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Designing Service Quality in Four Star Hotels Based on Inbound Traveler´s Point of View

Case of Safir Hotel

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Designing service quality in four star hotels based on inbound traveler`s point of View

(Case of Safir Hotel)

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Abstract

Evolution of economies worldwide highlights the fact that the service sector is growing faster than any other sectors. In contrary, the productivity and consequently the quality of this sector seems to be declining. Therefore, designing quality service is considered as a major challenge in service organizations and especially in those who want to have a customer based design.

In this thesis a new methodology has been proposed to prioritize Service Process Design Characteristics (SPDCs) based on customer requirements. For this propose, literature has been reviewed and classified, considering their contribution to different parts of methodology. Two comprehensive sets of customer requirements and SPDCs have been developed, which in turn supported the house of quality (HoQ) analysis. The proposed methodology has been examined in Safir hotel as a four star hotel in Isfahan. Data has been gathered from designed questionnaires and statistically analyzed. After computing the matrix in HoQ the total values of SPDCs have been found and prioritized then, they have been compared with the priorities from manager's point of view and the differences have been finally highlighted. Although the research questions have been 3 folded and all answered effectively, some

additional analysis have also been provided by which, the researcher believes they could add value to the research. Those inclu analysis of performance in addition to importance of customer requirements and also their correlation analysis.

The outcomes imply that the new methodology has the capability to be specialized for particular hotels, such as Safir hotel. The difference between the results of the proposed methodology and the managers point of view outlines the fact that the new methodology is much more effective than the traditional approaches, in which the service process design characteristics are prioritized based on managers' point of view. Some of the major limitations of the research include time consuming of data gathering and analysis, difficulty in managing large matrixes and lack of generality in application. However, some recommendations and suggestions have been presented, by which the applicability and effectiveness of the proposed methodology is expected to increas

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CHAPTER 1
INTRODUCTION

1.1. Introduction

In chapter 1 the aims and main question of this research are introduce, the key words and abbreviations are defined importance and justification of the research of the study are discussed and the chapter's design is briefly presented.

1.2. Research Type

1. Practical
2. Development

1.3. Keyword

1. Design
2. Service quality
3. Hotel management
4. Hospitality
5. Tourism
6. Customer
7. Quality function deployment

1.4. Problem Statement

Designing quality service is an important issue in today's world of competition in the tourism industry and in particular in the hotel sector. Although numerous resources are available on the subject of service quality design, only a few have provided a comprehensive framework and rarely have taken customer point of view in their studies. This study attends to propose a comprehensive framework for designing hotel service quality from customer's point of view.

Hospitality firms, such as hotels, are an ideal example of a market which could benefit from the \ implementation of service innovation. First, from a customer's perspective, the hospitality market is perpetually inundated by many similar, often easily substitutable service offerings. This can cause difficulties for hotel managers as they attempt to differentiate an individual hotel from its competitors (Reid and Sandler, 1992). One solution to this challenge may be to offer new and innovative features to customers. Secondly, the hospitality industry is rapidly changing due to accelerations in information technology (Olsen and Connolly, 2000).

Applicability and validity of the proposed framework is analyzed in a case study of Safir Hotel in Esfahan in 2007.

1.5. Significance and Importance of the research

This research try to show the importance of service quality management for providing better service in hotels to the guests, based on guests points of view.

The benefits of offer higher service quality have influence on both hotel sector and customers. Some of these advantages are, competitive advantages, management leadership, productivity improvement, work development, reduce costs and economic profits, employees satisfaction and increase their working value, staff empowerment, involvement, communication and teamwork, commitment on the different parts of management, customer satisfaction, customer loyalty, the benefit of this resources has influence on hotel sector and guests, innovation is an important value of this article.

1.6. Research Objectives

1. Determining the service quality dimensions in hotel sector and in particular in Safir Hotel.
2. Determining the service process design characteristics and in particular in Safir hotel to Prioritize Service Recovery Solutions according to customer point of view.
3. To show how house of Quality could be used for prioritizing SPDCS from customers' point of view and show the priorities in Safir hotel.

1.8. Research Application

Tourism industry as a whole and the hotel sector in practical and Safir Hotel;

1.9. Research Questions

1. What are the service quality dimensions in hotel sector and in particular what are the customer requirements? (In Safir hotel)
2. What are the service process design characteristics in the hotel industry and in particular Safir hotel?
3. How house of quality could be used for prioritizing SPDCS from customers' point of view and what are the priorities in Safir hotel?

1.10. Research type

The research type is Descriptive – Analytical –Development – Comparative analysis based. It is also a survey and case study, considering the Safir Hotel examination.

1.10.1. Research population

1. Iran 4* hotel managers,
2. Hotel Employees
3. Iran`s Inbound travelers

1.10.2. Data collection tools

Journals, e-journals, Text books, e-books, Questionnaire, Observation, Interview

1.11. Chapter design

1.11.1 Chapter 2

In chapter 2 the literature on the subject of the study is reviewed, the reviewed material is classified and the contribution of previous work towards this study is addressed, this chapter provides the bases for designing the frameworks included in chapter 3 which intern provides the new methodology to be developed.

1.11.2 Chapter 3

In chapter 3 the research methodologies, theoretical and executive frameworks of the study are developed. The statistical tools and techniques used for analysis are determined and the approaches for validity and reliability of the data analysis are addressed, the questioner needed for supporting the methodology is designed in this chapter and the statistical population and sample selection are presented.

1.11.3 Chapter 4

In chapter 4 the proposed methodology is employed in Safir hotel which is one of the 4 star hotels in Esfahan, the data gathered from the questioner are analyzed and entered into the house of quality for further analysis. Finally the results of the implementation of the new methodology are compared with the hotel managers and staff points of view.

1.11.4 Chapter 5

In chapter 5 major concussions and recommendations are presented and subjections for future studies are pointed out.

CHAPTER 2
LITERATURE REVIEW

2.1. Introduction

This chapter will give an overview of literature and models that are related to the research problem presented in the previous chapter. This chapter will introduce the concepts of Hotel, Hotel design, service quality, quality function deployment, relation between hotel design and service quality, traditional service quality dimensions, customer point of view in 4 star hotels in order to give a clear idea about the research area.

2.2 Hotel

Hotel [Fr., from O.Fr. (origin of Eng. *hostel*), from Latin (origin of Eng. *hospital*),=guest place], name applied since the late 17th cent. to an establishment supplying both food and lodging to the public. In common law of England and America, the hotelkeeper is a public servant and must receive all proper persons. The first American hotels, successors to the early inns, differed from their European prototypes by charging a fixed fee for food and lodging (American plan). For many years $1.00 per day was the accepted price. Tavern and Samuel (1762) and the City Hotel (1793) were fashionable resorts of early New York City. The Tremont House, in Boston (1829), for years considered the most imposing hotel in the United States, was rivaled by the Astor House, built in New York in 1836. The modern hotel in America dates from the early

days of railroad travel, when the modest hostelry, prepared to entertain small groups of occasional guests, was forced to become a more commodious and efficient institution to accommodate the great number of traveling salespeople. Technical progress in the late 19th cent. permitted the construction of large hotels with safeguards against fire. Hotels may be classed as transient, residential, or resort hotels. Semi commercial hotels with club features are maintained by organizations such as the YMCA (Young Men's Christian Association). With the growth of suburban centers and the increase of travel by automobile, a form of transient hotel, called a motel, became popular. In the 1990s, the “extended-stay hotel”—for guests who need a room for at least five nights—was developed, especially for business travelers who preferred more apartments like accommodations for longer stays. By 1998 extended-stay hotels represented 40% of U.S. lodging rooms planned for construction.

Hotels are undoubtedly the most significant and visible subsector within accommodation or lodging. Although a highly varied collection of properties in most countries, Hotels are the tourism subsector that provides the guests total employment in global terms and probably accounts for the highest level or receipts. The traditional view of hotel was an establishment providing accommodation as well as food and beverage services to short-stay guests on a paying basis. This view has influence most attempts to define hotels.

Accommodation and grading maybe applied to all subsector but in predominantly mostly use with respect of hotels. (Cooper et.al 1999).

There is a difference in focus and purpose between classification and grading:

Classification may be defined as “the assignment of hotels to a categorical rating according to type of property, facilities, and amenities offered” (Gee, 1994); **Grading** in contrast emphasizes quality dimensions. In practice most national and commercially operated schemes concentrate on classification with quality perceived to be an add-on which does not impact upon the star rating of an establishment. (Cooper et.al 1999).

2.2.1 General overview for four star hotels based on AA regulations

• All areas of operation should meet the **Four Star** requirements for cleanliness, maintenance and hospitality, and for the quality of physical facilities and delivery of services.

• Once registered, residents should have 24 hour access, facilitated by on-duty staff.

• Enhanced services offered e.g. 24 hour room service including cooked breakfast, offer of luggage assistance, meals at lunchtime, table service on request at breakfast.

• At least one restaurant, open to residents and non-residents, for breakfast and dinner seven days a week.

• All bedrooms with en-suite bathrooms and all with WC and thermostatically controlled showers. Additionally, at least half of these bedrooms should have a bath.

• At least one suite available.

2.3 Hotel design

Hotel design is the discipline concerned with the creation of an environment in which guests can be welcomed and provided with facilities for rest, relaxation and respite from their travels or workaday cares in return for payment to their host.(Wikipedia 2007).

The discipline of Hotel Design is rooted in traditions of hospitality to travelers dating back to the first movements of early man. From the formalized travels of the court entourage and their expectations of the highest levels of hospitality to the humble journeying of ordinary trades' people the development of specialist buildings to meet their need has been seen in many cultures.

Hotel Design today is a sophisticated discipline involving specialist architects, environmental and structural engineers, interior designers and skilled contractors and suppliers. The interior of an hotel may be the refurbishment of an existing building already used for the purpose, the conversion of a building previously used for another purpose or the construction of specialist buildings as an hotel but all need careful design to function effectively, as well as a good location.

Hotel design is essentially a marriage between the client brief and the designer vision. Hotel buildings have a clear specialist range of functions from restaurants to bedrooms, the operations of which must not interfere with each other through factors such as noise or the movement of people. Hotels are usually designed from the inside out to ensure the practical working and relationship of the parts in the most economical manner.

Hotel designers bring to their work their own cultural mores and need to understand the culture in which the hotel will operate if working outside their native environment. With the internationalization of travelers the links with local traditions in many hotel designs have been weakened and 'International' has become a style in its own right, often denoting the bland and inoffensive. This in turn has caused a reaction in many operators and guests who have sought out hotels with a vernacular local traditional style or created hotels where the design has been more linked to modernist stylistic tendencies of elites, the latter characterized by the boutique hotel. Stylistic influences of modern design are wide and shared through television and the web leading to a wide range of diverse stylistic exercises in hotel interiors from 'grunge' to 'classical'.(Wikipedia contributors 2007).

Public space design:

The written design objectives for the lobby should provide a detailed description of the front desk seating area, circulation, and secondary functions. To a large extent, the

architect and interior designer must first study each area individually, solving a multitude of design and functional issues and them put them together. Some issues are more related to back of the house (FRONT DESK), other to food and beverage (lobby bar), and other to organizing the public flow. The design of the front desk and related activities, just one aspect of the lobby, requires making conscious decisions on each of the following features:

1) Size of desk: Provide individual work station each 1.8 m long for registration and cashier, Assume two stations for first 150 rooms, one more for each additional 100 rooms.

2) Queuing Space: Provides sufficient space in front of the desk for guests to line up, for convention hotels provide at least 6.1 m clear of circulation.

3) Assistant manager`s desk: If required, provide a desk, seating and storage near the front desk for a consierge or assistant manager; consider making the desk a major decorative features within the lobby.

4) Bellman station: provide the bellman station near the front desk and main entrance.

5) Luggage storage: provide a lockable storage area adjoin the bellman station for shelving for checked-in luggage; provide direct access to the curb.

6) Telephones: Include house phones close to the front desk and public phone convenient to the lobby, approximately one for 100 rooms.

7) Furniture and fixtures: establish ambiance of lobby area by proving special millwork detailing and finishes, front desk, bellman station, assistant manager`s desk, and furnishings (lounge seating, decorating fighting, artwork) to establish the image of the hotel.

The design of the other areas of the lobby deals with fewer functional elements but requires more manipulation of the space. The definition of circulation, seating and retail areas usually is advances by such standard design techniques as level changes, floor materials, varying ceiling heights, special lighting, Signage programs, articulation of decoration details, and custom millwork.

Guestroom and suite design

The layout of the hotel guestroom is intertwined with decisions that the design team makes during the schematic design, when they establish the dimensions of the guestroom modules and the structural bay, accept a Varity of nontypical room configurations, and approve a final room mix. These decisions provide the interior designer with the framework to creatively plan the individual spaces and give the guestrooms a character consistent with the public areas.

Guestroom design entails a series of steps confirming the following:

- Major target market segment
- Typical guestroom dimensions
- Room mix including number and type of suites
- Typical guest room layout
- Suite and special room layout
- Proposed furniture, fixture, and equipment (FF&E) budget for guestrooms, suites, and corridors.

Designers recognize the specific needs of the target markets and identify features and amenities that these groups most want and expect. In general terms, the transient business person looks for single accommodations, the convention and group markets need double rooms, and the leisure market requires room to sleep two or more guests. Also, because each of these market groups uses the room differently, the designer must consider work and meeting functions in one case and family activities in another, the practical market influencing of hotel and resort guest rooms are identified in Table 2.1.

Table 2.1 Hotel guest characteristics (Ruters et al., 2001)

Market	Guest Characteristics	Propose for travel	Guestroom design factors
Business			
Group	Single or double occupancy; 2-4 night stay; 55% men, 45% women, somewhat price insensitive	Conventions, professional associations, Sales and training meetings	King or double-double; bathroom with dressing area; lounge seating with good work area
Individual	Single occupancy; 1-2 night stay; 50% men, 50% women, price insensitive	Corporate business, Sales, Conventions, Conferences	King; bathroom with separate stall shower, lounge seating with good work area
Leisure			
Family	Double plus occupancy (Includes children); 1-4 night stay, longer in resort areas; budget or midprice	Family vacations, Sightseeing, Sport, Family activity	Double-double, queen-queen, or adjoining rooms; lounge seating and television; Large compartmentalized bathroom, balcony, outside access
Couple	Double occupancy; 1-7 night stay; midprice to upscale and luxury	Tour, Clubs, Associations, Sightseeing, Theater, Sports, Weekend packages, Shopping, Vacation	King, dinning area, writing surface; moderate storage; large compartmentalized bathroom
Singles	Single occupancy; young professionals to seniors; mid-price to upscale	Tour, Clubs, Associations, Culture, Arts, Theater, Sport/Recreation, Shopping	King or queen; large /entertaining areas; standard bathroom

Room dimensions and configurations

The guestroom designs which most influences the room layouts and much of the guest reaction to a hotel is the choice of three critical room dimensions: the inside or net width, the length of the room from the exterior wall to the bathroom wall, and the size of the bathroom. The net width establishments the structural module through the building (equal either to the width of one room or two rooms), which carries through to

the public and service areas on the lower floors. The most common room width for the past several decades has been 3.7 m initially adopted as a standard in the mid-1950s by the holiday Inn chain for all of their roadside properties. It was sufficient to comfortably accommodate two double beds against one wall and a desk/dresser/luggage stand and television on the opposite wall, with an adequate aisle between. While the typical room layout has evolved slowly over the last half-century, the industries standard guestroom layout today is little different from the one pioneered in 1953 by Kemmons Wilson, the funder of holiday Inns. Though, to be sure, style, comfort, and guestroom technology have seen major advances.

Until then, even the newest and largest convention hotels built in the post-World war II period incorporated a variety of room sizes, including a large percentage that were narrower than the new 12 ft wide standard. These hotels, many of them still operating and competing with properties 30-50 years newer, are greatly limited by the smallness of their guestrooms. In the US and Canada, no first class or chain-affiliated hotels (except for the budget Inns) are built today with rooms less than 12 ft wide.

Occasionally, when older downtown or resort properties are acquired and fully renovated, the size of rooms may be smallet where they are limited by unavoidable architectural constraints.

In the past few years guestroom dimensions have become generally standardized for different quality levels of hotels or resorts (Figure 2.1). While a few hotel operations have tried to provide noticeably larger rooms than their direct competitors. The

guestroom size, quality of furnitges and finishes, and room rate remain closely linked because of the overriding influence of the initial cost of construction and furnishings.

Typical and unique guestroom layouts **Guestroom plans.** (A) Economy queen room, 220 ft^2 (20.5 m^2) saves space with sink/vanity outside bathroom and one bed. (B) Mid-scale king room, 320 ft^2 (30 m^2) shows how placing the bed against the bathroom wall increases useable space. (C) First-class double-double room, 365 ft^2 (34 m^2) with typical furnishings. (D) Three-bay conference suite, 1,160 ft^2 (108 m^2) combines a two-bay public area with wall-bed, lounge seating, work area, full bathroom, and wet bar with a typical guestroom, and second connecting room. (E) Luxury resort room 550 ft^2 (51 m^2) introduces five-fixture bathroom and fireplace (Four Seasons, Scottsdale). (F) International luxury guestroom, 530 ft^2 (49 m^2) features carefully detailed built-in storage, sliding doors, and glass partitions for an open effect (Park Hyatt, Hamburg). (G) Luxury casino-hotel room, 665 ft^2 (62 m^2) features large bathroom, queen-queen beds, and separate living area (The Venetian, Las Vegas). (H) Rotated room configuration, 530 ft^2 (49 m^2) places whirlpool tub on the exterior wall of spacious bathroom and features unusually wide guestroom space (The Ritz-Carlton Millenia, Singapore). (For vacation ownership, all-suite, and extended-stay units see Chapters 4 and 8.)

Figure 2.1 Typical and unique guestroom layouts (Rutes et al., 2001)

2.4. Service quality

The term “service” has been defined in various ways. Gronroos (2002) defined it as follows:

A service is an activity or a series of activities of a more or less intangible nature that normally, but not necessarily, takes place in the interaction between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems. Quinn et al. (1987), in a definition also adopted by Zeithaml and Bitner (1996), described services as including:

“. . . all economic activities whose output is not a physical product or construction, is generally consumed at the time it is produced, and provides added value in forms (such as convenience, amusement, timeliness, comfort or health) that are essentially intangible concerns of its first purchaser.”

Although many approaches to quality improvement apply equally to goods and services, there are conceptual differences between the two. These differences have been explored in detail by authors such as Edvardsson et al. (1994), Bergman and Klefsjo (2003) and Gummesson (1991). Some of the more important differences can be noted as follows:

- Services are not as tangible as goods, and it can therefore be difficult to explain, specify, and measure the contents of a service.

- Because services are more abstract than goods, services are perceived and evaluated more subjectively.

- The customer often plays an active role in creating a service.

- A service is often consumed at the same time as it is created; it cannot therefore be stored or transported.

- The customer does not become the owner of a tangible property after delivery of a service.

- Services often consist of a series of consequential activities; this makes it difficult (or impossible) for the consumer to test them before the purchase.

- Services often consist of a system of sub-services, but the customer usually evaluates the whole and not the separate parts.

A related issue that complicates the quality of services is their heterogeneous character. This means that the experience of a particular service can differ from time to time. Services are heterogeneous because both the consumer and the service provider have a significant influence on the production and delivery process (Gronroos, 1990). It is thus especially important that services be properly designed from the beginning – because they cannot be stored, exchanged, or redone (Edvardsson, 1996).

The service sector is expanding globally. Service quality is a very complex task and it is difficult to measure and design service quality objectively. Although most research programs have focused on measuring customer perceptions of service quality and satisfaction, few have provided company specific guidelines for how to design services to meet the quality standards expected by customers. The main aim of this paper was to propose a comprehensive and generic approach for designing quality service. It was also intended to design and develop a theoretical framework in order to enable academics, practitioners and service managers to implement a more advanced quality design program which could be a very useful contribution to managing the operations of the service industry.

Reviewing the literature, it is found that virtually no reference exists which can consider a comprehensive and systematic set of characteristics in designing quality service. Shahin (2004) proposed a comprehensive list of service process design characteristics (SPDCs). The proposed three levels list of SPDCs could be applied in any type of service organization. The limiting factors would be the resources, which are at the Chief Executives disposal, mainly in time, technical expertise, and both human and financial resources.

However, some of the potential benefits that the proposed approach might have include: higher customer satisfaction; better prioritization of service design features; facilitating the integration of SPDCs and advanced quality engineering techniques (e.g., quality function deployment, QFD) according to their methodology (i.e., the use of affinity diagrams); and comprehensive design of quality services and closing service quality gaps. Also, one of the limitations of the proposed method might be: time consuming in complicated cases; since a major part of required data will be gathered through in-depth study of the service processes and from the personnel in the service organization. This may become more difficult to manage cases including lots of intangibles and also harder to implement the approach in organizations that have not experienced any quality design or improvement program before.

