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**CUSTOMER SATISFACTION ANALYSIS TOWARDS
ENVIRONMENTAL PRACTICES:
CASE OF EUROPEAN LUXURY HOTELS**

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NIKA KAMPUŠ

Supervisor: Prof. Dr. Tanja Mihalič

EMTM Universities:
Faculty of Humanities, University of Southern Denmark
Faculty of Economics, University of Ljubljana
Faculty of Tourism, University of Girona

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INTRODUCTION

Luxury versus sustainability. Two contradictive yet powerful concepts that have been recently encouraged to jointly form the symbiosis. But can luxury and sustainability go hand in hand? The recent surge in the exploitation of natural resources and population growth has made a shift in the direction of sustainable behaviour indispensable. Is this shift feasible in the luxury industry? This research is an attempt to answer to this question by analyzing the relationship between adoption of environmental practices and customer satisfaction in luxury hotels.

Tourism, and consequently the hospitality sector, holds one of the crucial attributes in its pure and unpolluted environment. However, the hospitality sector devours significant volume of water, energy and non-renewable resources that degrade the environment and cause the long-term conflict. What is more, hotels are placed among top polluters and resource users among service industries (Sloan, Legrand & Chen, 2009). According to the previous research, hospitality industry has become more aware about the burden it brings to the environment and hotel managers are starting to recognize the need for the environmental protection, for which they need sufficient knowledge and funds to choose suitable environmental practices (Han & Kim, 2010; Kang, Stein, Heo & Lee, 2012). The encouragement to fight the environmental degradation also comes from the government, the green movement and current economic situation (Garrod & Chadwick, 1996). For instance, the government introduced regulatory initiatives to the hotel industry (European Commission, 2009). In terms of financial implications, there is levy of carbon taxes on non-renewable energy sources, which increases the costs of electricity, fuel and gas for hotels (Owen, 2006; Menanteau, Finon & Lamy, 2003). On the other hand, awareness about the environmental issues among customers is rising. They are more environmentally conscious and look to buy environmentally friendly products and services, thus indicating preference for firms that favor environmental practices (Kalafis, Pollard, East & Tsogas, 1999; Laroche, Bergeron & Barbaro-Forleo, 2001). However, this cannot be generalized to all settings. The most distinctive one is the luxury setting. According to Kapferer & Michaut-Denizeau (2014), luxury buyers consider luxury and sustainability contradictory and conflicting. Therefore, although environmental practices are being increasingly implemented in the hospitality sector, their fit in the luxury setting is questionable.

Luxury setting requires the provision of high-level quality services, which are resource intensive, and thus call for sustainable approach in order to minimize their impact. However, implemented environmental practices in the luxury setting can impose the risk to negatively affect comfort and well-being of luxury-oriented guests. While sustainability prioritizes respect and care for environment and society, luxury mirrors waste and overindulgence on the other end of the spectrum (Dubois, Czellar & Laurent, 2005; Hennigs, Wiedmann, Klarmann & Behrens, 2013). Moreover, luxury involves highly

priced products and services that are only affordable to a limited social group (Carcano, 2013), which presents an additional divide between the luxury and sustainability. Therefore, luxury that provokes esteem, prestige and status (Vigneron & Johnson, 2004) through its exclusivity, waste and excessiveness is in complete contrast with sustainability, which is collective and only involves the necessary and basic elements (Guercini & Ranfagni, 2013). Therefore, the implementation of sustainable elements could trigger customer dissatisfaction in a luxury setting.

UNWTO (2004) introduced the definition of sustainability through three pillars, namely economic, social and sustainable. Out of those, the economic pillar presents the basis to further implement the strategies for social and sustainable dimension. Thus, without stable economic dimension the element of sustainability cannot be successfully executed. Accordingly, if implementation of environmental practices decreases customer satisfaction in a luxury setting, such dissatisfaction may decrease customer loyalty and diminish the post-purchase intentions, thus putting at risk the profitability of a luxury provider. The relationship between antecedents of a customer satisfaction, which also encompass physical attributes of a service quality that are related to the environmental practices, customer satisfaction and customer loyalty is projected in the model of Ekinici, Dawes & Massey (2008), which will serve as a background to this paper, indicating the linkages between the mentioned constructs.

