play a critical role in customer satisfaction, not all store attributes are equally important in affecting customer satisfaction (Mittal, Ross, & Baldasare, 1998) and the relationship between attributes and satisfaction is not as simple as linear (Ting & Chen, 2002).

In other words, only a slight change of an attribute can greatly improve customer satisfaction, while greater efforts on another attribute can result in only a little improvement in customer satisfaction. Therefore, in order to effectively manage store attributes, identifying attributes that need to be prioritized and strategically focusing on implementing important attributes that fulfill customer expectations is important. Nevertheless, very limited efforts have been directed to understanding the accurate roles of store attributes in customer satisfaction and how to effectively implement important store attributes in retail store settings. In order to practically assist retailers in identifying and implementing important store attributes, this study employs Kano's theory and Quality Function Deployment (QFD), which have been widely utilized in operation discipline. Kano's theory provides an effective approach for categorizing and prioritizing the customer's evaluation of attributes into different types: 'must-be attributes,' 'performance attributes,' and 'attractive attributes,' each of which affects customer satisfaction in different ways (Kano, Seraku, Takahashi, & Tsuji, 1984).

While Kano's classification aids in prioritizing important attributes, QFD guides in implementation of these important attributes. QFD provides a structured process for service providers to assure high quality attributes and customer satisfaction while maintaining a competitive advantage. The 'Quality' in QFD refers to delivering *value* to customers by identifying customer wants and needs and translating these demands into actionable services. The purpose of this study is to provide assistance to the apparel retail industry by guiding the *process* of implementing quality retail store attributes by integrating Kano's model and QFD. The scope of this study is to illustrate *how to*, rather than actual implementation. This study focuses on apparel retail stores for two reasons. Because of their critical role in creating brand image, store attributes in apparel retail stores need to be more carefully manipulated than in other retail sectors. In addition, the low growth rate of U.S. apparel retailers for the past 10 years (Badgett, Boyce, Vantine, & Hittner, 2008) may necessitate that the sector find ways to attract and retain more customers. This study begins with introducing Kano's classification of store attributes, and then discusses implementation of important store attributes using the QFD method. Finally, academic and practical implications and suggestions for future research are discussed.

Literature Review

Kano's theory

Professor Noriaki Kano developed Kano's theory in the '80s. Noting the different roles of attributes on customer satisfaction, Kano distinguished the attributes into three distinct categories: 'must-be attributes,' 'performance attributes,' and 'attractive attributes' (Kano et al., 1984). Customers believe that a *must-be* attribute is a necessity and a prerequisite. If this attribute is not present, customers will be dissatisfied, but the presence of the attribute will not increase customer satisfaction. Must-be attributes are a decisive competitive factor; if they are not fulfilled, the customer will not be interested in the product at all (Matzler & Hinterhuber, 1998). An example of a must-be attribute in an apparel retail store could be the dressing room. The customers may expect a dressing room and take it for granted; without it customers will be dissatisfied. *Performance attributes* are related to the performance of the product and are usually explicitly demanded by customers. When a performance attribute is present, customers will be satisfied. The higher the attribute performance is, the higher the level of satisfaction will be. When this attribute is not present, though, customers will be dissatisfied. For example, a performance attribute in a retail store could be the store personnel.

The better the store employee performs his duties, such as helping the customer, being courteous and friendly, etc., the more satisfied the customer is, and vice versa. *Attractive attributes* have the greatest influence on how satisfied a customer will be with a given product. Attractive requirements are neither explicitly stated nor expected by the customer. The presence of attractive attributes leads to more than proportional satisfaction. If attractive attributes are not present, however, there is no feeling of dissatisfaction (Matzler & Hinterhuber, 1998). An example of an attractive attribute in an apparel retail store could be a magic mirror in the dressing room that displays a description of the garment, as well as other available colors and sizes, and suggests accompanying accessories. The absence of a magic mirror will not necessarily result in customer dissatisfaction or loss of customers, but the presence of the mirror creates joy for consumers, more than mere satisfaction.

