Sustainable business development and its challenges
- a study on Scandic hotels

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Abstract

This study analyses the housekeeping service performance of two Scandic hotels and perceptions of the hotel guests about the towel re-use and food waste issues, which make both environmental and business sense. The cleaning service in the hotel rooms is analyzed by the direct observation of 50 hotel rooms contributing to guests' satisfaction. The present study has followed qualitative research approach to perceive the service gaps of the housekeeping employees and perceived gaps of the guests as to sustainability concerned with the towel re-use and food waste issues. Notably, the study presents that hotels face the challenges of offering standard and constant housekeeping service. Furthermore, factors contributing to guests' satisfaction on the cleaning service were tested using the Wilcoxon test. In addition, guests' perceptions regarding the cleaning service and food waste were tested. The relevant data were collected through the questionnaire survey, observation and interview methods. The complete sample data in the questionnaire consist of 132 observations, 130 were used in the analysis. The results of the study view that satisfaction of the guests on the cleaning service differed due to the service gaps of the housekeeping personnel. Additionally, perceived gaps of the guests and their demographics made a variation on their satisfaction. Besides, the study identified guests' satisfaction as an important factor for the hotel sustainability. Moreover, towel re-use is an important issue since the guests perceive the economic aspect along with its environmental effect. Although hotels use small plates and communication message to reduce food waste, the guests wasted food due to the poor food taste. Habitual facts of the guests were also the causes of the food waste. Food waste and towel re-use are the concerns for the hotels. However, the hotel guests perceived these two issues differently. They perceived the impact of towel re-use on the environment more important than food waste. Increasing guests' attention as to the towel re-use and food waste issues seems to be a challenge.

Abbreviations

GCC	Guest Comment Card
HSSS	Housekeeping Standard Service Sequence
SBD	Sustainable Business Development
SD	Sustainable Development
SURVQUAL	Service Quality
TBL	Triple Bottom Line
TTCR	Travel and Tourism Competitiveness Report
UNEP	United Nations Environment Program
UNO	United Nations Organization
WCED	World Commission of Environmental Development

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1 Introduction

This chapter identifies the background of the study. It also consists of the research problem, aims, and research questions of the research project.

1.1 Problem background

A sustainable development orientation is a strategy for organizations in tourism to limit the negative impacts of their activities on natural, cultural and social environments (UNO, 1999) focusing its importance on the nature and culture (Lindberg, 1991). The organizations in the tourism industry have undertaken various steps on sustainability (Hobson and Essex, 2001). Since the term sustainability has entered the business world, an ever increasing number of firms realize its importance and emphasize the social and environmental goals of their organizations (Bansal, 2005; Hoffman, 1999). Moreover, this concept is popular both in production and service industry (Durmaza *et al.*, 2011).

The adoption of the sustainable development practices in the hospitality industry is meant to limit the harmful effects of the industry's activities on the natural and social environments and to increase its benefits to the host populations (Prud'homme and Raymond, 2013). However, perceived gaps (Gronross, 1984) of the stakeholders on the sustainability issue determine the degree of success of the sustainability goal. Positive perceptions on the sustainability issue seem to be effective for all the stakeholders in business, but their perceived differences are the challenges towards the sustainable development practice. Additionally, Clarke (2001) and Dalton et al. (2008) point that there is still little knowledge on the integration of the three dimensions of sustainability (economic–environmental–social) into a hotel's business strategy and on the impact of such practices on the customer satisfaction.

Customers' satisfaction and sustainability practice are coined together as satisfaction of the hotel guests ensures business profit for the long-term (Pongsiri, 2012). Customer satisfaction leads to improved brand equity (Pappu and Quester, 2006). Achieving the economic objective through satisfying customers is significant for business growth. In particular, hotel business faces the challenges of satisfying the guests as the guests receive service which is intangible, inseparable and variable (Hoffman and Bateson, 2008). In some of the cases, few categories of services for example, cleaning hotel room require more attention and physical efforts of the service personnel, who are in lack of proper education and competence (Pongsiri, 2012). Due to the nature of the service delivered, gaps take place as service gaps (Hoffman and Bateson, 2008). The gaps between the expectations and perceptions are likely for making the hotel guests satisfied or dissatisfied. Satisfied guests are expected as the returning customers and sources of the business profit (Bolton, 1998) but dissatisfied customers switch to the other firms, harm profit and complain sometimes. In the hotel business, dissatisfaction and complaints are the intimidation for sustainability.

Sustainability practices have focused most of the part on the environmental dimension (Ayuso, 2007) where weight is placed on energy and water conservation to promote their adoption. The study of Hobson and Essex (2001) add that few enterprises in the hospitality industry have adopted sustainability development orientation integrating the economic and social dimensions. On the other hand, the studies of Clarke (2001) and Dalton et al. (2008) have looked only at the customer's individual attitudes towards the environmental practice. Remarkably, managing food waste, water, electricity, labor hour are the part of the SBD.

Restraining food waste (Hartwitch and Peters, 2009; Kallbekken and Saelen, 2013) and towel re-use are the crucial issues for the hotels. If the guests are not motivated towards towel re-use, achieving sustainability objective will be a challenge. In addition, food quality plays a significant role in determining customer satisfaction (Andaleeb and Conway, 2006; Pullman and Gross, 2004; Yang and Mattila, 2011). Consequently, controlling food waste will be a problem due to the poor food taste. Thus, satisfying the hotel guests with the core service like standard hotel room, encouraging them for towel re-use and controlling food waste seem to be the issues important for the sustainable business development practice in the hotel industry.

1.2 Problem

The triple bottom line focuses the social justice, environmental quality and economic development objectives (Elkington, 1994). Reducing food waste in the hotel restaurant, cleaning the hotel rooms environmentally friendly ways, using less towels and washing them more friendly manner are the sustainability variables that make the SD and TBL concepts rational with the food waste, towel re-use and room cleaning in the hotel business.

The housekeeping employee faces the challenge in maintaining service quality in person, and controlling their individual service performance in the work place is a massive task (Pongsiri, 2012). On the other hand, travelers identify the housekeeping service as their concern in staying in the hotels (Greathouse *et al*., 1996; Pongsiri, 2012). Poor cleaning service by the housekeeping personnel may cause difference on satisfaction in the mind of the hotel guests. The hotel guests normally have breakfast in the hotel restaurant as they pay for the breakfast with the rent of the room. They also may have lunch and dinner where a certain amount of food is wasted during the dining time. Food waste is concerned with the environmental effect (Kallbekken and Saelen, 2013). Moreover, food production accounts for 20% of global green house gas emission (Hartwitch and Peters, 2009). One-third of the produced food is wasted (Gustavsson *et al*., 2011), but this issue is neglected (Kallbekken and Saelen, 2013).

Consumers' participation in the service process (Growth, 2005) is necessary to limit the food waste and to enhance towel re-use rate. Zeithaml (1988) further reported that customers' cooperative behavior is very significant in succeeding any business strategy. However, perceived gaps (Gronross, 1984) on the towel re-use and food waste are likely to be the challenges, and the business firms can use social cues (Kallbekken and Saelen, 2013) to alter guests' behavior as choice architecture (Thaler and Sunstein, 2008) to succeed towards the sustainability orientation of the hotel. It is therefore pertinent to understand how customers respond to their contribution towards environmental issues with regards to towel cleaning and food waste, since they are both keys in the environmental dimension of sustainability. Better understanding of the gaps will lead towards improvement of sustainable hotel management.

1.2.1 Problem statement

Guests' complaints can be instrumental or non-instrumental (Mark, 1992). Instrumental complaints are expressed for the purpose of altering an undesirable state of affairs, whereas non-instrumental complaints are raising voice resulting in three consequences like voice, exit, and retaliation (Hoffman and Bateson, 2008). The outcome of the consumers' verbal communication on displeasure with a specific service is termed as voice. Exit is the second complaining consequence in which a consumer stops patronizing the service provider. Retaliation is the final circumstance in which a consumer takes action deliberately, and hurt future business producing vindictive attitudes or negative word of mouth.

Two Scandic hotels in Uppsala observed comments and complaints from their clients as the results of the perceived gaps of the guests and service gaps of the employees working in the different service areas. Particularly, the comments were on the hotel room cleaning, towel change connected to the housekeeping service and on the food service in the hotel restaurant. The guests complained that bathroom floor was slippery sometime. In the bathrooms, the guests found hair on the floor, tooth paste was found on the basin. They also experienced odor in the bathroom. They further added that water drop appeared on the bathroom wall, towel was found dirty with yellow or black spot. The guests also claimed that they did not find shampoo or lotion in their convenience as the containers were not refilled timely.

Some of the complaints were formed on the room cleaning issue. For example, paper, water bottles were found under the bed. Bed sheet and pillow cover or linen was dirty. Additionally, the table lamps or lamps beside the bed did not work; dust and hair were found on the room. Beds were small, extra beds were not standard and room size was tiny. Some of the guests have shown the third complaint consequence as retaliation (Hoffman and Bateson, 2008). Furthermore, they wanted to change the room and some of the cases they did it and stayed in the other rooms due to the poor cleaning status. Dissatisfaction of the guests on the bathroom and room cleaning hampers economic objective, and economic aspect is one of the components of the SBD (Elkington, 1994, 1998; Gladwin *et al.*, 1995).

The housekeeping personnel restore new towel in the hotel rooms in place of the old ones. The guests also have complained regarding towel re-use. Sometimes, they wanted new towel but the old towel was not replaced. At the same time, few guests wanted to re-use towel, but the housekeeping personnel changed the old towel and replaced the new ones. More use of new towel is not sustainable for the hotels or for the environment itself whereas, more use of used towel by the guests is good for the environment. Environmental concern is one of the influential parts for sustainability (Elkington, 1994; Edward, 2005; Gladwin *et al.*, 1995).

The guests complained that the floor of the hotel restaurant was dirty, and lightings in the hotel restaurant were inadequate. Furthermore, food taste was not good, food price was high, varieties of food were not sufficient. From the internal record of the studied hotels in Uppsala, fifteen KGs of food on an average were wasted per day found in the hotel restaurant section in which most of the wasted food was uneaten, which could be eaten next although the hotels have communicated a message to the guests in the hotel restaurant about reducing food waste stressing the sustainability issue. Food waste is associated with the environmental effect (Kallbekken and Saelen, 2013), liable for 20% of global green house gas emission (Hartwitch and Peters, 2009) which is a risk for sustainability (Prud'homme and Raymond, 2013).

1.3 Aims, research questions and delimitations

Largely, the present study aimed to distinguish the causes of guests' satisfaction differences on the cleaning service identifying the service gaps of the housekeeping employees noticing also the perceived gaps of the guests regarding the towel re-use and food waste. Thus, guests' satisfaction was considered as a factor for sustainability. Sustainable development cannot be imagined without ensuring satisfaction of the customers as satisfied customers are the main source of profit. Moreover, customer satisfaction is considered as an inseparable part in the business world (Hoffman and Bateson, 2008) since customer satisfaction is assumed as one of the lever for the SBD leading to loyalty to the firms (Ryu *et al.*, 2012). After all, satisfied customers trust the firm in the future (Jani and Han, 2011), and advocate the other potential customers producing positive word of mouth (Pantelidis, 2010).

Firms obtain repeating sales from the satisfied customers (Alegre and Cladera, 2009) increasing the future revenue (Bolton, 1998) reducing customer complaints (Choi *et al.*, 2008) with perceived risk (Fornell *et al.*, 2006). Furthermore, Dimitriades (2006) added that satisfied consumers are less influenced by competitors' attack. The study of Seiders et al. (2005) pointed out more profitability from the pleased customers. Pleasure of the customers also can ensure positive behavior argued by Gruca and Rego (2005). The customers receive bundle of services from a hotel (Anderson *et al.*, 1994). One of the mentionable services includes the cleaning service of the housekeeping personnel, who make the hotel rooms ready. The housekeeping personnel clean and prepare the hotel rooms, where the guests are used to staying. The hotel room is one of the main sources to earn profit for the hotels. Demand of the hotel restaurant along with the other services is derived from the guests, who stay in the hotel rooms. If the guests are dissatisfied with the cleaning service, they may stop patronizing the hotels. Thus, satisfaction of the hotel guests on the cleaning service is very significant as guest satisfaction ensures hotels' turnover (Pongsiri, 2012).

The aim of the present study was to identify the causes of satisfaction variation of the guests as to the cleaning service. The reasons of satisfaction variation of the guests on the cleaning service needs to be addressed separately since the housekeeping service consists of the room and bathroom cleaning issues. Keeping this objective in mind, the study outlines the first research question as: *why does the satisfaction of the hotel guests on the room and bathroom cleaning service differ?*

A green hotel image can result in favorable behavioral intentions by the hotel guests including their intention to revisit (Lee *et al.*, 2010; Manaktola and Jauhari, 2007). With increased customer awareness, sustainable practice may become important to the travelers in choosing a hotel reported by Tzschentkea (2008). The hotels have been incorporating many green approaches in their operations (Revilla *et al.*, 2001). Motivating the hotel guests as to towel re-use is one of the green approaches since towel re-use is concerned with the environment. Notably, the housekeeping personnel change the old towel, and replace the new ones for the use of the hotel guests communicating a promotional message in the hotel bathrooms. Promotional message is designed effectively to motivate the targeted customers to act in favor of the company interest (Kotler, 2003). Promotion includes one of the Ps in marketing mix considered as a blending of four Ps like product, price, place and promotion (Kotler *et al.*, 2002). Manager designs the promotional tools (Armstrong and Kotler, 2007) to induce customers, but gaps between the intentional message and perceptions of the targeted audience may differ. As a result, variation in perceptions hampers promotional objectives.

The hotels influence their guests to re-use towel kept in the hotel rooms motivating the sustainability issue behind towel re-use communicating a message in the leaflet hung in every bathroom. However, the guests may not bother about the towel re-use issue and its effect on sustainability as they normally visit hotels to enjoy their stay. Considering the effect of SD, the study aimed to make out the impacts of the towel re-use issue knowing the individual perceptions of the guests on the environmental, cost and social or ethical effects. The second question on the towel re-uses focusing guests' perceptions is formed as: *how does the towel re-use issue affect the hotel guests?*

Sustainability and food waste are interdependent. Food waste in the kitchen by the hotel restaurant authority is controllable, but food waste by the guests in the hotel restaurant is difficult to manage. Therefore, it is essential to know what the guests perceive about the food served in the hotel restaurant as relation exists between the food taste and food waste issues.

Food waste is an economic and ethical issue since people in some parts of the world die because of the lack of food. Consequently, this issue must receive ethical concern as hunger remains the world's largest tragedy and scandal (Martin, 2013, p.15) since controlling food waste (Freedman and Brochado, 2010) is one of the green approaches for the hotels.

Scandic hotels communicated a message to the guests on food waste highlighting the environmental effect. However, the guests may possess different perceptions on food waste when they have food in the hotel restaurant. Additionally, it should be kept in consideration that there is a tendency of the guests to take surplus portions at buffets since they correlate the room price with the costs of food. Therefore, the study aimed to notice the factors liable for food waste by the hotel guests. The third research question is focused as: *what factors do the hotel guests perceive important for causing the food waste in the hotel restaurant?*

If more hotels from the other cities were included in the study, the results would be more trustworthy. In addition, complaints by the guests have not been attached to the appendix as the hotel managers requested not to disclose their confidential information to the public. Most importantly, lack of the related literature on the towel re-use, housekeeping service and food waste issues was one of the foremost limitations in the study. In the light of the accessible literatures and to the best of knowledge, no study was found combining the hotel room cleaning service, towel re-use and food waste issues connected to the sustainable business development on the hotels point of view. That is why, the present study tried to tie three topics in a single thread including the housekeeping service, towel re-use and food waste issues linked to the environment, economy and ethical or social issues.

1.4 Outline of the study

The output of the research work has been presented following 8 chapters. The figure below displays the outline of the study at a glance.
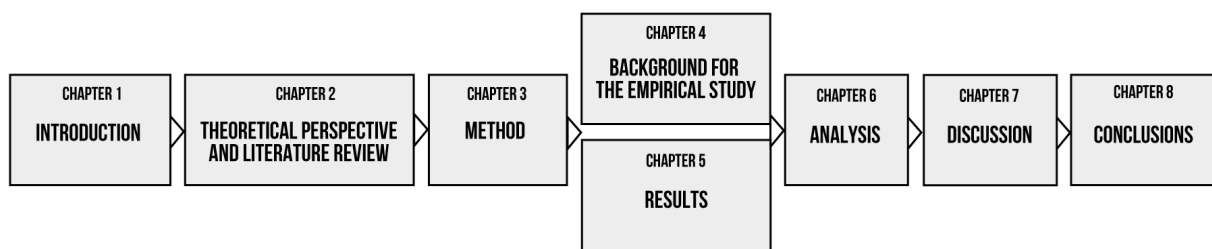
Figure 1: Outline of the study

Chapter 1 identifies the background of the study consisting of the problem, aims, research questions and delimitation. Chapter 2 presents the theoretical aspects and related literature. The third chapter aims to focus on the research approach, data collection methods and analysis techniques. Then, the fourth chapter consists of the background of the empirical study on the Scandic hotels focusing two promotional leaflets as the hotel messages.

Chapter 5 presents the results of the study with the answers of the research questions. Chapter 6 also answers the research questions with analysis. Then, chapter 7 reviews a comprehensive discussion of the analysis based on the service gaps and perceived gaps highlighting few challenges for hotels. The last chapter ties the problems, aims, and the research questions focusing the answers of the research questions in short noticing the potential research gaps.

2 Theoretical perspective and literature review

This chapter presents the theoretical aspects on the service gaps, satisfaction and sustainable business development with the hypotheses connected to the problems, aims and research questions. It also reviews the relevant studies on the sustainable business development issue.

2.1 Theoretical perspective

Service is an interactive activities between server and client by which the server tries to fulfill needs, expectations, and raise satisfaction and impression (Abraham and Taylor, 1999; Gronross, 1990). Scholarly research, however, has done little focus on services (Hoffman and Bateson, 2008). Services can be defined as deeds, efforts, or performance (Berry, 1980). Moreover, ''A service is an activity or benefit that one party can offer to another which is essentially intangible and does not result in the ownership of anything, and its production may or may not be tied to a physical product'' (Kotler *et al.*, 2002, p. 535).

The literature of Parasuraman et al. (1985) mentions service-intangibility, variability, and inseparability that must be understood to study the service issues pointed by Lovelock and Gummesson (2004). Service includes unique features such as intangibility, inseparability and variability (Hoffman and Bateson, 2008). Intangibility is the state when service cannot be readily displayed. Inseparability implies that service is not separated from their providers, and it is not stored for the later use (Kotler *et al.*, 2002). Additionally, variability refers to the quality of service depending on the service provider as well as when, where and how service is provided. Variability is liable for customer's dissatisfaction, and standard service ensures their satisfaction. Since the hotel industry is service oriented, measuring customer satisfaction is an important issue (Oliver, 1997). Consequently, what matters for guests' satisfaction and dissatisfaction; the intensity of perceived service.

Service management literatures include some influential models consisting of the service quality or SERVQUAL (Parasuraman *et al.*, 1985). Parasuraman et al. (1991, 1988, 1985) pointed out perceptions of the customers and their expectations-related gaps through SERVQUAL into five dimensions focusing tangibility, reliability, responsiveness, assurance and empathy. Moreover, Allan (2004) and Bojanic, and Rosen (1994) focused studies as to the perceptions of services on the hospitality industry including the tourism business and restaurant firms using gaps model.

2.1.1 Gaps model

Gaps model (Parasuraman *et al.,* 1985) refers to the conceptual model that deals with the gaps between the service provider and the customer. Gaps model or gaps theory is measured mainly by the five key dimensions. The first dimension is reliability; the ability to perform promised services dependably and accurately (Hoffman and Bateson, 2008). Tangibility is the second one; the appearance of physical facilities, equipments and employees. The third dimension is called responsiveness; the willingness to help customers promptly. Assurance is another aspect; the ability to convey trust and confidence displaying employee knowledge and courtesy. The last dimension is empathy meaning the provision of caring and individualized attention to the customers (Hoffman and Bateson, 2008). According to Parasuraman et al. (1985), when customer service expectations are combined with the above service quality dimensions, service gaps are defined as gaps one, two, three, four and gaps five.