The choice of quality design team members is fundamental to a service design project's success. The selection should include the most positive personnel with the closest links to customers. The correct choice will facilitate open discussions, the resolution of conflicts and encourage team commitment to the project. For those work as a member of service quality design teams, it is recommended that training courses be devised to improve human skills and facilitate the implementation of the model for more active, cost effective and efficient achievement of objectives. Additionally, the involvement of senior management in the formulation of the quality design project is important in gaining their commitment to the process and in providing incentives for personnel participation.

Another important consideration in the design of service packages is the elimination of sources of errors, because the creation and consumption of services occur almost simultaneously. Therefore, in a service organization, the proposed approach needs to be institutionalized.

Consequently, it is important to note that if services are not designed in a way to be able to achieve overall customer satisfaction, not all the customers could get what they want and they will go elsewhere, and there are plenty of alternatives available. To go global and to be competitive, organizations will be well advised to consider every aspects of quality in designing world class services. Considering comprehensive

characteristics in service process design, like what was proposed in this study, provides main pillars for competitiveness. It is important to note that business and industry must play the quality game to win. Playing "not to lose" is different from "playing to win". The only way to survive in the global marketplace is to "play to win" and avoid playing "not to lose". As much as the quality programs become more comprehensive, more successful would be the journey into the globalization.

It has been argued that service quality is the great differentiator among service providers (Parasuraman et al., 1985; Kandampully et al., 2002), there has been no agreed definition of service quality. Gronroos (1984) divided service quality into three components: technical, functional, and image. Juran (1988) stated that the quality of a product or service is determined by its fitness for use by external and internal customers. Gundersen et al. (1996) argued that a customer's experience is a product of both the tangible and intangible aspects, whereas Crompton and Mackay (1989) saw service quality as being concerned with the attributes of the service itself, and how those attributes developed positive perceptions of the service. It is widely accepted in the literature that service quality is dependent on consumers' needs and expectations, and whether the level of service meets these needs and expectations. Service quality has thus been distinguished as a "gap" between customers' expectations and the performance they actually receive (Parasuraman et al., 1985). Asher (1996) has suggested that service transactions are subjectively judged, and that service quality depends on the degree to which a customer's perceived expectations have been met. According to this paradigm, customers decide when they are satisfied.

This satisfaction is dependent on many factors – such as the quality of tangible facilities; the responsiveness and empathy of staff to customer needs and requests; the consistency of service quality; the accuracy of information provided; and the location of the hotel. A smaller gap between expectations and perceptions leads to the service being perceived as a higher quality and to customer satisfaction being increased.

2.4.1. Tourism and service quality

Kandampully (2000) has emphasised that quality will be the main driving force of tourism as travel firms strive to meet the competitive challenges of the future. According to the WTO (2003), quality in tourism can be defined as:

"…the satisfaction of all the legitimate product and service needs, requirements and expectations of the consumer, at an acceptable price, in conformity with the underlying quality determinants such as safety and security, hygiene, accessibility, transparency, authenticity and harmony of the tourism activity concerned with its human and natural environment."

This definition is in accordance with other observations on the nature of quality. For example, Bergman and Klefsjo¨ (2003) defined the quality of a product as ". . . its ability to satisfy, or preferably exceed, the needs and expectations of the customers",

and Deming (1986) noted that ". . . quality should be aimed at the needs of the customer, present and future".

According to von Friedrichs Gra¨ngsjo¨ (2001), there are at least five factors that describe and influence the tourism product:

(1) Tourism is dominated by services; this means that consumption occurs in interaction with the suppliers of those services.

(2) Demand for tourism is significantly influenced by seasonal variations, including climatic seasons and the timing of vacations; a consequence of this is that many staff members are hired for only short periods.

(3) The tourism industry consists of a mixture of private-sector businesses and public-sector organisations; as a result, the industry operates within two systems that have different requirements, rules, and forms of control.

(4) The tourism industry is fragmented. It consists of many small companies working in various business areas – including lodging, travel, food, and leisure.

(5) Tourism consists of a number of ingredients experienced over time, and it is seldom the case that one actor has control over all components.

These factors mean that "tourism quality" is a complex concept. Swarbrooke and Horner (2001) likened it to a jigsaw puzzle that has many parts that must fit together perfectly to satisfy the tourist. Nevertheless, despite the difficulties, satisfying the tourism customer is important – not only because it leads to positive word-of-mouth

recommendation and repeat customers, but also because a lack of satisfaction leads to complaints, and dealing with such complaints can be expensive, time-consuming, and injurious to a destination's reputation (Swarbrooke and Horner, 2001).

The term "experience" has become increasingly popular within tourism as entertainment options have increased rapidly in number and variety. Bitner (1992) and Mossberg (2003) have both related "experiences" to service quality. Bitner (1992) used the expression "servicescape" to describe the customer's overall perception of the services on offer, and Mossberg (2003) developed this further with specific reference to tourism in discussing so-called "experience areas". According to Mossberg (2003), these "experience areas" can include several destinations over extended geographical distances and quite long periods of time – because an "experience" can include various sub-components while still being regarded as a single entity.

In summary, quality is judged subjectively by consumers, and is therefore a difficult concept to assess and measure. It is even more complicated in tourism experiences, because "quality" in this setting includes many interactions with a variety of providers.

2.5 Quality function deployment

Quality Function Deployment is derived from six Chinese characters with Japanese Kanji pronunciation: Hin Shitsu (quality), Ki Nou (function), Ten Kai (deployment). The Japanese characters for Hin Shitsu represent quality, features or attributes, Ki and No represent function or mechanization and Ten and Kai deployment, diffusion, development or evolution.

Taken together, the Japanese characters mean “how do we understand the quality that our customers expect and make it happen in a dynamic way” (Cohen, 1995; Tottie and Lager, 1995; Martins and Aspinwall, 2001; Chow-Chua and Komaran, 2002). Emphasis on quality plans is also the reason why it was named Quality Function Deployment by the Japanese (Akao, 1990; Leo Lo et al., 1994; Prasad, 2000). The translation is not exact or descriptive (e.g. hin shitsu is synonymous with qualities, not quality). It was therefore, just a matter of translation, but instead of using Attributes Function Development, say, the term Quality function Deployment evolved. However, the message is the same.

QFD has been defined in many different ways. QFD is a structured process, a visual language, and a set of inter-linked engineering and management charts, which uses the seven management (new) tools. It establishes customer value using the voice of the customer and transforms that value to design, production, and manufacturing process characteristics. The result is a systems engineering process, which prioritizes and links the product development process so that it assures product quality as

defined by the customer/user (Dean, 1998). That is why the QFD process is often referred to as listening to the voice of the customer (Sower et al., 1999). QFD is also referred to as “house of quality (HOQ)”. The reason for this is that matrixes in QFD fit together to form a house-shaped diagram (Bicheno, 1994; Kutucuoglu et al., 2001). QFD is oriented toward involving a team of people representing the various functional departments that have involvement in product development: marketing, design engineering, quality assurance, manufacturing/ manufacturing engineering, test engineering, finance, product support, etc. (Crow, 1996).

QFD is based on the concept of company wide quality control (CWQC). The CWQC philosophy is characterised by customer orientation, cross functional management and process rather than product orientation. It refers to quality of management and the quality of work being done (Japan Industrial Standard Z8101, 1981). From that point of view, QFD becomes a management tool to model the dynamics of the design process (Govers, 2001). QFD is also known by the terms “ Customer - driven engineering “ and “ Matrix product planning “. The whole concept is based on a sequence of operations to translate the voice of the customer into the final product or service (Smith and Angeli, 1995). Mallon and Mulligan (1993) defined QFD as a cross functional tool that assists technically oriented people, such as architects and engineers, to understand CR sufficiently, to develop priorities for these requirements that are customer oriented and technically correct. Mazur (1993), defined QFD as “a system and procedures to aid the plan and development of services and assure that they will meet or exceed customer expectations”. Also, Akao (1990) defined it as “a method for developing a

design quality aims at satisfying the customer and then translating the customer's demands into design targets and major quality assurance points to be used through out the production stage". The term Quality Function Deployment is a poor translation of the original Japanese and rather than dwell on the meaning behind these particular words. In the light of the definitions, describe QFD as: "Customer driven product development".

2.5.1 QFD and the House of quality (HoQ)

A four phases approach is accomplished by using a series of matrixes that guide the product team's activities by providing standard documentation during product and process development (Figure 2.2). Each phase has a matrix consisting of a vertical column of "Whats" and a horizontal row of "Hows". "Whats" are CR; "Hows" are ways of achieving them. At each stage, the "Hows" are carried to the next phase as "Whats". (Cohen, 1995)

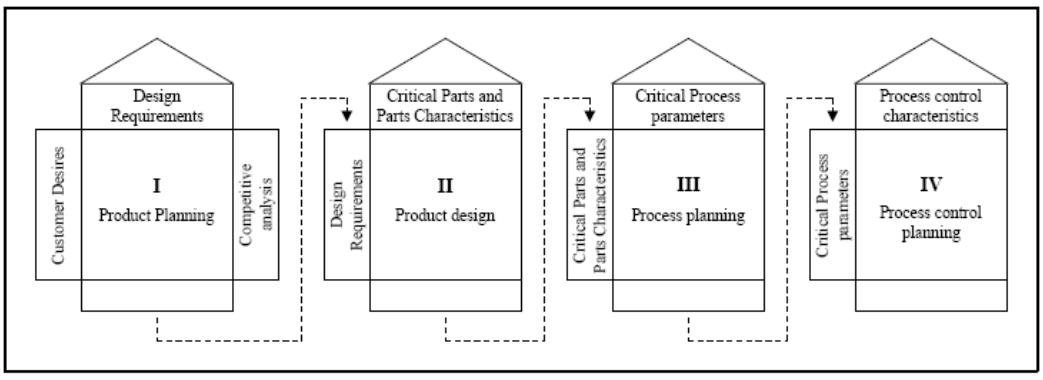

Figure 2.2. The four phases of traditional QFD (Cohen, 1995)

As a result, the House of Quality can be built in many shapes and forms. The general purpose of QFD model includes the components addressed in Figure 2.3. Customers requirements (CR) - Also known as "Voice of Customer" or VoC, they are the "whats" the customers want from the product to be developed. They contain customers' wishes, expectations and requirements for the product. (Shahin, 2004)

Customer importance ratings - Once these "whats" are in place, the customer needs to provide numerical ratings to these "whats" items in terms of their importance to the customer. A numerical rating of 1 to 5 is often used, in which the number 5 represents the most important and 1 the least.

Customer market competitive evaluations - In this block, a comparison is made between a company's product/service and similar competitive products/services on the market by the customer. The comparison results will help the developer position the product on the market as well as find out how the customer is satisfied now. For each product, the customer gives 1 to 5 ratings against each CR, 5 being best satisfied and 1 the worst.

Technical specifications - They are the technical specifications that are to be built into a product with the intention to satisfy the CR. They are sometimes referred as "hows" because they are the answers to CR: how can the requirements be addressed or satisfied. They are the engineers' understanding in technical terms what customers

really want. The technical specifications must be quantifiable or measurable so that they can be used for design.

Relationship matrix - Relationship matrix is used to maintain the relationship between CR and design requirements. In other words, the matrix corresponds to the "whats" vs. "hows". It is the center part of HoQ and must be completed by technical team. A weight of 1-3-9 or 1-3-5 is often used for internal representation of relationship, 1 being the weak and the biggest number being the strong relationship.

Correlation matrix - It is the triangular part in the HoQ (the "roof"). The correlation matrix is used to identify which "hows" items support one another and which are in conflict. Positive correlation help identify "hows" items that are closely related and avoid duplication of efforts. Negative correlation represents conditions that will probably require trade-offs. The positive and negative ratings are usually quantified using 2, 1, -1, and -2 ratings, with 2 being the two "hows" items are strongly supportive to each other and -2 being the conflicting. Sometimes only 1 and -1 are used.

Target goals - Completed by technical team, these are the "how muchs" of the technical "hows" items. They provide designers with specific technical guidance for what have to be achieved as well as objectively measuring the progress. The goals have to be quantified in order to be specific and measurable.

Technical difficulty assessment - Technical team conducts the assessment. It helps to establish the feasibility and realizability of each "hows" item. A 1 to 5 ratings are used to quantify technical difficulty with 5 being the most difficult and 1 being the easiest.

Technical competitive evaluation - It is used for comparing the new product with competitor's products to find out if these technical requirements are better or worse than competitors. Again, 1 to 5 ratings are used with 5 being the fully realized each particular "hows" item and 1 being the worst realized.

Overall importance ratings - This is the final step of finishing HoQ for phase 1. For each column, sum all the row numbers each of which is equal to the production of relationship rating and customer's important rating. The results help identify critical product requirements and assist in the trade-off decision making process.

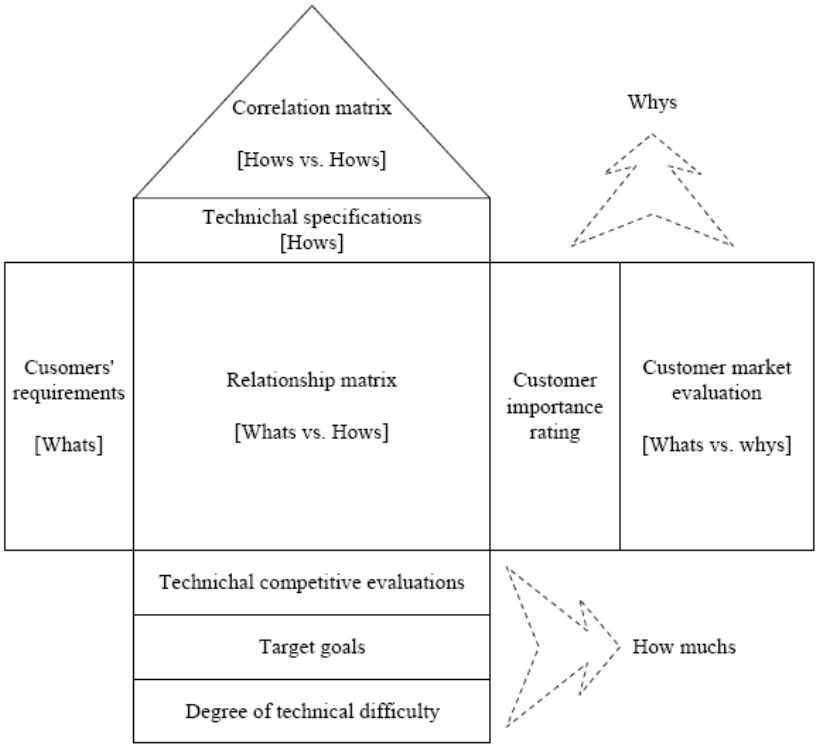

Figure 2.3. House of Quality (HoQ) in QFD (Menks et al, 2000)

2.5.2. Some of the important objectives of QFD

1) To drive long-term improvements in the way new products are developed in order to create value for customers Vonderembse and Raghunathan (1997)

2) Identify the customer; Determine what the customer wants; Provide a way to meet the customer's desires (Kathawala and Motwani, 1994).

3) Definition of the product characteristics, which meet the real needs of the customers; Gathering of all necessary information to set up the design of a product or a service, without neglecting any point of view; Supplying a support to competitive benchmarking; Preservation of coherence between the planning and manufacturing processes of a product; Provision of an audit trail from the manufacturing floor back to customer demands; Auto documenting the project during its evolution Zairi (1995).

4) Identify current performance measures that are closely linked to CR; Identify current performance measures that are redundant; Identify new customer oriented performance measures that are required; Identify conflicts associated with different performance measures; Identify target values for customer oriented performance

measures; Assess the degree of difficulty of achieving the target value(s) for specific performance measures (Jagdev et al., 1997).

2.6. Traditional service quality dimensions

2.6.1. Service quality in inbound tourism

In certain cases it can be difficult for a customer to ascertain the exact nature of the outcome of a service (Zeithaml and Bitner, 1996). For example, the outcomes of services performed by doctors, engineers, academics, accountants, architects, and others are not always self-evidently “good” or “bad” (Zeithaml and Bitner, 1996).

Because services are an essential part of the tourism experience, service quality is thus a crucial aspect of satisfying tourists.

The best-known instrument for measuring consumers’ opinions of service quality is the SERVQUAL instrument developed by (Parasuraman et al. 1988). SERVQUAL is a multi-item instrument for quantifying the difference between a customer’s service expectations and that customer’s perception of the actual service received (Shahin, 2006). Originally, (Parasuraman et al. 1985) presented ten dimensions of service quality:

- **Tangibles:** The appearance of physical artifacts and staff members connected with the service (accommodation, equipment, staff uniforms, and so on).
- **Reliability:** Ability to deliver the promised service.
- **Responsiveness:** Readiness of staff members to help in a pleasant and effective way.
- **Competence:** Capability of staff members in executing the service.
- **Courtesy:** The respect, thoughtfulness, and politeness exhibited by staff members who are in contact with the customer.
- **Credibility:** Trustworthiness and honesty of the service provider.
- **Security:** Absence of doubt, economic risk, and physical danger.
- **Access:** Accessibility of the service provider.
- **Communication:** Understandable manner and use of language by the service\ provider.
- **Understanding the customer:** Efforts by the service provider to know and understand the customer.

The scale was later revised to ensure that there was no overlap of dimensions. Zeithaml and Bitner (2000) stated that “reliability” has been consistently shown to be the most important dimension in service quality. However, as Bergman and Klefsjo (2003) have noted, the importance of various dimensions depends of the type of

service being provided – for example, “reliability” might be more important when visiting a doctor, but “tangibles” might be valued more highly when visiting a restaurant.

Within the tourism sector, there have been few empirical studies that have used the SERVQUAL approach. Atilgan et al. (2003) reported on the differing expectations and perceptions of German and Russian tourists with respect to service quality in tour operations. Ingram and Daskalakis (1999) used SERVQUAL to investigate hotels in Crete that had adopted the ISO 9000 (International Organization for Standardisation, 2000) quality standard; they found a divergence in perceptions of service quality between guests and managers, with the greatest gaps being found in hotels of the highest quality classification. O’Neill et al. (2000) used SERVQUAL to study five tour operators in Australia; they found that “assurance” was the most important indicator of service performance. Juwaheer and Ross (2003) used a modified version of SERVQUAL to measure service quality in the hotel industry in Mauritius; they identified nine dimensions, of which “assurance”, “reliability”, and “responsiveness” appear to have been the main determinants of service quality.

However, there have also been criticisms of the validity of the SERVQUAL instrument (Keating and Harrington, 2002; Gro¨nroos, 2002). Some authors have pointed out the difficulties involved in analysing differences between expectations and perceptions, whereas others have noted the influence of cultural background on the measurement

of service-quality perceptions (Armstrong et al., 1997; Ekinci and Riley, 1998). For example, Ekinci and Riley (1998) have argued that the instrument does not address the difficulty of quantifying and conceptualizing expectations – thus rendering it less useful as a comparison standard in assessing service quality. Some authors have expressed the view that the present scale is not sufficiently comprehensive (Sureshchandar et al., 2001). Finally, criticisms have been made about SERVQUAL's relevance to service quality in settings involving multiple stakeholders. For example, Baker and Fesenmaier (1997) studied service-quality expectations among visitors, employees, and managers of theme parks; they concluded that the SERVQUAL approach was inadequate in this setting because it ignores multiple stakeholders.

Despite these criticisms of SERVQUAL, the quality dimensions upon which the instrument is based are often employed when discussing and measuring service quality in a variety of service sectors, including the tourism industry. The use of SERVQUAL's quality dimensions in the present study thus facilitates comparison with other findings. In addition, the dimension of "communication", which was present in the original SERVQUAL model as a separate dimension, is regarded as being of particular relevance in a study in tourism, especially in a cross-cultural context.

Moreover, other dimensions in the original SERVQUAL model, such as "courtesy" and "security", are also of potential importance in the tourism context. For these reasons,

the dimensions of the original ten-item SERVQUAL model are adopted for use in the present study.

2.7 Customer needs and expectations related to quality

Expectations and needs are different things. People can have expectations of things that they do not actually need; conversely, they can also have needs that they do not expect. Indeed, in many situations, people do not realise what their needs are (Bergman and Klefsjo¨, 2003). As Witt and Muhlemann (1994,) noted:

". . . in many cases customers are not necessarily aware of exactly what they require."

According to the Kano model (Kano et al., 1984) illustrated in Figure 2.2, customers' needs can be categorized into three groups (Kano, 1995, 2001; Bergman and Klefsjo¨, 2003):

- Basic needs;
- Expected needs; and
- Excitement needs.

Each of these is discussed below. Basic needs are so obvious to the customer that he or she will not even mention them. Indeed, it is impossible for the customer to articulate these basic needs. If such needs are not met, the customer will be dissatisfied. However, meeting these needs does not produce satisfied customers. By meeting these basic needs, the service provider creates only “must-be” quality.