The research on this topic is limited. The recent study of Ban & Ramsaran (2016) explored the presence of service quality attributes in eco-lodges, however, there was no reference to service quality attributes for other types of accommodation or other categories. Similarly, Robinot. & Giannelloni (2010) studied the correlation between green practices and customer satisfaction, however they tested vague selection of green practices and did not focus on hotels of specific category. Also Millar & Baloglu (2011) examined hotel guests' preferences for environmental friendly room attributes. However, as well their study included limited number of room attributes and focuses only on respondents who indicated willingness to stay in green rooms and as such cannot be generalized. Baloglu & Jones (2014) focused their research on upscale and luxury properties only, however, they investigated solely energy management programs without taking other practices into account. Moreover, their research does not involve customers' point of view. Jones, Hillier & Comfort (2014) recognized that especially the leading hotel chains could face guest dissatisfaction when adopting green practices, however, also the respective research did not study the correlation between sustainability and customer satisfaction from the customers' point of view, thus further insight is needed. Pereira-Moliner et al. (2015) analyzed the influence of environmental proactivity on business performance but again without taking into account the customers' point of view. Despite various studies were conducted in the past that analyzed the influence of service encounters upon customer behaviour, there is absence of research that isolates attributes such as environmental practices and studies their impact on customer satisfaction in the luxury setting. Hence, in

this study the author addresses the respective issue and analyzes the relationship between environmental practices and customer satisfaction in luxury hotels. The construct of customer loyalty is as well included, in order to obtain more holistic overview.

This study is important, as nowadays one of the biggest challenges for hotel managers is to attract and maintain their guests. High competition in the hospitality industry and the central role of customer needs both call for high quality services that evoke customer satisfaction. Hence, it is essential to recognize antecedents and consequences of customer satisfaction (Ladhari, Brun & Morales, 2008). As mentioned, no study to date has analyzed the impact of environmental practices on tourist satisfaction in a luxury setting from the customers' point of view. Such research can help hoteliers and private investors to understand the market response to specific environmental practices and the consequent viability of such practices.

In order to obtain the results, this study develops theoretical framework based on findings of leading researchers on the topic of sustainability in the hospitality sector and tourist behaviour, which is presented in the first chapter. In the second chapter, the author develops the model with hypotheses. The third chapter gives foundations to empirical part, thus the methodology is presented, which gives a detailed insight on how the author collects data, targeting tourists at Barcelona El Prat airport (Spain) that are filtered by hotel category of their usual stay, and tourists staying in four- and five-star hotels in Barcelona (Spain). In the fourth chapter the author employs the descriptive statistics and tests the hypotheses through t-statistics to reveal if the implementation of environmental practices related to energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing is likely to decrease customer satisfaction and consequently also customer loyalty. The author also aims to reveal if there is a positive relationship between mentioned environmental practices and the overall customer satisfaction with environmental practices. Further, the author conducts the principal component analysis (PCA) in order to cluster a set of environmental actions into the respective categories, which are used to conduct the linear regression analysis. On this basis, the author aims to analyze the relationship between specific environmental practice and overall customer satisfaction with environmental practices, their direction and magnitude. The author also analyzes the relationship towards customer loyalty. In addition, with inclusion of multiple regression analysis the author aims to identify specifically which environmental practice has the strongest impact on overall customer satisfaction with environmental practices, in order to develop practical implications.

1 LITERATURE REVIEW

1.1 The concept of sustainability in the hospitality sector

In late 1970s the World Tourism Organization has identified the need for high environmental quality, if tourism wants to continue developing without being deprived from its main attribute. For that purpose the Environmental Committee has been established and formal definition for sustainable development, which is still most commonly used until today, has been put in place as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, *Towards Sustainable Development*, para. 1). After the Rio Earth Summit in 1992, which placed tourism on top of the program supporting sustainable development, green movements were put under the spotlight (Liburd, 2012). In 2015, COP21, known as the 2015 Paris Climate Conference, has introduced a clear objective to implement legally bounding and universal agreement on the climate, following the main goal of maintaining the global warming below two degrees Celsius (SIF, 2016). The concept of sustainable development is based on three pillars of sustainability, i.e. economic prosperity, social equity and environmental integrity (UNWTO, 2004). Mihalič (2009) recognized additional dimensions that further explain the complex nature of sustainability. The 3+3 sustainability model additionally includes the element of customer satisfaction, environmental education and political power. Although the concept of sustainability is holistic and embraces different dimensions, this study puts the focus on the environmental dimension. As described by Sloan, Legrand & Chen (2009, p. 8):

“The environmental dimension focuses on an organization’s impact on flora and fauna that make up the ecosystems in addition to the air we breathe, the water we drink and the land we enjoy. It involves looking at a company’s environmental footprint in regard to all its operations, facilities and finished products. Thus, all waste and emission elimination must be examined in detail. Productivity maximization and efficiency of all assets and resources must be strived for.”