Gaps one exists between customer expectations and management's perceived customer expectations (Parasuraman *et al.*, 1985). Hoffman and Bateson (2008) has defined gaps one as the knowledge gaps, the difference between what consumers expect of a service, and what management perceives that consumers expect. In addition, this is acknowledged as information and feedback-related gaps (Brogowicz *et al.*, 1990). Inadequate upward communication between managers and frontline employees, and too many management levels are the main causes of gaps one (Antony *et al.*, 2004).

Gaps two subsists between management's perceived customer expectations and actual specifications for the service delivery (Parasuraman *et al.*, 1985). This is the standard gaps (Hoffman and Bateson, 2008), the difference between what management perceives that consumers expect and quality specification set for the service delivery. The standard gaps exist as management fails to set the standard by consumers' expectations (Hoffman and Bateson, 2008). Brogowicz et al. (1990) pointed out standard gaps as design-related gaps.

Gaps taken palace by the company employees and service specifications designed by management refer to the gaps three (Parasuraman *et al.*, 1985). Hoffman and Bateson (2008) recognized gaps three as the delivery gaps; the difference between the actual quality specifications set for the service delivery and actual quality of service delivered. It is also known as implementation-related gaps (Brogowicz *et al.*, 1990). Moreover, delivery gaps occur between the actual performance of a service and the standards set by the management. In gaps one to four, differences between customers' service expectations and perceived service delivery can then be determined. In fact, the existence of the delivery gaps depends on both the willingness, and the ability of the employees to provide service to the specification.

Gaps four takes place between promises from businesses to customers and customer expectations to those external promises (Parasuraman *et al.*, 1985). It is the communication gaps (Hoffman and Bateson, 2008), the difference between the actual services delivered and service described. Moreover, such gaps can be specified as communication-related gaps by Brogowicz et al. (1990). Finally, gaps five (Parasuraman *et al.*, 1985) takes place as the results between the difference of customer expectations and customers' perceived service delivery. Hoffman and Bateson (2008) have pointed out gaps five as the service gaps; the function of gaps one, two, three, and four as the overall variations between customers' expectations and customers' perceptions of a service. Moreover, service gaps can be addressed as customers' perceptions and expectations-related gaps (Brogowicz *et al.*, 1990).

Gaps also may exist in the perceptions (Hoffman and Bateson, 2008). Gronross (1984) has defined perceived gaps as a comparison between the expectations and perceptions, and the outcome of a comparative evaluation process. For example though a hotel manager may feel comfortable room as consumers' preference, most of the cases the guests spend little hours in the hotel but much time in the other facilities (Hoffman and Bateson, 2008). Perceived gaps (Gronross, 1984) determine dissatisfaction and satisfaction of the guests.

2.1.2 Satisfaction

Guests' satisfaction confirms their retention, increase of market share and profit (Gilbert and Horsnell, 1998). According to Anderson and Sullivan (1993), satisfaction is the disparity between the perceived performance of the customers and their expectations. Perceived variance between perceptions and expectations resolve satisfaction (Oliver, 1993). Moreover, satisfaction of the customers varies person to person (Cronin and Taylor, 1992; Teas, 1993).

Customer satisfaction can be defined as meeting the rational expectations of customers with the list of goods and services offered by the service providers and purchased or availed by the consumers (Oliver, 1997). It is the level of state with the goods or services purchased or with the overall experience which is consumers' post consumption evaluations such as behavioral and attitudinal loyalty (Cooil *et al.*, 2007). Furthermore, Blanchard and Galloway (1994) along with Heskett et al. (1990) and Zeithaml et al. (1990) have linked customer satisfaction with service management literature as the results of a customer's perceptions of the value they receive, and the cost they pay to the service provider relative to the value expected from transactions or relationships with the competitors.

One of the biggest contemporary challenges of management in the service industries is providing and maintaining customer satisfaction (Lam and Zhang, 1999). This is because; overwhelming customer demand for quality products and service has become increasingly important to the professionals in the tourism industry (Lam and Zhang, 1999). Therefore, the main function a hospitality organization's member must perform is the delivery of quality service to its customers that makes them satisfied (Lewis and Booms, 1983). Hence, customer retention through service quality and satisfaction has become critical in the hospitality industry (Jeong and Oh, 1998). Poor quality of service makes the guests unhappy.

Johnson et al. (1995) clarified two basic conceptualizations of satisfaction named as transaction-specific and cumulative ones. Firstly, transaction-specific one is a customer's transient evaluation of a particular product or service experience (Cronin and Taylor, 1992; Parasuraman *et al.*, 1985). The other one is the cumulative satisfaction, which refers to both the economics and economic psychology (Johnson and Fornell, 1991; Meeks, 1984), where customers perceive satisfaction as the total consumption experience with a product or service.

Mazanec (2007) further adds three types of factors that the satisfaction theory deals with. Firstly, performance factors are considered to be the first group, which is connected to the products. Secondly, service attribute factors, that are thought to strengthen the consumer's satisfaction when improved. Finally, the delight factors whose gaps do not cause serious dissatisfaction, but their improvements make customers satisfied (Mazanec, 2007).

Customers encompass diverse expectations, which result in gaps in their perceptions. The performance model and the disconfirmation model (Johnson *et al.*, 1996) are related to the service gaps. Fornell, (1992) with Johnson and Fornell (1991) pointed out that those two models serve as the conceptual foundation in the service marketing. Furthermore, the summary of the performance and disconfirmation model is that customers' perceptions and their expectations have positive impact on satisfaction (Johnson *et al.*, 1996). To sum up, the models conclude that performance is defined as the customers' perceived level of product or service quality in comparison to the price they are to pay (Johnson *et al.*, 1996).

The study of Churchill and Surprenant (1982) further elaborated that the greater the product's or service's ability to provide according to the needs, or desire of the consumers relative to the price or costs incurred, the more satisfied those customers should be with their consumption experience. The balance between performance and customers' need also has been supported in the study of Tse and Wilton (1988). On the contrary, the poor product's or service's ability to provide according to the needs, or desire of the consumers relative to the price or costs incurred, the less satisfied or dissatisfied those customers should be with their consumption experience (Churchill and Surprenant, 1982; Tse and Wilton, 1988). Furthermore, Lancaster (1971) narrated the relationship between pay and performance connecting to satisfaction.

Satisfaction should be increased more, when service provider provides value of the products or service benefits to the customers per dollar as customers try to evaluate their value in comparison to the money they pay for (Lancaster, 1971). Moreover, expectations should have a direct positive effect on satisfaction due to the role of the consumers in the service process (Fornell and Johnson, 1993; Oliver, 1980). Thus, customer expectations hold important information as to the product or service performance since previous experience of the customers with a given service in the past as well as how it is likely to perform in the future is a primary determinant of expectations of service quality (Cadotte *et al.*, 1987). Those expectations are established prior to a service encounter, and influence customer satisfaction (Parasuraman *et al.*, 1985). The positive effects of expectations and perceived performance on satisfaction may be viewed as the macro-psychological input equivalent to the cognitive process of the customers (Tversky and Kahneman, 1974).

The relative size of the performance and expectations effects should depend on the relative strength of those constructs (Alloy and Tabachnik, 1984). As per Johnson and Fornell (1991), the stronger or more salient performance information is relative to expectations, the greater the relative positive effect of perceived performance on customer satisfaction. The weaker performance information is relative to expectations, the lower the effect of expectations on satisfaction. However, performance model may be tricky in the context of aggregate and cumulative customer satisfaction (Johnson and Fornell, 1991) as it requires an entire market segment holding inaccurate performance expectations, or being unable to learn from experience, which is impossible. It also presumes the absolute level of perceived performance unimportant; whether expectations and performance are high or low, it is the difference between them that affects the altitude of customer satisfaction (Johnson *et al.*, 1995).

Since satisfaction is an abstract construct, it should be managed using a variety of ways, of which disconfirmation of expectations is one (Fornell, 1992; Johnson *et al.*, 1995; Johnson and Fornell, 1991). The disconfirmation model posits that the degree to which perceived performance exceeds expectations increases the level of satisfaction while performance levels below expectations decrease the intensity of satisfaction (Anderson and Sullivan, 1993; Oliver, 1993) resulting in service gaps. Hence, disconfirmation model is related to satisfaction, which can be defined as a positive function of the difference between performance and expectations. Disconfirmation model assumes a decrease in satisfaction with increased expectations (Yi, 1991) where expectations serve as a point of difference, in which customers are presumed to evaluate performance information when justifying satisfaction. An important reason for the popularity of disconfirmation model is the concept of meeting and exceeding expectations. Since disconfirmation overlooks the value-percept disparity (Cronin and Taylor, 1992, 1994), it encounters restriction of applicability in few cases (Teas, 1993).

2.1.3 Sustainable development

The term sustainable development has been interpreted to mean "meeting the human needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). This concept is defined by the WCED (1987) as "a kind of development that meets the needs of the present population without compromising the ability of future generations to meet their own needs". As such, it appears to be such a term while from its roots of "sustain" and "ability," seems to have come to generally mean "the capacity to maintain" (Smith and Sharicz, 2011). Sustainable development might also mean the capacity to adapt, prompting the question of what existing conditions should be maintained as human societal development (Smith and Sharicz, 2011).

Tremblay (2007) refers SD as a macro-societal and macro-economic project that aims the social and individual welfare of the world's population. It is also based on the principles of intergenerational solidarity, equity, ethics and precaution (Stead and Stead, 1994). Additionally, it promotes responsibility for the actions of each to avoid risks to others and to the community for the greater interest, which requires a review of organizational values and beliefs of the individual members in the society (Stead and Stead, 1994). Edward (2005) defines sustainability as a revolution; the movement of individuals, organizations, and societies towards developing the capacity for environmental and socioeconomic long-term quality of life improvement towards the business strategy. In Elkington (1994), sustainability is asserted as an approach to business that considers economic, environmental and social issues in balanced, holistic, and long-term way that benefits current and future generations of the concerned stakeholders. On the whole, organizations aiming to be sustainable are required to pay concentration to their performance on three magnitudes equally consisting of the economic performance, social equity, and ecological preservation presented by Gladwin et al. (1995).

Elkington (1999) further adds the range of economic, social and environmental options with sustainable development open to future generations. Thus, SD requires a good equilibrium between its concern for economic, social and environmental considerations both in the present and distant future achieving the needs of a business's primary and secondary stakeholders without reducing its capability to meet the needs of future stakeholders (Dyllick and Hockerts, 2002). Thus, it is obvious that sustainability means a lot of things to different people making it difficult to concretely applicable (O'Riordan and Voisey, 1998).

Sustainable business development and triple bottom line can be well thought-out as the two sides of a single coin. The TBL concept is largely attributed to Elkington (1994) who argued for the incorporation of social justice, environmental quality and economic development objectives into the business strategy. The organizations aiming to pursue the SBD practice consider the economic performance or profit maximization objective as their first concern (Elkington, 1994, 1998; Gladwin *et al.*, 1995). Importantly in the studies of Elkington (1994, 1998) and Gladwin et al. (1995), economic phase has received as one of the prime concerns of the mangers to adopt the SBD practice since performing social responsibilities require economic support.

Social equity (Gladwin *et al.*, 1995) social issues (Elkington, 1998) and ethics (Stead and Stead, 1994) are the other substantial inputs for the SBD practice. Besides earning profit, ethical dealings of the concerned stakeholders are to be taken care bearing in mind different social issues for ensuring social equity. Elkington (1994) further pointed out that social equity; social issues and ethical affairs need to be considered in a balanced way for SBD. Moreover, environmental quality (Elkington, 1994) ecological preservation (Gladwin *et al.*, 1995) and environmental long-term quality of life improvement (Edward, 2005) are the indivisible parts of sustainability.

Business firms need profit to manage ecological preservation, and business concerns should have a sound profit source to make sure social equities for the diverse stakeholders. Thus, sustainability requires economic issue, social equity and ethical affairs in a balanced way (Elkington, 1994). However, corporate practice focuses intersection of environmental and economic aspects of SD (Isaksson *et al.*, 2010; Weick, 1987) to attain sustainability (Elkington, 1999). Sustainability gives less attention to the social progress (Green, 1995) though the theory is supposed to focus economy, environment and society in an equal manner.

Besides, Elkington (1999) posited that the greatest challenges for corporations desirous of achieving sustainability are found not "within" the areas covered by social, economic and environmental issues but "between" those areas. Stanners et al. (2007) also asserted on this view that the TBL framework has been criticized for focusing attention on strengthening individual parts of the framework rather than promoting the vital collaboration and interdependence between the interests of the stakeholders that reside within each of the three pillars. According to Levett (1998), it is the environment and not the economy that should occupy a prominent role in the model. In fact, SD theory is not out of criticism.

2.1.4 Hypothesis and the theoretical framework

The study focuses three research questions. The first one is formed as: *why does the satisfaction of the hotel guests on the room and bathroom cleaning service differ*? Satisfaction of the guests on the cleaning performances may differ for few reasons. Service system or process reduces service quality (Berry *et al*., 1994) that may cause satisfaction variance. Additionally, the guests who stay for more than one night in the hotels may show constructive perceptions on the cleaning services. Moreover, room cleaning attention of the stay over room and new room by the housekeeping personnel may differ as cleaning procedures and activities of the hotel bathrooms and rooms vary. Service gaps (Hoffman and Bateson, 2008) by the housekeeping personnel on the bathroom and room cleaning performances may also be liable for the satisfaction variance for the guests. Furthermore, demographic factors induce the behavior of the customers (Kotler *et al*., 2002) that may cause a variation in perceptions concerning satisfaction on the hotel room cleaning service.

Importantly, the study wants to explore the relationship between guests' satisfaction with the cleaning services focusing guests' gender and age as two segments, and perceived gaps (Gronross, 1984) of the guests may cause satisfaction variance. The preceding discussion is summarized as hypothesis 1: *Guests' satisfaction on the room and bathroom cleaning service is associated with the differences of their perceived gaps in terms of gender and age.*

Since this study wants to explore the relationship between guests' satisfaction with the cleaning service, hypothesis 1 can be split into two sub-hypotheses as
H1a: *Satisfaction of the guests concerning cleaning service is related to guests' gender,* and
H1b: *Satisfaction of the guests concerning cleaning service is related to guests' age.*

The second question on the towel re-use is concerned with the perceptions of the guests. The hotels want their guests to perceive towel re-use effective in minimizing the back pain of the cleaner responsible for washing the used towel since every used towel requires bending backbone of the cleaners at the time of washing and laundry services. In addition, the hotels see the towel re-use as an environmental issue since washing towel in the laundry requires electricity, water and detergent. Towel re-use has also direct economic effect as each and every re-used towel saves hotel cost. However, the hotels overlooked the economic aspect of the towel re-use. Moreover, gender and age factors of the guests and their stay frequency may affect the towel re-use as the guests stay for more nights use more towel for more times.

Finally, perceptions of the more night guests seem to be more important regarding the positive or negative effects of the towel re-use. As the hotel guests hold positive perceptions (Millar and Baloglu, 2008) or negative attitudes (Kasim, 2004b) on the non-green attributes compared to environmentally friendly alternatives, perceived gaps (Gronross, 1984) can be assumed as the change maker on the towel re-use for the hotels.

The third research question of the study is outlined as: *what factors do the hotel guests perceive important for causing the food waste in the hotel restaurant?* Food waste is concerned with ethics. Consequently, continuous and reckless food waste is a threat for making a hunger free world. Notably, the study assumes few assumptions causing food waste in the hotel restaurant. Firstly, the hotel guests may hold perceived gaps on food waste. Then, the guests may or may not perceive food waste is concerned with ethics. Since food waste is related to the taste of the food; the guests may waste food if food taste is not as per their expectations. Moreover, taste of the food may rely on the perceived gaps of the diverse segments of the guests, on their age, gender and stay frequency in the hotels. Additionally, the guests may associate the rent of the hotel rooms with the price of the breakfast and the guests may try other food as their habitual facts. Thus, the study hypothesizes relationship between the food waste with food taste and guests' habitual facts. The preceding discussion is summarized as hypothesis 2: *Food taste and habitual facts of the guests affect the food waste in the hotel restaurant.* Since the study aims to focus food taste and guests' habitual facts causing the food waste, hypothesis 2 can be divided into two sub-hypotheses as H2a: *Customers' food taste preferences affect the food waste in the hotel restaurant*, and H2b: *Customers' habitual facts affect the food waste in the hotel restaurant.*

Theoretical framework must be applicable to the conditions that it is attempting to describe, analyze, or predict (Clarkson's, 1995) as per the problems, hypotheses and theories.
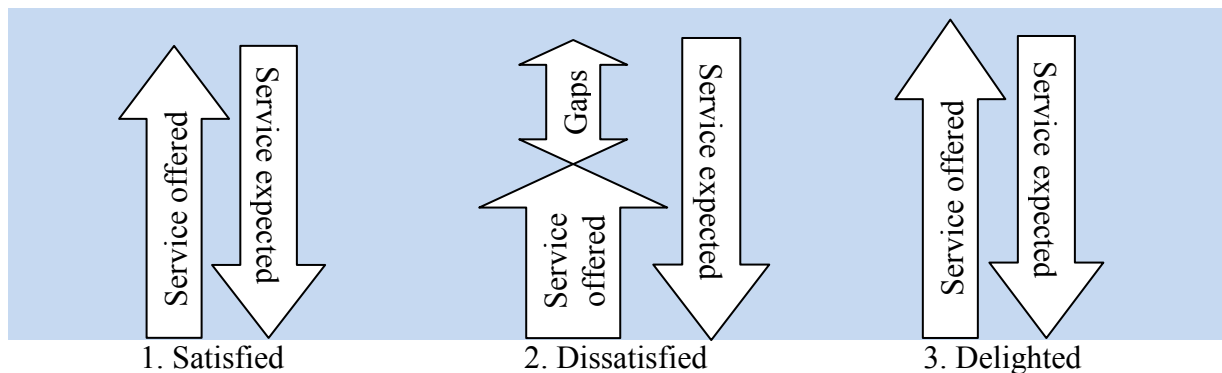
Figure 2: Gaps-fill model based on the gaps theory

Figure 2 may be applied as a framework for the study. If the cleaning service exceeds the expectations of the guests, no gaps exist, rather the guests are delighted.
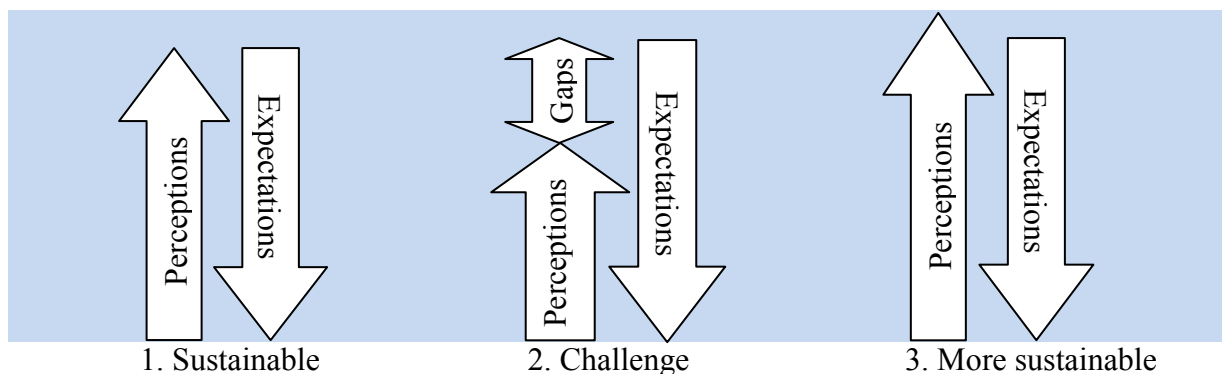

Figure 3: A perceived-expected model based on the gaps theory

Figure 3 may be used as another framework. If guests' perceptions exceeds the expectations on the towel re-use and food waste issue, no gaps exist, rather the issues are more sustainable.