An expected need correspond to what the customer expects to receive and to what is experienced as important. These needs can be articulated by the customer. If these expectations are fulfilled, the customer will be satisfied; however, if they not are fulfilled, the customer will be dissatisfied. By satisfying expected needs, the service provider creates “expected quality”. Excitement needs refer to the customer obtaining something that is unexpected from the product and the organization. This creates an attractive value to the customer. The customer is not aware of these unexpected needs, and cannot articulate them. By discovering and satisfying these needs, the service provider creates “attractive quality”. Such “excitement needs” are not necessarily restricted to technical innovations; these needs can also be met by services that are well performed or exciting (So¨derlund, 2001).

In summary, basic needs are expected but unspoken; expected needs are expected and expressed; and excitement needs are unexpected and unspoken. It is thus apparent that both basic needs and excitement needs are unspoken – that is, the customer will not articulate them, even when asked. In discovering and meeting these

unspoken needs, it is obviously very important for a service organization to have the ability to understand its customers. In particular, service providers who succeed in identifying and fulfilling unspoken excitement needs are likely to have very satisfied customers.

Such customers create value by mentioning their experiences to other people. The role of storytelling and word-of mouth recommendation is very powerful, especially with the widespread use of information and communication technology in contemporary society (Gummesson, 2004).

Although the Kano model has not been frequently used in tourism, there have been some studies that have utilized the model. For example, Tan and Pawitra (2001) used it in combination with other quality approaches to evaluate customer satisfaction, to guide improvement efforts, and to expedite the development of innovative services.

Although some needs are difficult (or even impossible) to investigate – because they are beyond the consciousness of the studied person – Kano's model is useful in working towards an understanding for the complexity of human needs

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CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the theoretical and executive frameworks of the study proposed. Also, the tools and techniques of statistical analysis are introduced. The reliability of the data is computed.

3.2 New theoretical methodology

HOQ for prioritizing service process design characteristic for proposing the new methodology, special kind of HOQ is developed in which service quality dimensions, i.e. customer requirements are compared with service process design characteristics (SPDCs) as it is shown in figure 3.1.

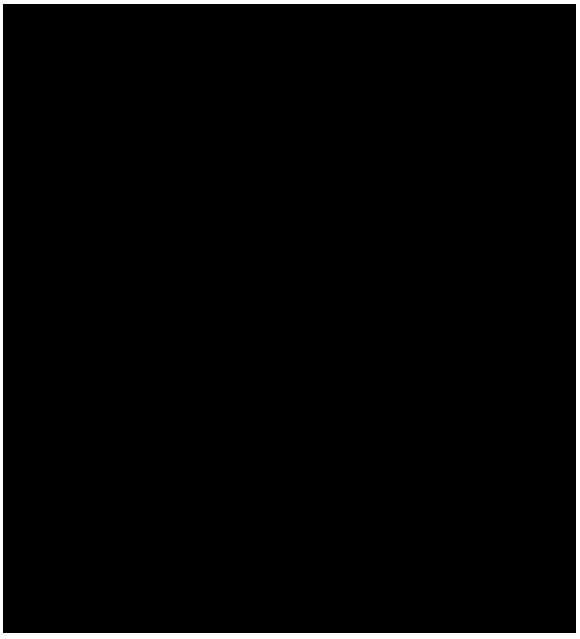

Figure 3.1 New Methodology: A service house of quality

3.2.1 A comprehensive set of customer requirements

Considering all those subjects reviewed and discussed in chapter 2 a comprehensive set of customer requirements are proposed for the hotel sector and in particular for the guestroom services; these items are defined as Table 3.1:

Table 3.1 A comprehensive set of customer requirements for hotel sector

• Performing the service at the designated time
• Mailing a transaction slip immediately
• Setting up appointments quickly
• Comfort of service environment and facilities
• Physical security
• Financial security
• Convenient location of service facilities
• Hotel guests will have a single, designated address
• The services are easily accessibility by phone
• Personnel speak well
• Personnel characteristics of the contact personnel
• Reputation of services
• Size of rooms
• Flowers/Plants
• The quality of in room temperature control
• Landscaping
• Physical representation of the services
• Quality of communication materials
• Quality and quantity of complimentary offered items
• Mini-bar be available
• Clean and neat appearance of public contact personnel
• Cleanliness and tidy appearance of the tangibles
• Behavior of personnel
• Consideration for customer`s property
• Friendliness
• Knowledge and skills of contact personnel
• Experience of personnel
• Flexibility in service delivery speed
• Hotel room be valuable for money
• Hotel food and beverage be valuable for money

3.2.2 A comprehensive set of Service process design characteristics:

Considering all those subjects reviewed and discussed in chapter 2 a comprehensive set of service process design characteristics are proposed for the hotel sector and in particular for the guestroom services; these items are defined as Table 3.2.

Table 3.2 A comprehensive set of SPDCs for the hotel sector

Workers skills
Wage payments
Motivation
Training, education, and development
Communication
Facility location
Facility layout and ambient conditions
Complementary product design
Service technology
Entertainment facilities
Handling, Storing, packaging, and protection of customers possessions
Safety and security facilities and customers property control
Time standards
Process design and scheduling
Failure prevention/recovery strategies; Customers feedback and corrective action control
Quality documentation and records

3.2.3 Questionnaire design

As it was shown in the Appendix 2 a column should be full field in which is called importance ratings for this propose all those items proposed in Table 3.1 are used in questionnaire design. In the questionnaire all the items are asked from Safir Hotel international guests the customers are asked to fill the questionnaire and rate the importance of the items based on five-point, Likert scale in addition to answer the major questions of this research, some further analysis are conducted for which the performance ratings could be used. Therefore, the same questionnaire is also used for grating performance from the customer's point of view. A sample of the questionnaire is given in Appendix. 2 as it is indicated, the five point Likert scale denotes 1 as very weak to 5 as very strong for performance ratings and 1 as not important to 5 as very important for importance ratings, respectively. Also another questionnaire is designed to ask the hotel managers to priorities SPDCs (Appendix.2)

3.3 Validity of the questionnaire

The designed questionnaire in Apendix. 2 is finalized before asking the respondents to fill it. A number of experts such as academic scholars in the field of tourism and hospitality management as well as the hotel managers asked to confirm the validity of the questionnaire.

3.4 Reliability analysis

For analyzing the reliability of the data gathered from the questionnaire Cronbakh Alpha is used which should have a value equal or rater than 0.7.

3.5 Research population and sample

3.5.1 Research population

a) Iran 4* Hotel managers

b) Hotel staff

c) Iran inbound tourism

3.5.2. Research sample

For top managers, the data gathered for the population is analyzed.

For travelers, a pilot study is undertaken, and the number of samples needed is calculated as:

$$n = \frac{4S^2}{e^2}$$

In which, ‘4’ denotes the approximate value of $z_{\alpha/2}$ considering 95% level of confidence; ‘S^2’ denotes the variance of data and ‘e’ denotes the error value, which is assumed to be equal to 5 percent of the mean value in this research.

3.6. Data Analysis / techniques:

Matrix analysis (Service HOQ), Statistical analysis including: one-sample t-test, two sample t-test, correlation analysis and analysis of variance.

3.7 Research executive framework

In order to provide the roadmap for implementing the new methodology, a flowchart is presented in figure 3.2, which addresses the pos and cons of each of the activities in this study.

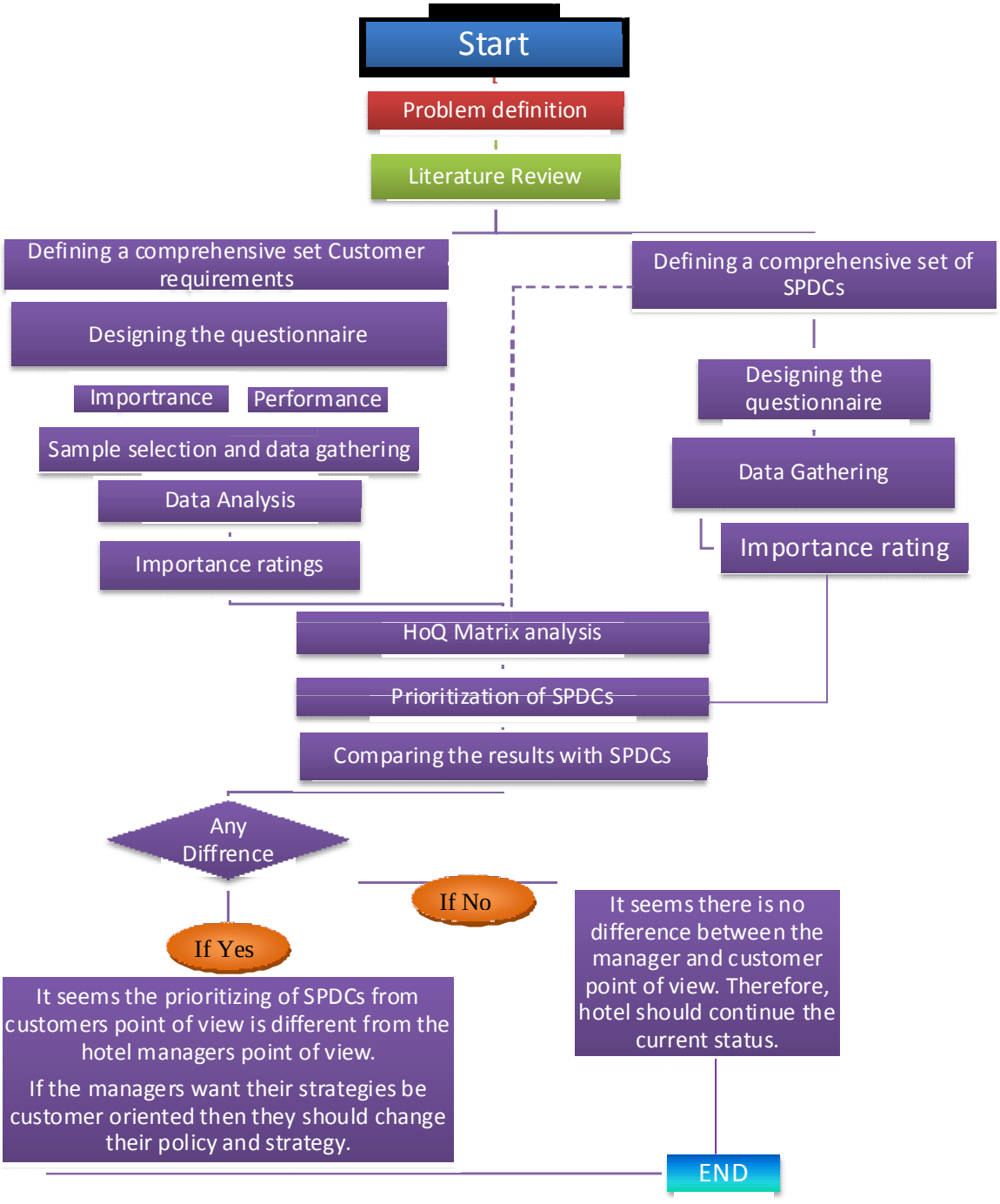

Figure 3.2. Research executive framework

CHAPTER 4
RESEARCH ANALYSIS

4.1. Introduction

In this chapter, the new methodology is applied in a case study. The case study includes the Safir hotel, which is a 4* hotel in the city of Isfahan. Since the hotel has so many service encounters and there exists different services in each with various processes, only the guestroom is selected for study, due to the importance and criticality it has for the managers. In the following, the Safir hotel is introduced briefly and then, the outcomes of the statistical analysis are presented, discussed and used in further stages of the study.

4.2. The Safir hotel

Safir`s general manager explains the mission statement as: Our priority and our goal is to provide each and every guest with a relaxed, calm & present atmosphere and provide personalized services to all guests.

With modern customer relationship tools, Safir hosted a customer loyalty program for loyal guests to benefit from a variety of services this hotel had on offer.

Safir Hotel is a four star hotel with 60 rooms and suites situated in the best part of Esfahan, close to many of this beautiful city's historical monuments.

A ten minute walk from the hotel take guests to the magnificent "Naghsheh Jahan Square", where monuments such as the "Emam Mosque", "Sheikh Luthollah Mosque", "AliQapu Palace" and the "Ghaisarieh Bazar" are located. Safir Hotel is also within walking distance of the famous "Chehelsutoon Palace","Hasht Behesht" and other historical museums of Esfahan. Being so close to those astounding sights is what makes Safir Hotel convenient and attractive to its customers.

With its friendly English speaking staff and management, guests are always made to feel welcome and at home. Safir Hotel provides guests with clean, bright and modern rooms, equipped with air conditioning and basic essentials, making their stay comfy and relaxing.

The hotel has a main restaurant where breakfast, lunch and dinner are served. An internet cafe, ladies' boutique, carpet and handicraft shops are also situated in the hotel. Safir hotel services are indicated in Table 4.1.

Table 4.1 Safir hotel services

▪ 24-hour Business Centre	▪ Laundry
▪ 24-hour Room Service	▪ Non-smoking Rooms
▪ City tour	▪ Free indoor parking
▪ Restaurant	▪ Postal / Courier Service
▪ Sauna and fitness centre	▪ Safe Deposit Box
▪ Airport Transfer	▪ Taxi & Limousine Service
▪ Satellite TV channels	▪ Wi-Fi wireless Internet access
▪ Central Video	▪ Copy/print service available
▪ Air-condition	▪ Fax machine
▪ Baby Sitting / Child Care on request	▪ Internet connectivity
▪ Car Rental Service	▪ Concierge
▪ Complimentary Shoeshine Service	▪ Porter
▪ Express Check-in and Check-out	▪ Safe deposit box at reception
▪ Foreign Exchange facilities	▪ Free newspaper
▪ Gift Shop	▪ 24 hours security staff
▪ Woman boutique	▪ Video camera at bldg entrance
▪ Handicraft shop	▪ Video surveillance in hallways

Safir hotel is in the process of expanding the hotel, adding 70 rooms and suites and will offer more services in the near future such as (convention hall, 2 restaurants, conference centre, meeting rooms, swimming pool, Spa /recreation facilities and etc.)

4.3. Data gathering

For gathering the data and filling the questionnaires, a pilot study is conducted and the number of respondents needed is calculated. For this purpose, 50 customers were asked and 42 responded. Considering 95% confidence level, and 5% error, the total needed number was computed as 35. Therefore, no more customers were needed to fill questionnaires and all the 42 returned questionnaires were considered for further analysis. As demographic characteristics, age, gender, nationality, number of times visited Iran, number of times stayed at Safir hotel were considered on top of questionnaires as illustrated in Figure 3.2.

4.4. Data analysis

Before using statistical tests, the data are analyzed descriptively. The results are presented in Figures 4.1, 1.2, 4.3, 4.4 and 4.5. As it is shown in figure 4.1, most of the respondents (34.88%) include the 26-30 years old customers; however, it is important to note that about 64% of the customers have ages between 21 to 30.

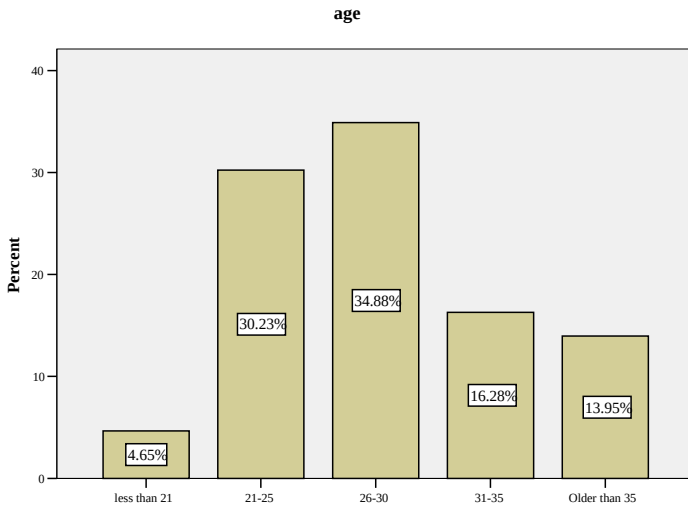

Figure 4.1. Percentage of customers considering their age

Considering the nationality factor (Figure 4.2), 41.86% of the customers are European as the majority of the sample. Other nationalities have approximately the same portion.

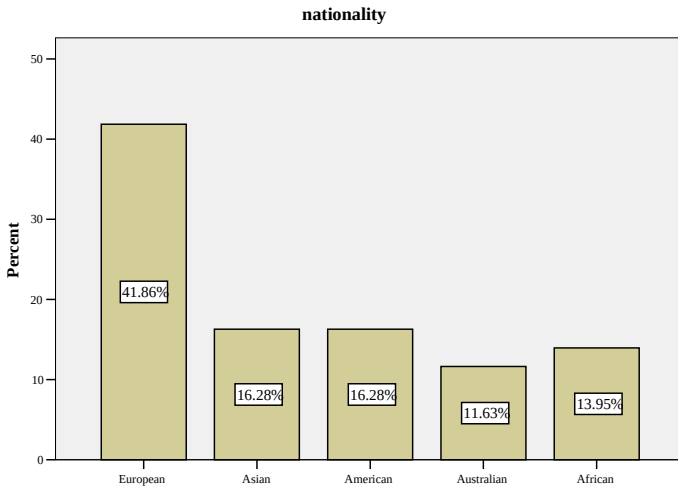

Figure 4.2. Percentage of customers considering their nationality

As it is shown in figure 4.3, the males are relatively more than females (53.49%).

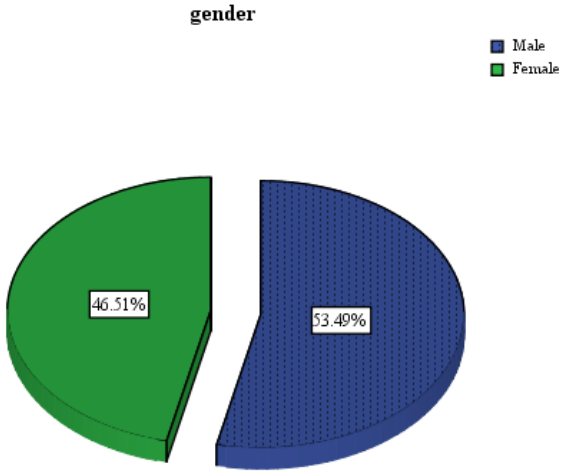

Figure 4.3. Percentage of customers considering their gender

Considering the number of visiting Iran (Figure 4.4), it seems that most of the respondents have visited Iran for the first time (73.81%), therefore, one should realize that only a few respondents have past experiences, which might weakly affect their expectations and perceptions, which in turn might affect the service quality gaps, which was addressed earlier in chapter 2.

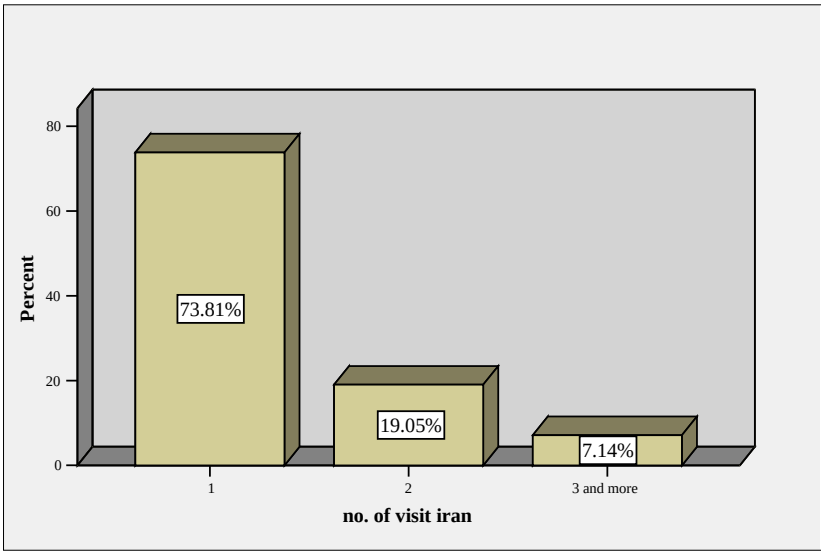

Figure 4.4. Percentage of customers considering number of times they visited Iran

Finally, considering the percentage of customers stayed earlier in Safir hotel (Figure 4.5), it seems that the majority of the respondents have experienced the hotel for the first time, and this might be in consistent with the above discussion of the number of customers visited Iran.

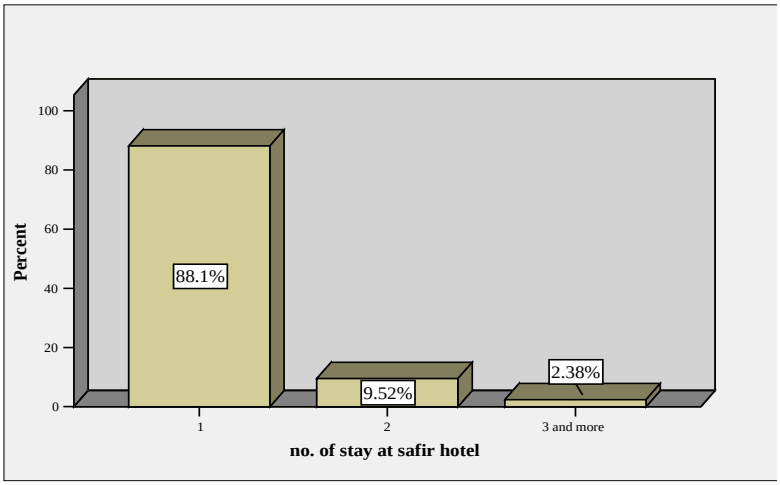

Figure 4.5. Percentage of customers considering number of stay they had in Safir hotel

4.4.1. Reliability analysis

As it was mentioned in chapter 3, the Cronbakh alpha is used for reliability analysis. At this stage, 2 alphas are computed; one for the items in case of importance ratings and the another for items in case of performance ratings. The alpha values of importance ratings and performance ratings are equal to 0.880 and 0.873, respectively, which are both satisfactory (>0.7).