Further, Kano developed a special questionnaire through which the customer requirements of store attributes can be accurately traced. To distinguish the type of customer requirements of store attributes (must-be, performance, and attractive), this special questionnaire is used, which has a pair of questions, one functional and one dysfunctional. The functional form of the question provides the customer's perception/reaction if the store has a certain attribute, and the dysfunctional form of the question provides the customer's perception/reaction if the store does not have the attribute (Matzler & Hinterhuber, 1998). Both types of questions provide five different response options for consumers to choose from, as shown in Table 1.

Table 1. An example of question structure in Kano’s theory

If the fitting room is present in an apparel store how do you feel? (Functional form of the question)	1. I like it that way 2. It must be that way 3. I am neutral 4. I can live with it that way 5. I dislike it that way
If the fitting room is not present in an apparel store how do you feel? (Dysfunctional form of the question)	1. I like it that way 2. It must be that way 3. I am neutral 4. I can live with it that way 5. I dislike it that way

Source: Matzler, Hinterhuber, Bailom, & Sauerwein 1996, p. 10.

Kano produced a rigorous methodology for mapping consumer responses. After the information is extracted from the survey, Kano’s evaluation table is used to tabulate the data; Table 2 provides an example. Kano classification begins with the tabulation of survey responses and distinguishing the attributes into different categories (M, P, A, I, Q, or R) based on the largest number of inputs. For example, if the highest number of responses for ‘fitting room’ is the must-be category, ‘fitting room’ is labeled as a must-be (M) attribute. Likewise, the various product attributes are classified into different categories.

Table 2. Kano evaluation table

Functional Question (Positive) Question	Dysfunctional (Negative) Question				
	Customer Requirements	1.Like	2.Must-be	3.Neutral	4.Live with
1.Like	Q	A	A	A	P
2.Must-be	R	I	I	I	M
3.Neutral	R	I	I	I	M
4.Live with	R	I	I	I	M
5.Dislike	R	R	R	R	Q

Source: Matzler, Hinterhuber, Bailom, and Sauerwein 1996, p. 10.

Note: M = must-be attribute; P = performance attribute; A = attractive attribute; I = indifferent attribute; R = reverse attribute; Q = questionable attribute.

Classifying and differentiating product attributes by means of the Kano method provides the following advantages (Matzler & Hinterhuber, 1998).

- Kano’s classification aids in understanding the important attributes that influence customer satisfaction. Classifying the attributes into must-be, performance, and attractive categories can be used to focus on priorities for attribute implementation.
- Knowing the classification of particular attributes provides valuable help in trade-off situations in the attribute implementation stage. If two attributes cannot be incorporated simultaneously due to technical or financial reasons, the attribute that has the greatest influence on satisfaction can be identified and prioritized.
- Determining and satisfying attractive attribute requirements of consumers enables to differentiate the products and/or services over competitors.

Because of these advantages, Kano’s theory has been used widely in different contexts and product categories. For example, Kano’s theory was employed to understand accurately the nature of VOC (voice of customer), where customer requirements are outlined (Tan & Shen, 2000). Kano’s theory was also used to categorize web-community service quality dimensions and their elements to understand the demands of users (Kuo, 2004). Ting and Chen (2002) used Kano’s theory to understand asymmetrical and non-linear effects of store attributes on customer satisfaction.

Further, Kano's theory was employed in identifying important product attributes that enhance customer satisfaction across product categories, such as television sets (Kano, 2001), e-services (Witell & Fudin, 2005), retail store price perceptions (Zielke, 2008), industrial product designs (Tontini, 2007), and employee compensation satisfaction (Matzler, Fuchs, & Schubert, 2004). While Kano's theory aids in prioritizing important attributes, these attributes can be used as inputs for the Quality Function Deployment (QFD) process for successful implementation of quality attributes.