If expectations and perceptions of the guests are at the similar level, the issue is sustainable. When perceptions are below their expectations, gaps will exist. This is perceptions and expectations related gaps (Brogowicz et al., 1990) or perceived gaps (Gronross, 1984) and that state is a challenge. However, the guests may hold positive perceptions on sustainability higher than their expectations. This condition is more sustainable. Hypothetically, the state of the gaps may result in three consequences. Service organization should be trying to be the third, or at least to be the first one. On the other hand, the second outcome is challenging for any particular service, or a threat for any sustainability issue.

The housekeeping personnel are in charge for cleaning-up the hotel rooms. As service varies due to the variability, the guests may perceive cleaning variation in the hotel rooms. If the guests perceive the hotel room cleaning service according to their expectations, they are satisfied, and no gaps exist in that case. In contrast, the guests are dissatisfied when they perceive service below their expectations, and gaps exist in that case. Furthermore, delighted condition is the stage when guests' perceptions exceed their expectations. Similarly, if the hotel guests perceive towel re-use is good for the environment, and supportive for reducing work pressure and back pain of the housekeeping employees, no gaps exist between management's expectations and guests' perceptions. This stage may be sustainable.

The hotel guests may be pleased or displeased with food served in the hotel restaurant, and food waste depends on the taste of food. Furthermore, there is a tendency of the guests to take excess portions at buffets since costs are misperceived. Moreover, this conception of the guests can be treated as a psychological factor as they associate their room price with the buffets. If the guests perceive food waste is harmful to the environment together with a threat for sustainability, and they voluntarily take part in the food waste reduction process, no gaps exist. Thus, participation of consumers in service process (Growth, 2005) influences the service provider, and consumers' cooperative behaviors (Zeithaml, 1988) contribute in shaping expectations of the customers in a certain service. Moreover, towel re-uses and food waste reductions require voluntary participation of the guests. Therefore, guest's participation is a valuable contribution to the SBD program for the hotels.

Towel re-use is good for the environment. It also may save the work pressure and back pain of the employees, which is an ethical aspect. Thus, towel re-use issue consists of the greening concept. If the hotel guests comprehend the same perceptions, no gaps exist, and this circumstance is the sustainable state. In addition, towel re-use saves costs of the hotel though the hotel authority concealed this fact. If the guests perceive this economic side, they may not pay attention in re-using towel. Then, sustainability objective behind towel re-use will be challenging. Furthermore, food waste connects environmental and ethical aspects. If food waste is controlled, a hunger free world can be achieved. Therefore, it is very imperative for the guests to perceive the importance of food waste according to the expectations of the hotel restaurant section. When perceptions equal to expectations, no gaps exist. However, gaps exist if perceptions and expectations differ resulting in variance on satisfaction.

Satisfaction also means how a customer's needs are met, and how well the service delivered meets the customer's expectations (Lewis and Booms, 1983). Parasuraman et al. (1985) summarized that discrepancy between a customer's expectations and perceptions shape employee service whereas ''perceived service quality'' is the gaps between a customer's expectations and perceptions as a measurement of service quality. Thus, the smaller gaps result in better quality of service and greater customer satisfaction, and the wider gaps result in poor quality of service and greater customer dissatisfaction (Parasuraman et al., 1985).

2.2 Literature review

A literature review provides a historical background to the research giving an overview of the current context of the work through reference to current debates (Ridley, 2008). Ridley (2008) further adds that a literature reviews introduction of appropriate terminology and provides definitions to clarify how the terms are used in the study unfolding related research in the field viewing how current research extends this or addresses gaps in work already done. Furthermore, it provides supporting proofs for a practical problem that the research is likely to address. In addition, literature review entails a thorough analysis and summary of existing knowledge (Hart, 1998). It also means to locate the research project to form its context or background and to provide insights into previous work (Blaxter *et al.*, 2006).

Rendering steady and tremendous housekeeping services are basics to meet the international standard for the hotel business (Blanke and Chiesa, 2011). A hotel room composes the room where the guests sleep, and a bathroom is attached with it. The present study intended to distinguish the satisfaction status of the guests on the room and bathroom cleaning service performed by the housekeeping personnel. It is noted that satisfaction obtains a higher rate of customer retention and improvement of market share and profit (Gilbert and Horsnell, 1998).

The study targets to recognize the impacts of towel re-use and food waste. The guests may hold perceived gaps on sustainability pertaining to the towel re-use and food waste issues. Furthermore, significant variation on satisfaction of the hotel guests on the cleaning service in the hotel rooms may affect profitability, which is tied with the SBD practice. As profit is an input for the SD, quality housekeeping service is critically important to a hotel's performance, guest satisfaction, reputation, loyalty and profitability (Pongsiri, 2012).

2.2.1 Housekeeping personnel and the cleaning service

Hospitality and tourism sectors have extended worldwide very rapidly in the last decades (Pongsiri, 2012). The employees working in this industry confront challenges in delivering quality service. These challenges will be a threat for succeeding the hospitality business, which is very competitive in the international market. Specifically, the area of housekeeping in the hospitality industry has captured as an important human resource management and development (Pongsiri, 2012) since housekeeping services are very sophisticated (Tsang and Qu, 2000). Tsang and Qu (2000) additionally argued that better service makes a differentiation in the mind of the customers in the hospitality industry.

According to TTCR, poor communication skills and language ability, deficiency of property maintenance and service gaps are the major challenges, the housekeeping personnel encounter whereas offering consistent along with excellent services are essentials to meet the international standard (Blanke and Chiesa, 2011). Furthermore, Pongsiri (2012) added that the housekeeping employees are most of the cases (not always) unwell educated old generation women. Moreover, educational qualification affects the image of the housekeeping services lower leveled, hard and poor (Pongsiri, 2012). Consequently, the tendency of avoiding this job by the well educated and new generation people affect the skilled housekeeping services (Pongsiri, 2012). Pongsiri (2012) further elaborated that the Housekeeping Standard Service Sequences is considered as the benchmark, which asserts sequences for functional work of the housekeeping room attendant. The HSSS consists of ten steps (Pongsiri, 2012) which detail an overall picture of how a hotel room is cleaned and prepared for the hotel guests prescribed by the housekeeping professionals.

The first step of cleaning service according to HSSS is to greet and ask for permission to enter the room. The second step is starting cleaning. The third one is turning off the electric tools to reduce power consumptions. The fourth is to open the doors, windows and curtains to ventilate, and let the air flow. The fifth is to clear old cloths, towel, food scrapes, paper, dirty objects etc. Bed making is the sixth step. Step seven includes bathroom cleaning. The eighth step consists of dusting and wiping all shelves, hovering and reorganizing all items in the rooms back into the hotel standard or as like the room the guests enter for the first time. The ninth step is to clean floor including sweeping, mopping and hovering. And the last step is to check the room at a glance having a look and then reporting. These ten steps are the teaching model that needs to be practiced into the real cleaning service environment (Pongsiri, 2012).

Based on the SERVQUAL (Parasuraman *et al.*, 1985), the study of Pongsiri (2012) viewed few service attributes of the housekeeping personnel as important perceived by the guests. The most important one is housekeeping assurance, then housekeeping reliabilities, after then housekeeping tangibility, housekeeping empathy and lastly, responsiveness in a deceasing order. Finally, the findings illustrated that the expectations of the guests and quality service by the housekeeping employees were concerned with the satisfaction of the guests (Pongsiri, 2012). Moreover, the study of Greathouse et al. (1996) reported few factors which travelers considered of great magnitude in the hotel accommodations. In addition, the guests perceived cleanliness of room, value for price, friendliness of staff, and security of property as the most focal attributes at the time of staying in the hotels. In fact, the guests acknowledged cleanliness of the hotel room as one of their major concerns (Greathouse *et al.* 1996).

The contemporary study of the housekeeping service rarely exists (Pongsiri, 2012). The challenge in keeping the cleaning service quality may occur with the individual, and not in the sequences since individual housekeeping job performance differs. Though controlling the service performance of the individual housekeeping personnel is a massive task, the business performance is to rely on the summation of individual performance (Pongsiri, 2012), where better service results in a successful organization. Pongsiri (2012) additionally noted that developing housekeeping service is critically weighty to an organization's performance, reputation, loyalty, ultimate profitability and guest satisfaction

Moreover, Greathouse et al. (1996) found the concern of the guests on the cleanliness issue. Additionally, Pongsiri (2012) proposed ten steps of cleaning performance into the real practice. Therefore, the present study expects to fill in the gaps of the literature on the housekeeping services regarding the satisfactory status of the bathroom and hotel room cleaning. Furthermore, it also motivates to analysis the cleaning services in the hotel room, and its relation to guest's satisfaction connecting to the sustainability issue showing a real practice of the cleaning performances of the housekeeping employees.

2.2.2 Sustainability practices and perceptions of the customers

Customers view sustainable practice as a crucial factor in their hotel selection decisions (Han *et al.*, 2009). Perceptions of the guests influence the sustainability concept in which travelers perceive sustainability in the hotel industry significantly. Some of the cases, guests perceive sustainability insignificant while choosing a hotel to stay. Thus, the guests perceive gaps on sustainability. In fact, guests now expect environmental attributes in the hotels (Deloitte Consumer Survey, 2008; Robinot and Giannelloni, 2010). The guests who are mindful on sustainability seem to be aware of the environmental concern, even they are happy to undergo minor inconveniences in order to support any green initiatives (Kim and Han, 2010).

Hotel guests expect certain environmental attributes as part of the service offering (Deloitte Consumer Survey, 2008; Robinot and Giannelloni, 2010). Consequently, a green hotel image can result in favorable behavioral intentions by the hotel guests including their intention to revisit (Lee *et al.*, 2010; Manaktola and Jauhari, 2007). With increased customer awareness, sustainable practice becomes central to the travelers in choosing a hotel (Tzschentkea, 2008). Millar and Baloglu (2008) found positive attitudes of the hotel guests on the sustainable practices. Their findings presented that the guests can differentiate a non-green hotel from a green one. Conversely, the study of Kasim (2004a) viewed an opposite findings. Although respondents were environmentally conscious, they were not necessarily concerned with the environmental practices of a hotel when choosing where to stay (Kasim, 2004a). Another study of Kasim (2004b) concluded unconsciousness of the few guests on the sustainability issue as they preferred some non-green attributes in the hotels during their stay.

Introduction to sustainability concept has uplifted the image of business in a new era, and exhaustive attention of the scholars (Bansal, 2005; Hoffman, 1999). Implementing sustainable practice is becoming increasingly important to the competitiveness of the hotels (Han *et al.*, 2009; Manaktola and Jauhari, 2007; Ogbeide, 2012; Tierney *et al.*, 2011). As a result, hotels have been incorporating many green approaches in their daily operations (Revilla *et al.*, 2001). They permanently analyze new trends defining better criteria presenting modern standards for improvement of quality of life (Bonvin, 2003). Thus, sustainable practices are considered as the key success factors in customers' hotel selection decisions (Han *et al.*, 2009; Manaktola and Jauhari, 2007). Millar and Baloglu (2008) further noted that SD practice has been employed randomly, and without researching on how a specific practice might influence a customer. Due to the awareness of the international community, issues impacting the environmental affairs are accepted drastically (Lipman and Vorster, 2011).

2.2.3 Food waste and environmental effect

The environmental effect of food provision is recognized (Kallbekken and Saelen, 2013). Food production which requires consumption of the natural resources and 92% of the global water footprint is related to agriculture (UNEP, 2012), accounting for 20% of global greenhouse gas emissions (Hertwitch and Peters, 2009). Moreover, land degradation, overfishing and pollution of local air and water are also allied to food production (Kallbekken and Saelen, 2013). Though one-third of the produced food is lost or wasted (Gustavsson *et al.*, 2011), this issue has received not as much of attention. It seems that food waste is a substantial, but neglected factor to the environmental change (Kallbekken and Saelen, 2013).

Reduction of food intake is one of the measures that assist to lower food waste in the hotel restaurant (Freedman and Brochado, 2010). Furthermore, eating situation often provides clues to help reduce food waste (Herman and Polivy, 2005). Moreover, plate shape and size helps in reducing food waste (Ittersum and Wansink, 2012; Sobal and Wansink, 2007). In addition, communicating social cues as the choice architecture (Thaler and Sunstein, 2008) also diminish the amount of food waste in the hotel restaurant (Kallbekken and Saelen, 2013).

Sustainable development focuses on economic and environmental issues and gives less attention to the third pillar; social progress (Green, 1995). Thus, the SD concept fails to promote the achievement of social objectives. Keeping the limitations of applicability (Elkington, 1999; O'Riordan and Voisey, 1998; Stanners *et al.*, 2007), the present study aimed to notice the environmental, economic and ethical or social issues of sustainability perceived by the hotel guests with reference to the towel re-use and food waste issues.

3 Method

This chapter aims to focus on the research approach, data collection methods and analysis techniques. It also consists of the validity, ethical consideration and limitation in data collection and data analysis of the study.

3.1 Research approach

Qualitative research involves the studied use and collection of a variety of empirical materials (Denzin and Lincoln, 1993). According to Ambert et al. (1995), it includes both field observations and analysis of texts. It is not necessarily important for qualitative research to begin with a priori hypothesis, and finding data to prove or disprove it (Ambert *et al*., 1995; Bogdan and Biklen, 2003). In other words, the focus of qualitative research is the empirical world aiming to convey its workings in its phenomenological integrity (Ambert *et al*., 1995). Ambert et al. (1995) further added that qualitative research seeks depth rather than breadth. Although developing measures of concepts will not be significant consideration, concepts are very much important in qualitative research (Bryman, 2004). In addition, this approach sees the contexts as important, and the phenomenon needs to be understood based on its settings (Bryman, 2004; Robson, 2011). Consequently, few reasons motivated to choose the qualitative approach for this thesis. Firstly, the nature of the research problem demands for gathering of descriptive data on the perceptions of the hotel guests as to sustainability. Secondly, major part of the work is based on the direct observation to investigate the service gaps of the employees. Thirdly, the study has blended the triangulation technique (Bryman, 2004) for a depth empirical focus on the problem like perceived gaps (Gronross, 1984) of the respondents and service gaps (Hoffman and Bateson, 2008) of the housekeeping employees.

3.2 Data collection

Methods refer to the specific techniques used to collect data, analysis them and showing ways to make them trustworthy (Robson, 2002). The present study gathered necessary information through the primary data sources such as observation, guest survey, and interview. Additionally, internal reports of the hotels, guest comments, leaflets used in the hotels and websites were used as the secondary data sources. Although the research project has focused two Scandic hotels, the units of analysis incorporated the service of the housekeeping employees to know the satisfactory attitudes of the hotel guests on the room and bathroom cleaning. It also focused perceptions of the guests on the towel re-use and food waste issues in connection to the sustainability practice based on the two promotional leaflets.

3.2.1 Primary data

Structured observation is also called systematic observation; a technique in which the researchers employ explicitly formulated rules for the observation and recording of the behaviour (Bryman, 2008). This is the participant observation (Bryman, 2008) in which the researcher participates so that the ground of the research problem can be perceived from the original sources. In the present study, participant observation helped understand the causes of guests' dissatisfaction on the cleaning services coupled with the problem. Importantly, the author performed a structured observation on 50 hotel rooms to observe the cleaning services of the housekeeping employees to check the cleaning status on the bathroom and living room so that service gaps of the housekeeping personnel can be identified.

Surveys are more like a research strategy than a tactic or specific method (Robson, 2002). A questionnaire was prepared after investigating the research problem, as the survey questions should be designed to help achieve the goals of the research and in particular, to answer the research questions (Robson, 2002). A review of the secondary materials aided to formulate the survey questionnaire. Overall, the survey relied largely on the closed questions including three sections, and contains all the questions within one page for the betterment of the respondents. It includes questions about the cleaning service focusing whether the guests are satisfied or dissatisfied on the bathroom and hotel room cleaning with two environmental issues such as re-use of towel and waste of food as regards the sustainability concept.

The first section consists of the questions on the room and bathroom cleaning service to know the satisfactory or dissatisfactory attitudes of the guests in order to discern their perceived gaps. Then, the second section which has emphasized the towel re-use including frequency of towel re-use. It also contains information on the environmental, economic and ethical aspects over towel re-use based on the promotional leaflet hung in the hotel's bathrooms. This phase in the questionnaire helped in identifying the perceived gaps of the guests on towel re-use concerning with the SD concept. Furthermore, the second section focuses the environmental, economical and back pain issues connecting to the towel re-use issue. The third section includes perceptions of the guests towards food waste following another leaflet put in the hotel restaurant. It also intends to know why the guests waste food keeping it in mind that the guests either leave food after their meal as food is not tasty enough, or they experiment or try different food as their habitual facts. Accordingly, the last part in the questionnaire assisted to identify the perceived gaps of the guests on the food waste issue. Moreover, the guests were asked to know their concern on food waste as an ethical issue or not segmenting them as gender, age and stay frequency of night/nights.

Two sample questionnaires have been pre-tested in front of the 2 hotel guests, and corrections have been made to finalize the questionnaire. Then, the questionnaire was translated into the Swedish language, and was attached to the English one so that both the local and international respondents would respond easily. The target population for this study was random including the local and international guests. A five point Likert scale approach was followed to set the questions. This summated rating approach is very widely used which is originally devised by Likert in the 1930s (Likert, 1932), and scales developed by this method are commonly termed as Likert scales. Finally, the guests responded the questionnaires themselves as self-completion questionnaire (Bryman, 2008; Robson, 2002).

Interviewing as a research method involves researcher and interviewee on asking questions and receiving answers, and a fully structured interview contains pre-determined questions (Robson, 2002). Bryman (2008) defines structured interview as one of the main ways of research based on paper and pencil or computer assisted personal interview. In the present study, the author has arranged a structured personal interview with the hotel manager to make out his perceptions on the housekeeping services, towel re-use and food waste issues based on paper and pencil. To sum up, the hotel manager was interviewed to explore some information, which was not possible to know from the other data sources in relation to the problems.

3.2.2 Secondary data

At the beginning of the study, related literatures have been reviewed together with comments of the guests; leaflets and record of food waste were used as the secondary data sources. Furthermore, articles, books, dissertations and other research reports were analyzed.

Moreover, the author reviewed the complaints of the guests thoroughly to understand the root causes of the problems on the cleaning services performed by the housekeeping employees. In addition, the guests have shown their positive and negative perceptions about the cleaning service together with the food service in the GCCs. Furthermore, two leaflets used at Scandic hotels were considered as the links of the research problem.

3.2.3 Data analysis

Analytical induction is referred to an approach to analyze the qualitative data in which universal explanations of phenomena is sought by pursuing collection of data until no inconsistency with a hypothetical explanation of a phenomenon is found (Bryman, 2008). As the data in observation, survey and interview were qualitative, the study used analytical induction to perceive the causes of guests' satisfaction and dissatisfaction on the cleaning service, and guests' perceptions on the food waste and towel re-use issues as to sustainability.

There are many ways to measure customer satisfaction. One measure consists of responses to a single question on the customer-satisfaction questionnaire: ''overall, how satisfied are you with?'' (Su, 2004). In addition, guest comments card is commonly used as guest satisfaction indices by most of the hotels (Su, 2004). A guest comment card is the card commonly distributed in the rooms allowing those guests to respond willingly on their experience they experienced during their stay. In this study, GCCs were used as the satisfactory and dissatisfactory comments. Furthermore, few questions in the questionnaire survey were used as the satisfactory and dissatisfactory measures in the data analysis.

The Excel program helped in computing the data. Firstly, the qualitative data have been converted into quantitative form sorting and coding them. Data having 2 dimensions, for example yes/no, one night/more than one, ok/not ok, have been coded as number 1 and 2. Data consisting of five magnitudes have been categorized as 0 to 5 numbers in the five point Likert scale. Secondly, frequency distribution was identified discretely to count the percentile. Responses of the guests regarding strongly disagree, disagree, neutral, agree and strongly agree have been separately counted together with their percentages. Furthermore, answers related to strongly dissatisfied, dissatisfied, neutrality, satisfied and strongly satisfied have been counted frequently. Finally, the information was studied using analytical induction.