On this basis the author concludes that the main aim of environmental dimension is to diminish the negative impact of firm’s activities on the environment, while preserving and protecting the natural diversity. In addition, the term “environmental performance” defines company’s activity impacts on the social and natural environment. Those impacts can be positive or negative and they can either be objective or evincing the society’s perceptions of company’s impacts (Ilinitich, Soderstrom & Thomas, 1998; Tyteca et al., 2002). Oreja-Rodriguez & Armas-Cruz (2012, p. 65) described environmental performance (EP) as:

“The impact of the hotel’s activities on the natural environment and how the social agents perceive and evaluate these activities, all this evaluated through the

perceptions of managers. EP and its sub-dimensions are assumed to measure the results obtained from applying the environmental management practices. The resulting subdimensions are: “Results of prevention of environmental impact”, “Results of control of environmental impact”, and “Results of environmental communication and training”.”

It is important to differentiate between environmental performance and the environmental management, since the former measures the extent to which the company fulfills its environmental goals. On the opposite, environmental management symbolizes the utilization of measures to protect the environment (Oreja-Rodriguez & Armas-Cruz, 2012).

Mihalič (2000) also raised the need to differentiate between environmental impact management and environmental quality management, especially when analyzing environmental competitiveness from the managerial perspective. Although the two concepts are co-dependent, environmental quality management is seen from the broader perspective. While environmental impact management encompasses actions that encourage the provision of products and services, which lower the negative impact on the environment and informs tourists about such practices, environmental quality management encourages the protection of the environment on a destination level, including recovered environments from already degraded stage, and informs tourists about the environmentally sound destinations. However, for the purpose of this paper the author focuses solely on the environmental impact management, which encompasses environmental management practices that lower the negative impact on the environment. Nevertheless, as highlighted in the study (Mihalič, 2000) for destinations to reach environmental competitiveness, the focus on environmental impact management, as well as environmental quality management is required.

Sustainability is increasingly influencing numerous industries, where companies implement environmental practices to gain economic benefits of conducting business in a sustainable way (Atkinson, Dietz & Neumayer, 2007). According to Lubin & Esty (2010), there has been increased adoption of sustainability into business strategies, which can be observed as a megatrend that presents the new competitive advantage among companies. Garrod and Chadwick (1996) reported that initially companies did not switch to the environmental focus voluntarily, as the main reason for refocusing was pressure from the government. The reluctance for adoption of green practices was mostly presented due to discontent about the danger of rising costs, weakening marketing opportunities, increasing uncertainties and also decreasing competitiveness, if focusing on environmental issues and overlooking other upcoming trends. However, Mendelson and Piasecki (1999) have soon chosen the criteria of pro-environmentalism to differentiate visionary leaders from non-visionary ones, as the former are aiming for environmental performance to achieve three essential goals. First, the reduction in environmental risks; second, the reduction in legal responsibilities and third, gain of competitive advantage through differentiation and

improved company's image. In 2012, Ernst & Young and the GreenBiz Group stated that through the past two decades corporate sustainability has developed into a complex and systematized business that successfully serves consumer and stakeholder demands (Ernst & Young and GreenBiz, 2012).

There are different classifications that try to capture companies' diverse pro-environmental programs and strategies. Hunt and Auster (1990) ranked companies among five development stages extending from "beginner" that provides minimal environmental protection, to the "proactivist", who is the most aggressive with implementation of green practices. Companies can advance through the stages as soon as they meet the specific criteria. Other researchers have introduced similar models where companies can advance through the stages according to their pro-environmental efforts. For instance, Roome's model introduces five stages regarding environmental response, i.e. non-compliance, compliance, compliance-plus, commercial and environmental excellence and as the last one, the leading edge that is being applicable to the environmental leaders in a particular industry. However, Schaefer and Harvey (1998) that made a research on foundations of Roome's (1992) and Hunt and Auster's (1990) model in which they tried to position numerous companies into the model, revealed that it is rather difficult to fit the criteria of specific stages in order to receive accurate empirical findings.