4.4.2. Kolmogorov-Smirnov test

For confirming that the data is distributed normally, the Kolmogorov-Smirnov test is use and the data shows that the significant test value of both importance and performance ratings are higher than 0.05 (i.e. 0.836 and 0.738, respectively) and therefore, we could accept that the statistical distribution of the data is normal.

4.4.3. Mean and Standard deviation of the data

The mean and standard values of the data are presented in Table 4.2 and Table 4.3 for importance ratings and performance ratings, respectively. Apparently, all the mean values are greater than moderate (i.e. 3.00) excluding one item with value of 2.68 which is related to item no. 14 (flower and plants), highlighting the fact that this is less important to the customers. However, this should be taken in account in future studies for which the nationality of the respondents, which are mainly European might be an important factor.

Table 4.2 Descriptive statistics (Importance ratings)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
x1	*37*	*4.54*	*.730*	*2*	*5*
x2	*37*	*3.92*	*1.090*	*1*	*5*
x3	*37*	*4.22*	*.947*	*2*	*5*
x4	*37*	*4.51*	*.692*	*2*	*5*
x5	*37*	*4.65*	*.538*	*3*	*5*
x6	*37*	*4.68*	*.530*	*3*	*5*
x7	*37*	*4.51*	*.651*	*3*	*5*
x8	*37*	*4.00*	*.850*	*1*	*5*
x9	*37*	*4.24*	*.830*	*1*	*5*
x10	*37*	*4.32*	*.626*	*3*	*5*
x11	*37*	*4.22*	*.854*	*1*	*5*
x12	*37*	*4.11*	*.809*	*1*	*5*
x13	*37*	*3.76*	*.796*	*2*	*5*
x14	*37*	*2.68*	*.915*	*1*	*4*
x15	*37*	*3.51*	*.768*	*2*	*5*
x16	*37*	*3.59*	*.956*	*1*	*5*
x17	*37*	*3.86*	*.751*	*2*	*5*
x18	*37*	*4.05*	*.780*	*2*	*5*
x19	*37*	*3.78*	*1.031*	*1*	*5*
x20	*37*	*3.81*	*.908*	*2*	*5*
x21	*37*	*4.51*	*.607*	*3*	*5*
x22	*37*	*4.54*	*.605*	*3*	*5*
x23	*37*	*4.49*	*.607*	*3*	*5*
x24	*37*	*4.51*	*.559*	*3*	*5*
x25	*37*	*4.51*	*.607*	*3*	*5*
x26	*37*	*4.43*	*.689*	*3*	*5*
x27	*37*	*4.38*	*.681*	*3*	*5*
x28	*37*	*4.27*	*.652*	*3*	*5*
x29	*37*	*4.41*	*.686*	*3*	*5*
x30	*37*	*4.30*	*.702*	*3*	*5*

Table 4.3 Descriptive statistics (Performance ratings)

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
y1	*34*	*4.15*	*.657*	*2*	*5*
y2	*34*	*3.50*	*.707*	*2*	*5*
y3	*34*	*3.88*	*.729*	*3*	*5*
y4	*34*	*4.18*	*.758*	*3*	*5*
y5	*34*	*4.06*	*.776*	*3*	*5*
y6	*34*	*4.03*	*.758*	*3*	*5*
y7	*34*	*4.24*	*.819*	*3*	*5*
y8	*34*	*3.62*	*.697*	*2*	*5*
y9	*34*	*4.12*	*.769*	*3*	*5*
y10	*34*	*4.35*	*.597*	*3*	*5*
y11	*34*	*4.35*	*.544*	*3*	*5*
y12	*34*	*4.06*	*.649*	*3*	*5*
y13	*34*	*4.03*	*.758*	*2*	*5*
y14	*34*	*3.29*	*.799*	*1*	*4*
y15	*34*	*3.53*	*.861*	*1*	*5*
y16	*34*	*3.29*	*.799*	*1*	*4*
y17	*34*	*3.85*	*.702*	*2*	*5*
y18	*34*	*3.97*	*.797*	*2*	*5*
y19	*34*	*3.79*	*.880*	*2*	*5*
y20	*34*	*3.68*	*1.249*	*1*	*5*
y21	*34*	*4.26*	*.666*	*3*	*5*
y22	*34*	*4.15*	*.892*	*1*	*5*
y23	*34*	*4.35*	*.691*	*3*	*5*
y24	*34*	*4.32*	*.638*	*3*	*5*
y25	*34*	*4.47*	*.507*	*4*	*5*
y26	*34*	*4.29*	*.676*	*3*	*5*
y27	*34*	*4.26*	*.751*	*3*	*5*
y28	*34*	*4.00*	*.985*	*1*	*5*
y29	*34*	*4.21*	*.770*	*2*	*5*
y30	*34*	*4.06*	*.851*	*1*	*5*

4.4.4. One sample t-test

At this stage, one sample t-test with t-value of 3.00 is used for analyzing all items in the both questionnaires. The results are presented in Tables 4.4 and 4.5. As it is shown in Table 4.4, only one of the items, i.e. Item number 14 with sig. value of 0.096 (flower and plants) has a mean value equal to medium (3.00) and the rest of the results outline the fact that almost all of the items are important from customers point of view.

Table 4.4 One sample t-test (Importance ratings)

factor	No. of replier	Minimum	Maximum	Mean	t-statistic	Sig.	Hypothesis of Equal=3
x1	43	1	5	4.4	9.584	0	No
x2	43	1	5	3.84	4.941	0	No
x3	43	1	5	4.12	7.118	0	No
x4	42	2	5	4.45	13.342	0	No
x5	42	3	5	4.62	18.017	0	No
x6	42	3	5	4.6	17.617	0	No
x7	41	3	5	4.46	13.188	0	No
x8	40	1	5	3.95	7.104	0	No
x9	43	1	5	4.07	7.118	0	No
x10	43	3	5	4.35	14.436	0	No
x11	43	1	5	4.19	9.125	0	No
x12	43	1	5	4.07	9.131	0	No
x13	42	2	5	3.74	6.237	0	No
x14	43	1	4	2.77	-1.703	0.096	Yes
x15	43	1	5	3.51	4.055	0	No
x16	43	1	5	3.6	4.266	0	No
x17	41	2	5	3.83	7.192	0	No
x18	43	2	5	3.98	8.306	0	No
x19	42	1	5	3.76	5.023	0	No
x20	43	2	5	3.79	5.839	0	No
x21	42	3	5	4.52	16.62	0	No
x22	42	3	5	4.5	15.324	0	No
x23	43	3	5	4.47	15.237	0	No
x24	43	3	5	4.51	17.995	0	No
x25	43	3	5	4.56	17.327	0	No
x26	42	3	5	4.48	14.251	0	No
x27	43	3	5	4.35	13.599	0	No
x28	42	3	5	4.21	12.196	0	No
x29	43	3	5	4.4	13.168	0	No
x30	43	3	5	4.3	12.674	0	No

As it is shown in Table 4.5, two items, i.e. Items number 14 and 16 with sig. values of 0.071 and 0.197 (flower and plants and landscaping) have mean values equal to medium (3.00) and the rest of the results outline the fact that almost all of the items are highly ranked in case of performance from customers point of view.

Table 4.5 One sample t-test (Performance ratings)

factor	No. of replier	Minimum	Maximum	Mean	t-statistic	Sig.	Hypothesis of Equal=3
y1	42	2	5	4.12	10.28	0	No
y2	41	2	5	3.59	4.844	0	No
y3	42	2	5	3.9	7.418	0	No
y4	41	3	5	4.22	10.771	0	No
y5	40	3	5	4.03	8.101	0	No
y6	42	3	5	4.02	8.863	0	No
y7	41	3	5	4.27	10.063	0	No
y8	37	2	5	3.7	5.774	0	No
y9	42	3	5	4.21	10.063	0	No
y10	42	3	5	4.36	15.247	0	No
y11	41	3	5	4.37	16.302	0	No
y12	42	3	5	4.02	9.753	0	No
y13	42	1	5	3.83	6.129	0	No
y14	41	1	4	3.22	1.853	0.071	Yes
y15	42	1	5	3.52	4.073	0	No
y16	42	1	4	3.17	1.311	0.197	Yes
y17	42	2	5	3.86	8.591	0	No
y18	41	2	5	3.95	7.569	0	No
y19	41	2	5	3.83	5.776	0	No
y20	42	1	5	3.76	4.028	0	No
y21	42	3	5	4.31	12.475	0	No
y22	42	1	5	4.21	9.04	0	No
y23	42	3	5	4.4	13.695	0	No
y24	42	3	5	4.31	12.475	0	No
y25	42	4	5	4.48	18.926	0	No
y26	42	3	5	4.31	13.189	0	No
y27	41	3	5	4.27	11.471	0	No
y28	42	1	5	3.93	6.034	0	No
y29	42	2	5	4.19	9.985	0	No
y30	42	1	5	3.98	7.278	0	No

4.4.5. Mean comparisons

In order to analyze the potential differences between the groups of respondents, four analysis of variance and one 2-sample t-test are used, considering the number of sub-categories of demographic factors. The results are presented in Table 4.6.

According to Tables 4.6X and 4.6Y, there seems not to be considerable difference between groups of respondents in case of age, due to the significance values of the tests which are not less than 0.05.

Table 4.6x Mean comparisons in case of age (Importance ratings)

ANOVA

Importance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.444*	*4*	*.111*	*.902*	*.472*
Within Groups	*4.674*	*38*	*.123*		
Total	*5.118*	*42*			

Table 4.6y Mean comparisons in case of age (Performance ratings)

ANOVA

Performance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.106*	*4*	*.027*	*.187*	*.944*
Within Groups	*5.260*	*37*	*.142*		
Total	*5.366*	*41*			

According to Tables 4.7X and 4.7Y, there seems not to be considerable difference between groups of respondents in case of nationality, due to the significance values of the tests which are not less than 0.05.

Table 4.7x Mean comparisons in case of nationality (Importance ratings)

ANOVA

Importance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.445*	*4*	*.111*	*.904*	*.471*
Within Groups	*4.673*	*38*	*.123*		
Total	*5.118*	*42*			

Table 4.7y Mean comparisons in case of nationality (Performance ratings)

ANOVA

Performance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.329*	*4*	*.082*	*.604*	*.662*
Within Groups	*5.037*	*37*	*.136*		
Total	*5.366*	*41*			

According to Tables 4.8X and 4.8Y, there seems not to be considerable difference between groups of respondents in case of gender, due to the significance values of the tests which are not less than 0.05.

Table 4.8x Mean comparisons in case of gender (Importance ratings)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
mx	Equal variances assumed	.120	.731	.211	41	.834	.02281	.10797	-.19523	.24085
	Equal variances not assumed			.212	40.386	.834	.02281	.10781	-.19502	.24064

Table 4.8y Mean comparisons in case of gender (Performance ratings)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
my	Equal variances assumed	.238	.628	-.557	40	.580	-.06303	.11311	-.29164	.16557
	Equal variances not assumed			-.555	37.89	.582	-.06303	.11355	-.29293	.16687

According to Tables 4.9X and 4.9Y, there seems not to be considerable difference between groups of respondents in case of the number of times of travel to Iran, due to the significance values of the tests which are not less than 0.05.

Table 4.9x Mean comparisons in case of number of times of travel to Iran (Importance ratings)

ANOVA

Importance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.121*	*2*	*.061*	*.476*	*.625*
Within Groups	*4.955*	*39*	*.127*		
Total	*5.076*	*41*			

Table 4.9y Mean comparisons in case of number of times of travel to Iran (Performance ratings)

ANOVA

Performance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.395*	*2*	*.198*	*1.544*	*.227*
Within Groups	*4.865*	*38*	*.128*		
Total	*5.260*	*40*			

According to Tables 4.10X and 4.10Y, there seems not to be considerable difference between groups of respondents in case of number of times stay at Safir hotel, due to the significance values of the tests which are not less than 0.05.

Table 4.10x Mean comparisons in case of number of times stay at Safir hotel (Importance ratings)

ANOVA

Importance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.205*	*2*	*.102*	*.819*	*.448*
Within Groups	*4.871*	*39*	*.125*		
Total	*5.076*	*41*			

Table 4.10y Mean comparisons in case of number of times stay at Safir hotel (Performance ratings)

ANOVA

Performance Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*.034*	*2*	*.017*	*.125*	*.883*
Within Groups	*5.226*	*38*	*.138*		
Total	*5.260*	*40*			

4.4.6. Correlation analysis

In this section, the correlations between each of the items in the questionnaires are computed and addressed. The results are presented in Appendix 1x and Appendix 1y. For the ease of analysis, only correlation values more than 0.5 are assumed to be important for further analysis. Therefore, for instance, the correlation value of 0.757 between items of 29 and 30 implies that as much as the hotel room is more valuable for money, then the hotel food and beverage will be more valuable either. Considering all values in the Table, it is argued that there seems not to be considerable negative correlation between any of the items. However, this discussion and analysis provides valuable insights to the managers and process designers of the hotels in order to improve the quality of their services more strategically and more effectively.

4.5. Prioritizing SPDCs using service HoQ

At this stage the comprehensive customer requirements proposed in chapter 3 are entered into the left side of the HoQ Also, the comprehensive set of SPDCs which was also proposed in the previous chapter is entered into the top of the HoQ, The mean value of the importance rating of the customer requirements are all placed in the corresponding column, in order to fill the interrelationship matrix, a team of formed including, the researcher, supervisor and the hotel top managers. The team assumed four different possibilities for the relationship between each of the customer requirements and SPDCs as: blank (No relation ship,) 1-(Weak relationship), 3-(Moderate relationship), 9-(Strong relationship). As it is Illustrated in Figure 4.6, three different signs are used to denote the weak, Moderate and strong interrelationships as 

, 

and 

, respectively. In order to prioritize SPDCs, the importance rating value of each of the customer requirements is multiplied by the corresponding interrelationship weight the team determined. Then, all the multiplied values in each column belonging to each of the SPDCs are added up and a total value is calculated for each column l.e each SPDCs.

SPDCs

Weak Relation 1
Moderate Relation 3
Strong Relation 9

Customer Requirments	IMPORTANCE RATING	Workers skills	Wage payments	Motivation	Training, education, and development	Communication	Facility location	Facility layout and ambient conditions	Complementary service design	Service technology	Entertainment facilities	Handling, Storing, packaging, and protection of customers possessions	Safety and security facilities and customers property control	Time standards	Process design and scheduling	Failure prevention/recovery strategies; Customers feedback and corrective action control	Quality documentation and records
Performing the service at the designated time	4.54	9	1	9	9	3	9	9	3	9		1		9	3	9	3
Mailing a transaction slip immediately	3.92	9		3	9	9			1	9				9	9	3	3
Setting up appointments quickly	4.22	3	1	3	3	3		3	1	3				3	9	3	3
Comfort of service environment and facilities	4.51	9			3	9	9	9	3	9	3	3	9		3	3	3
Physical security	4.65	9		3	9	3	9	9			3	9	9			3	3
Financial security	4.68	9	9	3	3	3	3	3	3	3		9	9	1	3	9	9
Convenient location of service facilities	4.51	1			1	9	9	9		9	3	3	9				
Hotel guests will have a single, designated address	4.00					9	9	9	9	3		3	3	1	1	9	3
The services are easily accessibility by phone	4.24	9		3	3	9	3	9	3	9		9	1	3	9	3	9
Personnel speak well	4.32	9	3	9	9	9			3	1	3	9	3		1	3	3
Personnel characteristics of the contact personnel	4.22	9	9	9	9	9						9	9	3	3	3	1
Reputation of services	4.11	9	3	9	9	9	1	1	9	9	9	3	3	3	3	1	1
Size of rooms	3.76					1	9	9	3	1	3		3			3	1
Flowers/Plants	2.68						9	9	9		3						1
The quality of in room temperature control	3.51						1	9	9	9			3				1
Landscaping	3.59						9	9	9		9		9		3		
Physical representation of the services	3.86	9			3	9	9	9		9	1	1	1	9	9	3	3
Quality of communication materials	4.05	1		1		9	3	3	3	9	3	3	3	1	1	3	3
Quality and quantity of complimentary offered items	3.78					3		1	9	9	9			3	1	3	1
Mini-bar be available	3.81					3		1	9	9	3				3		1
Clean and neat appearance of public contact personnel	4.51	9	9	9	9	9	1		1	3	1	3	1		1		
Cleanliness and tidy appearance of the tangibles	4.54	3	1	3	9			9		3					9		9
Behavior of personnel	4.49	9	9	9	9	9			9		1	3	1	3			
Consideration for customer`s property	4.51	3	3	3	9					1		9	9			1	1
Friendliness	4.51	9	3	9	9	9			1	1					1	9	1
Knowledge and skills of contact personnel	4.43	9	9	9	9	9			3	9		3	3	1	9	9	1
Experience of personnel	4.38	9	3	9	9	9		3	1	9		9	9	3	9	9	9
Flexibility in service delivery speed	4.27	9	3	9	9	3	1	1	3	9	1	3	3	9	9	3	1
Hotel room be valuable for money	4.41				3	3	9	9	3	3	9		9			3	
Hotel food and beverage be valuable for money	4.30						9	9								3	
Total		661.51	292.57	476.73	683.38	683.38	458.60	581.86	420.90	617.46	257.01	404.04	469.59	254.79	418.29	423.01	318.36
Priorities		3	14	6	1	2	8	5	10	4	15	12	7	16	11	9	13

Figure 4.6 Prioritizing SPDCs using service HOQ

The total Values on the bottom of the matrix are prioritized and are listed in Table 4.11 (left side). As it is addressed “Training, education, and development” with total value of 683.38 is targeted as the first priority and “Time standards” with total value of 254.79 is targeted as the last priority. Therefore, it is concluded that if the Hotel wants to select a SPDCs with a high impact on customer requirements as a whole, it is greatly recommended to the hotel to act expediently to resolve the issues.

In order to find out the extend of potential difference between the computed priorities and the priorities in minds of the top managers, three of the hotel managers are asked to prioritize the service recovery solutions. After computing the mean values the items are priotrized and the final results are presented on the right side of the Table 4.11, As it is highlighted, there is a considerable different between the results of employing the new methodology and the traditional approach i.e. managers point of view In other words if hotel strategy is to listen to the voice of the guests and the selected the most effective SPDCs, then using the new approach is highly recommended. The total values on the bottom of the matrix are prioritized in table 4.11Table.

Table 4.11 Comparison of the priorities of SPDCs according to the HoQ and managers point of view

	Priority of the SPDCs acording to the HoQ	Priority of the SPDCs acording to the Managers point of view
1	Training, education, and development	Workers skills
2	Communication	Training, education, and development
3	Workers skills	Motivation
4	Service technology	Communication
5	Facility location	Safety and security facilities and customers property control
6	Motivation	Handling, Storing, packaging, and protection of customers possessions
7	Safety and security facilities and customers property control	Facility location
8	Facility layout and ambient conditions	Facility layout and ambient conditions
9	Failure prevention/recovery strategies; Customers feedback and corrective action control	Service technology
10	Complementary product design	Process design and scheduling
11	Process design and scheduling	Failure prevention/recovery strategies; Customers feedback and corrective action control
12	Handling, Storing, packaging, and protection of customers possessions	Quality documentation and records
13	Quality documentation and records	Entertainment facilities
14	Wage payments	Wage payments
15	Entertainment facilities	Time standards
16	Time standards	Complementary product design

According to Table 4.11 In the left side, (trading, education, and development) is the first priority according to service HoQ and in the other side managers highlighted (workers skill) as the most important point in SPDCs.

(Time standard) is not important at all from the service HoQ point of view and (Complimentary product design) in the other side has less value based on managers point of view.

CHAPTER 5
CONCLUSIONS & RECOMMENDATIONS

5.1 Introduction

In this thesis a new methodology was proposed to prioritize SPDCs based on customer requirements. For this propose literature was reviewed and classified considering their contribution to different part of methodology.

Two comprehensive sets of customer requirements and SPDCs were developed, which in turn supported the house of quality (HoQ) analysis. The proposed methodology was examined in Safir hotel as a four star hotel is Isfahan. Data was gathered from designed questionnaires and statistically analyzed. After computing the matrix in HoQ the total values of SPDCs were found and prioritized then, they were compared with the priorities from manager's point of view and the differences were finally highlighted. Although the research questions were 3 folded and were all answered effectively, some additional analyses were also provided by which the researcher believes they could add value to the research. Those include analysis of performance in addition to importance of customer requirements and also their correlation analysis. In the following major conclusions and recommendations are presented.