3.2.4 Statistical analysis

Wilcoxon signed ranks test helped in testing the hypotheses. Wilcoxon signed ranks test is a non-parametric test to check whether two independent samples originated from the same populations or not along with equal distribution. Notably, Wilcoxon signed ranks test has benefits that interval measurement is not required in applying this test, which does not assume normal distribution within the sample groups in comparison to the t-test.

A more complete and through depiction of the guests' perceptions on service were obtained by reporting the differences in the rank sum irrespective of gender and age. More specifically, the observation was ranked, and the sum of all ranks from one of the groups was compared with the other group expecting hypothetical identical distribution among the guests. Z statistics were used to determine if there is a statistically significant difference in the underlying distribution of the Likert scale items though it is not necessarily important for qualitative research to prove or disprove the hypothesis (Ambert *et al.*, 1995; Bogdan and Biklen, 2003). However, the p values were presented to check the service and perceived gaps.

Besides the service gaps (Hoffman and Bateson, 2008) in the housekeeping service, perceived gaps (Gronross, 1984) of the guests or their perceptions and expectations related gaps (Brogowicz *et al.*, 1990) on the towel re-use and food waste issues in connection with the sustainability concept were tested segmenting the respondents as age and gender group. Remarkably, the guests were the populations, where sample was analyzed, but populations were generalized in the statistical analysis. In the analysis, Wilcoxon signed ranks test was applied to check whether two independent samples originated from the same populations or not in which the study classified the populations as two sample groups in terms of age and gender for better analysis of the data. Another benefit of using Wilcoxon signed ranks test is that, this test does not require interval measurement. Furthermore, most of the data in the questionnaire survey consisted of five point Likert items instead of interval data. Therefore, this test benefited the analysis of five point Likert items of the questionnaire survey.

Distribution measures of the data have not been measured in the study. Moreover, the samples were not tested to identify whether they are normally distributed or not. In addition, it is assumed that the data of the guests in terms of gender and age are not normally distributed. Wilcoxon signed ranks test support these conditions, but other parametric tests generally measure normal distribution of the data before statistical analysis. Particularly, normal distribution was not required to test the hypotheses to know the p values. That was the advantage of the Wilcoxon signed ranks test in the study over the other parametric test.

Besides advantages, Wilcoxon signed ranks test encountered few drawbacks at the time the statistical analysis in the present study. For example, this test has restriction of analyzing data having two magnitudes like yes/no. Therefore, the data of questions number 1 (a), 2 (a), and 3 (a) have been ignored at the time of using the test. Hence, questions in the questionnaire regarding five point Likert items only were analyzed applying this Wilcoxon test.

3.3 Validity

Validity is the most important principle of a research, which is concerned with the integrity of the conclusions that are generated from a piece of research (Bryman, 2008). Additionally, trustworthiness is required to make the research subject unbiased (Bryman, 2004; Robson, 2011). Subsequently, the author in this study was conscious about the objectivity though it is not possible to be fully objective all time (Bryman, 2004) since bias and rigor can be created, when there is a close relationship between the researcher and the settings in which it operates (Robson, 2011). As the author worked very closely with the employees throughout the research period, it might create bias during a long time involvement in the organization since it can be difficult to keep the researcher role (Robson, 2011; Yin, 2009). However, observation has been completed in a way so that it becomes unbiased. Most of the data were first hand, which were expected to be bias free. Furthermore, the given information was presented to the hotel manager in order to avoid misinterpretation of the recorded information after taking the interview for validation of the requisite information.

On a whole, the researcher has tried his best to work in a way so that the research project becomes trustworthy following a triangulation technique. Triangulation refers to the state, when more than one method or source of data is used (Bryman, 2004). Triangulation makes easier to avoid bias (Robson, 2002). Moreover, surveys through the questionnaire, cleaning supervision results observed by the author, guests' comments and interview methods have been used in this research project. Thus, a combination of more sources and methods of data may generate trustworthiness of this study, and the results are likely to be dependable.

3.4 Ethical consideration

Considering the possibility of harming to the participants (Robson, 2002) is an ethical aspect of research. The author has tried carefully to handle this ethical consideration. Particularly, for the period of the questionnaire survey, the hotel restaurant was almost full with the guests, but they were not requested to answer the questionnaire as it was their dinning time.

Sometimes, the guests were gossiping or watching TV. At that particular moment, the author did not request the guests for responding the questionnaire since the guests were busy on their personal affairs. On the other hand, the relax period of the guests have been used, when they have intentionally responded the questionnaires. In this way, situation effect and circumstances were considered at the time of the data collection. In addition, privacy, temper, attitudes, willingness and circumstances of the respondents have been considered in approaching the questionnaires. Furthermore, tape recorder was not used at the time of conducting the interview so that the hotel manager might feel free in answering the questions.

Ensuring safeguards concerning confidentiality seem to be difficult for someone as a researcher (Alderson, 1998). Since guests' comments are very confidential information for the hotels, the hotel manager requested the researcher not to disclose their secret information. Consequently, confidentiality and privacy have been maintained strictly as an ethical consideration.

3.5 Limitation

There is a scholarly debate regarding whether items on Likert scales of the qualitative data can be treated as quantitative data or not. Moreover, analysis based on mean and standard deviation could result in missed information when the qualitative data are considered as quantitative ones. Therefore, mean and standard deviations of the Likert scales items have been overlooked since the data are qualitative (Jamieson, 2004).

The most important limitation was the data collection phase in the present study as the guests were disinterested in responding the questionnaire. At the beginning, the managers were not inclined to access a stranger at the hotels assuming someone would gather sensitive data from their guests. However, they have been convinced regarding the confidentiality.

Questionnaires have been placed on each table in the hotel rooms so that the guests fill in them intentionally, but the respondents were less responsive. After one week, only seven questionnaires were filled in. As the response rate was not adequate through the self-completion questionnaire method (Bryman, 2008), a direct collection method was followed. That is, the author personally requested the individual guest to fill in the questionnaire.

When the guests checked in the hotels, they did not have time to respond the questionnaire as they were busy. Since they did not stay night, they were not able to share their perceptions. When they were checking out, they seemed to be busy also. Therefore, there was only option to request the respondents to fill in the questionnaire, when they were in the leisure period in the lobby since the restaurant and bar were not allowed by the management for collecting data. In fact, the expected place was the lobby where the guests would sit, and then a copy of the questionnaire was approached to them for their response. Especial care was taken at the time of offering the questionnaire to the guests when they were busy. Hence, the questionnaire survey has been perceived as a great limitation in the study.

4 Background for the empirical study

This chapter consists of background for the empirical study on the Scandic hotels. It reviews two leaflets used in the hotels as the promotional tools for the sustainability practices.

4.1 Sustainable practices of Scandic and its history

Scandic is one of the leading hotel chains in the northern Europe (internet, scandichotels, 1, 2014). In 1963, it had started its journey as Sweden's first Esso Motorhotell. In the first day of its orientation, visitors were offered coffee with treats on the side. Besides, the Esso Motorhotell chain, presently known as Scandic hotels, was based on the concept of hotels on major travel routes and was the first of its kind in Sweden. In 2013, Scandic has entered its 50th year with 7,500 team members and 156 hotels in eight countries, making a total of 29,849 hotel rooms (internet, scandichotels, 1, 2014). In 1993, Scandic started developing sustainability practices what has become the industry's leading sustainability program (internet, scandichotels, 2, 2014). Currently, Scandic hotels use the following figure as the compass for their SBD practice.

Figure 4: Compass for SBD (internet, scandichotels, 2, 2014)

The studied hotels were established in 1969. Presently, they consist of 184 rooms at Nord and 133 rooms at Uplandia, where 75 employees work in the different service divisions (pers. mess., Sönmez, 2014). In everyday decision at Scandic, the environment, economy and social affairs are considered as the inputs for SBD. Largely, this has produced results as becoming the trend-setter in the hotel industry. Considering SBD compass as a lever for the company's success, the hotels perceive sustainability practice in their operations as the composition of the environment, economy and ethics since it is central to its business to contribute to a sustainable society. Furthermore, marketing process of the hotels is considered sustainable, that must be based on the relevant and reliable facts (internet, scandichotels, 2, 2014).

It is important for all the Scandic hotels to operate business functions in an ethical manner. For example, the products or services are environmentally friendly, or more environmental friendly than the equivalent products or services in the market. In addition, the products or services must be produced and delivered in a good working and production conditions contributing to, or at least not discourage more sustainable development in terms of the environment, climate, health and living conditions meeting or exceeding quality expectations (internet, scandichotels, 2, 2014). Thus, Scandic wants to find a balance between the physical, emotional and spiritual needs that everyone belongs to. It seems to be a holistic approach of providing and rendering quality service. Moreover, the hotels target to deliver products and services that are a good choice both environmentally and socially meeting the regulatory requirements along with reliable and transparent information to their stakeholders.

Service economy includes the soft part of the economy consisting of the nine industry super sectors including education and health services, financial activities, government, information, leisure and hospitality, professional and business services, transportation and utilities, wholesale and retail trade, and other services (Hoffman and Bateson, 2008). Hospitality or hotel business is one of the members in the nine industry super sectors, where hotel specialists permanently analyze new trends; define better criteria, present modern standards in order to improve quality of life for the hotel guests as the part of the SD (Bonvin, 2003). Consequently, SD practice is considered as the key success factors in customers' hotel selection decisions (Han *et al.*, 2009; Ogbeide, 2012; Tierney *et al.*, 2011).

4.2 Re-use of towel, food waste and the hotel messages

At Scandic hotels, the housekeeping personnel clean the hotel rooms and make them ready for renting. As the cleaning process is manual, it is tough by the personnel to make all rooms equally clean. Moreover, this hard job is performed by the housekeeping personnel, who are mainly responsible for the entire hotel cleaning activities focusing the hotel rooms. Considerably, renting hotel rooms is one of the main sources of cash inflow of the hotels.

The guests will be dissatisfied if the housekeeping personnel do not execute the cleaning services as per the expectations of the hotel guests, there will be gaps; as service gaps according to Hoffman and Bateson (2008). Moreover, demand of the hotel restaurant is derived by the demand of the guests stay in the hotel rooms. If the guests are not pleased with the food, it may hamper the sales of the hotel rooms. Furthermore, reluctance of re-using towel will make the sustainability objective challenging. Therefore, the hotel room cleaning service, towel re-use and food waste issues are linked with the SBD idea.

Scandic motivates their guests to re-use towel saying that the nature will be saved, and the housekeeping employees will get release from their physical hazards or from back pain. In every bathroom in the studied hotels, a leaflet shows a message on towel re-use and its impact on the environment. (*Hello, want to save the planet and reduce back pain? Hang your towel if you want to use it again that will make the nature happy as we won't wash it in vain. If you put it in the basin, you will spare the backs of our cleaners and we'll wash it in the most environmentally friendly way. Of course, we'll pick it up even if it lands on the floor.*) The message in the leaflet works as one of the links of the research problem in the present study. Moreover, the study focuses the environmental, economical and back pain effects of towel re-use followed by the message communicated with the guests in the hotels. However, the hotels have concealed the cost or economic issue in the leaflet. If the hotel guests do not pick out the same perceptions that towel re-use is concerned with sustainability, there will be gaps.

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The hotel restaurant section is cautious in delivering quality food; they also seem to be mindful about food waste. As reduction of food waste is helpful for sustainability, the hotels persuade their gusts to reduce food waste communicating a message. In the hotel restaurant, a leaflet shows a message on the food waste, and its effect on the environment. (*Eat as much as you like and leave as little as you can. Our food is so good that it's easy to take more than you can actually manage. The less we throw away the better it is for the environment.*) The message above works also as another ground of the research problem in the present study. It seems that management wants the guests to reduce food waste in the hotel restaurant. However, the guests may have unlike perceptions on the message as few factors affect food waste. Thus, perceived gaps of the hotel guests on the food waste hamper the SBD goal.

The leaflet in the hotel restaurant influences the hotel guests in dropping food waste. If the hotels guests who have food in the hotel restaurant possess the same perceptions, there will not be any gap. On the other hand, gaps will exist if the guests find variation in their perceptions. The guests may perceive the messages of the two leaflets as a cost savings strategy, and then they may not participate in the Scandic's sustainability program. If it happens, the issues of towel re-use and food waste reduction will not be feasible.

The guests waste some food which may be composition of few factors; either food is not enough tasty perceived by the guests or they waste food due to the lack of their awareness, which is a habitual fact. The guests also waste food in their homes (pers. mess., Sönmez, 2014). Furthermore, they may associate their bundle price they pay for the hotel room together with breakfast. Therefore, it is required to see the perceived difference of the hotel guests on the food waste issue that why a certain amount of food is wasted every day.

Food waste covers the environment, economic, and ethical issues. Towel re-use also composes the environment, costs, and ethical (back pain) issues. Both the issues wrap direct and indirect impact on the environment. Largely, towel re-use and food waste issues of the hotels consist of the economic, social and environmental aspects. These issues have a great demand that how hotel business can be run in a sustainable way coping with the challenges of the perceived gaps of the guests and service variation of the employees. In order to look into the challenges, it is essential to uncover the service gaps regarding service delivery, service standard and service expectations between the housekeeping employees and the hotel guests.

If significant service gaps exist among the housekeeping personnel, it is a challenge for sustainable hotel business development as service gaps will hamper profitability of the hotels. One of the major bases of the TBL is economy, which is directly connected to profitability. Importantly, profit is required to ensure social justice. In fact, a hotel needs to ensure profitability as taking environmental protection measures relies on profit. However, all the guests may not be pleased with the hotel services. Consequently, satisfaction and dissatisfaction of the guests relates to profit, which is the major motivation for business.

The guests may perceive variation in satisfaction due to the service gaps (Hoffman and Bateson, 2008) regarding the hotel room cleaning service. Furthermore, Scandic management may realize the perceived gaps (Gronross, 1984) on sustainability as to the towel re-use and food waste issues. Both the cases, the guests are the core sources of the key information on the service and perceived gaps. So, the results will entail whether the service gaps among the housekeeping personnel and the perceived gaps among the guests exist or not in the light of the observation and questionnaire survey. In addition, the results presents answers to the research questions followed by the problems and aims of the study based on the hypotheses.

5 Results

This chapter presents the results of the study with the answers to the research questions. Moreover, it entails the results of the guest comments, survey with questionnaire, the housekeeping personnel job observation and interview connected to the aims of the study.

5.1 Why satisfaction on the cleaning service differs

The author has investigated the comments and complaints of the guests provided by the hotel manger to comprehend the causes of the guests' dissatisfaction on the cleaning services. Complaint attitudes, as well as positive and negative behavioral intentions are important for understanding customer reaction to dissatisfaction upon the services of the business organizations (Lee *et al*., 2013).

Generally, complaining behavior results in three consequences: voice, exit, and retaliation (Hoffman and Bateson, 2008). Voice is referred to the outcome that consumer verbally communicates dissatisfaction with a specific service provider consisting of high, medium and low voice. Exit is the second complaining consequence in which a consumer stops patronizing the service provider including high, medium and low exit. Finally, the third complaint effect is retaliation. It is the situation in which a consumer takes action deliberately designed to either damage the physical operation or hurt future business. As a result, they generate negative word of mouth, or vindictive attitudes to the service provider.

5.1.1 Perceived gaps of the guests on the housekeeping service

From January to August in 2013, two Scandic hotels in Uppsala encountered comments and complaints from their guests. The comments were on the bathroom cleaning, room cleaning, and towel change as to the housekeeping service. Notably, some of the guests were dissatisfied with the cleaning of the hotel rooms. In the bathrooms, they saw hair on the floor, tooth paste was found on the basin. Sometime, bathroom floor was slippery. The guests also experienced bad smell in the bathroom. Additionally, water drops were appeared on the bathroom wall, towel was found dirty with yellow or black spot, shampoo or lotion containers were not refilled timely by the housekeeping personnel. As a result, the guests perceived dissatisfaction on the bathroom cleaning.

In the living room, paper, water bottles were found under the bed, linen was dirty. The guests experienced smoke of the cigarette and scent of perfume in the living room. In addition, the table lamps or lamps beside the bed did not work; dust and hair were found on the room. Furthermore, beds were small, extra beds were not standard and room size was tiny about what the guests complained. Gaps five (Parasuraman *et al*., 1985) or service gaps (Hoffman and Bateson, 2008) or perceived gaps (Gronross, 1984) behind the hotel room cleaning service were liable for the disparity on the guests' satisfaction on the cleaning service.

5.1.2 Difference on the cleaning process of the room and bathroom

The participant observation (Bryman, 2008) helps the researcher to understand the ground of the research problem from the original sources. Since employees are considered as one of the key elements in the operation of a successful hospitality business (Karatepe *et al*., 2009), the author observed the service of the housekeeping employees to measure satisfaction difference.

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The author attended the observation of 50 hotel rooms for watching the cleaning procedures from the 1st October, 2013 to the 31st October, 2013. A cleaning control supervisor of the hotel management observed the cleaning results, and the author took part in it. In the cleaning procedure, management set about 26 types of tasks for cleaning a single hotel room. Among them, 15 items included for a room and 11 items for a bathroom. Furthermore, some of the individual item integrated few sub items (see Appendix 6).

The cleaning process of the room and bathroom differed. Generally, a room is interiorly designed with some common furniture. Those include showcase, bed, chair, table, tools, lighting, cloth hanger, linen, television etc. In addition, a bathroom consists of shampoo, lotion, hand wash, shower gel, hair dryer, towel, basin, toilet paper, and a sanitary bin. The housekeeping employees strive to clean the hotel room to their best according to the standard set by Scandic management. Necessarily, the service delivery process of the housekeeping employees may be narrated to perceive how they clean the hotel rooms resulting in difference on satisfaction perceived by the hotel guests.

The cleaning procedure includes washing the walls of the bathroom with hot water so that no human germ remains on the bathroom walls if the previous guest takes a shower. Then, the walls are washed with the cleaning chemicals, and finally the walls are rinsed with cold water so that the bathroom becomes cool. Moreover, the employees become very caring in cleaning bathrooms so that no water drops remain in the walls, or no hair and spot remain in the toilet. After then, the water path through which water passes in the bathroom is brushed, as bad smell is produced from the preserved water used by the prior guests stayed in the room.

After cleaning the bathroom, the housekeeping employee makes the sleeping room ready fixing linen including bed sheet, pillow covers and towel. The floor in the hotel room is cleaned together with all furniture. Additionally, dirty objects thrown by the previous guests are taken away. The housekeeping personnel also sort out all the garbage, and put them in a certain place for recycle or re-use. Thus, the housekeeping personnel assist to keep the hotel clean. All the housekeeping employees work under the direction of a housekeeping manager.

The housekeeping personnel carried out the individual cleaning activity differently. In fact, total types of activities to clean a single standard hotel room were more than 26 items. Consequently, cleaning procedure of those individual twenty six items of the bathroom and room differed that might cause variance in guests' satisfaction. Service process can reduce service quality (Berry *et al.*, 1994) resulting in satisfaction variance on the cleaning service.

5.1.3 Variation on the cleaning activities

Besides the cleaning process, cleaning activities of the hotel room and bathroom differed individually. The author observed that hotel room cleaning included making bed, (with linen like bed sheet, pillow cover etc.) observing under bed, fixing paintings, curtain, window cover, lights, information or advertisement, television, dustbin, pillow box, hangers, mirror, extra towel, pillow, and wiping floor. It also included wiping all furniture, making the writing pad ready and putting a pen on the table, fixing all the furniture at the right palaces along with wiping the front and back sides of the doors (the bathroom and room).

Bathroom cleaning consisted of washing sink or basin, fixing soap and glass, washing walls and the path through which water passes along with refilling shampoo, fixing toilet tool, toilet and sanitary paper; washing bathroom floor, and mirror and checking smell in the bathroom.

The results exhibit that cleaning sink, fixing toilet paper, sanitary bag and testing bathroom smell were completely correct. Then, fixing soap, cleaning floor, fixing glass on the sink were 98, 97, and 94 percent accurate respectively. Moreover, fixing shower handle, refilling shampoo, and cleaning toilet were 90 percent each. Cleaning of water path was reported as 80 percent. Fixing extra towel; pillow and cleaning of floor were fully accurate according to the supervision. Fixing bed and cleaning under bed were 90 percent accurate.