Hospitality sector followed the trends in sustainability since early beginnings. According to Goldstein and Primlani (2012) "the past several decades have seen a growing awareness amongst hoteliers and investors regarding the environmental and social impacts of hotel development and operations" (p. 3). Nowadays pro-environmental practices are becoming increasingly more presented, which is proved by the expansion of green hotels (Butler, 2008), cooperation and alliances for sustainability (Blanco et al., 2009) and preservation of water and energy resources (Alvarez et al., 2001). According to Sloan, Legrand & Chen (2009), 80 per cent of European hoteliers are already implementing pro-environmental activities. In addition, Cervellon & Shammas (2013) stated that increased number of luxury players is implementing corporate social and environmental responsibility in their mission, goals, strategies and actions. Prarie (2012) stated, "the hotel industry is in the midst of a sustainability awakening". In the hospitality sector that followed various environmental initiatives, e.g. International Tourism Partnership (ITP, 2014), there have been increased efforts to green the hospitality sector through reducing non durable goods, energy and water consumption and emissions released to the water, soil and air. Through implementation of pro-environmental practices, many hoteliers recognized numerous opportunities to decrease their operating costs while preserving the environment, comply with environmental regulations imposed by politicians and at the same time meet the demand of newly formed target groups who required environment friendly products and services and cared about the environmental performance of hotels (Liburd, 2010; Yim & Penny, 2007). Nevertheless, when analyzing a hotel sustainability business model on the case of Slovenia, Mihalič, Žabkar & Knežević Cvelbar (2012) found out that 66 per cent of

the hospitality firms have precisely monitor economic performance, while only 42 per cent of hotels have measured the social performance and 28 per cent the environmental performance, which showed that managerial attitudes were still based on the economic mind-set, although the sustainability values have been identified.

Hence, taking closer look on who is taking the lead in adopting the concept of sustainability, according to Hunt & Auster (1990), world known five star hotels chains are the ones taking the lead and actively working on their pro-environmental programs. They can be placed among companies whose programs are aggrandized throughout the organization. Those hotel chains are practicing constant monitoring and following the principle of managing rather than reacting. Also findings of Pereira-Moliner et al. (2015) showed that environmental management systems are more developed in hotels that are positioned in higher category, are large in size and are chain-affiliated.

On the demand side, TUI Travel Sustainability Survey 2012 showed that the modern mainstream tourists are increasingly more aware and interested in sustainability issues and consequently demand more sustainable products. According to their latest research on this topic 54 per cent of tourists are highly familiar with sustainability, while 40 per cent out of those are highly interested in this topic (TUI Travel PLC, 2012). In addition, Carcano (2013) explained that customers in developed markets demand environmentally friendly products and do not look to purchase products, which do not meet minimum requirements when it comes to sustainability. Furthermore, previous studies have also shown that customers are more environmentally conscious and look to buy environmentally friendly products and services (Laroche, Bergeron & Barbaro-Forleo, 2001) and are as well willing to sacrifice their comfort, in order to support environmental practices (Dolnicar & Long, 2009; Doran, Hanss & Larsen, 2015), however, this cannot be applied to all settings. The strongest contrast to the sustainable setting presents the luxury one. Tourists that choose luxury hotels over non-luxury hotels require superior value and high quality services and products that evoke superior satisfaction in every aspect (Nasution & Mavondo, 2008). According to the study of Kapferer and Michaut-Denizeau (2014), luxury buyers consider luxury and sustainability contradictory and conflicting. Since above mentioned studies, which indicated higher demand for environmentally friendly products and services, do not isolate tourists in luxury hotels only, this research aims to fill the gap and clarify how implemented environmental practices influence guest satisfaction specifically in luxury hotels.

1.1.1 Luxury hotels

Putting a spotlight to the luxury setting, luxury hotels supply the market with superior facilities and services. Through the years as hotel guests requested higher value for money and at the same time increased quality of provided facility and services, luxury hotels

became progressively more comparable (Presbury, Fitzgerald & Chapman, 2005). Al Khattab and Aldehayyat (2011) demonstrated that high prices distinguish luxury hotels from non-luxury hotels. However, Griffin et al. (1996) demonstrated that guests who stay in luxury hotels prioritize luxury over the price. Nevertheless, for highly paid product or service they also expect the high level of received value. Such high expectations relate to the size of guestrooms, high level of service, luxurious location, atmosphere and comfort in general (Dolnicar, 2002). According to the research of Luxury Branding (2015), top ten most popular luxury hotels brands in 2015 were The Ritz-Carlton, Oberoi Hotels & Resorts, Raffles Hotel & Resorts, Langham Hotels and Resorts, Rocco Forte Hotels, Dorchester Collection, Capella Hotels and Resorts, Park Hyatt, Shangri-La Hotels and Resorts and Armani Hotels & Resorts, respectively. UNWTO (2001, p. 331) ranks luxury tourism into category that encompasses five-star hotels (deluxe hotels) and four-star hotels (first class hotels). Hence, those star categories, i.e. four- and five-star, present the basis for this research, as they provide the author with an insight into the luxury setting.