5.2 Conclusions

1) An advance technique, called house of quality was further developed for service applications in which a comprehensive set of customer requirements could be compared with a comprehensive set of SPDCs in hotels in general and customer requirements could be prioritized accordingly. . It was found that new methodology has the capability to be specialized for particular hotels, such as Safir hotel.

2) The outcomes imply that if the managers want to listen to the voice of customers and design service quality from customers point of view, the new methodology is much more effective than the traditional approaches in which, the SPDCs are prioritized based on manager's point of view. This conclusion was made based on the differences between the results of the proposed methodology and the manager's point of view in the case study. According to the results of the new methodology, "Training, education, and development" with total value of 683.38 is targeted as the first priority and "Time standards" with total value of 254.79 is targeted as the last priority. As it was found, there was a different order in priorities of the traditional approach.

3) The results of the one sample t-test imply that the customer requirements have relatively high importance and high performance.

4) The result of variance analysis and independent sample t-test outlines that there dose not exist, significant differences between groups of respondents.

5) The outcomes of the correlation analysis imply that some high correlation values between each of the customer requirements in case of both importance and performance.

5.3 Limitations

1) Although the new methodology sounds valuable and effective, it seems that including all items in the questionnaire and data gathering and analysis might be time consuming

2) Although the new methodology is customer oriented and involves grate advantages, it seems incases that there are too many items in each side of the matrix; the matrix might become large and hard to manage.

3) The proposed methodology was only conducted in a particular Hotel. However, from this point of view the generality of the investigation is questionable

4) Data gathered from the questionnaires are subjective and due to the probable ambiguity in the voice of customers, data analysis might be effected and hard to interpret. This is also true for the weights determined by the team of expert in the interrelationship matrix and also for the priorities determined by the managers for the SPDCs traditionally

5) As this thesis required the questionnaire to be asked only from inbound travelers, in the short period of time it was very difficult to collect the data.

6) The short time provided to complete the thesis after approving the subjects from the University was another limitation.

5.3 Recommendations and suggestions for future studies

1) Considering the literature review on quality function deployment (QFD) and its evolution, It is believed that the technique is flexible enoght to be integrated with other quality improvement tools and techniques Therefore similar developments to the QFD approach could be considered in the proposed methodology in order to further develop its capabilities and applicabilities

2) Although there was considerable difference between the first and the last priorities derived from the matrix, it seems that the middle values are somehow close to each other and therefore it is recommended to use other scales rather than 1-3-9 for the interrelationship analysis with wider distances in between. Similarly, a different scale instead of the 5 point Likert scale could be used for questionnaire design.

3) In cases like this thesis in which all importance and performance ratings are higher than the median (3.00) other valuable techniques such as importance – performance (IPA) could be use for differentiating items and providing more logical bases to the managers and service designers to decide on quality initiatives.

4) Some high correlation values were found between customers requirement`s Important ratings and performance ratings it is important to note that the correlation analysis of the importance ratings might seem less useful comparing to the performance correlations by which service designers are able to find which set of the requirements could be fulfilled simultaneously. If the analyst considers a further weight including such cases and multiplies it by the ordinary importance ratings, then the outcomes will become more effective.

5) It is recommended to reduce the items in the questionnaire as much as possible in order to save time in analysis. , it does not ,necessarily mean having trade off between items rather it is recommended to work on those items which might have been addressed by other related studies and more critical.

6) In order to better manage matrix, it is recommended to classify the items on each sides of the matrix and cut down the major matrixes, based on the classified items. Also it is important to note that the recommended action in the above (no. 6) would also lead to the objectives.

7) In order to adopt the generality of the proposed methodology, it is highly recommended to implement it in other different areas, i.e. other individual owned hotels or even chain hotels.

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Appendix 1x. Correlation analysis (Importance ratings)

		x1	x2	x3	x4	x5	x6
x1	Correlation Coefficient	1	0.482355	0.475825	0.803215	0.099681	0.241234
	Sig. (2-tailed)	.	0.001054	0.00126	0.000001	0.529953	0.123798
	N	43	43	43	42	42	42
x2	Correlation Coefficient	0.482355	1	0.633448	0.391467	-0.03438	0.059489
	Sig. (2-tailed)	0.001054	.	5.14E-06	0.010358	0.828894	0.708233
	N	43	43	43	42	42	42
x3	Correlation Coefficient	0.475825	0.633448	1	0.512285	-0.00893	0.225797
	Sig. (2-tailed)	0.00126	5.14E-06	.	0.000524	0.955245	0.150487
	N	43	43	43	42	42	42
x4	Correlation Coefficient	0.803215	0.391467	0.512285	1	0.197574	0.416778
	Sig. (2-tailed)	0.000001	0.010358	0.000524	.	0.215635	0.006714
	N	42	42	42	42	41	41
x5	Correlation Coefficient	0.099681	-0.03438	-0.00893	0.197574	1	0.719994
	Sig. (2-tailed)	0.529953	0.828894	0.955245	0.215635	.	0.000001
	N	42	42	42	41	42	42
x6	Correlation Coefficient	0.241234	0.059489	0.225797	0.416778	0.719994	1
	Sig. (2-tailed)	0.123798	0.708233	0.150487	0.006714	0.000001	.
	N	42	42	42	41	42	42
x7	Correlation Coefficient	0.374583	0.190117	0.198349	0.537673	0.092788	0.341572
	Sig. (2-tailed)	0.015826	0.233815	0.213803	0.000346	0.569039	0.030995
	N	41	41	41	40	40	40
x8	Correlation Coefficient	0.253259	0.536588	0.626252	0.447192	-0.02461	0.089235
	Sig. (2-tailed)	0.114845	0.000358	1.54E-05	0.004314	0.880181	0.583989
	N	40	40	40	39	40	40
x9	Correlation Coefficient	0.356288	0.300103	0.237054	0.438165	-0.0668	0.197332
	Sig. (2-tailed)	0.019026	0.050554	0.125875	0.003705	0.67425	0.210343
	N	43	43	43	42	42	42
x10	Correlation Coefficient	0.375871	0.054996	-0.07092	0.358371	-0.14561	-0.14356
	Sig. (2-tailed)	0.012993	0.726134	0.651323	0.019784	0.357525	0.364393
	N	43	43	43	42	42	42
x11	Correlation Coefficient	0.485955	0.425551	0.31601	0.419068	-0.01479	0.030012
	Sig. (2-tailed)	0.000954	0.004442	0.038981	0.005739	0.925936	0.850347
	N	43	43	43	42	42	42
x12	Correlation Coefficient	0.395476	0.350877	0.447128	0.469051	0.094028	0.196333
	Sig. (2-tailed)	0.008668	0.021058	0.002647	0.001728	0.553655	0.212707
	N	43	43	43	42	42	42
x13	Correlation Coefficient	0.097288	0.265675	0.093369	0.315723	0.082633	0.286826
	Sig. (2-tailed)	0.539924	0.089032	0.556449	0.044341	0.607513	0.069034
	N	42	42	42	41	41	41
x14	Correlation Coefficient	-0.36908	-0.21358	-0.30621	-0.33628	-0.01175	-0.17939
	Sig. (2-tailed)	0.014869	0.169076	0.045823	0.02945	0.941134	0.255642
	N	43	43	43	42	42	42
x15	Correlation Coefficient	-0.39682	-0.13557	-0.29612	-0.36426	0.010784	-0.05351
	Sig. (2-tailed)	0.008424	0.386034	0.053845	0.017715	0.945961	0.73647
	N	43	43	43	42	42	42

Appendix 1x. Continued

		x1	x2	x3	x4	x5	x6
x16	Correlation Coefficient	0.057191057	0.121664	0.091339	-0.01711	-0.02644	-0.19768
	Sig. (2-tailed)	0.715653198	0.437047	0.560216	0.914373	0.867983	0.209526
	N	43	43	43	42	42	42
x17	Correlation Coefficient	0.193332083	0.329652	-0.02125	0.03052	0.086732	0.072788
	Sig. (2-tailed)	0.225852392	0.035313	0.895099	0.84976	0.58975	0.651082
	N	41	41	41	41	41	41
x18	Correlation Coefficient	0.173899877	0.246819	0.039058	0.107917	0.040964	0.146227
	Sig. (2-tailed)	0.264739471	0.110577	0.80362	0.496336	0.796735	0.355465
	N	43	43	43	42	42	42
x19	Correlation Coefficient	0.23751231	0.281344	0.344183	0.117564	-0.05873	0.087941
	Sig. (2-tailed)	0.129881414	0.071084	0.02562	0.464143	0.715291	0.584554
	N	42	42	42	41	41	41
x20	Correlation Coefficient	0.22376174	0.117877	0.320785	0.484661	0.099604	0.163289
	Sig. (2-tailed)	0.149181334	0.451554	0.035965	0.001143	0.530273	0.301486
	N	43	43	43	42	42	42
x21	Correlation Coefficient	0.21581116	0.139495	0.245306	0.284557	0.106913	0.187279
	Sig. (2-tailed)	0.169862492	0.37828	0.117391	0.071359	0.500374	0.234982
	N	42	42	42	41	42	42
x22	Correlation Coefficient	0.365260749	0.187805	0.24537	0.352594	0.177197	0.292395
	Sig. (2-tailed)	0.01738057	0.233647	0.117293	0.023756	0.261597	0.060238
	N	42	42	42	41	42	42
x23	Correlation Coefficient	0.108676137	0.061499	-0.01096	0.115834	0.202326	0.110873
	Sig. (2-tailed)	0.487872499	0.695233	0.944373	0.465086	0.198797	0.484543
	N	43	43	43	42	42	42
x24	Correlation Coefficient	-0.025259883	-0.19356	-0.17428	0.040283	0.06146	-0.01766
	Sig. (2-tailed)	0.872262945	0.213628	0.26369	0.800043	0.699014	0.91159
	N	43	43	43	42	42	42
x25	Correlation Coefficient	-0.052913217	-0.22838	-0.28578	-0.1437	0.016171	0.06546
	Sig. (2-tailed)	0.736126678	0.140751	0.063207	0.363942	0.919041	0.680436
	N	43	43	43	42	42	42
x26	Correlation Coefficient	0.143876363	-0.12552	0.185164	0.097171	0.127108	0.125993
	Sig. (2-tailed)	0.363335275	0.428347	0.240406	0.545585	0.422463	0.426578
	N	42	42	42	41	42	42
x27	Correlation Coefficient	0.291164349	0.055456	0.218758	0.272067	0.166513	0.216017
	Sig. (2-tailed)	0.058184911	0.723932	0.158729	0.081327	0.291911	0.169447
	N	43	43	43	42	42	42
x28	Correlation Coefficient	0.256802648	0.099749	0.133073	0.259685	0.007011	0.178944
	Sig. (2-tailed)	0.100650361	0.52967	0.400836	0.101081	0.9653	0.262957
	N	42	42	42	41	41	41
x29	Correlation Coefficient	0.08171898	-0.0962	0.008976	0.167101	0.135811	0.264551
	Sig. (2-tailed)	0.602402	0.539445	0.954442	0.290184	0.391125	0.090444
	N	43	43	43	42	42	42
x30	Correlation Coefficient	0.147538402	-0.08866	0.169006	0.228028	0.028448	0.105222
	Sig. (2-tailed)	0.345095056	0.571839	0.278629	0.146388	0.858067	0.507212
	N	43	43	43	42	42	42

Appendix 1x. Continued

		x7	x8	x9	x10	x11	x12
x1	Correlation Coefficient	0.374583313	0.253259	0.356288	0.375871	0.485955	0.395476
	Sig. (2-tailed)	0.015825831	0.114845	0.019026	0.012993	0.000954	0.008668
	N	41	40	43	43	43	43
x2	Correlation Coefficient	0.190116514	0.536588	0.300103	0.054996	0.425551	0.350877
	Sig. (2-tailed)	0.233814946	0.000358	0.050554	0.726134	0.004442	0.021058
	N	41	40	43	43	43	43
x3	Correlation Coefficient	0.198349455	0.626252	0.237054	-0.07092	0.31601	0.447128
	Sig. (2-tailed)	0.213803224	1.54E-05	0.125875	0.651323	0.038981	0.002647
	N	41	40	43	43	43	43
x4	Correlation Coefficient	0.537672635	0.447192	0.438165	0.358371	0.419068	0.469051
	Sig. (2-tailed)	0.000346354	0.004314	0.003705	0.019784	0.005739	0.001728
	N	40	39	42	42	42	42
x5	Correlation Coefficient	0.092788436	-0.02461	-0.0668	-0.14561	-0.01479	0.094028
	Sig. (2-tailed)	0.569038848	0.880181	0.67425	0.357525	0.925936	0.553655
	N	40	40	42	42	42	42
x6	Correlation Coefficient	0.341571756	0.089235	0.197332	-0.14356	0.030012	0.196333
	Sig. (2-tailed)	0.030995285	0.583989	0.210343	0.364393	0.850347	0.212707
	N	40	40	42	42	42	42
x7	Correlation Coefficient	1	0.507321	0.333752	0.168961	0.478692	0.326094
	Sig. (2-tailed)	.	0.00098	0.032963	0.290951	0.001546	0.037461
	N	41	39	41	41	41	41
x8	Correlation Coefficient	0.507321346	1	0.329398	0.0212	0.277279	0.390948
	Sig. (2-tailed)	0.00097957	.	0.037935	0.896688	0.083237	0.01262
	N	39	40	40	40	40	40
x9	Correlation Coefficient	0.333752396	0.329398	1	0.424057	0.34863	0.352054
	Sig. (2-tailed)	0.032962595	0.037935	.	0.004599	0.021954	0.020601
	N	41	40	43	43	43	43
x10	Correlation Coefficient	0.168960994	0.0212	0.424057	1	0.575898	0.263916
	Sig. (2-tailed)	0.29095148	0.896688	0.004599	.	5.33E-05	0.08725
	N	41	40	43	43	43	43
x11	Correlation Coefficient	0.478691531	0.277279	0.34863	0.575898	1	0.65278
	Sig. (2-tailed)	0.001545547	0.083237	0.021954	5.33E-05	.	2.1E-06
	N	41	40	43	43	43	43
x12	Correlation Coefficient	0.326094076	0.390948	0.352054	0.263916	0.65278	1
	Sig. (2-tailed)	0.03746104	0.01262	0.020601	0.08725	2.1E-06	.
	N	41	40	43	43	43	43
x13	Correlation Coefficient	0.320397864	0.323493	0.360002	0.200881	0.093935	0.033498
	Sig. (2-tailed)	0.041122642	0.041732	0.019191	0.202089	0.554047	0.833199
	N	41	40	42	42	42	42
x14	Correlation Coefficient	-0.225616399	-0.19819	-0.10302	-0.18951	-0.2632	-0.23456
	Sig. (2-tailed)	0.156092591	0.220219	0.510911	0.223556	0.088149	0.130022
	N	41	40	43	43	43	43
x15	Correlation Coefficient	-0.161616262	-0.29316	0.028407	-0.1045	-0.13069	-0.01784
	Sig. (2-tailed)	0.312733897	0.066371	0.856505	0.50484	0.403529	0.909599
	N	41	40	43	43	43	43

Appendix 1x. Continued

		x7	x8	x9	x10	x11	x12
x16	Correlation Coefficient	0.040489786	0.342827	0.015684	-0.04707	0.007136	-0.03991
	Sig. (2-tailed)	0.801546309	0.030344	0.920486	0.76438	0.963777	0.79944
	N	41	40	43	43	43	43
x17	Correlation Coefficient	0.217285567	0.134864	0.166797	0.087159	0.217456	0.088469
	Sig. (2-tailed)	0.183934234	0.413032	0.297265	0.587912	0.172019	0.582293
	N	39	39	41	41	41	41
x18	Correlation Coefficient	0.167619133	0.406065	0.346562	0.060082	0.003057	0.157569
	Sig. (2-tailed)	0.294855967	0.009327	0.022807	0.701928	0.984478	0.312915
	N	41	40	43	43	43	43
x19	Correlation Coefficient	0.344190819	0.437025	0.294382	-0.06535	0.150386	0.262557
	Sig. (2-tailed)	0.02964817	0.005405	0.058436	0.680923	0.341796	0.092991
	N	40	39	42	42	42	42
x20	Correlation Coefficient	0.317124532	0.501068	0.308026	0.12956	0.109025	0.255568
	Sig. (2-tailed)	0.043355262	0.00099	0.044485	0.407646	0.486468	0.09811
	N	41	40	43	43	43	43
x21	Correlation Coefficient	0.586405738	0.308328	0.36187	0.139191	0.325899	0.296493
	Sig. (2-tailed)	6.99854E-05	0.05291	0.018531	0.379332	0.035186	0.056569
	N	40	40	42	42	42	42
x22	Correlation Coefficient	0.586405738	0.308328	0.426003	0.22801	0.364139	0.292128
	Sig. (2-tailed)	6.99854E-05	0.05291	0.00491	0.146422	0.017754	0.060484
	N	40	40	42	42	42	42
x23	Correlation Coefficient	0.489080517	0.179561	0.099505	0.076556	0.093362	-0.04786
	Sig. (2-tailed)	0.001174968	0.267571	0.525527	0.625596	0.551523	0.760546
	N	41	40	43	43	43	43
x24	Correlation Coefficient	0.099472165	-0.00908	-0.00362	0.200236	-0.09934	-0.15675
	Sig. (2-tailed)	0.536065928	0.955635	0.981638	0.197945	0.52622	0.315457
	N	41	40	43	43	43	43
x25	Correlation Coefficient	0.008861629	-0.24461	-0.06361	0.225247	0.064034	-0.06272
	Sig. (2-tailed)	0.956147737	0.128207	0.68528	0.146429	0.683316	0.689486
	N	41	40	43	43	43	43
x26	Correlation Coefficient	0.227128381	0.221675	0.254218	0.304911	0.165016	0.053468
	Sig. (2-tailed)	0.158707222	0.16922	0.104245	0.049594	0.296333	0.736648
	N	40	40	42	42	42	42
x27	Correlation Coefficient	0.260416442	0.26045	0.313479	0.244799	0.271494	0.276357
	Sig. (2-tailed)	0.100088798	0.104557	0.040662	0.11362	0.078224	0.072827
	N	41	40	43	43	43	43
x28	Correlation Coefficient	0.435497725	0.322194	0.362858	0.196154	0.122946	-0.00403
	Sig. (2-tailed)	0.004428862	0.045464	0.018189	0.213134	0.437933	0.979777
	N	41	39	42	42	42	42
x29	Correlation Coefficient	0.33584937	0.318093	0.345952	0.100135	-0.04355	0.104268
	Sig. (2-tailed)	0.031811519	0.045468	0.023063	0.522894	0.781556	0.505793
	N	41	40	43	43	43	43
x30	Correlation Coefficient	0.433297822	0.530297	0.26155	0.112041	0.059931	0.098156
	Sig. (2-tailed)	0.004656353	0.000432	0.090229	0.474419	0.702643	0.531183
	N	41	40	43	43	43	43