Cleaning the paintings and fixing advertisement in front of the table were 82 percent accurate. In addition, curtain, window cover, TV, bin, box, hanger and mirror were fixed at 82, 96, 88, 94, 98, 80 and 88 percent each. Largely, average results show a hotel room has been cleaned at 92 percent, in which the bathroom and rooms have been cleaned at 94 and 90 percent. Thus, performing cleaning activities of the bathroom and room by the employees differed.

The cleaning activities of the bathroom and room varied, and the results of the observation show that individual cleaning performance of the 26 items had a variance. Therefore, difference on the individual cleaning performance caused variance in satisfaction perceived by the hotel guests on the bathroom and room cleaning service.

5.1.4 Service gaps of the housekeeping employees

In order to identify the service gaps of the housekeeping personnel, the guests were asked questions on the bathroom and room cleaning service to know their perceptions on the satisfaction as to the housekeeping service. The author conducted the survey on the hotel guests from the 23rd of September, 2013 to the 30th of October, 2013 (see Appendix 3).

The author directly offered 320 questionnaires to the guests when they were free in the hotels. The guests responded 132 questionnaires; among them 2 questionnaires were cancelled due to the partial answers of the respondents. The results of the study have focused the finding based on the 130 responses. Moreover, it is noted that 105 guests were from Sweden as local guests, and 17 guests were from the other countries as the international ones.

In addition, 5 guests came from Norway. 2 guests were from Finland and Russia each, 3 guests were from the USA and 1 guest visited from England, Scotland, Netherland, Italy and Spain each. The guests have been categorized as different segments for better data analysis. Hence, combination of the local and international guests makes the service gaps (Hoffman and Bateson, 2008) by the housekeeping employees clear on the cleaning performance.

The guests were asked questions on the room and bathroom cleaning services of Scandic Nord and Uplandia. The questionnaire was prepared in English and in the Swedish language for both the local and international guests (Appendix 1 and 2). The first part of the questionnaire consists of the information regarding the room and bathroom cleaning in order to know the satisfactory or dissatisfactory attitudes or perceived gaps of the guests along with the frequency of the guests stayed for single night or more nights in the two hotels.

Table 1 entails the number of the guests responded on the housekeeping services. 128 guests responded on the cleaning service. Largely, most of the guests were satisfied with the room and bathroom cleaning service, whereas some of the guests were strongly satisfied on the room and bathroom cleaning respectively. Thus, the results specify gaps five (Parasuraman *et al.*, 1985); or service gaps (Hoffman and Bateson, 2008) or customers' perceptions and expectations-related gaps (Brogowicz *et al.*, 1990).

Perceptions and expectations-related gaps (Brogowicz *et al*., 1990) on the room and bathroom cleaning performances were accountable for the difference on the guest's satisfaction.

Table 1: Overall perceptions on the cleaning service

Attitudes	Room		Bathroom	
	N	%	N	%
Strongly dissatisfied	01	00	01	00
Dissatisfied	02	01	01	00
Neutral	11	08	10	07
Satisfied	63	49	63	49
Strongly satisfied	51	39	53	41

Source: Calculation based on the questionnaire survey

Table 1 and 2 also compare the service gaps (Hoffman and Bateson, 2008) by the housekeeping personnel that caused differentiation on the satisfaction on the cleaning services perceived by the hotel guests at the time of their stay at Scandic hotels.

Table 2: Segment based perceptions on the cleaning service

Room	Bathroom	Male ⇔ Female Attitudes	Room	Bathroom
01%	01%	Strongly dissatisfied	00%	00%
01%	00%	Dissatisfied	02%	02%
09%	06%	Neutral	07%	09%
51%	51%	Satisfied	43%	43%
36%	40%	Strongly satisfied	46%	43%
Room	Bathroom	Night 1 ⇔ Nights Attitudes	Room	Bathroom
02%	02%	Strongly dissatisfied	00%	00%
02%	00%	Dissatisfied	01%	01%
08%	10%	Neutral	08%	06%
48%	48%	Satisfied	49%	49%
38%	38%	Strongly satisfied	40%	43%
Room	Bathroom	Age 1 ⇔ Age 2 Attitudes	Room	Bathroom
03%	03%	Strongly dissatisfied	00%	00%
03%	00%	Dissatisfied	01%	01%
09%	09%	Neutral	08%	07%
51%	51%	Satisfied	48%	48%
32%	35%	Strongly satisfied	42%	43%

Source: Calculation based on the questionnaire survey

5.1.5 Gender influence

Table 2 compares perceptions of the guests on the cleaning service where the guests were segmented as male and female to compare their perceived satisfaction. 89 guests responded as male and 31 guests were as female. Still, 10 guests did not show their identities.

The female guests tended to be more satisfied than the male with the room cleaning. In contrast, the male group was more pleased than the female on the bathroom cleaning service.

5.1.6 Stay frequency of the guests

50 guests stayed for single night and 80 guests stayed for more than one night. More night guests seemed to be more satisfied with the cleaning service than the single night guests. Moreover, guests stayed for more nights might hold deep perceptions on the satisfaction on the cleaning service as they perceived the service staying longer time in the hotels.

A stay over room is not cleaned in the same way a dirty room cleaned for the first time. Furthermore, 10 minutes are distributed for a stay over room and less than 20 minutes are for a fully dirty room respectively (pers. mess., Sönmez, 2014). Notably, time constraint affected cleaning service. Thus, variance in cleaning services of the stay over and dirty rooms also affected satisfaction of the guests.

Generally, the house keeping personnel perform light cleaning performance in the hotel rooms when the guests stay for a single night. If the guests stay for more nights, linen is altered and medium cleaning is performed. Moreover, when a guest departures the room, the housekeeping personnel perform full cleaning service as a new guest is likely to stay in that room. Therefore, stay frequency of the guests and cleaning service according to the night stay influenced the hotel guests on their satisfaction regarding the room and bathroom cleaning service according to the survey results (in Table 2).

5.1.7 Age influence

The study assumes age as the factor that influences satisfaction of the guests on the cleaning service. The guests in age group 2 (31 and above) seemed to be more satisfied on the room and bathroom cleaning service than the age group 1 (18 to 30). Very few guests in aged 18 to 30 were strongly dissatisfied with the bathroom and room cleaning, but the guests over 31were not strongly dissatisfied with the cleaning service. Thus, segment based perceptions made the sense clear that guests' satisfaction differed as per the individual factors what Cronin and Taylor (1992) and Oliver (1993) supported in their studies.

5.2 How towel re-use affects the guests

The second section in the questionnaire has emphasized the towel re-use issue based on the message in the leaflet (see Appendix 4). The message contains information on the environmental, economic and ethical aspects of the towel re-use. The perceptions of the guests are shown in table 3 and 4, where 104 guests re-used their towel out of 132 guests at the time of their stay in the two Scandic hotels.

5.2.1 Back pain of the employees

130 guests responded on the back pain issue related to towel re-use. However, the guests possessed mixed perceptions on the back pain or social effect of towel re-use. Moreover, 13 percent of the guests perceived that their re-use of towel does not ease back pain of the employees. Positively, 61 percent of the guests perceived towel re-use reduces back pain of the employees. Moreover, positive perceptions seemed to be higher than the negative ones.

5.2.2 Environmental effect

The guests agreed upon re-use of towel issue having a positive effect on the environment, employees, and for the hotels. However, their perceptions varied.

Table 3: Overall perceptions on the towel re-use issue

Attitudes	Reduces back pain		Good for environment		Saves hotel cost	
	N	%	N	%	N	%
Strongly disagree	05	03	08	06	09	06
Disagree	13	10	00	00	03	02
Neutral	31	23	08	06	04	03
Agree	45	34	46	35	53	41
Strongly agree	36	27	68	52	60	46

Source: Calculation based on the questionnaire survey

35 percent of the guests answered that towel re-use is good for the environment, where 52 percent of them replied strongly on the positive environmental effect of towel re-use.

Table 4: Segment based perceptions on the towel re-use issue

Reduce pain	Environ- mental	Cost savings	Male ⟺ Female Attitudes	Reduce pain	Environ- mental	Cost savings
04%	07%	09%	Strongly disagree	02%	02%	02%
10%	00%	02%	Disagree	09%	00%	02%
24%	08%	02%	Neutral	21%	00%	04%
35%	38%	47%	Agree	31%	29%	26%
24%	44%	38%	Strongly agree	34%	68%	63%

Reduce pain	Environ- mental	Cost savings	Night 1 ⟺ Nights Attitudes	Reduce pain	Environ- mental	Cost savings
06%	12%	14%	Strongly disagree	02%	02%	02%
10%	00%	02%	Disagree	10%	00%	02%
26%	10%	00%	Neutral	22%	03%	05%
32%	26%	42%	Agree	36%	41%	40%
26%	52%	40%	Strongly agree	28%	52%	50%

Reduce pain	Environ- mental	Cost savings	Age1 ⟺ Age2 Attitudes	Reduce pain	Environ- mental	Cost savings
09%	09%	09%	Strongly disagree	02%	05%	06%
06%	00%	03%	Disagree	11%	00%	02%
25%	12%	00%	Neutral	23%	04%	04%
37%	28%	50%	Agree	33%	37%	38%
21%	50%	37%	Strongly agree	29%	53%	49%

Source: Calculation based on the questionnaire survey

5.2.3 Cost effect

129 guests responded on the cost effect of towel re-use. In addition, 41 and 46 percent of the guests respectively perceived that towel re-use saves costs of the hotels.

Very few of the guests possessed negative responses of the cost effect on towel re-use as the results of perceived gaps (Gronross, 1984). Towel re-use is good for the environment, and it is also cost effective for the hotels supported by most of the guests. Moreover, the hotel guests perceived gaps on the towel re-use issue as they understood the cost effect in advance, but management has not communicated the cost effect of towel re-use to the guests.

5.2.4 Gender effect

Table 4 compares perceptions of the diverse groups of the guests on the towel re-use issue. The female were more reactive than the male on towel re-use and its effect on the back pain issue concerning with the employees. Moreover, female guests were more mindful on the environmental effect as to towel re-use than the male. However, the male seemed to be less conscious on sustainability than the female as they perceived cost effect of towel re-use on the hotels more than the male guests. This gap is considered as perceived gaps (Gronross, 1984).

5.2.5 Stay frequency of the guests

The guests in terms of stay frequency in the hotels perceived gaps (Gronross, 1984) on towel re-use. The results entail that single night guests were less responsive on the towel re-use issue and its effect on the back pain whereas more night guests were more conscious on the environmental effect. Perceptions of more night guests seemed to be more dependable as they were likely to use more towels. Therefore, they were supposed to utter their constructive arguments on sustainability concerned with the towel re-use issue.

5.2.6 Age effect

Lastly, the age factor affected the towel re-use. The guests in age group 2 remarked higher reply rate than age 1 on the towel re-use and its effect on the back pain issue along with the environmental effect. They perceived the cost effect with a slight difference. This variation can be termed as perceived gaps as per Gronross (1984). In addition, such gaps can be alleged as the perceptions and expectations related gaps (Brogowicz et al., 1990) since the guests might not perceive sustainable effect of the towel re-use as per the expectations of the hotels.

5.3 Factors affecting the food waste in the hotel restaurant

The third section in the questionnaire includes perceptions of the guests on the food waste issue following another leaflet put in the hotel restaurant (see Appendix 5). The study intends to know why the guests waste food because a certain amount of food was wasted in the hotel restaurant (see Appendix 8). Importantly, the guests either left food after their meal as food was not tasty enough, or they tried different food as their habitual facts. Table 5 and 6 view the affected factors causing food waste, which is directly concerned with sustainability.

5.3.1 Perceived gaps

Food waste is not an ethical concern/issue perceived by 25 percent of the guests viewing their negative attitudes although 74 percent of the guests perceived food waste as an ethical issue. The results point out perceived gaps (Gronross, 1984) and also gaps concerning with perceptions and expectations (Brogowicz et al., 1990). The hotel restaurant expected the guests to perceive food waste reduction as an environmental concern; or a sustainable issue.

5.3.2 Food taste

23 and 7 percent of the guests were dissatisfied on the food taste. It seems that all the guests were not pleased with the taste of food. So, they might use more food than their needs.

Table 5: Overall perceptions on the food waste issue

Attitudes	Dissatisfied with food taste		Experiment & try different food	
	N	%	N	%
Strongly disagree	20	16	23	18
Disagree	30	24	23	18
Neutral	36	29	40	32
Agree	29	23	33	26
Strongly agree	09	07	05	04

Source: Calculation based on the questionnaire survey

16 percent of the guests were satisfied with the food taste, and 24 percent was strongly satisfied. Perceived gaps (Gronross, 1984) and perceptions and expectations related gaps (Brogowicz *et al*., 1990) on the food taste might be one of the causes of the food waste.

Table 6: Segment based perceptions on the food waste issue

Dissatisfied with food taste	Try different food	Male ⇔ Female Attitudes	Dissatisfied with food taste	Try different food
16%	17%	Strongly disagree	16%	22%
24%	21%	Disagree	24%	11%
28%	32%	Neutral	29%	30%
24%	26%	Agree	21%	27%
06%	02%	Strongly agree	08%	08%
Dissatisfied with food taste	Try different food	Night1 ⇔ Nights Attitudes	Dissatisfied with food taste	Try different food
10%	12%	Strongly disagree	20%	22%
24%	22%	Disagree	24%	16%
26%	32%	Neutral	30%	32%
30%	30%	Agree	18%	24%
08%	04%	Strongly agree	06%	04%
Dissatisfied with food taste	Try different food	Age 1 ⇔ Age 2 Attitudes	Dissatisfied with food taste	Try different food
12%	15%	Strongly disagree	17%	19%
25%	25%	Disagree	23%	16%
19%	37%	Neutral	32%	30%
32%	21%	Agree	20%	28%
09%	00%	Strongly agree	06%	05%

Source: Calculation based on the questionnaire survey

5.3.3 Habitual facts

About one-third of the guests was used to leaving food, and also tested different food. However, most of the guests did not experiment the other food at their meal time.

The guests who did not try the other food seemed to be satisfied with the food taste. Yet, considerable number of the guests tried the other food in the hotel restaurant. At the same time, few of the guests exposed their disagreement as they did not try the other food.

The distinction (in Table 6) shows some satisfied guests with food taste tried the other food as for experiment. This might be the habitual fact of the guests who used more food as they might associate the renting price of the hotel room with buffets. Thus, both the satisfied and dissatisfied guests tried the other food might include in the 30 percent that experimented the other food in the hotel restaurant. Gaps four (Parasuraman *et al.*, 1985) or communication gaps (Hoffman and Bateson, 2008) existed in that case. In addition, gaps two (Parasuraman *et al.*, 1985) or standard gaps (Hoffman and Bateson, 2008) might exist as food was not tasty enough perceived by the guests when they have had food in the hotel restaurant.

5.3.4 Gender influence

Table 6 also compares perceptions of the guests on the food waste in the hotel restaurant. It shows the perceived gaps between the male and female guests on food waste. Moreover, the male and the female agreed on their dissatisfaction with the food taste almost at the same rate which indicates gaps two (Parasuraman *et al.*, 1985) or standard gaps (Hoffman and Bateson, 2008). Surprisingly, most of the male and female of the guests were not dissatisfied with the food served in the hotel restaurant, which might indicate their satisfaction.

5.3.5 Stay frequency of the guests

The single night guests were more dissatisfied with food taste than the more night guests. Besides, the single night guests tried other food more than the guests, who stayed more nights in the hotels. They seemed to have gaps four (Parasuraman *et al.*, 1985) or communication gaps (Hoffman and Bateson, 2008) as the message on good food taste in the hotel restaurant did not equal to their perceptions exactly. Therefore, the guests were less caring about food waste. Additionally, food taste was not as per the expectations of few guests. Hence, to have perceived gaps in food taste is to have perceived gaps on food waste. Accordingly, dissatisfied guests with food taste might waste food in the hotel restaurant.

5.3.6 Age influence

The hotel guests in age one and age two groups realized variance in their perceptions on the food waste issue. Age one group viewed satisfaction on food service more than the age two as the results of the gaps five (Parasuraman *et al.*, 1985) or service gaps (Hoffman and Bateson, 2008). In addition, they might also distingush perceived gaps (Gronross, 1984) with gaps of perceptions and expectations (Brogowicz *et al.*, 1990) on food service resulting in food waste.

5.4 Results of the hypothesis tested

Table 7 shows the results of Z and p values in terms of gender and age of the guests based on the Wilcoxon test. The p values and the corresponding values of Z imply both the samples originated from the same population whereas guests' perceived difference varied. To summarize, the p values of the two hypotheses are connected to the guests' satisfaction about the cleaning service performed by the housekeeping personnel, and perceptions of the hotel guests on the subject of food waste concerning food taste and habitual facts.

5.4.1 Satisfaction of the guests concerning cleaning service is related to guests' gender.

The present study divided the first hypothesis as sub-hypothesis (H1a) in order to explore the relationship between guests' gender with the satisfaction concerning the hotel cleaning service. Table 7 views the p values of item 1 consisting of the satisfaction of the guests on the hotel room cleaning service performed by the housekeeping personnel. Then, p values of item 2 consist of the satisfaction of the guests on the bathroom cleaning service. The test results show that relationship exists between guests' satisfaction with the cleaning services, and guests' pleasure on the cleaning service differed based on their gender. Moreover, the gender group illustrates different p values as to the living room and bathroom cleaning services, which prove that satisfaction on the room and bathroom cleaning service differs in terms of the male and female segments. However, the differences are not statistically significant. To sum up, item 1 and 2 make up the cleaning service issue attended by the housekeeping personnel, and the guests perceived variation on their satisfaction.

5.4.2 Satisfaction of the guests concerning cleaning service is related to guests' age.

The first hypothesis was spilt as sub-hypothesis (H1b) so that the relationship between guests' age with the satisfaction concerning hotel cleaning service could be explored. Table 7 displays the p values of the first item consisting of the satisfaction on the hotel room cleaning service. Then, p values of the second item consist of the satisfaction of the guests on the bathroom cleaning service. The test results show that relationship is obvious between guests' satisfaction with the cleaning services in the light of guests' age. Notably, the age segment seems to be more cleaning sensitive than the gender segment as the p values of the room cleaning and bathroom cleaning service of the age group are not alike. The guests segmented as age perceived gaps on satisfaction concerning room and bathroom cleaning service in comparison to the gender segment. In short, relationship exists between the satisfaction and the age factor as the test results identified difference. However, the differences are not statistically significant. To summarize, items 1 and 2 consist of the hotel cleaning service accomplished by the housekeeping personnel, and the guests perceived variation on their satisfaction regarding the room and bathroom cleaning service.

Table 7: Wilcoxon test: Z and P values by gender and age

Item	Gender		Age	
	z	Prob > |z|	z	Prob > |z|
(1) You are satisfied with the cleaning of your room during your stay at Scandic.	-0.282	0.7779	-1.086	0.2774
(2) You are satisfied with the cleaning of bathroom during your stay at Scandic.	0.655	0.5122	-0.763	0.4452
(3) Sometimes, you leave some food in the hotel restaurant, because you are dissatisfied with the taste.	0.272	0.7859	0.947	0.3437
(4) Sometimes, you leave some food in the hotel restaurant, because you like to experiment and try different food.	0.225	0.8219	-0.755	0.4502

Source: Calculation based on the questionnaire survey using the Wilcoxon test

5.4.3 Customers' food taste preferences affect the food waste in the hotel restaurant.

The study spilt the second hypothesis (H2a) to see the relation of food taste with food waste. The p values of item 3 indicate the perceptions of the guests on the food waste issue, and food taste affected food waste in the hotel restaurant (see Table 7). The guests in terms of gender and age wasted food owing to the poor taste of the food served in the hotel restaurant. Notably, the guests agreed that sometimes they were dissatisfied with the food taste. The age groups were more dissatisfied with the taste of the food than the gender group according to the results. Moreover, the test results show the p values of item 3 showing distinction based on the gender and age segments. In the summary, food taste perceived by the guests affected the food waste issue although this effect is not proved statistically significant.