Quality Function Deployment (QFD) process

The QFD concept originated in Japan in the 1970s as a concept for new product development under the umbrella of total quality control. In the 1980s, it became increasingly popular in the Western world in the automotive industry as an important way for improving design quality. It has been successfully applied in many Japanese organizations to improve manufacturing processes and to build competitive advantages (Hauser & Clausing, 1988). The founder of QFD, Akao (1972, p. 8) defines it as "a method for developing a design quality aimed at satisfying the customer and then translating the customer's demands into design targets and major quality assurance points to be used throughout the production phase." Whereas, Terninko's (1997, p. 3) incorporated marketing concept into its concept and defined QFD as "a modern quality system aimed at increasing market share by satisfying the customer." The QFD approach is different from the traditional approach that focused on improving physical quality (Sharma, Rawani, & Barahate, 2008) in the sense that QFD provides a organized way for firms to assure quality as well as customer satisfaction while being able to maintain a competitive advantage.

Some advantages of QFD are that it reduces the start-up costs of new product development, shortens design cycles, increases efficiency, and saves time (Bayraktaroglu & Ozgen, 2008). QFD also enhances the number of satisfied customers because the customers' needs and desires are met or exceeded by the product/service. In the QFD process, the marketing and manufacturing departments should cooperate closely with the design engineers to ensure implementation of customers' requirements in the final product or service.

The QFD process consists of four phases. The first, the *design phase*, begins with understanding and evaluating customer requirements by various methods, such as focus groups, questionnaires, in-depth interviews, or observation of customers. A structured list of customer requirements, competitive opportunities, and technical abilities to meet the customer requirements are documented in this phase. Next, the requirements are prioritized regarding their importance. Kano's model can be used effectively in the QFD process to gather information because the customer requirements can be categorized via Kano's analysis model as must-be, performance, and attractive requirements. Further, the QFD process compares the organization's products/services with those of the competition through a competitive analysis by asking customers the performance levels of the company's products/services and the performance levels of the competitors' products/services on each requirement. This provides the opportunity for the organization to see whether it has competitive advantages and, if it does, on which important customer requirements (Bayraktaroglu & Ozgen, 2008). In the second phase, the *descriptive phase*, customer specifications of the product or service requirements are evaluated.

The QFD team in the firm can discuss the requirements necessary to meet the wants and needs of the customers. The product or service attributes that are important to meet customer needs are then deployed into the process planning phase. In the third phase, the *process planning phase*, the various processes involved in producing a product or service are assessed and the one that poses the most benefit is selected. The fourth phase, the *implementation phase*, provides a guide through the product/service development cycle from product design to production to help implement the customer requirements. In this phase, the solutions are implemented that help to satisfy the customer requirements. Finally, all of this information is analyzed in a matrix called house of quality (HOQ), which "links customer needs to the development team's technical responses to meet these needs" (Chan & Wu, 2002, p. 25). In all the phases, decisions are based on the highest level of customer satisfaction. Therefore, one of the advantages of the QFD process is that all the business functions involved in the process focus on achieving a common goal, customer satisfaction. The most recognized tool often used in the application of QFD is the HOQ matrix (Hauser & Clausing, 1988). Therefore, this study utilizes HOQ to demonstrate the application of QFD in apparel retail settings.

Implementation of quality store attributes in apparel retail store contexts

The following six steps illustrate the implementation of store attributes using the HOQ tool, a technique of the QFD process, with inputs from Kano's classification.

Step 1: The first step identifies the customer expectation of important attributes in an apparel retail store. In this step, the information obtained from Kano’s analysis model can be inputted. The Kano model can be integrated into the QFD process in order to understand customer requirements in more detail and to differentiate the requirements into must-be, performance, and attractive requirements. For example, store attributes such as merchandise, service, clientele, physical facilities, convenience, promotion, and store atmosphere can be categorized into Kano’s must-be, performance, and attractive attributes.