Appendix 1x. Continued

		x13	x14	x15	x16	x17	x18
x1	Correlation Coefficient	0.09728798	-0.36908	-0.39682	0.057191	0.193332	0.1739
	Sig. (2-tailed)	0.53992436	0.014869	0.008424	0.715653	0.225852	0.264739
	N	42	43	43	43	41	43
x2	Correlation Coefficient	0.265675324	-0.21358	-0.13557	0.121664	0.329652	0.246819
	Sig. (2-tailed)	0.089032359	0.169076	0.386034	0.437047	0.035313	0.110577
	N	42	43	43	43	41	43
x3	Correlation Coefficient	0.093368733	-0.30621	-0.29612	0.091339	-0.02125	0.039058
	Sig. (2-tailed)	0.556448632	0.045823	0.053845	0.560216	0.895099	0.80362
	N	42	43	43	43	41	43
x4	Correlation Coefficient	0.315723272	-0.33628	-0.36426	-0.01711	0.03052	0.107917
	Sig. (2-tailed)	0.044340612	0.02945	0.017715	0.914373	0.84976	0.496336
	N	41	42	42	42	41	42
x5	Correlation Coefficient	0.082633089	-0.01175	0.010784	-0.02644	0.086732	0.040964
	Sig. (2-tailed)	0.607512875	0.941134	0.945961	0.867983	0.58975	0.796735
	N	41	42	42	42	41	42
x6	Correlation Coefficient	0.2868256	-0.17939	-0.05351	-0.19768	0.072788	0.146227
	Sig. (2-tailed)	0.069033859	0.255642	0.73647	0.209526	0.651082	0.355465
	N	41	42	42	42	41	42
x7	Correlation Coefficient	0.320397864	-0.22562	-0.16162	0.04049	0.217286	0.167619
	Sig. (2-tailed)	0.041122642	0.156093	0.312734	0.801546	0.183934	0.294856
	N	41	41	41	41	39	41
x8	Correlation Coefficient	0.32349262	-0.19819	-0.29316	0.342827	0.134864	0.406065
	Sig. (2-tailed)	0.04173194	0.220219	0.066371	0.030344	0.413032	0.009327
	N	40	40	40	40	39	40
x9	Correlation Coefficient	0.360001704	-0.10302	0.028407	0.015684	0.166797	0.346562
	Sig. (2-tailed)	0.019191383	0.510911	0.856505	0.920486	0.297265	0.022807
	N	42	43	43	43	41	43
x10	Correlation Coefficient	0.200881435	-0.18951	-0.1045	-0.04707	0.087159	0.060082
	Sig. (2-tailed)	0.202089193	0.223556	0.50484	0.76438	0.587912	0.701928
	N	42	43	43	43	41	43
x11	Correlation Coefficient	0.093934804	-0.2632	-0.13069	0.007136	0.217456	0.003057
	Sig. (2-tailed)	0.554047393	0.088149	0.403529	0.963777	0.172019	0.984478
	N	42	43	43	43	41	43
x12	Correlation Coefficient	0.033498243	-0.23456	-0.01784	-0.03991	0.088469	0.157569
	Sig. (2-tailed)	0.833198752	0.130022	0.909599	0.79944	0.582293	0.312915
	N	42	43	43	43	41	43
x13	Correlation Coefficient	1	0.239189	0.114662	-0.02683	0.342289	0.203049
	Sig. (2-tailed)	.	0.127114	0.469645	0.866052	0.030622	0.197161
	N	42	42	42	42	40	42
x14	Correlation Coefficient	0.239189095	1	0.404592	0.282077	0.335431	0.195783
	Sig. (2-tailed)	0.127113766	.	0.007123	0.066861	0.032039	0.20831
	N	42	43	43	43	41	43
x15	Correlation Coefficient	0.114661526	0.404592	1	-0.17539	0.166243	0.125589
	Sig. (2-tailed)	0.469645398	0.007123	.	0.2606	0.298895	0.422288
	N	42	43	43	43	41	43

Appendix 1x. Continued

		x13	x14	x15	x16	x17	x18
x16	Correlation Coefficient	-0.026832276	0.282077	-0.17539	1	0.486129	0.358478
	Sig. (2-tailed)	0.86605195	0.066861	0.2606	.	0.001271	0.018251
	N	42	43	43	43	41	43
x17	Correlation Coefficient	0.34228875	0.335431	0.166243	0.486129	1	0.559339
	Sig. (2-tailed)	0.030621584	0.032039	0.298895	0.001271	.	0.000144
	N	40	41	41	41	41	41
x18	Correlation Coefficient	0.203049445	0.195783	0.125589	0.358478	0.559339	1
	Sig. (2-tailed)	0.197161099	0.20831	0.422288	0.018251	0.000144	.
	N	42	43	43	43	41	43
x19	Correlation Coefficient	0.037572595	0.19146	-0.13569	0.503648	0.419615	0.653394
	Sig. (2-tailed)	0.815587338	0.224507	0.39156	0.000673	0.007031	2.72E-06
	N	41	42	42	42	40	42
x20	Correlation Coefficient	0.184241504	0.177207	0.008691	0.217547	0.166019	0.411465
	Sig. (2-tailed)	0.242798942	0.25562	0.955888	0.161106	0.299555	0.006121
	N	42	43	43	43	41	43
x21	Correlation Coefficient	0.194718615	-0.10181	-0.03014	0.108679	0.125201	0.076603
	Sig. (2-tailed)	0.222477068	0.521172	0.849711	0.493284	0.435415	0.629685
	N	41	42	42	42	41	42
x22	Correlation Coefficient	0.194718615	-0.26433	-0.04282	0	0.185813	0.166318
	Sig. (2-tailed)	0.222477068	0.090728	0.787727	1	0.244768	0.292485
	N	41	42	42	42	41	42
x23	Correlation Coefficient	0.327301011	-0.15595	-0.15983	-0.07513	0.148838	0.078343
	Sig. (2-tailed)	0.034361446	0.317961	0.305946	0.632061	0.353024	0.617527
	N	42	43	43	43	41	43
x24	Correlation Coefficient	0.190914135	-0.07757	-0.00887	-0.22196	0.016321	0.021158
	Sig. (2-tailed)	0.225855713	0.62101	0.954971	0.152578	0.919326	0.892874
	N	42	43	43	43	41	43
x25	Correlation Coefficient	0.007777763	0.080813	-0.08931	-0.09051	0.076193	-0.02008
	Sig. (2-tailed)	0.961010799	0.606443	0.568994	0.563814	0.635875	0.898318
	N	42	43	43	43	41	43
x26	Correlation Coefficient	-0.022429159	0.045202	-0.0864	0.292697	0.027084	0.221207
	Sig. (2-tailed)	0.88929789	0.776223	0.586406	0.059961	0.866511	0.159181
	N	41	42	42	42	41	42
x27	Correlation Coefficient	0.107682501	-0.04807	-0.27401	0.241302	0.219016	0.221779
	Sig. (2-tailed)	0.497277468	0.759547	0.075391	0.119036	0.168887	0.152913
	N	42	43	43	43	41	43
x28	Correlation Coefficient	0.330457928	0.034211	-0.04355	-0.00654	0.142041	0.331632
	Sig. (2-tailed)	0.034840023	0.8297	0.784207	0.967213	0.381951	0.031914
	N	41	42	42	42	40	42
x29	Correlation Coefficient	0.357299514	-0.07691	0.068201	0.047271	0.220294	0.423948
	Sig. (2-tailed)	0.020181859	0.623984	0.66389	0.763407	0.166353	0.00461
	N	42	43	43	43	41	43
x30	Correlation Coefficient	0.337034495	0.002847	-0.1582	0.261729	0.128156	0.348193
	Sig. (2-tailed)	0.029063864	0.985545	0.310941	0.09	0.424569	0.022132
	N	42	43	43	43	41	43

Appendix 1x. Continued

		x19	x20	x21	x22	x23	x24
x1	Correlation Coefficient	0.23751231	0.223762	0.215811	0.365261	0.108676	-0.02526
	Sig. (2-tailed)	0.129881414	0.149181	0.169862	0.017381	0.487872	0.872263
	N	42	43	42	42	43	43
x2	Correlation Coefficient	0.281343612	0.117877	0.139495	0.187805	0.061499	-0.19356
	Sig. (2-tailed)	0.071083514	0.451554	0.37828	0.233647	0.695233	0.213628
	N	42	43	42	42	43	43
x3	Correlation Coefficient	0.344182738	0.320785	0.245306	0.24537	-0.01096	-0.17428
	Sig. (2-tailed)	0.025619861	0.035965	0.117391	0.117293	0.944373	0.26369
	N	42	43	42	42	43	43
x4	Correlation Coefficient	0.11756416	0.484661	0.284557	0.352594	0.115834	0.040283
	Sig. (2-tailed)	0.464142696	0.001143	0.071359	0.023756	0.465086	0.800043
	N	41	42	41	41	42	42
x5	Correlation Coefficient	-0.058732911	0.099604	0.106913	0.177197	0.202326	0.06146
	Sig. (2-tailed)	0.715291276	0.530273	0.500374	0.261597	0.198797	0.699014
	N	41	42	42	42	42	42
x6	Correlation Coefficient	0.08794102	0.163289	0.187279	0.292395	0.110873	-0.01766
	Sig. (2-tailed)	0.584554315	0.301486	0.234982	0.060238	0.484543	0.91159
	N	41	42	42	42	42	42
x7	Correlation Coefficient	0.344190819	0.317125	0.586406	0.586406	0.489081	0.099472
	Sig. (2-tailed)	0.02964817	0.043355	7E-05	7E-05	0.001175	0.536066
	N	40	41	40	40	41	41
x8	Correlation Coefficient	0.437025123	0.501068	0.308328	0.308328	0.179561	-0.00908
	Sig. (2-tailed)	0.005405285	0.00099	0.05291	0.05291	0.267571	0.955635
	N	39	40	40	40	40	40
x9	Correlation Coefficient	0.294382377	0.308026	0.36187	0.426003	0.099505	-0.00362
	Sig. (2-tailed)	0.058435842	0.044485	0.018531	0.00491	0.525527	0.981638
	N	42	43	42	42	43	43
x10	Correlation Coefficient	-0.065354436	0.12956	0.139191	0.22801	0.076556	0.200236
	Sig. (2-tailed)	0.680923495	0.407646	0.379332	0.146422	0.625596	0.197945
	N	42	43	42	42	43	43
x11	Correlation Coefficient	0.150386052	0.109025	0.325899	0.364139	0.093362	-0.09934
	Sig. (2-tailed)	0.341796487	0.486468	0.035186	0.017754	0.551523	0.52622
	N	42	43	42	42	43	43
x12	Correlation Coefficient	0.262556905	0.255568	0.296493	0.292128	-0.04786	-0.15675
	Sig. (2-tailed)	0.092990868	0.09811	0.056569	0.060484	0.760546	0.315457
	N	42	43	42	42	43	43
x13	Correlation Coefficient	0.037572595	0.184242	0.194719	0.194719	0.327301	0.190914
	Sig. (2-tailed)	0.815587338	0.242799	0.222477	0.222477	0.034361	0.225856
	N	41	42	41	41	42	42
x14	Correlation Coefficient	0.191460001	0.177207	-0.10181	-0.26433	-0.15595	-0.07757
	Sig. (2-tailed)	0.224506516	0.25562	0.521172	0.090728	0.317961	0.62101
	N	42	43	42	42	43	43
x15	Correlation Coefficient	-0.135687642	0.008691	-0.03014	-0.04282	-0.15983	-0.00887
	Sig. (2-tailed)	0.391560333	0.955888	0.849711	0.787727	0.305946	0.954971
	N	42	43	42	42	43	43

Appendix 1x. Continued

		x19	x20	x21	x22	x23	x24
x16	Correlation Coefficient	0.503647522	0.217547	0.108679	0	-0.07513	-0.22196
	Sig. (2-tailed)	0.000673422	0.161106	0.493284	1	0.632061	0.152578
	N	42	43	42	42	43	43
x17	Correlation Coefficient	0.419615277	0.166019	0.125201	0.185813	0.148838	0.016321
	Sig. (2-tailed)	0.007030585	0.299555	0.435415	0.244768	0.353024	0.919326
	N	40	41	41	41	41	41
x18	Correlation Coefficient	0.653394424	0.411465	0.076603	0.166318	0.078343	0.021158
	Sig. (2-tailed)	2.71834E-06	0.006121	0.629685	0.292485	0.617527	0.892874
	N	42	43	42	42	43	43
x19	Correlation Coefficient	1	0.349601	0.351015	0.306499	0.036151	-0.21448
	Sig. (2-tailed)	.	0.023242	0.024435	0.051289	0.820197	0.172582
	N	42	42	41	41	42	42
x20	Correlation Coefficient	0.34960085	1	0.144479	0.135104	-0.00989	-0.04997
	Sig. (2-tailed)	0.023241745	.	0.361307	0.393619	0.949797	0.750323
	N	42	43	42	42	43	43
x21	Correlation Coefficient	0.351015217	0.144479	1	0.909079	0.419356	0.295691
	Sig. (2-tailed)	0.024434848	0.361307	.	0.000001	0.005702	0.057273
	N	41	42	42	42	42	42
x22	Correlation Coefficient	0.306499107	0.135104	0.909079	1	0.469874	0.307982
	Sig. (2-tailed)	0.051288924	0.393619	0.000001	.	0.001692	0.047229
	N	41	42	42	42	42	42
x23	Correlation Coefficient	0.03615145	-0.00989	0.419356	0.469874	1	0.572335
	Sig. (2-tailed)	0.820196782	0.949797	0.005702	0.001692	.	6.07E-05
	N	42	43	42	42	43	43
x24	Correlation Coefficient	-0.214476889	-0.04997	0.295691	0.307982	0.572335	1
	Sig. (2-tailed)	0.17258167	0.750323	0.057273	0.047229	6.07E-05	.
	N	42	43	42	42	43	43
x25	Correlation Coefficient	-0.075017537	-0.32807	0.094934	0.077514	0.270998	0.435182
	Sig. (2-tailed)	0.636810036	0.031733	0.549819	0.625603	0.078791	0.00354
	N	42	43	42	42	43	43
x26	Correlation Coefficient	0.391789541	0.322143	0.304625	0.27996	0.13046	0.07882
	Sig. (2-tailed)	0.011300183	0.037476	0.049819	0.072544	0.410228	0.619777
	N	41	42	42	42	42	42
x27	Correlation Coefficient	0.470296137	0.145332	0.377757	0.381617	0.275036	0.267271
	Sig. (2-tailed)	0.001673268	0.352437	0.013647	0.012642	0.074263	0.083159
	N	42	43	42	42	43	43
x28	Correlation Coefficient	0.266079689	0.171984	0.422926	0.522437	0.504991	0.483328
	Sig. (2-tailed)	0.092662456	0.276115	0.005871	0.000459	0.000648	0.001185
	N	41	42	41	41	42	42
x29	Correlation Coefficient	0.278890974	0.134005	0.453132	0.548547	0.490323	0.431447
	Sig. (2-tailed)	0.073687372	0.391607	0.002583	0.000169	0.000844	0.003869
	N	42	43	42	42	43	43
x30	Correlation Coefficient	0.418383142	0.365425	0.412542	0.412432	0.331167	0.250334
	Sig. (2-tailed)	0.005827229	0.015969	0.006628	0.006644	0.030064	0.105432
	N	42	43	42	42	43	43

Appendix 1x. Continued

		x25	x26	x27	x28	x29	x30
x1	Correlation Coefficient	-0.052913217	0.143876	0.291164	0.256803	0.081719	0.147538
	Sig. (2-tailed)	0.736126678	0.363335	0.058185	0.10065	0.602402	0.345095
	N	43	42	43	42	43	43
x2	Correlation Coefficient	-0.228379392	-0.12552	0.055456	0.099749	-0.0962	-0.08866
	Sig. (2-tailed)	0.140750912	0.428347	0.723932	0.52967	0.539445	0.571839
	N	43	42	43	42	43	43
x3	Correlation Coefficient	-0.285782731	0.185164	0.218758	0.133073	0.008976	0.169006
	Sig. (2-tailed)	0.063206573	0.240406	0.158729	0.400836	0.954442	0.278629
	N	43	42	43	42	43	43
x4	Correlation Coefficient	-0.143696541	0.097171	0.272067	0.259685	0.167101	0.228028
	Sig. (2-tailed)	0.363941609	0.545585	0.081327	0.101081	0.290184	0.146388
	N	42	41	42	41	42	42
x5	Correlation Coefficient	0.016170646	0.127108	0.166513	0.007011	0.135811	0.028448
	Sig. (2-tailed)	0.91904111	0.422463	0.291911	0.9653	0.391125	0.858067
	N	42	42	42	41	42	42
x6	Correlation Coefficient	0.065459834	0.125993	0.216017	0.178944	0.264551	0.105222
	Sig. (2-tailed)	0.680436289	0.426578	0.169447	0.262957	0.090444	0.507212
	N	42	42	42	41	42	42
x7	Correlation Coefficient	0.008861629	0.227128	0.260416	0.435498	0.335849	0.433298
	Sig. (2-tailed)	0.956147737	0.158707	0.100089	0.004429	0.031812	0.004656
	N	41	40	41	41	41	41
x8	Correlation Coefficient	-0.244610233	0.221675	0.26045	0.322194	0.318093	0.530297
	Sig. (2-tailed)	0.128207413	0.16922	0.104557	0.045464	0.045468	0.000432
	N	40	40	40	39	40	40
x9	Correlation Coefficient	-0.06361479	0.254218	0.313479	0.362858	0.345952	0.26155
	Sig. (2-tailed)	0.685279931	0.104245	0.040662	0.018189	0.023063	0.090229
	N	43	42	43	42	43	43
x10	Correlation Coefficient	0.225247402	0.304911	0.244799	0.196154	0.100135	0.112041
	Sig. (2-tailed)	0.146429457	0.049594	0.11362	0.213134	0.522894	0.474419
	N	43	42	43	42	43	43
x11	Correlation Coefficient	0.064033605	0.165016	0.271494	0.122946	-0.04355	0.059931
	Sig. (2-tailed)	0.683315946	0.296333	0.078224	0.437933	0.781556	0.702643
	N	43	42	43	42	43	43
x12	Correlation Coefficient	-0.062719308	0.053468	0.276357	-0.00403	0.104268	0.098156
	Sig. (2-tailed)	0.689486056	0.736648	0.072827	0.979777	0.505793	0.531183
	N	43	42	43	42	43	43
x13	Correlation Coefficient	0.007777763	-0.02243	0.107683	0.330458	0.3573	0.337034
	Sig. (2-tailed)	0.961010799	0.889298	0.497277	0.03484	0.020182	0.029064
	N	42	41	42	41	42	42
x14	Correlation Coefficient	0.080813349	0.045202	-0.04807	0.034211	-0.07691	0.002847
	Sig. (2-tailed)	0.606443291	0.776223	0.759547	0.8297	0.623984	0.985545
	N	43	42	43	42	43	43
x15	Correlation Coefficient	-0.089310941	-0.0864	-0.27401	-0.04355	0.068201	-0.1582
	Sig. (2-tailed)	0.568994006	0.586406	0.075391	0.784207	0.66389	0.310941
	N	43	42	43	42	43	43

Appendix 1x. Continued

		x25	x26	x27	x28	x29	x30
x16	Correlation Coefficient	-0.090506063	0.292697	0.241302	-0.00654	0.047271	0.261729
	Sig. (2-tailed)	0.563813645	0.059961	0.119036	0.967213	0.763407	0.09
	N	43	42	43	42	43	43
x17	Correlation Coefficient	0.076192886	0.027084	0.219016	0.142041	0.220294	0.128156
	Sig. (2-tailed)	0.635874921	0.866511	0.168887	0.381951	0.166353	0.424569
	N	41	41	41	40	41	41
x18	Correlation Coefficient	-0.020076963	0.221207	0.221779	0.331632	0.423948	0.348193
	Sig. (2-tailed)	0.898317711	0.159181	0.152913	0.031914	0.00461	0.022132
	N	43	42	43	42	43	43
x19	Correlation Coefficient	-0.075017537	0.39179	0.470296	0.26608	0.278891	0.418383
	Sig. (2-tailed)	0.636810036	0.0113	0.001673	0.092662	0.073687	0.005827
	N	42	41	42	41	42	42
x20	Correlation Coefficient	-0.328072849	0.322143	0.145332	0.171984	0.134005	0.365425
	Sig. (2-tailed)	0.03173256	0.037476	0.352437	0.276115	0.391607	0.015969
	N	43	42	43	42	43	43
x21	Correlation Coefficient	0.094934356	0.304625	0.377757	0.422926	0.453132	0.412542
	Sig. (2-tailed)	0.549819305	0.049819	0.013647	0.005871	0.002583	0.006628
	N	42	42	42	41	42	42
x22	Correlation Coefficient	0.077514244	0.27996	0.381617	0.522437	0.548547	0.412432
	Sig. (2-tailed)	0.625603155	0.072544	0.012642	0.000459	0.000169	0.006644
	N	42	42	42	41	42	42
x23	Correlation Coefficient	0.270997678	0.13046	0.275036	0.504991	0.490323	0.331167
	Sig. (2-tailed)	0.078791094	0.410228	0.074263	0.000648	0.000844	0.030064
	N	43	42	43	42	43	43
x24	Correlation Coefficient	0.435181839	0.07882	0.267271	0.483328	0.431447	0.250334
	Sig. (2-tailed)	0.003540049	0.619777	0.083159	0.001185	0.003869	0.105432
	N	43	42	43	42	43	43
x25	Correlation Coefficient	1	0.260881	0.250716	0.272376	0.192969	0.072494
	Sig. (2-tailed)	.	0.095173	0.104884	0.080969	0.215054	0.6441
	N	43	42	43	42	43	43
x26	Correlation Coefficient	0.260881356	1	0.627687	0.362995	0.29395	0.506739
	Sig. (2-tailed)	0.095173187	.	8.62E-06	0.019668	0.058824	0.000616
	N	42	42	42	41	42	42
x27	Correlation Coefficient	0.250715608	0.627687	1	0.266088	0.35186	0.425066
	Sig. (2-tailed)	0.104883632	8.62E-06	.	0.088518	0.020676	0.004493
	N	43	42	43	42	43	43
x28	Correlation Coefficient	0.27237612	0.362995	0.266088	1	0.49603	0.435199
	Sig. (2-tailed)	0.080968917	0.019668	0.088518	.	0.000836	0.003972
	N	42	41	42	42	42	42
x29	Correlation Coefficient	0.192968898	0.29395	0.35186	0.49603	1	0.679849
	Sig. (2-tailed)	0.215054304	0.058824	0.020676	0.000836	.	0.000001
	N	43	42	43	42	43	43
x30	Correlation Coefficient	0.072493768	0.506739	0.425066	0.435199	0.679849	1
	Sig. (2-tailed)	0.6440998	0.000616	0.004493	0.003972	0.000001	.
	N	43	42	43	42	43	43