Until this date, there is no existing globally harmonized standard that would classify hotels according to their quality. Nevertheless, many attempts have been made to set a general definition and grading system, which is challenging due to hotels' different qualities, characteristics and locations. In general, hotel classification can be based on different criteria, such as size, services & amenities, guest profile, corporate structure, location, star ranking and price tier (Timothy & Teye, 2009). UNWTO (World Tourism Organization) and IHRA (International Hotel and Restaurant Association) have introduced common definition of hotel rating systems as "accommodation establishments of the same type (e.g. hotels, motels, inns) have been conventionally broken down into classes, categories, or grades according to their common physical and service characteristics and established at government, industry or other private levels" (2004, p. 9). Thus, despite there are numerous rating systems put in place, most commonly used grading system are stars, e.g. the higher is the number of stars, the higher is the luxury provided. Also Harris/VFM consulting firm's research showed that the star rating is among most crucial factors when choosing the hotel (Boni, n.d.). Looking from broader perspective, World Tourism Organization (2014) and Hensens (2015) also highlighted the importance of online reviews and stated that for hotels to stay high in a marketplace, the conventional rating systems needs to trigger integration with the online guest review platforms, in order to provide better transparency towards customers. However, as already mentioned, for the purpose of this study the author focuses on luxury hotels, thus as classified by UNWTO on four-star and five-star hotels (2001, p. 331). In addition, according to the recent report of World Tourism Organization (2015), the comparison of classification criteria for four- and five-star categories showed many more similarities rather than differences. The criteria for five-star hotels is to some level mirrored in criteria for four-star hotels. Further, for most of the recurring criteria for five-star hotels, there is minor or no difference in their recurrence for four-star hotels. Hence, the authors expects to get balanced data set gathered from hotel guests at four- and five-star hotels.

1.1.2 Environmental management practices

As explained in chapter 1.1., sustainability plays an important role across various sectors, including the hospitality sector, and minimization of the environmental risk forms an important part of agendas among industry leaders. Vestag et al. (1996) emphasized the difference between endogenous and exogenous elements of environmental risk. First ones encompass internal company's operations, while the second ones focus on company's location, surrounding infrastructure, ecological characteristics and population's attitude towards pro-environmental behaviour. For the purpose of this research, the author mainly focuses on the endogenous elements of the environmental risk.

Environmental risk is managed through environmental management practices that are associated with the green strategy and management of hospitality providers. Such practices encompass hotel's synergy with the environment, the impact on the ecosystems and the consumption of natural resources (Carcano, 2013). Eco-efficiency, defined as a concept that reduces consumption of energy, wastes, natural resources and pollutants released through provision of products and services (Ayres, 1998; Reijnders, 1998) plays an important role. Thus, environmental management practices encompass energy and natural resources management that aims to decrease energy and water consumption, promotes the use of renewable sources and implements the waste management. Green practices are most commonly applied in laundry rooms, administrative offices and also public spaces and guest rooms (Ghiasi, Maragheh, Khezri, Nia & Panahi, 2016). According to Gonzales & Leon (2001), green practices such as waste management and water and energy saving programs are most common as they require lower financial inputs and can be implemented during hotel's normal operation process. Oppositely, green practices such as solar energy systems require higher financial input and are therefore less presented. Carcano (2013) stated that the main focus is nowadays put on energy efficiency, lighting, temperature control and transportation. According to Sloan, Legrand & Chen (2009), most common practices involve energy saving, water saving, green purchasing and waste minimization. In addition, numerous hotels that implement environmental management practices obtain the eco-labels for the purpose of receiving third-party certification. However, in order to obtain an eco-label, hotels need to reach specific environmental standards. Some of the most recognized eco-labels are The European Eco-label, The Green Key, Green Globe, Green Seal, Nordic Swan, Green Tourism Business Scheme, ISO 14001 and others (Sloan, Legrand & Chen, 2009; Geerts, 2014). Aside of green practices that specific hotel undertakes, Trung and Kumar (2005) emphasized the involvement of guests with the green practices, which importantly impacts the efficiency of environmental management.