After classifying the attributes into Kano’s categories, a retail store can prioritize the attributes based on their goals. That is, all must-be requirements should be fulfilled so that the customers are not dissatisfied. In order to be competitive as a market leader, a retail store should satisfy the performance attributes. A retail store can then focus on attractive attributes if its goal is to differentiate itself from its competitors (Shen, Tan, & Xie, 2000).

Step 2: Step 2 determines how important the attributes are for the customers. That is, the weight of each attribute is determined by the customer survey results. Additionally, this step classifies how apparel retail store X is perceived compared to its competitors, stores A, B, and C. This is achieved by the customer competitive assessment survey, which measures customer perceptions of product attributes relative to competitors’ product attributes. The importance is ranked on a scale of 1 to 10 (1 being Worst and 10 being Best).

Figure 1 illustrates Step 2 of the process.

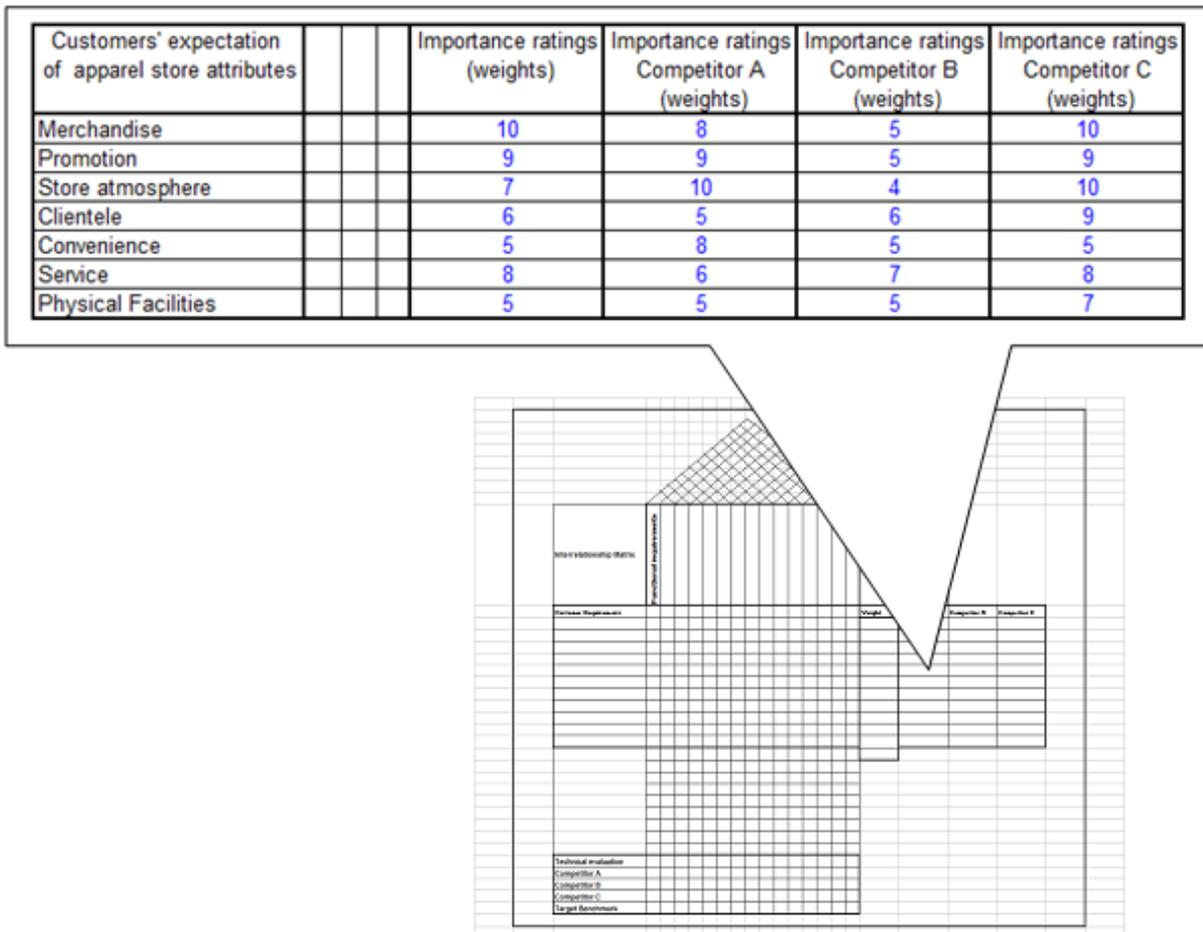


Figure 1. QFD Step 2: Determining the customers’ importance of each store attribute and their perceptions of these attributes in competitors’ stores.

Note: This figure is adopted from Simelton (2007). The attributes and the numbers are hypothetical and suggested by the authors. In reality, the numbers in this figure can be determined by analyzing a customer survey.

Step 3: The critical customer requirements are translated into achievable functional measures or actions in Step 3. For example, implementation of the store attribute quality ‘merchandise’ can be achieved by translating the attribute into an action, such as providing quality merchandise, providing deep assortments, providing stylish and fashionable apparel, displaying merchandise in an appealing manner, etc. The identified important store attributes are evaluated by the team of experts. In an apparel retail store setting, the team of experts can consist of designers and visual merchandisers who will decide upon the quality, assortment, and display of merchandise. The team will identify all possible ways to implement the important store attributes, and the experts will identify an approach to implement these attributes that will capture all possible ways to increase customer satisfaction.