Appendix 1y. Correlation analysis (Performance ratings)

		Y1	Y2	Y3	Y4	Y5	Y6
Y1	Correlation Coefficient	1	0.223806	0.445214	0.41754	0.342491	0.495114
	Sig. (2-tailed)	.	0.15953	0.003132	0.006604	0.030517	0.000858
	N	42	41	42	41	40	42
Y2	Correlation Coefficient	0.223806	1	0.518817	0.006985	0.241251	0.141968
	Sig. (2-tailed)	0.15953	.	0.00051	0.965879	0.1337	0.375928
	N	41	41	41	40	40	41
Y3	Correlation Coefficient	0.445214	0.518817	1	0.522615	0.30117	0.317418
	Sig. (2-tailed)	0.003132	0.00051	.	0.000456	0.058962	0.040528
	N	42	41	42	41	40	42
Y4	Correlation Coefficient	0.41754	0.006985	0.522615	1	0.511245	0.477484
	Sig. (2-tailed)	0.006604	0.965879	0.000456	.	0.000881	0.001595
	N	41	40	41	41	39	41
Y5	Correlation Coefficient	0.342491	0.241251	0.30117	0.511245	1	0.698083
	Sig. (2-tailed)	0.030517	0.1337	0.058962	0.000881	.	0.000001
	N	40	40	40	39	40	40
Y6	Correlation Coefficient	0.495114	0.141968	0.317418	0.477484	0.698083	1
	Sig. (2-tailed)	0.000858	0.375928	0.040528	0.001595	0.000001	.
	N	42	41	42	41	40	42
Y7	Correlation Coefficient	0.225643	-0.19018	-0.05316	0.257283	0.185928	0.161887
	Sig. (2-tailed)	0.156043	0.239817	0.741335	0.108998	0.250691	0.311914
	N	41	40	41	40	40	41
Y8	Correlation Coefficient	0.366867	0.107887	0.274258	0.216737	0.270895	0.318489
	Sig. (2-tailed)	0.025517	0.525047	0.100454	0.197575	0.110031	0.054711
	N	37	37	37	37	36	37
Y9	Correlation Coefficient	0.106741	0.290984	0.410364	0.263163	0.034134	-0.17478
	Sig. (2-tailed)	0.501069	0.064928	0.00695	0.096432	0.83437	0.268267
	N	42	41	42	41	40	42
Y10	Correlation Coefficient	0.462473	0.022474	0.226852	0.426363	0.273188	0.378976
	Sig. (2-tailed)	0.002045	0.88908	0.148538	0.005441	0.088079	0.013323
	N	42	41	42	41	40	42
Y11	Correlation Coefficient	0.399496	-0.10867	0.162149	0.399136	0.381812	0.296307
	Sig. (2-tailed)	0.009663	0.504453	0.31112	0.010731	0.016463	0.059958
	N	41	40	41	40	39	41
Y12	Correlation Coefficient	0.498463	0.018565	0.205926	0.286505	0.232406	0.33307
	Sig. (2-tailed)	0.000781	0.908281	0.190754	0.069359	0.148993	0.031134
	N	42	41	42	41	40	42
Y13	Correlation Coefficient	0.286394	-0.06693	0.069465	0.18931	0.283334	0.298184
	Sig. (2-tailed)	0.065951	0.677584	0.662019	0.235843	0.076454	0.055108
	N	42	41	42	41	40	42
Y14	Correlation Coefficient	0.070913	-0.04638	-0.24889	-0.12879	-0.02708	0.081002
	Sig. (2-tailed)	0.659519	0.776283	0.116604	0.428342	0.87001	0.614647
	N	41	40	41	40	39	41
Y15	Correlation Coefficient	0.041947	0.159099	0.081384	0.022659	0.112242	0.177782
	Sig. (2-tailed)	0.791967	0.32043	0.608395	0.888171	0.490476	0.26
	N	42	41	42	41	40	42

Appendix 1y. Continued

		Y1	Y2	Y3	Y4	Y5	Y6
Y16	Correlation Coefficient	0.025354	0.332138	0.070569	0.06583	0.178966	0.134648
	Sig. (2-tailed)	0.873371	0.033872	0.656978	0.682596	0.269185	0.395232
	N	42	41	42	41	40	42
Y17	Correlation Coefficient	0.12788	0.042074	0.19275	0.052258	0.164023	0.049744
	Sig. (2-tailed)	0.419626	0.793945	0.221341	0.745569	0.311851	0.7544
	N	42	41	42	41	40	42
Y18	Correlation Coefficient	0.024692	-0.2567	0.135062	0.080823	-0.02471	0.018078
	Sig. (2-tailed)	0.878211	0.109836	0.399822	0.620056	0.881293	0.910677
	N	41	40	41	40	39	41
Y19	Correlation Coefficient	0.054508	-0.08086	0.159553	0.039165	-0.2571	-0.19357
	Sig. (2-tailed)	0.735002	0.619888	0.319034	0.81038	0.114098	0.225267
	N	41	40	41	40	39	41
Y20	Correlation Coefficient	0.163928	0.063353	0.181344	0.281412	-0.19884	0.00584
	Sig. (2-tailed)	0.299572	0.693944	0.250416	0.074682	0.218699	0.970721
	N	42	41	42	41	40	42
Y21	Correlation Coefficient	0.098539	0.083172	0.177761	0.194607	0.052795	0.091334
	Sig. (2-tailed)	0.534699	0.605166	0.260058	0.222749	0.746282	0.565122
	N	42	41	42	41	40	42
Y22	Correlation Coefficient	0.233193	0.17936	0.230233	0.440211	0.118162	0.091349
	Sig. (2-tailed)	0.137218	0.261829	0.14242	0.003974	0.467733	0.565055
	N	42	41	42	41	40	42
Y23	Correlation Coefficient	0.151559	-0.03763	0.215591	0.439517	0.310095	0.435097
	Sig. (2-tailed)	0.338002	0.815316	0.170309	0.004038	0.051495	0.003981
	N	42	41	42	41	40	42
Y24	Correlation Coefficient	0.079935	0.250145	0.316916	0.320884	0.638311	0.336484
	Sig. (2-tailed)	0.614818	0.114711	0.040864	0.040799	9.36E-06	0.029344
	N	42	41	42	41	40	42
Y25	Correlation Coefficient	0.150565	0.119876	0.545731	0.453618	0.412255	0.291522
	Sig. (2-tailed)	0.341215	0.455341	0.000186	0.002895	0.008209	0.061043
	N	42	41	42	41	40	42
Y26	Correlation Coefficient	0.28749	0.1681	0.285749	0.516768	0.251662	0.259955
	Sig. (2-tailed)	0.064877	0.293452	0.066589	0.000542	0.117229	0.096397
	N	42	41	42	41	40	42
Y27	Correlation Coefficient	0.368557	-0.19521	0.362803	0.663955	0.308493	0.479809
	Sig. (2-tailed)	0.017737	0.227381	0.019738	3E-06	0.056036	0.001501
	N	41	40	41	40	39	41
Y28	Correlation Coefficient	0.374651	0.078842	0.361101	0.373711	0.253747	0.319665
	Sig. (2-tailed)	0.014505	0.624142	0.0188	0.016091	0.114123	0.039052
	N	42	41	42	41	40	42
Y29	Correlation Coefficient	0.202009	-0.06817	0.105537	0.208298	0.338228	0.336403
	Sig. (2-tailed)	0.199516	0.671955	0.505938	0.191247	0.032788	0.029386
	N	42	41	42	41	40	42
Y30	Correlation Coefficient	0.02837	-0.19579	-0.04054	0.042281	0.180651	0.21234
	Sig. (2-tailed)	0.858452	0.219902	0.798779	0.792956	0.26463	0.177001
	N	42	41	42	41	40	42

Appendix 1y. Continued

		Y7	Y8	Y9	Y10	Y11	Y12
Y1	Correlation Coefficient	0.225643	0.366867	0.106741	0.462473	0.399496	0.498463
	Sig. (2-tailed)	0.156043	0.025517	0.501069	0.002045	0.009663	0.000781
	N	41	37	42	42	41	42
Y2	Correlation Coefficient	-0.19018	0.107887	0.290984	0.022474	-0.10867	0.018565
	Sig. (2-tailed)	0.239817	0.525047	0.064928	0.88908	0.504453	0.908281
	N	40	37	41	41	40	41
Y3	Correlation Coefficient	-0.05316	0.274258	0.410364	0.226852	0.162149	0.205926
	Sig. (2-tailed)	0.741335	0.100454	0.00695	0.148538	0.31112	0.190754
	N	41	37	42	42	41	42
Y4	Correlation Coefficient	0.257283	0.216737	0.263163	0.426363	0.399136	0.286505
	Sig. (2-tailed)	0.108998	0.197575	0.096432	0.005441	0.010731	0.069359
	N	40	37	41	41	40	41
Y5	Correlation Coefficient	0.185928	0.270895	0.034134	0.273188	0.381812	0.232406
	Sig. (2-tailed)	0.250691	0.110031	0.83437	0.088079	0.016463	0.148993
	N	40	36	40	40	39	40
Y6	Correlation Coefficient	0.161887	0.318489	-0.17478	0.378976	0.296307	0.33307
	Sig. (2-tailed)	0.311914	0.054711	0.268267	0.013323	0.059958	0.031134
	N	41	37	42	42	41	42
Y7	Correlation Coefficient	1	0.202923	0.331736	0.044502	0.361994	0.265375
	Sig. (2-tailed)	.	0.235242	0.034102	0.782337	0.021715	0.093563
	N	41	36	41	41	40	41
Y8	Correlation Coefficient	0.202923	1	0.156277	0.089129	0.124559	0.132916
	Sig. (2-tailed)	0.235242	.	0.355663	0.59987	0.469186	0.432903
	N	36	37	37	37	36	37
Y9	Correlation Coefficient	0.331736	0.156277	1	0.219529	0.286578	0.129626
	Sig. (2-tailed)	0.034102	0.355663	.	0.162449	0.069285	0.413255
	N	41	37	42	42	41	42
Y10	Correlation Coefficient	0.044502	0.089129	0.219529	1	0.579724	0.350837
	Sig. (2-tailed)	0.782337	0.59987	0.162449	.	7.12E-05	0.022726
	N	41	37	42	42	41	42
Y11	Correlation Coefficient	0.361994	0.124559	0.286578	0.579724	1	0.506171
	Sig. (2-tailed)	0.021715	0.469186	0.069285	7.12E-05	.	0.000734
	N	40	36	41	41	41	41
Y12	Correlation Coefficient	0.265375	0.132916	0.129626	0.350837	0.506171	1
	Sig. (2-tailed)	0.093563	0.432903	0.413255	0.022726	0.000734	.
	N	41	37	42	42	41	42
Y13	Correlation Coefficient	-0.04197	-0.15377	-0.20826	0.188459	0.363359	0.565695
	Sig. (2-tailed)	0.794439	0.363541	0.18567	0.231992	0.019537	9.46E-05
	N	41	37	42	42	41	42
Y14	Correlation Coefficient	0.211279	0.144808	-0.22029	-0.04796	0.067886	0.303733
	Sig. (2-tailed)	0.190635	0.399431	0.166351	0.765898	0.677254	0.053535
	N	40	36	41	41	40	41
Y15	Correlation Coefficient	0.233185	0.019238	0.186189	0.150117	0.142168	0.24642
	Sig. (2-tailed)	0.142308	0.910021	0.237768	0.342671	0.375249	0.115683
	N	41	37	42	42	41	42

Appendix 1y. Continued

		Y7	Y8	Y9	Y10	Y11	Y12
Y16	Correlation Coefficient	0.04409	-0.02109	0.019718	0.096431	-0.06531	0.024398
	Sig. (2-tailed)	0.784304	0.901389	0.901362	0.543517	0.68495	0.878107
	N	41	37	42	42	41	42
Y17	Correlation Coefficient	-0.02661	0.164222	0.211596	0.06679	0.287914	0.162328
	Sig. (2-tailed)	0.868805	0.331422	0.17856	0.6743	0.06794	0.304378
	N	41	37	42	42	41	42
Y18	Correlation Coefficient	0.053864	0.108145	0.134609	0.230759	0.370132	-0.05151
	Sig. (2-tailed)	0.741322	0.524048	0.401418	0.146625	0.01873	0.749108
	N	40	37	41	41	40	41
Y19	Correlation Coefficient	0.184039	0.130437	0.279453	0.032578	0.025106	0.071443
	Sig. (2-tailed)	0.255624	0.4483	0.076814	0.839759	0.877787	0.65713
	N	40	36	41	41	40	41
Y20	Correlation Coefficient	0.139454	0.165102	0.444208	0.282219	0.158285	0.239681
	Sig. (2-tailed)	0.384528	0.328803	0.003209	0.070171	0.322945	0.12631
	N	41	37	42	42	41	42
Y21	Correlation Coefficient	-0.07232	0.078805	0.301888	0.388342	0.410589	0.060662
	Sig. (2-tailed)	0.653163	0.642919	0.052014	0.011041	0.007665	0.70274
	N	41	37	42	42	41	42
Y22	Correlation Coefficient	0.191748	0.010125	0.465579	0.430359	0.388977	0.300869
	Sig. (2-tailed)	0.22975	0.952573	0.001889	0.004444	0.011954	0.052852
	N	41	37	42	42	41	42
Y23	Correlation Coefficient	0.110106	0.148791	0.07669	0.448657	0.44482	0.384167
	Sig. (2-tailed)	0.493148	0.379453	0.629293	0.002882	0.003569	0.012013
	N	41	37	42	42	41	42
Y24	Correlation Coefficient	0.232562	0.170003	0.344379	0.191125	0.25701	0.214788
	Sig. (2-tailed)	0.143408	0.314444	0.02553	0.225334	0.104771	0.171944
	N	41	37	42	42	41	42
Y25	Correlation Coefficient	0.228834	0.244885	0.373962	0.257762	0.216183	0.183218
	Sig. (2-tailed)	0.150118	0.144071	0.014701	0.09934	0.174605	0.245471
	N	41	37	42	42	41	42
Y26	Correlation Coefficient	0.318945	0.032828	0.265801	0.335401	0.362013	0.455243
	Sig. (2-tailed)	0.042101	0.847051	0.088876	0.029902	0.020027	0.002451
	N	41	37	42	42	41	42
Y27	Correlation Coefficient	0.325615	0.063564	0.086863	0.352016	0.370316	0.44732
	Sig. (2-tailed)	0.040333	0.712651	0.589185	0.024003	0.018667	0.003365
	N	40	36	41	41	40	41
Y28	Correlation Coefficient	0.027987	0.151904	-0.06334	0.268698	0.231676	0.253163
	Sig. (2-tailed)	0.862107	0.369447	0.690247	0.085322	0.144981	0.105739
	N	41	37	42	42	41	42
Y29	Correlation Coefficient	0.361772	0.131907	-0.11021	0.044085	0.151078	0.255302
	Sig. (2-tailed)	0.020116	0.436432	0.48716	0.781617	0.34574	0.102725
	N	41	37	42	42	41	42
Y30	Correlation Coefficient	0.13376	0.124707	-0.25936	-0.05663	-0.04183	0.010382
	Sig. (2-tailed)	0.40442	0.462094	0.097185	0.721687	0.795104	0.947973
	N	41	37	42	42	41	42

Appendix 1y. Continued

		Y13	Y14	Y15	Y16	Y17	Y18
Y1	Correlation Coefficient	0.286394	0.070913	0.041947	0.025354	0.12788	0.024692
	Sig. (2-tailed)	0.065951	0.659519	0.791967	0.873371	0.419626	0.878211
	N	42	41	42	42	42	41
Y2	Correlation Coefficient	-0.06693	-0.04638	0.159099	0.332138	0.042074	-0.2567
	Sig. (2-tailed)	0.677584	0.776283	0.32043	0.033872	0.793945	0.109836
	N	41	40	41	41	41	40
Y3	Correlation Coefficient	0.069465	-0.24889	0.081384	0.070569	0.19275	0.135062
	Sig. (2-tailed)	0.662019	0.116604	0.608395	0.656978	0.221341	0.399822
	N	42	41	42	42	42	41
Y4	Correlation Coefficient	0.18931	-0.12879	0.022659	0.06583	0.052258	0.080823
	Sig. (2-tailed)	0.235843	0.428342	0.888171	0.682596	0.745569	0.620056
	N	41	40	41	41	41	40
Y5	Correlation Coefficient	0.283334	-0.02708	0.112242	0.178966	0.164023	-0.02471
	Sig. (2-tailed)	0.076454	0.87001	0.490476	0.269185	0.311851	0.881293
	N	40	39	40	40	40	39
Y6	Correlation Coefficient	0.298184	0.081002	0.177782	0.134648	0.049744	0.018078
	Sig. (2-tailed)	0.055108	0.614647	0.26	0.395232	0.7544	0.910677
	N	42	41	42	42	42	41
Y7	Correlation Coefficient	-0.04197	0.211279	0.233185	0.04409	-0.02661	0.053864
	Sig. (2-tailed)	0.794439	0.190635	0.142308	0.784304	0.868805	0.741322
	N	41	40	41	41	41	40
Y8	Correlation Coefficient	-0.15377	0.144808	0.019238	-0.02109	0.164222	0.108145
	Sig. (2-tailed)	0.363541	0.399431	0.910021	0.901389	0.331422	0.524048
	N	37	36	37	37	37	37
Y9	Correlation Coefficient	-0.20826	-0.22029	0.186189	0.019718	0.211596	0.134609
	Sig. (2-tailed)	0.18567	0.166351	0.237768	0.901362	0.17856	0.401418
	N	42	41	42	42	42	41
Y10	Correlation Coefficient	0.188459	-0.04796	0.150117	0.096431	0.06679	0.230759
	Sig. (2-tailed)	0.231992	0.765898	0.342671	0.543517	0.6743	0.146625
	N	42	41	42	42	42	41
Y11	Correlation Coefficient	0.363359	0.067886	0.142168	-0.06531	0.287914	0.370132
	Sig. (2-tailed)	0.019537	0.677254	0.375249	0.68495	0.06794	0.01873
	N	41	40	41	41	41	40
Y12	Correlation Coefficient	0.565695	0.303733	0.24642	0.024398	0.162328	-0.05151
	Sig. (2-tailed)	9.46E-05	0.053535	0.115683	0.878107	0.304378	0.749108
	N	42	41	42	42	42	41
Y13	Correlation Coefficient	1	0.181089	0.240342	0.183232	0.095809	-0.03687
	Sig. (2-tailed)	.	0.257181	0.125237	0.245434	0.546133	0.818969
	N	42	41	42	42	42	41
Y14	Correlation Coefficient	0.181089	1	0.335233	0.38562	0.224055	0.105363
	Sig. (2-tailed)	0.257181	.	0.032146	0.012776	0.159053	0.517599
	N	41	41	41	41	41	40
Y15	Correlation Coefficient	0.240342	0.335233	1	0.449896	0.12854	-0.02286
	Sig. (2-tailed)	0.125237	0.032146	.	0.002796	0.417211	0.887192
	N	42	41	42	42	42	41

Appendix 1y. Continued

		Y13	Y14	Y15	Y16	Y17	Y18
Y16	Correlation Coefficient	0.183232	0.38562	0.449896	1	0.037959	-0.06627
	Sig. (2-tailed)	0.245434	0.012776	0.002796	.	0.811367	0.680584
	N	42	41	42	42	42	41
Y17	Correlation Coefficient	0.095809	0.224055	0.12854	0.037959	1	0.619323
	Sig. (2-tailed)	0.546133	0.159053	0.417211	0.811367	.	1.58E-05
	N	42	41	42	42	42	41
Y18	Correlation Coefficient	-0.03687	0.105363	-0.02286	-0.06627	0.619323	1
	Sig. (2-tailed)	0.818969	0.517599	0.887192	0.680584	1.58E-05	.
	N	41	40	41	41	41	41
Y19	Correlation Coefficient	-0.08034	0.214333	-0.02584	0.084004	0.412808	0.460611
	Sig. (2-tailed)	0.617563	0.178413	0.872611	0.601547	0.007312	0.002781
	N	41	41	41	41	41	40
Y20	Correlation Coefficient	-0.06194	0.161527	0.282804	0.3283	0.338515	0.331316
	Sig. (2-tailed)	0.696798	0.313005	0.069568	0.033784	0.028321	0.034343
	N	42	41	42	42	42	41
Y21	Correlation Coefficient	-0.06504	0.078751	0.047267	0.109893	0.53159	0.587711
	Sig. (2-tailed)	0.682356	0.624544	0.766277	0.488436	0.000292	5.34E-05
	N	42	41	42	42	42	41
Y22	Correlation Coefficient	0.056249	0.06941	0.213757	0.11151	0.462426	0.32706
	Sig. (2-tailed)	0.723478	0.666313	0.174062	0.482022	0.002047	0.036867
	N	42	41	42	42	42	41
Y23	Correlation Coefficient	0.15639	-0.00392	0.086437	0.00637	0.168832	0.246846
	Sig. (2-tailed)	0.322643	0.980603	0.586242	0.968062	0.285145	0.119734
	N	42	41	42	42	42	41
Y24	Correlation Coefficient	0.076444	-0.01962	0.213787	0.333972	0.272237	0.114672
	Sig. (2-tailed)	0.630396	0.90308	0.174	0.030652	0.081131	0.47528
	N	42	41	42	42	42	41
Y25	Correlation Coefficient	0.082479	-0.26102	0.138284	0.117936	0.087874	0.047244
	Sig. (2-tailed)	0.603564	0.099278	0.382474	0.45697	0.580005	0.769279
	N	42	41	42	42	42	41
Y26	Correlation Coefficient	0.159104	0.021096	0.163903	0.226725	0.038472	-0.02183
	Sig. (2-tailed)	0.314211	0.895843	0.299645	0.148771	0.808863	0.892237
	N	42	41	42	42	42	41
Y27	Correlation Coefficient	0.350205	-0.09663	0.02303	-0.04973	0.126497	0.184476
	Sig. (2-tailed)	0.024789	0.547825	0.886351	0.757501	0.430638	0.254475
	N	41	41	41	41	41	40
Y28	Correlation Coefficient	0.184451	-0.03061	-0.03017	0.342436	0.165409	0.321455
	Sig. (2-tailed)	0.242254	0.84932	0.849567	0.026428	0.295168	0.040422
	N	42	41	42	42	42	41
Y29	Correlation Coefficient	0.300716	0.029585	0.332653	0.028524	0.178829	0.172524
	Sig. (2-tailed)	0.052978	0.854312	0.031358	0.857691	0.25716	0.280746
	N	42	41	42	42	42	41
Y30	Correlation Coefficient	0.210289	0.171571	0.218692	0.198672	0.307352	0.282527
	Sig. (2-tailed)	0.181319	0.283454	0.164096	0.207201	0.047706	0.073491
	N	42	41	42	42	42	41