Thus, hotels recognized that sustainable behaviour can be an advantage, as it presents the foundation to drive innovation, boost competitiveness and also produces bottom line results through cost minimization (Lubin & Esty, 2010). Carcano (2013) stated that the key ingredients for companies to successfully adopt sustainability into their strategies are

committed leadership, engaged employees, engaged stakeholders and determined implementation. What is more, sustainability should be deeply reflected in company's DNA, e.g. Marriott's DNA is quoted as a "spirit to serve", which is interpreted as serving to guests, wider communities and the environment.

With reference to luxury hotels, Jones, Hillier & Comfort (2013) explained that the leading hotel chains, owning the luxury brands, have a full reach across the globe due to widely spread network and can therefore introduce their footprints globally. Hence, they are the leaders in showing the example on how to deal with challenges concerning sustainability and promoting their efforts and accomplishments. Moreover, luxury conglomerates are in advanced phase of development also when it comes to the corporate sustainability strategy. Thus, in their case the essence of corporate sustainable strategy is already embedded in their mission and main values (Carcano, 2013). Similarly, Stylos & Vassiliadis (2015) explained that five-star hotels need to focus on full implementation of sustainable strategies, as they are the pioneers on top and they are the ones showing good examples for hotels in other star categories to follow. Jones, Hillier & Comfort (2014) researched sustainability practices among top hotel chains and found that their commitments already encompass wide specter of issues concerning environmental, social and economic aspect. Main purposes for utilizing such actions are cost saving, care for sustainability and support to the natural ecosystems. Their research analyzed top ten hotel chains with regards to their approach towards sustainability and according to results most of the hotel chains displayed their sustainability program demonstrating the track of the climate and greenhouse gas emissions, protection of natural resources, energy and water savings, efforts on recycling and waste management, sourcing of sustainable produce and their reduction of the overall effect on the environment.

In order to have deeper understanding about different management green practices through which hotels can minimize the environmental risk, the division of green practices is made in the category of energy saving, supplier-hotel collaborations, design and materials, water saving, recycling and reusing.

1.1.2.1 Energy saving

Energy presents one of the fundamentals for hotel operation. Substantial amount of energy is consumed in order to assure comfort and high quality services to hotel guests. According to BPIE (2011) hotels and restaurants across Europe consumed 11 per cent of total energy consumption measured across the non-residential building sector. Nevertheless, the energy consumption in the respective sector has declined over years, which indicates the upcoming trend of higher energy efficiency in hotels (Chan & Kantamaneni, 2015).

According to HES (2011) analysis, a third of the energy consumption in the European hotels derives from the space heating. Further activities that are most energy intensive are hot water, cooling, lighting, cooking, office equipment, ventilation and refrigeration, respectively. Similar findings reported Ali, Mustafa, Al-Mashaqubah, Mashal & Mohsen (2008) indicated that vast quantities of heat and electricity are consumed by hospitality sector for lighting, air conditioning, water heating and laundry operations. Their study revealed that despite only a limited number of hotels implemented energy management practices, 80 per cent of them indicated willingness to use energy efficient devices. In addition, according to their study more than 95 per cent of five star hotels initiated complete environmental program.

Energy efficiency in hospitality sector is sometimes hard to control, as hotel guests are provided with full control on thermostat settings and air conditioning units. That means that they can use thermostat or air conditioning while at the same time having the windows open. In addition, heating, ventilation and air condition are switched on also when hotel guests are not in the room and thus consequently accumulating the energy waste. This is even more noticeable in luxury hotels with higher energy intensity per hotel guest, due to bigger size swimming pools, multiple restaurants and kitchens, in-house laundries, higher offer of services, etc. (Chan & Kantamaneni, 2015).