Step 4: The relationship between the achievable functional measures (Step 3) and the customer requirements (Step 1) is assessed in Step 4 (see Figure 2). Based on their experience and strategic view, the group of experts determines whether the relationship between functional measures and customer requirements is strong (9), moderate (3), or weak (1) and assigns values in each cell for each relationship. If the expert group finds a moderate relationship, the members may re-examine the functional measure and try to strengthen the relationship. The final score or priority score is calculated by multiplying the importance rating for each attribute (outputs of Step 1) by a relationship weight value (9, 3, or 1) of the identified achievable functional measures (outputs of Step 3) and adding all the values. The highest final score (priority rating) indicates which functional measure is an important and appropriate strategy (store attribute) to implement to attract customers to the store. For example, in Figure 2, the highest priority rating is 182, followed by 172. The underlying functional measure for these ratings is ‘provide deep merchandise assortment’ and ‘stylish and fashionable merchandise,’ respectively. The company should therefore seek to achieve these functional measures before other functional measures.

Step 5: The technical and competitive evaluations are done by comparing the apparel store of interest to its most serious competitors. For example, if the study is being conducted on a specialty apparel retail store, then Old Navy, Gap Inc., American Eagle Outfitters, etc. can be compared for competitive evaluations because they represent specialty apparel stores that carry similar merchandise and cater to similar customer age groups. Finally, the technical team provides target values that serve as directions to set a strategy that can match the store of interest to its closest competitor on the most important customer expectation.

Step 6: Correlations among the achievable functional measures are recognized. The functional measures that support one another and those that conflict are identified. For example, the functional measures ‘aisle placement and width,’ ‘store layout,’ ‘merchandise display,’ and ‘store congestion’ have

	Functional measures (strong=9;moderate=3;weak=1)	provide quality merchandise	provide deep merchandise assortment	stylish and fashion apparel	discount coupons by mail & online	merchandise display	store congeniality	aisle placement & width	carpeting	store layout	store location in convenient place	convenient parking area	courteous store personnel	flexible merchandise return policies	store lighting	Importance ratings by Customers (weights)
Merchandise		9	9	9	3	3	1	1	1	1	1	1	3	3	1	10
Promotion		1	3	3	9	1	1	1	1	1	1	1	1	1	1	9
Store atmosphere		1	1	3	1	9	9	9	9	9	1	1	1	1	9	5
Clientele		1	3	1	1	1	1	1	1	1	1	1	9	9	1	6
Convenience		1	3	1	3	1	3	1	1	1	9	9	1	1	1	4
Service		3	3	3	3	1	1	1	1	1	1	1	3	3	1	8
Physical facilities		1	1	1	1	1	1	3	3	1	1	1	1	1	1	6
Priority rating		144	182	172	164	108	96	100	100	88	80	80	132	132	88	