5.4.4 Customers' habitual facts affect the food waste in the hotel restaurant.

The study divided the second hypothesis (H2b) to identify the relationship of the habitual facts with the waste of food. The p values of item 4 show guests' perceptions on the food waste issue concerning their habitual facts (see Table 7). Usually, the guests experiment the taste of food watching much food at buffets and try different food items. The guests based on gender and age wasted food in the hotel restaurant due to their habitual facts. However, the gender groups were more habituated in experimenting and trying other food than the age segment as per the results. Additionally, the test results view the p values of item 4 showing difference based on the age and gender segments. To sum up, habitual factors of the guests affected the food waste issue though this effect does not have statistical significance.

Table 8: Wilcoxon test: Ranks

Item	Gender		Age	
	Actual	Expected	Actual	Expected
(1) Satisfied with the cleaning of your room	1781.5	1953	1886	1844.5
(2) Satisfied with the cleaning of bathroom	1833	1953	1748.5	1844.5
(3) Dissatisfied with the taste	2046	1891	1583.5	1624
(4) Like to experiment and try different food	1842.5	1968	1676.5	1711

Source: Calculation based on the questionnaire survey using the Wilcoxon test

Table 8 views the results comparing the actual and expected rank sum irrespective of gender and age following the Wilcoxon test. Actual rank sum is the observation in the sample, and expected rank sum has been assumed based on the sample observed in the data. However, the actual rank sum was in focus in the present study as the real perceptions of the guests, where the actual perceived value of item 1(room cleaning) by gender is lower than the age group. In contrast, perceived value of item 2 (bathroom cleaning) by gender is higher than the age group. The age group held higher perceived gaps on the hotel room cleaning. In addition, the gender group held higher perceptions on item 3 (food taste) and 4 (habitual facts) concerning the food waste than the age group, and the guests perceived gaps on the food waste.

6 Analysis

This chapter answers the research questions in connection to the results with the theories. Furthermore, the results of the hypotheses are presented based on the Wilcoxon test.

6.1 Why satisfaction on the cleaning service differs

Guests' satisfaction on the cleaning service differed owing to the perceived gaps of the guests and service gaps of the housekeeping employees. The results of the study explain that the guests perceived difference on the satisfaction on the bathroom and room cleaning service due to the gaps of expectations and for the ultimate service variation. Such gaps refers to gaps five (Parasurarman *et al*., 1985) and service gaps (Hoffman and Bateson, 2008). Continuation of the service gaps between the housekeeping employees and the guests on the room and bathroom cleaning made the hotel guests dissatisfied.

Variance on the cleaning procedure and cleaning activities of the hotel room caused the difference on the satisfaction of the guests on the room and bathroom cleaning. Moreover, individual cleaning activity of the room and bathroom differed, and satisfaction on the individual cleaning activity was unlike. Transaction-specific conceptualization of satisfaction (Johnson *et al*., 1995) applies on the cleaning service as specific cleaning performance varied. The hotel guests evaluated a particular cleaning service individually as their transient evaluation (Cronin and Taylor, 1992). Furthermore, they might perceive overall satisfaction on the room and bathroom cleaning service as the results of their cumulative construct (Johnson and Fornell, 1991; Meeks, 1984). This is termed as a cumulative conceptualization of satisfaction (Johnson *et al*., 1995). Importantly, perceived gaps (Gronross, 1984) or perceptions-expectations related gaps (Brogowicz *et al*., 1990) on the hotel room cleaning service are accountable for guests' satisfaction variance.

The hotel guests perceived difference on the satisfaction on the cleaning service due to the stay frequency in the hotels as the expectations and perceptions of the guests varied. Expectations have a positive effect on satisfaction (Fornell and Johnson, 1993; Oliver, 1980) as first experience of the guests is the primary determiner of the guests of perceiving satisfaction on a particular service attributes (Cadotte *et al*., 1987). Since the guests enter for the first time in a new room may form positive perceptions on the cleaning service, the cleaning performance are not supposed to be the same as the new room, when the housekeeping personnel clean that room next day as a stay over room. Thus, gaps in perceived performance and expectations determine satisfaction (Anderson and Sullivan, 1993; Oliver, 1993). So, the guests supposed variance on satisfaction on the room cleaning service.

Satisfaction on the cleaning service also differed in terms of their gender and age. As male, female, young and older people are the demographics, those individual factors influenced satisfaction (Cronin and Taylor, 1992; Oliver, 1993; Teas, 1993). Since gender and age are the identities; the study focused them as the points of differences. Moreover, the test results display that the actual cleaning service of the hotel room perceived by the age group are higher than the expected one, whereas the actual cleaning of bathroom irrespective of age and gender are lower. Furthermore, previous increased expectations (Yi, 1991) of having a well-cleaned hotel room might affect the guests on the cleaning service. This particular increased expectation may be viewed as the micro-psychological input in the cognitive process (Tversky and Kahneman, 1974) regarding the cleaning service perceived by the guests.

Hypotheses H1a and H1b outline relationship between guests' satisfaction on the housekeeping service with their gender and age respectively. The Wilcoxon sum test supported hypothesis H1 that guests' satisfaction on the room and bathroom cleaning services are associated with the differences of their perceived gaps in terms of gender and age. Table 7 shows the test results where the results of item 1 and 2 display the p values. They indicate that relationship exists between guests' satisfaction with the room and bathroom cleaning service in terms of the gender and age of the hotel guests having no statistical significance. Additionally, the test results (see Table 8) compare the actual and expected values where perceptions of the age group on the actual room cleaning results are higher than the gender group. In contrast, perceptions of the gender group on the actual bathroom cleaning results are higher than the age group. Thus, satisfaction on the cleaning service varied justifying perceived gaps (Gronross, 1984) and service gaps (Hoffman and Bateson, 2008).

6.2 How towel re-use affects the guests

Towel re-use by the guests reduces back pain of the employees, environmental hazards and hotels' cost. Towel re-use affects in reducing back pain of the employees, who are responsible for washing towel. Reduction of back pain ensures individual welfare (Tremblay, 2007; Stead and Stead, 1994). Thus, towel re-use is directly concerned with social issues (Elkington, 1998) and ethics (Stead and Stead, 1994). In fact, most of the guests perceived that towel re-use is good for the environment. As environmental quality (Elkington, 1994) ecological preservation (Gladwin et al., 1995) and environmental long-term quality of life improvement (Edward, 2005) are the elements of sustainability, towel re-use affects that state contributing to the ecological preservation and environmental long-term quality of life improvement. However, organizations aiming to be sustainable focus more attention to the environmental and economic aspects (Isaksson et al., 2010; Weick, 1987), but less attention to promote the achievement of social objectives (Green, 1995). Thus, towel re-use affected the guests and this effect can be addressed as perceived gaps (Gronross, 1984).

The organizations consider the economic performance for the sustainability practices (Elkington, 1994, 1998; Gladwin et al., 1995). Since every re-used towel saves costs of the hotels what the hotel guests perceived, towel re-use affects economic aspect, which is the valuable components of the SBD. Thus, towel re-use issue by the hotel guest affects sustainable business development practice, which unites economic issue, social equity and ethical affairs (Elkington, 1994). Moreover, the hotel guests evaluated environmental, ethical and economic effects of towel re-use individually as their transient evaluation (Cronin and Taylor, 1992; Parasurarman et al., 1985). The guests also might perceive overall perceptions of the towel re-use issue as the results of cumulative construct (Johnson and Fornell, 1991; Meeks, 1984). Additionally, the guests might hold variance in perceptions due to their individual factors because of the results of their perceived gaps (Gronross, 1984).

Customers compare product performance as per the price they pay for it (Johnson et al., 1995). As the guests are charged price for the hotel room including towel costs, the guests may not bother about the re-use of towel and its effects on sustainability. They perceived gaps (Gronross, 1984) on the towel re-use issue, and its effect regarding the environment and costs or economy issues. However, few guests perceived that towel re-use is not concerned with lessening of the back pain of the employees. In fact, gaps related to towel re-use effects can be measured as the perceived gaps (Gronross, 1984). Finally, used towel is washed in an environment friendly manner, in which cleaners need not clean towel that saves work pressure of the cleansers resulting in reduction of their back pain as a social effect.

The guests seemed to be more environment conscious as they held higher number of responses regarding re-use of towel, and its effect on the environment. Hence, the guests perceived the economic aspect of towel re-use in advance. Additionally, the hotels are economically benefited by the towel re-use of the guests since every re-used towel saves hotel costs. The gaps among the age and the gender groups of the hotel guests can be addressed as perceived gaps (Gronross, 1984). There might be a fact behind the gaps. That is, the guests might not re-use towel more if the hotels disclosed the cost effect of towel re-use. Instead of explaining the economic aspect, the guests have been communicated the environmental and the ethical (back pain) ones making towel re-use issue as a strategic decision.

The study results made it clear that the hotel guests perceived gaps about sustainability as to the towel re-use at the time of their stay in the hotels since the study aimed to make out the perceptions of the guests towards the towel re-use, and examine the effects. In a word, the guests perceived gaps on the towel re-use and its effect regarding the occupational hazards or back pain of the employees. On the whole, the results imply gaps in perceptions among the guests on the towel re-use effect.

6.3 Factors affecting the food waste in the hotel restaurant

Food taste and habitual facts of the guests affected food waste. The hotel guests perceived that food waste is an issue of ethics with difference. Thus, food waste is directly concerned with social issues (Elkington, 1998) and ethics (Stead and Stead, 1994) which is the part of sustainability. Importantly, most of the guests perceived that food waste is concerned with the issue of ethics. Moreover, production of food items requires natural resources, and food waste is harmful to the environment. Additionally, environmental quality (Elkington, 1994) ecological preservation (Gladwin et al., 1995) and environmental long-term quality of life improvement (Edward, 2005) are the elements of sustainable business development. Thus, control of food waste affects sustainability contributing to the ecological preservation and environmental long-term quality of life improvement. In fact, organizations focus less attention to the achievement of social objectives (Green, 1995). Perceived gaps (Gronross, 1984) of the guests also focus less attention to food waste in the present study.

The organizations regard as the economic performance for the sustainability practices (Elkington, 1994, 1998; Gladwin et al., 1995). Less food waste saves costs of the hotels, which is the valuable economic component of the sustainable business development. Thus, food waste issue by the hotel guests affects SBD practice, which ties the economic issue, social equity and ethical affairs (Elkington, 1994). Moreover, the guests perceived that poor taste of the food was one of the causes of the food waste. Consequently, they might evaluate the taste of an individual item of food as their transient evaluation (Cronin and Taylor, 1992). The guests also might perceive overall perceptions of the food at the end of their meal as the results of their collective apprehension. This state refers to the cumulative construct of satisfaction according to Johnson and Fornell (1991) and Meeks (1984).

The guests might possess variance in perceptions on the taste of food due to their individual perceptions on satisfaction (Cronin and Taylor, 1992; Oliver, 1993; Teas, 1993). Moreover, gender, age and stay frequency of guests were the individual factors that influenced the perceptions on the food waste and food taste issues. Besides, customers compare service performance as per the price they pay for a certain product or service (Johnson et al., 1996). As the guests are charged price for the food, and breakfast is associated with the room rent, they might not bother about the food waste and its effects on the environment.

The study shows that the guests perceived satisfaction difference on the food served in the hotel restaurant due to the gaps of the expectations and the service delivery. This consequence refers to gaps five (Parasurarman *et al.*, 1985) and service gaps (Hoffman and Bateson, 2008). In fact, existence of the service gaps on the food service made some of the hotel guests displeased. Moreover, dissatisfaction of the guests was liable for forming guest complaints.

Expectations have a positive effect on satisfaction (Fornell and Johnson, 1993; Oliver, 1980). Furthermore, first time experience of the guests is the primary determiner of perceiving satisfaction on a particular service attributes (Cadotte *et al.*, 1987). Therefore, the experience of the guests having tasty food for the first time, the message in leaflet claiming food is tasty enough in the hotel restaurant might form positive expectations. When the guests have had food in the hotel restaurant, few of them perceived gaps on food taste. Since gaps in perceived performance and expectations determine satisfaction (Anderson and Sullivan, 1993; Oliver, 1993), the guests perceived variance on satisfaction as to the food taste causing food waste.

Disconfirmation model (Johnson *et al.*; 1996; Johnson and Fornell, 1991) might be applicable in case of the food waste issue as perceived performance of the few guests on food taste was lower than their expectations. Both the groups were not fully satisfied on the food served in the hotel restaurant that can be addressed as gaps five (Parasurarman *et al.*, 1985) or service gaps (Hoffman and Bateson, 2008). Simultaneously, the hotel guests possessed the tendency to take excess portions at buffets since costs might be misperceived. Furthermore, performance model (Johnson *et al.*, 1996) might work as the guests paid a fixed amount at buffets evaluating value of the food with the price they compensated for as the results of the cost-benefit proposition (Churchill and Suprenant 1992; Lancaster 1971; Tse and Wilton, 1998). The guests were used to taking food items more than their needs for trying food taste. Most importantly, dissatisfaction on food taste was one of the causes of food waste.

In addition, previous increased expectations (Yi, 1991) having tasty food in the hotel restaurant might affect the guests. Previous increased expectations may be viewed as the micro-psychological input of the guests as cognitive process which is connected to perceived gaps as per Gronross (1984) regarding the food taste issue causing substantial food waste.

Hypothesis H2a was hypothesized for justifying perceptions of the guests on the food waste issue concerning the food taste. The Wilcoxon sum test supported hypothesis H2a assuming perceived gaps on the food taste as per the test results (see Table 7 and 8). The test results of item 3 and 4 (in Table 7) show the p values. According to the test results, the guests perceived gaps on the food waste irrespective of the gender and age having no statistical significance.

Hypothesis H2b was outlined for justifying perceptions of the guests on the food waste issue relating to the habitual facts of the guests. The Wilcoxon sum test also supported hypothesis H2b assuming perceived gaps on the food waste associating guests' habitual facts based on the test results. The test results of item 3 and 4 (in Table 7) show the p values in which the guests perceived gaps on the food waste irrespective of the gender and age having no statistical significance. Although the leaflet in the hotel restaurant demands food taste is good enough to manage by the guests, the Wilcoxon test results view variation regarding food taste comparing the age and gender group. Food waste affects the environment, and food taste with habitual facts is accountable for the food waste. Therefore, the study focused food taste and habitual facts of the guests as the main affecting factors causing the food waste in the hotel restaurant.

7 Discussion

This chapter ties the problems, aims, and the research questions presenting an extended discussion of the analysis based on the service gaps and perceived gaps connected to the Wilcoxon rank sum test focusing few challenges of sustainability as per the findings.

7.1 Difference on satisfaction and sustainability

Satisfaction of the individual guest differs (Cronin and Taylor, 1992; Oliver, 1993; Teas, 1993) on the housekeeping service. Specifically, differences on the cleaning procedure of the room and bathroom, variance of the cleaning activities, gender, stay frequency and age of the guests influenced their satisfaction on the cleaning service. Service gaps (Hoffman and Bateson, 2008) by the housekeeping employees were liable for the satisfactory or dissatisfactory attitudes of the guests since service varies on who offers it, how and when it is offered (Kotler *et al*., 2002). Additionally, service variance takes place as inseparability, variability, and intangibility are attributed with service (Hoffman and Bateson, 2008).

7.1.1 Perceived gaps and sustainability

The Wilcoxon rank sum test in the study shows gaps between the actual and expected perceptions of the guests on the cleaning service. Besides, the following figure compares the perceived gaps on the cleaning performance between the gender and age groups.
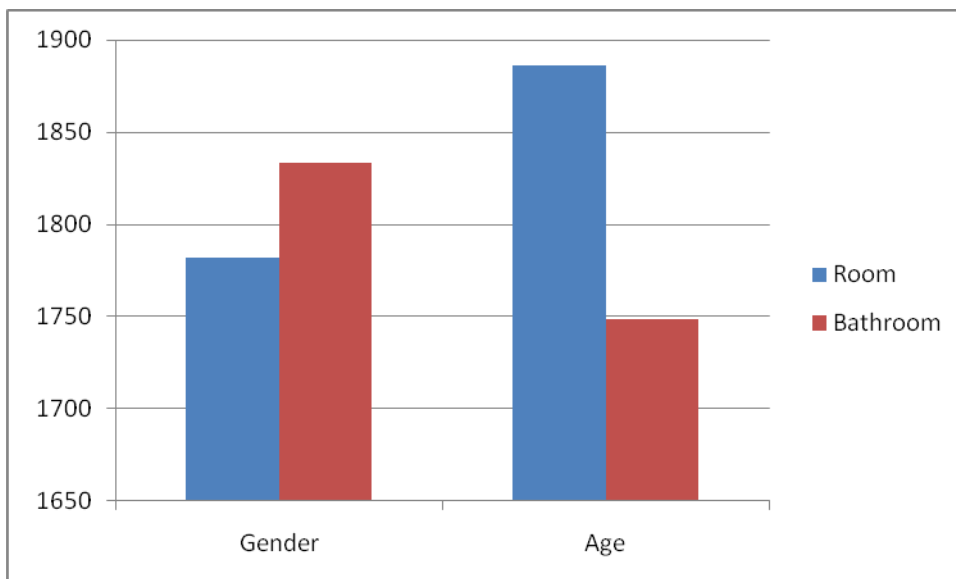
Figure 5: Service gaps perceived by the guests as per the Wilcoxon rank sum test

Perceptions on the bathroom cleaning service in the gender segment were higher than the age segment. Based on the test results, it can be argued that the young people were more sophisticated on the bathroom cleaning issue. Notably, perceptions of the age segment on the room cleaning were higher than the gender segment. Cumulative conceptualization of satisfaction (Johnson and Fornel 1991; Meeks, 1984) applies and the guests perceived satisfaction variance. Therefore, the hotel authority may rent a comparatively better cleaned room to the young people at the time of accepting the room booking.

Moreover, expectations of the guests are significant (Pongsiri, 2012), because gaps between expectations and perceptions determine their satisfaction. In addition, quality housekeeping service is critically important for guest satisfaction, which ultimately leads a hotel towards profitability (Pongsiri, 2012). In fact, profit or economic aspect of business is the fundamental part of the sustainable development (Elkington, 1994, 1998; Gladwin *et al*., 1995).

7.1.2 Housekeeping service performance and gaps

The housekeeping employees in the hospitality are the important human resources (Pongsiri, 2012). Consequently, the housekeeping service in the hotel business can be considered as a very valuable input in the value chain for the hotel sustainability.
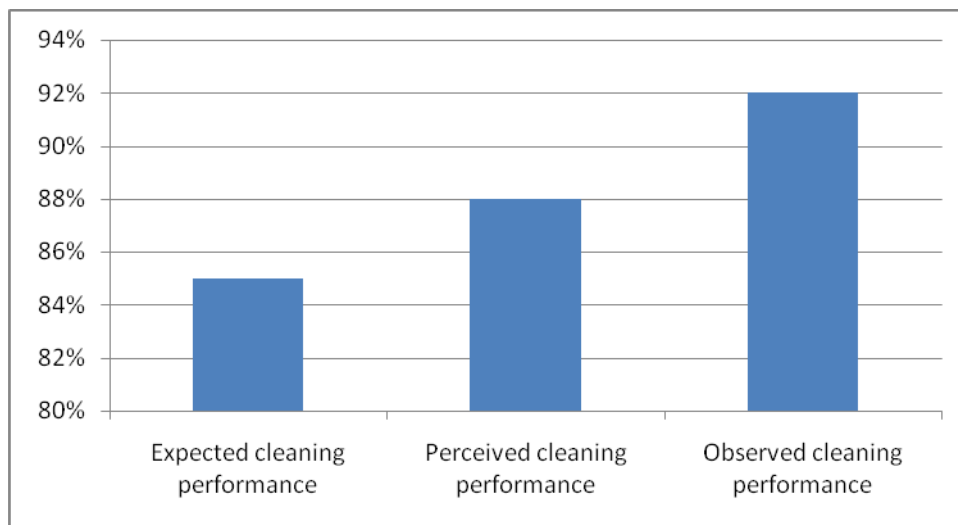
Figure 6: Gaps on the cleaning performance as per the observation and survey

The above figure proves variance in expectations, perceptions and observation on the room cleaning service, which makes the gaps clear on the housekeeping service. Moreover, observation of the cleaning process of the 50 hotel rooms confirms variance on the cleaning proficiency of the housekeeping employees. Furthermore, the survey results show the service gaps of the employees on the bathroom and room cleaning. Thus, service gaps caused perceived variation in guests' pleasure on the cleaning service.