Bohdanowicz, Churie-Kallhauge, Martinac (2001) stated that hotels should maximize the utilization of renewable and passive space-conditioning and shading/lighting technologies. In addition, solar, wind and hydro energy sources should be used to minimize carbon footprint. Most commonly used is solar and wind power system, heat pump plants and biomass-fueled structures. Furthermore, savings can also be reached by zoning and setting up the independent temperature control systems in each guest room. Such systems are switched off or set to a minimum level when the respective room is not occupied. In terms of lighting, the installation of sensors lowers the lighting costs. Moreover, the maximum use of a natural light further decreases the lighting costs, According to the cost saving, division of Nikolaou, Vitouladitis & Tsagarakis (2012), seven aspects of energy saving that hotels can implement to follow the pro-environmental outlook were introduced. Those are energy saving lamps, electronic keys, air conditioning maintenance, inverter air conditioning technology, solar water heaters and ISO 14001 certification. In addition, some hotels also established their own programs to fight the environmental risk. For instance, the luxury hotel chain of Kempinski, KREEN (Kempinski Renewable Energies) was founded to improve the energy efficiency of Kempinski hotels. KREEN provides consulting and project management services that aim to reduce the operating costs of Kempinski hotels through adaption of renewable energies. That depends on hotel's geographic location, the renewable energy supply and the local energy cost (Road, 2013).

In the report of Chan & Kantamaneni (2015), three major areas of focus are suggested to reduce the energy consumption. First, energy conservation from heating, which involves

high efficiency lighting system and double glazed windows. Second, usage of natural cooling techniques, which utilizes fans, ventilations and ground cooling with ground-air exchangers. Third, energy conservation from artificial lighting, which presents occupancy sensors and fluorescent lamps.

1.1.2.2 Sustainable supplier-hotel collaborations

It is important for hotels to collaborate with suppliers who as well follow pro-environmental principles to holistically implement the environmental management. Moreover, hotels also play the role of encouraging suppliers to adopt pro-environmental behaviour. For example, some hotels encourage their suppliers to minimize and reuse the packaging. In addition, to enhance the pro-environmental collaboration, hotels are sourcing locally produced goods and services, the use of which decreases transportation (Sloan, Legrand & Chen, 2009).

Hotel collaborations with local suppliers have a positive impact on the environment due to significantly lower negative impact of transportation on the environment, as mentioned above. However, the focus on local suppliers narrows the choice given to the customers. For example, in case of food offering, the major impact that food production has on environment is growing, processing, packaging and transport. Therefore, the local food is often seen as a sustainable food, as it causes lower negative impact on the environment, due to reduced transport and support to the locals. However, focus on the local food can limit the variety of food offered, as the seasonal products prevail (Sloan, Legrand & Chen, 2009). In addition to transport, suppliers that follow pro-environmental principles practice agriculture and forestry in a way that maintains the nutrients of food, protects endangered species, involves growing crops in a sustainable way and accessing materials from forestry areas that are regulated by environmental standards, e.g. fairtrade food and organic food (Cuenlass, n.d.).

For instance, Scandic hotel chain took advantage of collaboration with suppliers to boost the environmental innovation. Scandic demands certain level of environmental standard that needs to be reached by their suppliers prior to the buying process. What is more, numerous times Scandic develops new products in collaboration with suppliers in order to minimize the environmental risk of products that are being bought. Hence, through collaboration with suppliers the hotel chain has developed oxygen brighteners that are used instead of chlorine bleach during the laundry process. Further, they re-developed usual bar soaps and bottled shampoos into natural shampoos and soaps stored in PET dispensers, which are reusable and recyclable. Also, through tight supplier collaboration they have introduced the new energy-management and temperature-control system, which functions via TV signal. To summarize, through Scandic's initiatives their suppliers followed the path towards minimization of the negative impact that their products have on the environment (Goodman, 2000).

1.1.2.3 Sustainable design and materials

Tourism is closely related to the land use and land cover. Nowadays, there is an increase in environmental regulation on land use, due to increased loss of natural environments and growing public appreciation of environmental values (Seidl, Tisdell & Harrison, 2002). As the development of tourism delivers construction of new hotels, transport infrastructure and leisure activities, it makes significant changes in land cover and land use. However, the integrated land use plan can support sustainable development through high prioritization of land resource and landscape protection, creation of land use function zoning with the optimization of natural resources and pre-set boundaries of the area, which is devoted to tourism development (Wang & Liu, 2013). Actions also tackle environmentally friendly building designs and materials, impact fees and fiscal stimulus for redevelopment plans (Sweeting, Bruner & Rosenfeld, 1999).