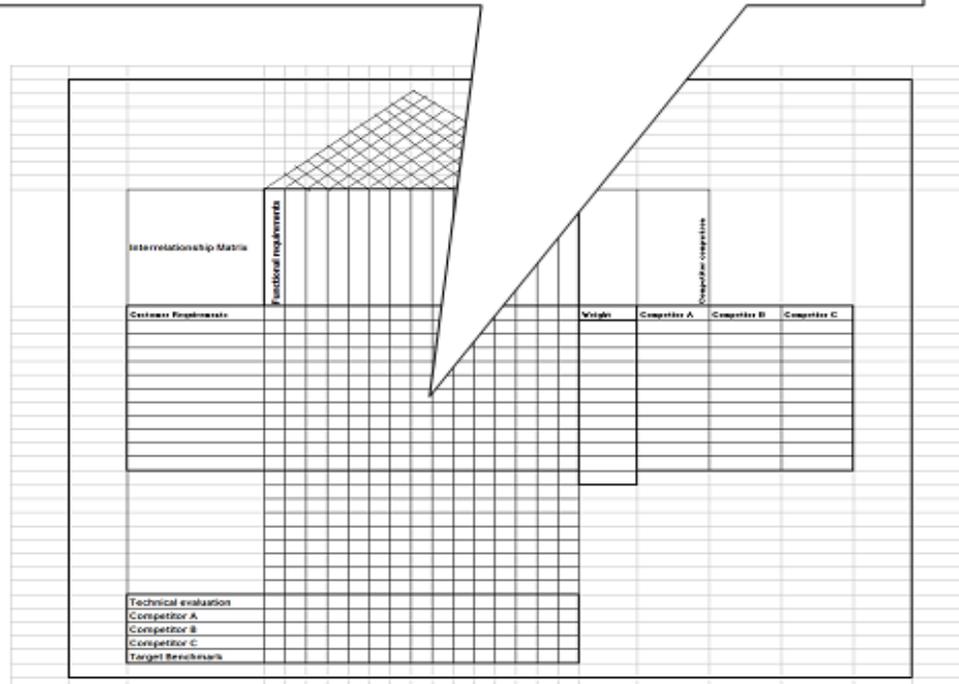


Figure 2. QFD Step 4: Assigning values for a relationship between the achievable functional measures and the customer requirements, and then determining the priority rating.

Note: This figure is adopted from Simelton (2007). The attributes and the numbers are hypothetical and suggested by the authors. In reality, the functional measures and the numbers in this figure are inputted by the expert team correlations. Specifically, ‘aisle placement and width’ and ‘store layout’ may have a positive correlation. That is, if the aisles are placed at an appropriate width, the store layout will be appealing to customers and the customers will be satisfied.

On the other hand, ‘aisle placement and width’ and ‘store congestion’ may have a negative correlation. That is, if the aisles are not placed at an appropriate width and are placed too narrow, the store will be congested and customers may be dissatisfied. The correlation matrix provides room to identify the supporting and conflicting measures and aids the technical team in resolving the conflicts by highlighting the conflicting measures.