The Wilcoxon test results disclose that the cleaning results of the bathroom irrespective of age and gender differed as the housekeeping employees served the guests differently. Therefore, perceptions of the guests on the cleaning service varied. Moreover, Scandic management wanted their housekeeping personnel to clean a hotel room at 85 percent (pers. mess., Sönmez, 2014). The guests perceived that the housekeeping personnel cleaned a hotel room at 88 percent. However, the observation results of 50 rooms cleaned by the housekeeping personnel supervised by the management show that a hotel room has been cleaned at 92 percent. Thus, cleaning target of the management and cleaning supervision results varied with the perceptions of the guests connected to the service of the housekeeping personnel.

The observation results show that room and bathroom do not consist of the similar products and services since product relates satisfaction and service strengthens it (Mazanec, 2007). The observation viewed that the housekeeping personnel used some tangible products like linen, towel, toilet paper, shampoo, lotion, pen, paper in preparing the living rooms for the guests.

Additionally, use of the tangible products required for preparing the hotel rooms were almost standard, and the guests had less complaint on them. In contrast, intangible service by the housekeeping personnel to prepare the room differed and the guests perceived gaps. Moreover, the guests complained fewer on the tangible items as per the complaint study, but most of the complaints were reported on the intangible service combined to clean the hotel room. So, maintaining service standard is very challenging (Hoffman and Bateson, 2008).

The conceptual framework (Figure 2) worked for the study. Service offered by the housekeeping personnel equaled to the expectations of most of the guests, who were satisfied and no gaps existed. Then, service offered by the housekeeping personnel exceeded the expectations of few of the guests, as per the guest comments card and survey results. No gaps existed in that case also, rather the guests were delighted. However, gaps continued when service offered by the housekeeping personnel became below the expectations for very few of the guests. Thus, dissatisfied state on the cleaning service is a challenge for sustainability.

7.2 Effects of towel re-use and guests' perceptions

The guests perceived gaps on the towel re-use in terms of their gender, stay frequency and age. Surprisingly, the towel re-use was environmentally good and cost effective. Moreover, the guests perceived the towel re-use as the back pain reduction measure for the employees.
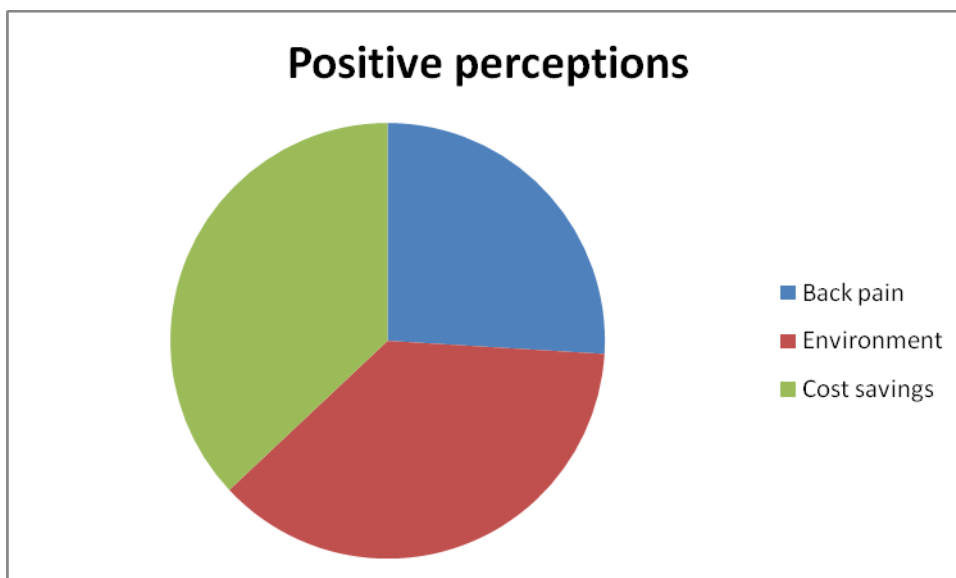
Figure 7: Perceived gaps on towel re-use based on the survey

The above figure visualizes perceived gaps on the towel re-use. Perceived gaps (Gronross, 1984) caused variation whereas the guests perceived environmental and cost effects of towel re-use important. Sustainability practice is employed without researching the influence of a particular greening issue on the customers (Millar and Baloglu, 2008). Keeping this limitation in mind, the present study tried to measure the economic, environmental and back pain effect of the towel re-use. It can be uttered that the hotels should not communicate the economic aspect of the towel re-use since the guest may stop re-using towel. Guests perceive sustainability as a crucial factor (Han *et al*., 2009), and positive (Millar and Baloglu, 2008). Besides, they are happy to undergo minor inconvenience to support any green initiative (Kim and Han, 2010).

Findings of the study also reveal that the hotel guests possessed positive perceptions on the towel re-use issue as a sustainability practice. Therefore, this favorable behavioral insight (Tzschantkea, 2008) of the guests can be used as strength in the hotel business. However, re-use of the used towel by the guests may be liable for their short-term inconvenience to support the towel re-use issue as a green initiative.

The questionnaire survey entails that 61 percent of the guests perceived positive effect of towel re-use, which reduces back pain of the employees. 87 percent of the guests respectively perceived their towel re-use is good for the environment and cost savings for the hotels. Yet, 13, 6 and 8 percent of the guests respectively perceived negative perceptions on the back pain, environment and cost issues connecting to towel re-use (see Table 3). It can be urged that few of the guests did not seem to be mindful on the sustainability practice, and they might not prefer green attributes in the hotels like the findings of the study of Kasim (2004a; 2004b).

Figure 7 on the perceived gaps (Gronross, 1984) of the guests was plotted following the survey results (according to Table 3) about the towel re-use issue showing positive perceptions linking with sustainability. The guests perceived the towel re-use differently concerning sustainability. They held same perceptions about the towel re-use that it is environmentally beneficial (87%) and economically profitable (87%) for the hotels. In comparison to the environmental and economic aspects, less but considerable figure (61%) realized that re-use of towel reduces back pain of the employees.

81 guests out of 100 re-used towel observed in the study. If the re-used towels are multiplied by the water, detergent, electricity and labor used for washing a single towel, a very considerable amount of natural resources can be saved. Notably, 81 towels out of 100 save money for the hotels. Thus, re-use of towel is economically significant. Moreover, the employees become free in washing towel that may ease their back pain as well.

The second theoretical framework (Figure 3) worked for the present study based on guests' perceptions and expectations on the towel re-use concerning the environmental effect. The guests holding positive perceptions on the environmental concern according to their expectations might re-use towel. Towel re-use was sustainable to them. Perceptions of few of the guests were below their expectations having negative attitudes on the towel re-use effect, gaps existed and that state was a challenge for sustainability. Moreover, the guests who strongly agreed on the towel re-use issue having positive perceptions on the environmental concern higher than their expectations, were more sustainable to the hotels.

7.3 Factors affecting the food waste

The study identified that food taste, difference on perceptions, habitual facts, and demographics of the guests affected food waste. Importantly, poor food taste and tendency of the guests of taking more food than their needs as habitual facts were the major causes of the food waste.

7.3.1 Perceived gaps and the food waste

Figure 8 illustrates the distinction on the food waste issue between the gender and age groups. The guests perceived gaps (Gronross, 1984) on the food waste issue as they reported that they left food in the hotel restaurant due to the dissatisfaction to the food taste with their habitual facts.

To have perceived gaps on the food waste issue is to have perceived gaps on ethics as the food waste is directly a risk in making a hunger free world (Martin, 2013).
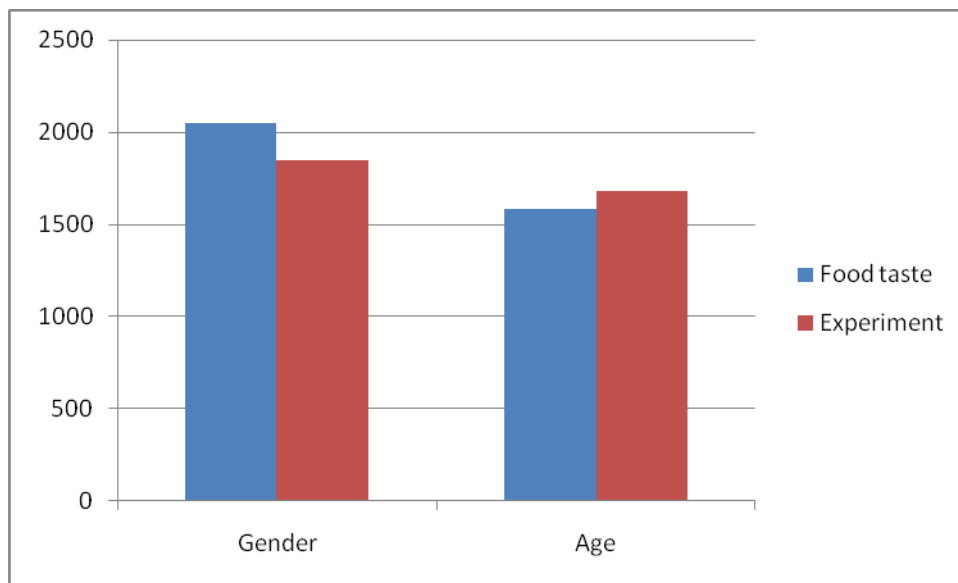

Figure 8: Perceived gaps on the food waste issue as per the Wilcoxon rank sum test

Thus, the study finds application of performance model (Johnson *et al*., 1996) in which the guests might realize perceived gaps (Gronross, 1984) among the food taste, price and food waste. Moreover, perceptions of the gender segment on the food waste were higher than the age segment.

Notably, the present study identified two reasons for the food waste. Firstly, the taste of the food was not according to the expectations of few guests. Secondly, they tried different items of food at buffets because they might associate room price with the food. Waste of food is an issue of ethics. On the food waste issue, various target groups viewed their perceptions. Particularly, 74 percent of the respondents agreed that food waste is an ethical issue, but 25 percent of them disagreed. In fact, the guests perceived gaps (Gronross, 1984) on the food waste and its effect.

The study compared the perceptions of the guests on food waste presenting their perceived gaps. This seems to be gaps four (Parasuraman *et al*., 1985) or communication gaps (Hoffman and Bateson, 2008) because the message in the hotel restaurant did not match with the perceptions of the guests on good taste of the food. In addition, some of the guests were less mindful about food waste, because food taste was not according to their expectations. Furthermore, they might associate the room price of the hotel with the breakfast served in the hotel restaurant, and they might be absentminded on food waste. Consequently, the guests used more food than their needs at the time of their meal.

The results demonstrate that some satisfied guests with food taste tried the other food as for experiment. Both the satisfied and dissatisfied guests tried the other food might include one-third of the guests who experimented the other food in the hotel restaurant. Here, gaps two (Parasuraman *et al*., 1985) or standard gaps (Hoffman and Bateson, 2008) might exist as food taste was not good enough perceived by some of the guests when they have had food in the hotel restaurant. Remarkably, the guests wasted food being dissatisfied with food taste since they did not find proper matching with the information on the leaflet message.

The hotels focused the message (*our food is so good*) in the hotel restaurant that the food of the hotel restaurant is very good. However, the reality of the food taste perceived by the considerable amount of guests was different. Theoretically, cumulative conceptualization of satisfaction (Johnson *et al*., 1995) matches with the consequence, in which the guests might perceive overall satisfaction on the taste of the food served in the hotel restaurant.

7.3.2 Food waste and sustainability

Food provision composes the environmental effect (Kallbekken and Saelen, 2013), as food production accounts for 20 percent of global greenhouse gas emissions (Hertwitch and Peters, 2009). What is more, production of food requires natural resources, and 92 percent of the global water footprint is related to agriculture (UNEP, 2012). Furthermore, pollution of local air and water are related to food production (Kallbekken and Saelen, 2013). Surprisingly, one-third of the produced food is wasted (Gustavsson *et al*., 2011) receiving less attention.

The record of the hotel restaurant (see Appendix 8) given by the hotel manger displays a waste of 15.59 kilograms of food per day by the hotel guests (pers. mess., Sönmez, 2014). If food is wasted at this rate, 5690 kilograms of food will be wasted per year. Since scarce natural resources are engaged behind food production; those resources will not have utility at all if that considerable amount of food is wasted per year. Nevertheless, food waste is a neglected factor to the environmental change (Kallbekken and Saelen, 2013), and a great threat for the sustainability issue.

Scandic management communicated a message to the guests in the hotel restaurant to diminish food waste as much as possible focusing the sustainability issue (pers. mess., Sönmez, 2014). Communicating social cues reduce the amount of food waste in the hotel restaurant. (Kallbekken and Saelen, 2013). Moreover, these clues are the part of the choice architecture which can positively assist the food waste reduction (Thaler and Sunstein, 2008) in the hotel restaurant.

Few other studies view some techniques of lowering the food waste. The study of Freedman and Brochado (2010) proved reduction of food intake was one of the measures assisting to lower food waste in the hotel restaurant. Additionally, eating situation often provides clues to help reduce food waste (Herman and Polivy, 2005). Furthermore, plate shape and size helps in reducing food waste (Ittersum and Wansink, 2012; Sobal and Wansink, 2007). Moreover, comminicating social cues (Kallbekken and Saelen 2013), and reducing plate size and shape (Ittersum and Wansink, 2012; Sobal and Wansink, 2007) are effective for declining of the food waste.

The practice of being benefitted from the previous works is found in the present study. For example, the hotel management undertook strategies of placing small plates and glasses in the hotel restaurant so that the plates become full with the little amount of food, and guests are to take food again if needed. Small glasses also helps control waste of juice, milk, tea, coffee and other drinks (pers. mess., Sönmez, 2014). Scandic hotels were strategic to control the behavior of the guests making them compelled to take less food placing small plates and glasses at buffets.

The finding of the present study identified poor taste was one of the main problems behind the food waste and then the habitual facts. As prevention is better than cure, it is better to know the causes of the food waste and then to take the initiative accordingly.

It can be suggested that standard of the food taste must be maintained according to the expectations of the guests. Furthermore, comminicating social cues focusing the sustainability issue (Kallbekken and Saelen, 2013) may alter the habitual facts as the choice architecture (Thaler and Sunstein, 2008) to change the perceptions of the guests towards food waste.

The second theoretical framework (Figure 3) worked for the present study based on the perceptions and expectations of the guests on the food waste. The guests having positive perceptions on the ethical base according to their expectations might waste minimum food. This circumstance is sustainable. However, perceptions of few of the guests were below their expectations, gaps existed and that state was a challenge for sustainability as they continued wasting food in spite of having good taste of the food. Moreover, the guests who strongly agreed not to waste food having perceptions on the ethical concern as to the food waste higher than the expectations were more sustainable to the hotels.

7.4 Sustainability challenges

The study identified few challenges of sustainability related to the Scandic hotels consisting of keeping the cleaning service quality at the constant level, increasing positive perceptions of the guests on the back pain and food waste issues, increasing participation of the guests towards management program, offering sustainable service to the guests and reducing customers' comments at a reasonable level.

7.4.1 Keeping the cleaning service at the constant level

What people essentially desire is not products but a satisfying experience (Baker *et al.*, 1983). At Scandic, the guests perceived experience from all the service counters. In particular, the housekeeping is the key area where the guests perceived experience. The key service area differed in terms of who offered service, when and how the services were offered (Kotler *et al.*, 2002). Furthermore, it is very challenging to offer the guests a satisfying experience owing to the service gaps (Hoffman and Bateson, 2008).

The present study argues that the service of the housekeeping employee is interdependent on the hotel sustainability issue. As hotel room service is the key demand of Scandic hotel, service-dominate logic may be applied there which means that the primary role of a marketer is to deliver service, where goods are simply a means of rendering a service to the customers (Ballyntyne and Vaery, 2008). Due to the service variability (Kotler *et al.*, 2002) delivery gaps took place resulting in the service gaps (Hoffman and Bateson, 2008) or gaps four (Parasuraman *et al.*, 1985).

It is a challenge to standardize the services of the housekeeping section; the very valuable value creating zone in the hotel business since management is to satisfy the hotel guests with standard hotel rooms through the standard service of the housekeeping employees. Moreover, the housekeeping personnel prepare the hotel rooms for sale. The reception helps to sell the hotel rooms, and the restaurant section serves food to the guests. Hence, all the service counters in the hotels contribute in keeping the profit chain taking part in attaining the economic objective. Though the housekeeping section, the reception and the hotel restaurant are the linking sources of the profit chain, a standard and well cleaned hotel room works as a starting point of the hotel profit chain. Service gaps among the house keeping employees will surely affect the other services in the hotels. Therefore, keeping the cleaning service at the constant level for the guests should be the prime concern.

7.4.2 Increasing positive perceptions of the guests on the back pain and food waste

Towel re-use was studied in the present study since that issue is concerned with the environment and economy. Remarkably, towel re-use holds economic benefits, and respective hotels receive that advantage. The guests identified the economic and environmental aspects significant as the results of their perceived gaps (Gronross, 1984). Notably, a hotel should not communicate the economic issue of towel re-use as the guests perceived that in advance. They may not respond to the towel re-use issue as per the expectations of the hotel company if towel re-use is perceived as a cost cutting strategy for the hotels.

Moreover, employee's back pain reduction objective will not be attained, and the society will be deprived of the environmental benefits if the guests do not re-use towel. Simultaneously, hotel sustainability will still remain a dream if the guests are not conscious enough to reduce food waste in the hotel restaurant. Consequently, SBD program will face a challenge in the long run if a hotel fails to get participation of the guests in reducing unnecessary food intake, and to induce them for more towel re-use.

Additionally, the hotel guests have to be motivated continuously on the back pain issue as they have less sensitivity on this matter, that the cleaners will get release from their back pain if towel is re-used. However, the guests also realized negative perceptions on the food waste issue. Even, some of the guests did not think that food waste is an ethical concern. Therefore, it is very challenging to motivate the guests on the back pain and food waste issues as those two issues are concerned with their personal traits.

7.4.3 Increasing participation or cooperative behavior of the guests

In the service businesses, interaction between employees and customers are the key success factors (Evanschitzky *et al*., 2011). Guest participation is connected to the hotel sustainability as participation of the hotel guests can ensure attaining the objectives of re-using towel and reducing food waste. Thus, participation of the guests or their cooperative behaviour plays an important role for increasing towel re-use and decreasing food waste. In fact, reduction of food waste requires sharing of the guests in the management's program run by Scandic.

In particular, sufficient response of the guests to the leaflets is expected to enhance guests' participation. In addition, guests' contribution is highly required in order to decrease food waste in the hotel restaurant that will result in a positive state for the SBD. However, this is the responsibility of the hotel managers to influence their guests on the food waste issue. To do so, the hotel restaurant manager can design heart touching message to inspire the guests together with improving food taste in the hotel restaurant. Since it is tricky to make the guests participative, only voluntary participation of the guests can ensure improvement of towel re-use rate and reduction of food waste.

When the guests stay in the hotel rooms and observe the promotional message on towel re-use, they may not perceive the message seriously. Furthermore, the guests observe another message on the food waste issue; they may not bother it as they pay for the food. In addition, the guests may associate both the leaflet messages as a cost cutting strategy of the Scandic hotels. Therefore, increasing participation of the guests or their cooperative behavior towards the towel re-use and food waste issues seems to be a very challenging task for the hotel business since all guests are not likely to be economical, likewise they become in their homes.

7.4.4 Offering sustainable service by the housekeeping employees

Sustainable services can be defined as the offerings that satisfy customers' needs considering the environment, economy and ethics (Belz *et al*., 2009). Particularly, cleaning service is found physically challenging. Moreover, the hotels set less than 20 minutes to clean an unoccupied room and 10 minutes for a stay over room (pers. mess., Sönmez, 2014). Though cleaning a stay over room within 10 minutes is a reasonable time, but less than 20 minutes for an unoccupied dirty room seems to be inadequate.