Appendix 1y. Continued

		Y19	Y20	Y21	Y22	Y23	Y24
Y1	Correlation Coefficient	0.054508	0.163928	0.098539	0.233193	0.151559	0.079935
	Sig. (2-tailed)	0.735002	0.299572	0.534699	0.137218	0.338002	0.614818
	N	41	42	42	42	42	42
Y2	Correlation Coefficient	-0.08086	0.063353	0.083172	0.17936	-0.03763	0.250145
	Sig. (2-tailed)	0.619888	0.693944	0.605166	0.261829	0.815316	0.114711
	N	40	41	41	41	41	41
Y3	Correlation Coefficient	0.159553	0.181344	0.177761	0.230233	0.215591	0.316916
	Sig. (2-tailed)	0.319034	0.250416	0.260058	0.14242	0.170309	0.040864
	N	41	42	42	42	42	42
Y4	Correlation Coefficient	0.039165	0.281412	0.194607	0.440211	0.439517	0.320884
	Sig. (2-tailed)	0.81038	0.074682	0.222749	0.003974	0.004038	0.040799
	N	40	41	41	41	41	41
Y5	Correlation Coefficient	-0.2571	-0.19884	0.052795	0.118162	0.310095	0.638311
	Sig. (2-tailed)	0.114098	0.218699	0.746282	0.467733	0.051495	9.36E-06
	N	39	40	40	40	40	40
Y6	Correlation Coefficient	-0.19357	0.00584	0.091334	0.091349	0.435097	0.336484
	Sig. (2-tailed)	0.225267	0.970721	0.565122	0.565055	0.003981	0.029344
	N	41	42	42	42	42	42
Y7	Correlation Coefficient	0.184039	0.139454	-0.07232	0.191748	0.110106	0.232562
	Sig. (2-tailed)	0.255624	0.384528	0.653163	0.22975	0.493148	0.143408
	N	40	41	41	41	41	41
Y8	Correlation Coefficient	0.130437	0.165102	0.078805	0.010125	0.148791	0.170003
	Sig. (2-tailed)	0.4483	0.328803	0.642919	0.952573	0.379453	0.314444
	N	36	37	37	37	37	37
Y9	Correlation Coefficient	0.279453	0.444208	0.301888	0.465579	0.07669	0.344379
	Sig. (2-tailed)	0.076814	0.003209	0.052014	0.001889	0.629293	0.02553
	N	41	42	42	42	42	42
Y10	Correlation Coefficient	0.032578	0.282219	0.388342	0.430359	0.448657	0.191125
	Sig. (2-tailed)	0.839759	0.070171	0.011041	0.004444	0.002882	0.225334
	N	41	42	42	42	42	42
Y11	Correlation Coefficient	0.025106	0.158285	0.410589	0.388977	0.44482	0.25701
	Sig. (2-tailed)	0.877787	0.322945	0.007665	0.011954	0.003569	0.104771
	N	40	41	41	41	41	41
Y12	Correlation Coefficient	0.071443	0.239681	0.060662	0.300869	0.384167	0.214788
	Sig. (2-tailed)	0.65713	0.12631	0.70274	0.052852	0.012013	0.171944
	N	41	42	42	42	42	42
Y13	Correlation Coefficient	-0.08034	-0.06194	-0.06504	0.056249	0.15639	0.076444
	Sig. (2-tailed)	0.617563	0.696798	0.682356	0.723478	0.322643	0.630396
	N	41	42	42	42	42	42
Y14	Correlation Coefficient	0.214333	0.161527	0.078751	0.06941	-0.00392	-0.01962
	Sig. (2-tailed)	0.178413	0.313005	0.624544	0.666313	0.980603	0.90308
	N	41	41	41	41	41	41
Y15	Correlation Coefficient	-0.02584	0.282804	0.047267	0.213757	0.086437	0.213787
	Sig. (2-tailed)	0.872611	0.069568	0.766277	0.174062	0.586242	0.174
	N	41	42	42	42	42	42

Appendix 1y. Continued

		Y19	Y20	Y21	Y22	Y23	Y24
Y16	Correlation Coefficient	0.084004	0.3283	0.109893	0.11151	0.00637	0.333972
	Sig. (2-tailed)	0.601547	0.033784	0.488436	0.482022	0.968062	0.030652
	N	41	42	42	42	42	42
Y17	Correlation Coefficient	0.412808	0.338515	0.53159	0.462426	0.168832	0.272237
	Sig. (2-tailed)	0.007312	0.028321	0.000292	0.002047	0.285145	0.081131
	N	41	42	42	42	42	42
Y18	Correlation Coefficient	0.460611	0.331316	0.587711	0.32706	0.246846	0.114672
	Sig. (2-tailed)	0.002781	0.034343	5.34E-05	0.036867	0.119734	0.47528
	N	40	41	41	41	41	41
Y19	Correlation Coefficient	1	0.428459	0.243336	0.362912	-0.03456	0.061848
	Sig. (2-tailed)	.	0.005193	0.125258	0.019699	0.830127	0.700874
	N	41	41	41	41	41	41
Y20	Correlation Coefficient	0.428459	1	0.543473	0.582214	0.240506	0.170746
	Sig. (2-tailed)	0.005193	.	0.0002	5.24E-05	0.12497	0.27964
	N	41	42	42	42	42	42
Y21	Correlation Coefficient	0.243336	0.543473	1	0.58657	0.435905	0.311105
	Sig. (2-tailed)	0.125258	0.0002	.	4.46E-05	0.003907	0.044919
	N	41	42	42	42	42	42
Y22	Correlation Coefficient	0.362912	0.582214	0.58657	1	0.525606	0.41248
	Sig. (2-tailed)	0.019699	5.24E-05	4.46E-05	.	0.000351	0.006637
	N	41	42	42	42	42	42
Y23	Correlation Coefficient	-0.03456	0.240506	0.435905	0.525606	1	0.531022
	Sig. (2-tailed)	0.830127	0.12497	0.003907	0.000351	.	0.000297
	N	41	42	42	42	42	42
Y24	Correlation Coefficient	0.061848	0.170746	0.311105	0.41248	0.531022	1
	Sig. (2-tailed)	0.700874	0.27964	0.044919	0.006637	0.000297	.
	N	41	42	42	42	42	42
Y25	Correlation Coefficient	0.028415	0.030923	0.242129	0.066026	0.374044	0.55776
	Sig. (2-tailed)	0.860014	0.84586	0.122369	0.67782	0.014678	0.000124
	N	41	42	42	42	42	42
Y26	Correlation Coefficient	-0.10256	0.443881	0.187361	0.372839	0.431529	0.352627
	Sig. (2-tailed)	0.523407	0.003234	0.234773	0.015026	0.004325	0.021996
	N	41	42	42	42	42	42
Y27	Correlation Coefficient	0.195035	0.309431	0.06647	0.267996	0.398666	0.253004
	Sig. (2-tailed)	0.221712	0.048992	0.679671	0.090248	0.009829	0.110487
	N	41	41	41	41	41	41
Y28	Correlation Coefficient	0.155008	0.216438	0.215808	0.116054	0.212298	0.315018
	Sig. (2-tailed)	0.33319	0.168596	0.169869	0.464233	0.177089	0.042154
	N	41	42	42	42	42	42
Y29	Correlation Coefficient	0.081169	0.02055	0.011403	0.109821	0.313083	0.323296
	Sig. (2-tailed)	0.613912	0.897221	0.942863	0.488724	0.043503	0.03676
	N	41	42	42	42	42	42
Y30	Correlation Coefficient	0.248285	0.118678	0.078465	0.023062	0.109639	0.240176
	Sig. (2-tailed)	0.117523	0.454123	0.621355	0.884738	0.489448	0.125506
	N	41	42	42	42	42	42

Appendix 1y. Continued

		Y25	Y26	Y27	Y28	Y29	Y30
Y1	Correlation Coefficient	0.150565	0.28749	0.368557	0.374651	0.202009	0.02837
	Sig. (2-tailed)	0.341215	0.064877	0.017737	0.014505	0.199516	0.858452
	N	42	42	41	42	42	42
Y2	Correlation Coefficient	0.119876	0.1681	-0.19521	0.078842	-0.06817	-0.19579
	Sig. (2-tailed)	0.455341	0.293452	0.227381	0.624142	0.671955	0.219902
	N	41	41	40	41	41	41
Y3	Correlation Coefficient	0.545731	0.285749	0.362803	0.361101	0.105537	-0.04054
	Sig. (2-tailed)	0.000186	0.066589	0.019738	0.0188	0.505938	0.798779
	N	42	42	41	42	42	42
Y4	Correlation Coefficient	0.453618	0.516768	0.663955	0.373711	0.208298	0.042281
	Sig. (2-tailed)	0.002895	0.000542	3E-06	0.016091	0.191247	0.792956
	N	41	41	40	41	41	41
Y5	Correlation Coefficient	0.412255	0.251662	0.308493	0.253747	0.338228	0.180651
	Sig. (2-tailed)	0.008209	0.117229	0.056036	0.114123	0.032788	0.26463
	N	40	40	39	40	40	40
Y6	Correlation Coefficient	0.291522	0.259955	0.479809	0.319665	0.336403	0.21234
	Sig. (2-tailed)	0.061043	0.096397	0.001501	0.039052	0.029386	0.177001
	N	42	42	41	42	42	42
Y7	Correlation Coefficient	0.228834	0.318945	0.325615	0.027987	0.361772	0.13376
	Sig. (2-tailed)	0.150118	0.042101	0.040333	0.862107	0.020116	0.40442
	N	41	41	40	41	41	41
Y8	Correlation Coefficient	0.244885	0.032828	0.063564	0.151904	0.131907	0.124707
	Sig. (2-tailed)	0.144071	0.847051	0.712651	0.369447	0.436432	0.462094
	N	37	37	36	37	37	37
Y9	Correlation Coefficient	0.373962	0.265801	0.086863	-0.06334	-0.11021	-0.25936
	Sig. (2-tailed)	0.014701	0.088876	0.589185	0.690247	0.48716	0.097185
	N	42	42	41	42	42	42
Y10	Correlation Coefficient	0.257762	0.335401	0.352016	0.268698	0.044085	-0.05663
	Sig. (2-tailed)	0.09934	0.029902	0.024003	0.085322	0.781617	0.721687
	N	42	42	41	42	42	42
Y11	Correlation Coefficient	0.216183	0.362013	0.370316	0.231676	0.151078	-0.04183
	Sig. (2-tailed)	0.174605	0.020027	0.018667	0.144981	0.34574	0.795104
	N	41	41	40	41	41	41
Y12	Correlation Coefficient	0.183218	0.455243	0.44732	0.253163	0.255302	0.010382
	Sig. (2-tailed)	0.245471	0.002451	0.003365	0.105739	0.102725	0.947973
	N	42	42	41	42	42	42
Y13	Correlation Coefficient	0.082479	0.159104	0.350205	0.184451	0.300716	0.210289
	Sig. (2-tailed)	0.603564	0.314211	0.024789	0.242254	0.052978	0.181319
	N	42	42	41	42	42	42
Y14	Correlation Coefficient	-0.26102	0.021096	-0.09663	-0.03061	0.029585	0.171571
	Sig. (2-tailed)	0.099278	0.895843	0.547825	0.84932	0.854312	0.283454
	N	41	41	41	41	41	41
Y15	Correlation Coefficient	0.138284	0.163903	0.02303	-0.03017	0.332653	0.218692
	Sig. (2-tailed)	0.382474	0.299645	0.886351	0.849567	0.031358	0.164096
	N	42	42	41	42	42	42

Appendix 1y. Continued

		Y25	Y26	Y27	Y28	Y29	Y30
Y16	Correlation Coefficient	0.117936	0.226725	-0.04973	0.342436	0.028524	0.198672
	Sig. (2-tailed)	0.45697	0.148771	0.757501	0.026428	0.857691	0.207201
	N	42	42	41	42	42	42
Y17	Correlation Coefficient	0.087874	0.038472	0.126497	0.165409	0.178829	0.307352
	Sig. (2-tailed)	0.580005	0.808863	0.430638	0.295168	0.25716	0.047706
	N	42	42	41	42	42	42
Y18	Correlation Coefficient	0.047244	-0.02183	0.184476	0.321455	0.172524	0.282527
	Sig. (2-tailed)	0.769279	0.892237	0.254475	0.040422	0.280746	0.073491
	N	41	41	40	41	41	41
Y19	Correlation Coefficient	0.028415	-0.10256	0.195035	0.155008	0.081169	0.248285
	Sig. (2-tailed)	0.860014	0.523407	0.221712	0.33319	0.613912	0.117523
	N	41	41	41	41	41	41
Y20	Correlation Coefficient	0.030923	0.443881	0.309431	0.216438	0.02055	0.118678
	Sig. (2-tailed)	0.84586	0.003234	0.048992	0.168596	0.897221	0.454123
	N	42	42	41	42	42	42
Y21	Correlation Coefficient	0.242129	0.187361	0.06647	0.215808	0.011403	0.078465
	Sig. (2-tailed)	0.122369	0.234773	0.679671	0.169869	0.942863	0.621355
	N	42	42	41	42	42	42
Y22	Correlation Coefficient	0.066026	0.372839	0.267996	0.116054	0.109821	0.023062
	Sig. (2-tailed)	0.67782	0.015026	0.090248	0.464233	0.488724	0.884738
	N	42	42	41	42	42	42
Y23	Correlation Coefficient	0.374044	0.431529	0.398666	0.212298	0.313083	0.109639
	Sig. (2-tailed)	0.014678	0.004325	0.009829	0.177089	0.043503	0.489448
	N	42	42	41	42	42	42
Y24	Correlation Coefficient	0.55776	0.352627	0.253004	0.315018	0.323296	0.240176
	Sig. (2-tailed)	0.000124	0.021996	0.110487	0.042154	0.03676	0.125506
	N	42	42	41	42	42	42
Y25	Correlation Coefficient	1	0.40248	0.34167	0.34054	0.405352	0.148573
	Sig. (2-tailed)	.	0.008231	0.028789	0.02733	0.007743	0.347714
	N	42	42	41	42	42	42
Y26	Correlation Coefficient	0.40248	1	0.550234	0.418053	0.243515	-0.0339
	Sig. (2-tailed)	0.008231	.	0.000194	0.00587	0.120178	0.831235
	N	42	42	41	42	42	42
Y27	Correlation Coefficient	0.34167	0.550234	1	0.54411	0.449898	0.32219
	Sig. (2-tailed)	0.028789	0.000194	.	0.000236	0.003165	0.03994
	N	41	41	41	41	41	41
Y28	Correlation Coefficient	0.34054	0.418053	0.54411	1	0.436482	0.433949
	Sig. (2-tailed)	0.02733	0.00587	0.000236	.	0.003854	0.004089
	N	42	42	41	42	42	42
Y29	Correlation Coefficient	0.405352	0.243515	0.449898	0.436482	1	0.757203
	Sig. (2-tailed)	0.007743	0.120178	0.003165	0.003854	.	0.000001
	N	42	42	41	42	42	42
Y30	Correlation Coefficient	0.148573	-0.0339	0.32219	0.433949	0.757203	1
	Sig. (2-tailed)	0.347714	0.831235	0.03994	0.004089	0.000001	.
	N	42	42	41	42	42	42

Appendix 2. Questionnaire

Lulea University of Technology

Questionnaire

Mohammad Bagherian

Ms. Candidate in Hospitality & Tourism Management

Please write your name:	.....				
Please write your field of study or work:	.....				
Please mark your age:	<21	21-25	26-30	31-35	>35
Please mark your nationality:	European	Asian	American	Australian	African
Please mark your gender:	Male	Female			
Please mark the no. of times you have visited Iran:	1st time	2nd time	3rd & above		
Please mark the no. of times you have stayed at Safir Hotel:	1st time	2nd time	3rd & above		

Appendix 2. Questionnaire Continue

Importance						
	How do you rate the importance of the following Items:	Not Important	Less Important	Moderate	Important	Very Important
1	Performing the service at the designated time					
2	Mailing a transaction slip immediately					
3	Setting up appointments quickly					
4	Comfort of service environment and facilities					
5	Physical security					
6	Financial security					
7	Convenient location of service facilities					
8	Hotel guests will have a single, designated address					
9	The services are easily accessibility by phone					
10	Personnel speak well					
11	Personnel characteristics of the contact personnel					
12	Reputation of services					
13	Size of rooms					
14	Flowers/Plants					
15	The quality of in room temperature control					
16	Landscaping					
17	Physical representation of the services					
18	Quality of communication materials					
19	Quality and quantity of complimentary offered items					
20	Mini-bar be available					
21	Clean and neat appearance of public contact personnel					
22	Cleanliness and tidy appearance of the tangibles					
23	Behavior of personnel					
24	Consideration for customer`s property					
25	Friendliness					
26	Knowledge and skills of contact personnel					
27	Experience of personnel					
28	Flexibility in service delivery speed					
29	Hotel room be valuable for money					
30	Hotel food and beverage be valuable for money					

Appendix 2. Questionnaire Continue

Performance						
	How do you rate the Performance of the following Items:	Very weak	Weak	Moderate	Strong	Very Strong
1	Performing the service at the designated time					
2	Mailing a transaction slip immediately					
3	Setting up appointments quickly					
4	Comfort of service environment and facilities					
5	Physical security					
6	Financial security					
7	Convenient location of service facilities					
8	Hotel guests will have a single, designated address					
9	The services are easily accessibility by phone					
10	Personnel speak well					
11	Personnel characteristics of the contact personnel					
12	Reputation of services					
13	Size of rooms					
14	Flowers/Plants					
15	The quality of in room temperature control					
16	Landscaping					
17	Physical representation of the services					
18	Quality of communication materials					
19	Quality and quantity of complimentary offered items					
20	Mini-bar be available					
21	Clean and neat appearance of public contact personnel					
22	Cleanliness and tidy appearance of the tangibles					
23	Behavior of personnel					
24	Consideration for customer`s property					
25	Friendliness					
26	Knowledge and skills of contact personnel					
27	Experience of personnel					
28	Flexibility in service delivery speed					
29	Hotel room be valuable for money					
30	Hotel food and beverage be valuable for money					

Appendix 2. Questionnaire Continue

Skandinaviens nordligaste tekniska universitet
– Forskning & utbildning i världsklass

Mohammad Bagherian

Ms. Candidate in Hospitality and Tourism Management

Dear Managers, please indicate the importance of comprehensive set of Service process design characteristics in Safir hotel

Please write your Filled of work: ……

Please mark your years of experience: <5 5-10 10>

Please mark your age: <25 25-35 35>

Please mark your Gender Male Female

	Please indicate The importance of below items:	Not Important	Less important	moderate	Important	Very Important
1	Workers skills					
2	Wage payments					
3	Motivation					
4	Training, education, and development					
5	Communication					
6	Facility location					
7	Facility layout and ambient conditions					
8	Complementary product design					
9	Service technology					
10	Entertainment facilities					
11	Handling, Storing, packaging, and protection of customers possessions					
11	Safety and security facilities and customers property control					
13	Time standards					
14	Process design and scheduling					
15	Failure prevention/recovery strategies; Customers feedback and corrective action control					
16	Quality documentation and records					