The correlations are indicated by symbols to depict strong negative, negative, and positive relationships between achievable functional measures. This completes the HOQ. The final output of the matrix specifies important attributes to be considered and the best way to implement these attributes, which are linked back to the demands of the customer or customer requirements. Figure 3 depicts the overall HOQ process to implement apparel store attributes. The priority ratings in Figure 3 indicate that the retailers should consider the measures in the order of highest priority ratings. For example, in Figure 3 the highest priority rating is 182 and the underlying functional measure is to provide deep merchandise assortment. This measure should be considered as the most important priority, followed by other measures in order of highest rating, and retailers should formulate appropriate strategies to meet customer expectations for the underlying measures. The competitor comparison column in Figure 3 aids retailers in understanding the customer perception of product attributes in relation to competitors' product attributes, which further aids them in competitive benchmarking. The technical evaluation values of competitors allow the retailers to set target values. For example, for providing deep merchandise assortment, competitor B's technical value evaluation 3 is the highest among the three competitors. Thus, technical value 3 is set as a target value for the retail store of interest. Likewise, the highest technical evaluation value among the three competitors for each functional measure is set as a target value for the retail store. This helps the retailer formulate appropriate strategies to implement the important attributes that can match or exceed competitors, while also satisfying customer needs.

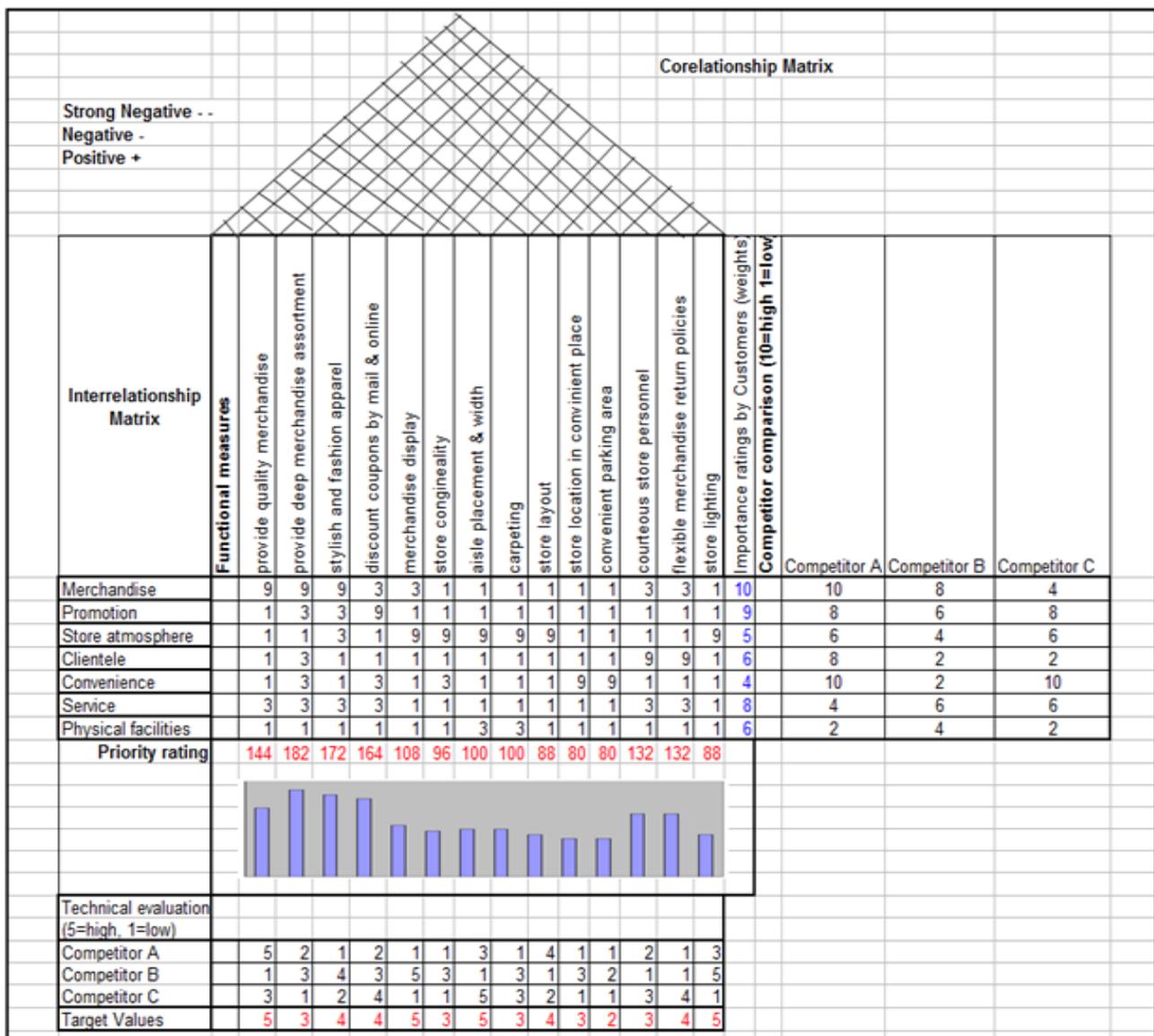


Figure 3. Summary of quality application process to implement apparel store attributes.

Note: This figure is adopted from Simelton (2007). The attributes, functional measures, weights, and all the numbers are hypothetical and suggested by the authors.

Discussion and Conclusions

This study demonstrates how Kano's model and QFD processes can be utilized for identifying, prioritizing, and implementing apparel store attributes to maximize customer satisfaction. For the successful implementation of store attributes that optimize customer satisfaction, inputs from both the customer and the expert team are critical. Through various methods, such as focus groups, questionnaires, in-depth interviews, and customer observation, customer requirements of store attributes and customer perceptions of competitors' store attributes can be gathered. With the data, store attributes can be classified into must-be, performance, and attractive dimensions utilizing Kano's theory. This process helps the expert team to understand which attributes are taken for granted by consumers (must-be attributes), which attributes are directly related to customer satisfaction (performance attributes), and which attributes will make the store stand out in the market (attractive attributes), which the expert team can then use to prioritize important store attributes and build strategies to implement the attributes.