Importantly, laborious job and time limitation may be the challenges in offering standard cleaning rooms or sustainable service by the housekeeping personnel as time constraint creates a mental pressure to clean a room. In addition, poor communication skills and language ability, deficiency of property maintenance and service gaps are the major challenges the housekeeping personnel encounter, whereas offering consistent and excellent services are essentials to meet the international standard (Blanke and Chiesa, 2011).

Pongsiri (2012) also pointed out that housekeeping employees are most of the cases (not always) unwell educated old generation women. The educational qualification affects the housekeeping services lower leveled, hard and poor. Furthermore, the tendency of avoiding this job by the well educated and new generation people affect the lack of skilled housekeeping employee (Pongsiri, 2012). To have unskilled housekeeping employees is a challenge for sustainability in the hotel industries.

7.4.5 Reducing the guests' complaints

Complaint is different from criticism as complaining expresses dissatisfaction within complainers; on the other hand criticism may be an objective and dispassionate observation about a person or object (Hoffman and Bateson, 2008). This is a great challenge for the management to lower the numbers of the negative comments since negative comments of the hotel restaurant impact on the satisfaction of the hotel guests.

Satisfaction of the hotel guests ensures returning customers, which affects profitability of the hotels. On the other hand, dissatisfied guests are harmful to the hotel profitability as they produce negative word of mouth, which will hinder other prospective guests to come in the hotels. Less complaint indicates guests' satisfaction but more complaints signal dissatisfaction with the hotel services. In this case, hotel management can review the negative comments and trace that service areas to take necessary steps. At the same time, the positive comments have to be praised among the service employees who may be motivated then to keep that service area standard.

Positive and negative comments of the guests contrast the service gaps (Hoffman and Bateson, 2008) of the hotel employees and the perceived gaps (Gronross, 1984) of the guests. Reducing negative word of mouth or negative comments seem to be very tough for the hotels because the hotels are service dependent in comparison to the other businesses. Guests' negative comments are considered as problems for sustainability. Furthermore, suggestions of the guests to alter or add certain services or products in the hotels as their expectations seem to more challenging for the lack of the strategic capability of the hotels. Because of its having star limitation, Scandic is not able to add some facilities or products though some guests demanded few facilities in their convenience in the GCCs. Most importantly, standardization of the service is a great challenge (Hoffman and Bateson, 2008).

8 Conclusions

The last chapter summarizes the problems, aims, research questions, methods and the theories answering the research questions in short. Furthermore, it shows the gaps for the further research in connection to the sustainable business development on the hotels perspective.

The study focused the hotel business inclusion of the cleaning service, towel re-use concerning the environmental effect and the food waste concerning food taste and guests' habitual facts. Notably, housekeeping and food service are the basic services. Failure of the core service will have severe consequences on the sustainability profile of the hotel.

The first problem of the study was concerned with the cleaning service of the housekeeping personnel aiming to explore the causes of the variation on the guests' satisfaction as to the housekeeping service formulating the question, why guests' satisfaction regarding the room and bathroom cleaning service by the housekeeping personnel differed. Moreover, the hypothesis was closely connected to the research question that relationship exists between the satisfaction of the hotel guests as to the room and bathroom cleaning service with their gender and age correlating observation, questionnaire survey and interview methods focusing the gaps theory (Parasuraman *et al.*, 1985).

Satisfaction of the guests on the room cleaning performance differed owing to the perceptions and expectations-related gaps (Brogowicz *et al.*, 1990) of the hotel guests and service gaps (Hoffman and Bateson, 2008) of the housekeeping personnel. In addition, findings of the study identified multi tasks of cleaning a housekeeping employee encountered during the cleaning process. In fact, satisfaction of the guests on the hotel room cleaning is a managerial concern. However, supervision of the individual cleaning task is challenging (Pongsiri, 2012).

The written comments of the guests implied satisfaction difference or dissatisfaction upon the cleaning service. Furthermore, the survey made the sense clear that satisfaction of the different guests differed on the room and bathroom cleaning service. Moreover, satisfaction of the hotel guests on the housekeeping performance affects hotel profitability (Pongsiri, 2012). The study of Gunderson et al. (1996) also identified cleanliness of housekeeping as an important concern for the travellers. Since a cleaned hotel room satisfies the hotel guests as a core service, no hotel is able to sustain in the long run due to the core service failure.

The second problem was concerned with encouraging the guests for the towel re-use; a strategy that makes both the environmental and business sense (Porter and van der Linde, 1995) which is connected to the employees' back pain at the same time. The objective was to know the impacts of the towel re-use on the hotel guests having in question in mind that how the towel re-use issue affects the guests showing the connection to the environmental, economic and social effect (back pain). Questionnaire survey and interview methods helped in finding out the required information where sustainable development (Elkington, 1994; Gladwin *et al.*, 1995) and gaps theory (Parasuraman *et al.*, 1985) were in focus in analysing the collected data.

Perceived gaps (Gronross, 1984) of the guests affected the towel re-use since the guests realized perceived variance on the issue. Furthermore, the guests identified the hotels are economically benefited by their towel re-use. Importantly, re-use of towel is good for the environment; it saves back pain of the employees which is an ethical aspect as well.

The study displayed re-use of towel, its economic and environmental advantages on the hotels where the guests perceived the environmental and cost effect of towel re-use more important than the back pain effect. However, the guests were less mindful that towel re-use reduces back pain of the employees. Sustainability objective may be attained when the guests re-use towel more as it benefits the hotels economically saving cost of the hotel on per towel. Moreover, towel re-use is good for the environment since a certain quantity of water, detergent; electricity and labour are not employed behind a single towel wash if it is re-used.

Participation of the guests (Growth, 2005) and their cooperative behaviour (Zeithaml, 1988) are the essentials for the success of the SD (Smith and Sharicz, 2011). However, perceived gaps (Gronross, 1984) on the sustainability issue are the challenges, and the firms had better use social cues (Kallbekken and Saelen, 2013) or effective promotional message to motivate the guests for towel re-use as choice architecture (Thaler and Sunstein, 2008).

The last problem of the study was formulated concerning with the food waste in the hotel restaurant. The objective was to know the factors important for causing the food waste having question in consideration what factors affect the food waste by the guests. Poor food taste and habitual facts of the guests were hypothesised as the factors likely for the food waste using questionnaire survey, observation and interview as methods in collecting the required data. Sustainable development (Elkington, 1994, 1998; Gladwin *et al.*, 1995) and gaps theory (Parasuraman *et al.*, 1985) were in consideration in the analysis.

Poor taste of the food and habitual facts of the guests affected food waste, which affect food production (UNEP, 2012), environment (Kallbekken and Saelen, 2013), and green house gas emission (Hertwitch and Peters, 2009). The present study identified communication gaps between the promise of the management and the guests, because food taste was not good enough perceived by the considerable number of guests. So, poor taste might be the causes for perceiving the variability in which the guests perceived variance on food waste as their ethical concern. Thus, perceived gaps in food waste can be addressed as a sustainability challenge.

Furthermore, the current study focused the food waste issue which is concerned with the food quality, that plays significant role in determining satisfaction of the customers (Andeleeb and Conway, 2006; Pullman and Gross, 2004; Yang and Mattila, 2011). Upgrading food quality or taste of the food as per the expectations of the guests is a direct approach of controlling food waste. Without considering the importance of food quality, undertaking other approach like reduction of the size of plates, glass, cups (Sobal and Wansik, 2007; Ittersum and Wansink, 2012) may not be a sustainable strategy for limiting food waste. Thus, business strategy, food quality improvement and developing effective communication message focusing sustainability issue can reduce food waste that may save the planets from the environmental problem. Then, reduction of the food waste can result in a hunger free world.

As the study of the housekeeping service rarely exists (Pongsiri, 2012), studies are required on the cleaning service issue showing its connection to the hotel sustainability. In addition, efforts should be devoted to make the housekeeping service more sustainable. Largely, the present study has presented insights on sustainability connected to certain service variables formulating two hypotheses in which the problems have been analyzed based on few established theories with a view to answering the research questions. However, future research based on a larger sample using suitable parametric statistical measures is required to make out how much food waste reduction and towel re-use impact on sustainability.

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Personal message

Mehmet Sönmez
Hotel Manager, Scandic Uppsala Nord, Sweden
2014-01-02.

Appendix1:Questionnaire

Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Department of Economics

Hello,

I am a Master's student. This survey on the Scandic hotels is a part of my study. The output of the work will be used only for the academic purpose. It might take your few minutes of your time to respond the questionnaire. Please answer the following questions putting a cross mark on the box left.

1.(a) How long is your present stay at Scandic? ☐ One night ☐ More than one
  (b) Are you satisfied with the cleaning of your room during your stay at Scandic?
  ☐ Strongly dissatisfied ☐ Dissatisfied ☐ Neutral ☐ Satisfied ☐ Strongly satisfied
  (c) Are you satisfied with the cleaning of bathroom during your stay at Scandic?
  ☐ Strongly dissatisfied ☐ Dissatisfied ☐ Neutral ☐ Satisfied ☐ Strongly satisfied

2.(a) Do you re-use your towel during your stay? ☐ Yes ☐ No
  (b) Do you agree that re-use of towel reduces occupational hazards such as back pain of the employees?
  ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree
  (c) Do you agree that reuse of towel is good for the environment?
  ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree
  (d) Do you agree that reuse of towel saves cost of the hotels?
  ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

3.(a) Is waste of food in the hotel restaurant an ethical issue? ☐ Yes ☐ No
  (b) Sometimes you leave some food in the hotel restaurant because:
  (b1) Because you are dissatisfied with the taste.
  ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree
  (b2) Because you like to experiment and try different food.
  ☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Your name: ☐ Male ☐ Female
                Age: ☐ 18- 30 ☐ 31 and above. Country:

Thank you very much for your valuable time.

Appendix 2: Questionnaire in the Swedish language

Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Department of Economics

Hej!

Jag är en hög klassificerad student. Den här ankäts formuläret på Scandic hotel ät en del av min studie. Den produktionen av arbetet kommer bara att användas för akademiska skäl. Det kanske tar dig några minuter att svara. Snälla svara på dem följande frågorna genom att sätta ett kryss på rutorna.

1.(a) Hur länge kommer ditt närvarande att på Scandic? ☐ En natt ☐ Flera nätter
  (b) Är du nöjd med att städa ditt rum medans du stannar på Scandic?
    ☐ Starkt missnöjd ☐ Missnöjd ☐ Vanlig ☐ Nöjd ☐ Starkt nöjd
  (c) Är du nöjd med städningen av bad rummen medans du stannar på Scandic?
    ☐ Starkt missnöjd ☐ Missnöjd ☐ Vanlig ☐ Nöjd ☐ Starkt nöjd

2.(a) Återänvänder du din handuk medans du stannar? ☐Ja ☐Nej
  (b) Håller du med om att återanvända handukar minskar yrkes risker som tex ont i ryggen av dem anställda?
    ☐ Starkt ogilla ☐ Ogilla ☐ Vanlig ☐ Gilla ☐ Starkt gilla
  (c) Håller du med om att återanvändning av handukar är bra för miljön?
    ☐ Starkt ogilla ☐ Ogilla ☐ Vanlig ☐ Gilla ☐ Starkt gilla
  (d) Håller du med om att återanvändning av handukar sparar pengar på hotellen?
    ☐ Starkt ogilla ☐ Ogilla ☐ Vanlig ☐ Gilla ☐ Starkt gilla

3. (a) Är slöserin på mat i hotellet ett etiskt problem? ☐ Ja ☐ Nej
  (b) Ibland lämnnar du lite mat i hotell resturangen för att:
  (b1) För att du ogillar smaken
    ☐ Starkt ogilla ☐ Ogilla ☐ Vanlig ☐ Gilla ☐ Starkt gilla
  (b2) För att du gillar att experimentera och pröva ny mat rätter.
    ☐ Starkt ogilla ☐ Ogilla ☐ Vanlig ☐ Gilla ☐ Starkt gilla

Ditt namn: ☐Man ☐Kvinna
Ålder: ☐ 18-30 ☐ 31 eller äldre   Land:

Tack så jätte mycket för din tid.

Appendix 3: Guest survey summary

Age	M/F	1a	1b	1c	2a	2b	2c	2d	3a	3b1	3b2
32	89	50	1	1	104	5	8	9	92	20	23
95	31	80	2	1	23	13	0	3	31	30	23
3	10	0	11	10	0	31	8	4	0	36	40
		0	63	63	1	45	46	53	0	29	33
		0	51	53	0	36	68	60	0	9	5
(N)130	130	130	128	128	128	130	130	129	123	124	124
Male											
32	89	50	1	1	69	4	7	8	62	14	15
57	0	39	1	0	18	9	0	2	21	21	19
0	0	0	8	6	0	22	8	2	0	25	29
0	0	0	45	45	1	32	34	42	0	21	23
0	0	0	32	35	0	22	40	34	0	6	2
(N)89	89	89	87	87	88	89	89	88	83	87	88
Female											
0	0	0	0	0	35	1	1	1	30	6	8
38	31	41	1	1	5	4	0	1	10	9	4
0	0	0	3	4	0	9	0	2	0	11	11
0	0	0	18	18	0	13	12	11	0	8	10
0	0	0	19	18	0	14	28	26	0	3	3
(N)38	31	41	41	41	40	41	41	41	40	37	36
1 night											
32	50	50	1	1	38	3	6	7	30	5	6
18	0	0	1	0	11	5	0	1	15	12	11
0	0	0	4	5	0	13	5	0	0	13	16
0	0	0	24	24	0	16	13	21	0	15	15
0	0	0	19	19	0	13	26	20	0	4	2
(N)50	50	50	49	49	49	50	50	49	45	49	50
More nights											
0	39	0	0	0	66	2	2	2	62	15	17
77	31	80	1	1	12	8	0	2	16	18	12
0	0	0	7	5	0	18	3	4	0	23	24
0	0	0	39	39	1	29	33	32	0	14	18
0	0	0	32	34	0	23	42	40	0	5	3
(N)77	70	80	79	79	79	80	80	80	78	75	74
Age 1											
	32	32	1	1	23	3	3	3	18	4	5
	0	0	1	0	8	2	0	1	9	8	8
	0	0	3	3	0	8	4	0	0	6	12
	0	0	16	16	0	12	9	16	0	10	7
	0	0	10	11	0	7	16	12	0	3	0
	(N)32	32	31	31	31	32	32	32	27	31	32

57	18	0	0	81	2	5	6	74	16	18
31	80	1	1	15	11	0	2	22	22	15
0	0	8	7	0	23	4	4	0	30	28
0	0	47	47	1	33	37	37	0	19	26
0	0	41	42	0	29	52	48	0	6	5
(N)88	98	97	97	97	98	98	97	96	93	92

Appendix 4: Leaflet used in the bathroom

HELLO!
WANT TO SAVE THE PLANET AND REDUCE BACK PAIN?

Hang your towel if you want to use it again, that will make the nature happy as we won't wash it in vain. If you put it in the basin you'll spare the backs of our cleaners and we'll wash it in the most environmentally friendly way. Of course, we'll pick it up even if it lands on the floor.

Appendix 5: Leaflet used in the hotel restaurant

ÄT HUR MYCKET DU VILL OCH LÄMNA SÅ LITE DU KAN.

VÅR MAT ÄR SÅ GOD ATT MAN LÄTT LASSAR PÅ LITE FÖR MYCKET. JU MINDRE VI SLÄNGER DESTO BÄTTRE MÅR NATUREN.

Eat as much as you like, and leave as little as you can. Our food is so good that it's easy to take more than you can actually manage.
The less we throw away the better it is for the environment.

scandichotels.se

Scandic

Appendix 6: Housekeeping job observation summary (hotel room)

Bäddning	Under säng	Fåtöljer	Gardiner	Persienner	Lampor	Reklam	Tv	Papperskorg	Garderober
45(ok)	45	41	41	48	40	41	44	47	49
5(not ok)	5	9	9	2	10	9	6	3	1
50	50	50	50	50	50	50	50	50	50

Galgar	Speglar	Dammning	Vässkbänk	Extra Kuddar	Extra handdukar	Golv hotellrum
40	44	47	50	50	50	47
10	6	3	0	0	0	3
50	50	50	50	50	50	50

Housekeeping job observation summary (bathroom).

Handfat	Tväl	Glass	Duschväggar	Kranar	Schampo
50(ok)	49	47	39	45	44
0(not ok)	1	3	11	5	6
50	50	50	50	50	50

Toalettstol	Toapper	Santietspåser	Golv badrum	Lukter
45	49	49	50	48
5	1	1	0	2
50	50	50	50	50

Comments:1= ok, 2= not ok

Appendix 7. Interview between the hotel manager and the author

Interview starts…

Me: May almighty bless you. How are you?
Hotel Manager: Fine. Same to you.

Me: I would like to know when Scandic Uppsala Nord and Scandic Uplandia were established.
Hotel Manager: In 1969.

Me: How many rooms do you have?
Hotel Manager: 184 at Nord and 133 at Uplandia.

Me: How many employees work in both the hotels?
Hotel Manager: 75.

Me: I am interested to know some information about the housekeeping jobs.
Hotel Manager: Ok.

Me: How many rooms do your target to clean per hour?
Hotel Manager: In 2014, we have target 3.25 rooms per hour and 10 minutes for a stay over room. Previous year it was 3 rooms.

Me: How do you measure the cleaning result?
Hotel Manager: Guests' perceptions. It is 85%. We have also self control.

Me: How much does a small or large towel cost?
Hotel Manager: We hire a whole set of linen required for a room. It costs 22 to 25 kroner; we do not pay for a single towel.

Me: 81% guests responded that they re-use towel. It is a huge amount.
Hotel Manager: Yes, sometimes guests complain that they hang towel for re-use but housekeeping employees took them away and put new ones.

Me: Considerable amount of food is being wasted in the hotel restaurant. I have the record that someday 37 KGs of food has been wasted. How will you explain this issue?
Hotel Manager: Generally, the problem is in the Europe that they possess economic solvency. They have sufficient food to eat. They also waste food in their homes. In the hotel restaurant, they watch huge amount of food which is free of choice. They take much food, but cannot finish and leave them.

Me: What strategies do you undertake to resolve the food waste issue?
Hotel Manager: We have put a message at breakfast that, take as much as you can but leave as little as possible. We want the participation of the guests. Of course, we cannot say to our guests that you are wasting food, or do not waste them. We have put small plates so that the plates become full with little food and guests are to come again to take food if needed. We have put also small glasses to take juice so that the guests waste minimum. We have recently started keeping records of waste of food at breakfast. We stared keeping records to know how many kilo grams of food are wasted per day. We are trying to control food waste.

Me: Thank you very much for your time. I am grateful to you for providing me with the required information. I may need to talk to you later and I will keep contact with you.
Hotel Manager: You are welcome.

Interview closed.

Mehmet Sönmez
Hotel Manager, Scandic Uppsala Nord
Gamla Uppsalagatan 50, 75425 Uppsala, Sweden
Phone: +46184952312, Mobile: +46709735512
Email: mehmet.sonmez@scandichotels.com
Date: January 02, 2014.

Appendix 8: Food waste breakfast

FOOD WASTE BREAKFAST

REUSE
REDUCE
RECYCLE

DATE:	DAY:	KG:	SIGN:		DATE:	DAY:	KG:	SIGN:
21/12	Lördag	10,06	Didi		/			
21/12	Lördag	8,06	Didi		/			
23/12	Mån	11,05	Pixie		/			
24/12	Thursday	9,6	HABBE		/			
25/12	onsdag	11,0	HABBE		/			
26/12	Torsday	9,0	HABBE		/			
27/12	fredag	13,25	Pansa		/			
28/12	lördag	35,15	Pansa		/			
29/12	Söndag	37,5	Petee		/			
30/12	Mån	9,15	Pixie		/			
2/12	Ousol	8,5	Petee		/			
3/1	Fre	12,5	Kain		/			
3/1	Fre	12,55	Kain		/			
3/1	Fre	1,5	Kain		/			
4/1	Lördag	19,5	Petee		/			
5/1	Söndag	17,5	Petee		/			
	/				/			
	/				/			

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