This study demonstrated step by step how the QFD process can be applied effectively in the implementation of apparel store attributes to optimize efforts to increase customer satisfaction. In that sense, QFD provides multiple benefits for retailers; it allows the retail organization i) to prioritize the list of attributes customers look for in an apparel store from the inputs of Kano's classification of attributes, ii) to prioritize what the company can do to satisfy customer requirements, iii) to discover the store's performance against its competitors, iv) to set realistic target values that will almost guarantee customer satisfaction, if met, and v) to assure a better product, process, or service.

Academically, this study fills a void in the research on store attributes. Previous studies focused primarily on identifying store attributes that affect customer satisfaction in a given study setting (Mittal et al., 1998; Tan & Shen, 2000) and were limited in fully examining *which* attributes influence customer satisfaction the most and *how to implement* those attributes strategically. This study, however, provides a means to identify and classify retail store attributes in a way that ensures customer satisfaction and also illustrates how to implement these attributes. In addition, although the integrated approach of Kano's model and QFD had been studied in a couple of research settings (i.e., innovative product development (Shen et al., 2000) and quality library services (Bayraktaroglu & Ozgen, 2007)), its application to the apparel retail store setting had not previously been attempted. The integrated approach of Kano's model and QFD in apparel retail settings helps to identify the different levels of customer requirements for apparel store attributes (Kano's model) and details strategic planning to implement these attributes (QFD) accordingly. This approach is innovative as well as practical since it approaches customer satisfaction holistically by taking consumers' perceptions of competitors into account and putting customer data and an expert team's efforts together. The method suggested in this study advances our understanding of store attributes and the management of store attributes for customer satisfaction.

The practical contribution of this study is that it provides U.S. apparel firm managers with more definitive information on implementing apparel retail store attributes. In particular, the integrated approach enables retailers to differentiate customer expectations of store attributes into must-be, performance, and attractive attributes. This differentiation of attributes serves as an important basis on which retailers can develop realistic strategic planning to implement the important attributes. For example, the attractive attributes, if implemented, will enable a retailer to differentiate itself from competitors, and the must-be attributes will ensure customer satisfaction.

This study is limited to demonstrating the implementation process. Future research may consider validating the study by capturing data from the actual implementation process of retail store attributes using the proposed framework.

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