More specifically, construction heavily affects local natural habitat and landscape right from the start of the building process. However, indirectly the global environment is as well affected by the production of building materials. At the time when the construction process is finished, the long-term effects gradually degrade the local environment through intensive energy and water consumption (Sloan, Legrand & Chen, 2009). In order to minimize the damage that construction causes to the environment, sustainable architectural design, which is also known as eco-design or green design, aims to present architectural solutions for resource efficiency and resource conservation. Various construction techniques involve sustainable construction materials and design concepts (Ghiasi, Maragheh, Khezri, Nia & Panahi, 2016).

The first step towards sustainable architectural design is sustainable planning, which ensures that all environmental and social impacts are identified and analyzed prior the construction starts (Sloan, Legrand & Chen, 2009). Afterwards, the first principle of sustainable design conditions the use of the sun. Solar design aims to fully exploit the sun, which can be done by glazing, thermal mass and also orientation. First, double glazed windows minimize the air gap in the glass and therefore enhance the insulating function of windows. Second, orientation is as well an essential factor, as it controls the amount of sun that the building receives. For example, the side of the building that faces south should be equipped with windows and solar panels. Oppositely, the side of the building that faces north receives low levels of sunlight and should therefore have low number of windows, in order to prioritize the insulation. Third, thermal mass as the last factor regulates how much of internal heat can be stored in a building. Sustainable buildings that have a high thermal mass can maintain high temperature during winter and low temperature during summer for longer time. High thermal mass can be produced by materials such as brick, concrete and also stone or water (Bohdanowicz, Churie-Kallhauge, Martinac, 2001; Sloan, Legrand & Chen, 2009). According to Scandic hotel chain, being one of the leaders in sustainability (Cuenllas, n.d.), the interior of the guest rooms utilizes wood for the floor and part of the

wall, avoids the presence of mercury through minimization of mirrors' size, introduces wool and cotton instead of synthetic textiles, cloth hangers made of wood, curtains and bed covers made of cotton and as well reduces the use of plastic thus even plastic and metal lamps are replaced with wood (Goodman, 2000). Nowadays, LEED (Leadership in Energy and Environmental Design) is the most recognized green building rating system that aims to certify buildings according to their environmental performance. It encompasses all phases, from construction, design and materials used to consumption (Sloan, Legrand & Chen, 2009).

In addition, also particular recreational areas of hotel's property have the negative impact on environment. For example, golf facilities bring mechanized activities like spraying. Moreover, the issue of waste disposal is aggravated and agrochemicals and fertilizers are used (Bartlett & James, 2011). Furthermore, air and water recreational activities bring negative consequences such as disturbance to the wildlife through noise and human waste. Management has options to demolish the negative impact through exclusion of such activities, introduction of proper fuel handling correlated efficiency guidelines or re-focus to low impact recreational activities like biking, hiking and others (Burginm & Hardiman, 2011). Similarly, the availability of various transportation options can increase the noise level and pollution at the hotel's property. Thus, practices such as introduction of zones where no vehicles are allowed, paths where no motorized vehicles are allowed around the hotel's property, the limitation on parking capacities and parking fees, are encouraged (Sweeting, Bruner & Rosenfeld, 1999; Kelly, Haider, Williams & Englund, 2007).

1.1.2.4 Water saving

Availability of clean water is becoming scarce. The United Nations World Water Development Report (UNESCO WWAP, 2003, p. 19) indicates the following:

“The projected growth in industrial demand for water can only be met by integrating improved supply-side considerations with enhanced demand-side management at government and enterprise levels. Demand side initiatives play an important role in increasing water efficiency of industrial processes, and lowering the pollution load of effluents discharged by industry.”

Growth in tourism industry puts extra pressure on water resources through increased number of hotels, restaurants, golf courses, spas and water-related recreation areas. In particular, golf courses consume significantly bigger amounts of water resources compared to other dimensions, i.e. approximately 2.3 million liters per day for a 18-hole golf course (UNESCO WWAP, 2006).

According to Miao & Wei (2013), pro-environmental behaviour is more prevalent in household setting in contrast to the hotel setting, as in hotels the need for individual's

comfort and convenience is evoked. Their results are compatible with Eurostat (2009) where results showed that crucial cause for high water consumption in hotels is tourist behaviour. As tourists aim to experience comfort and enjoyment while staying in a hotel, they use more water while taking a shower, compared to the water consumption for same activity when being at home. E.g. tourists in Spain use twice as much water as the locals (UNESCO WWAP, 2006). According to the study of Hamele & Eckardt (2006), which involved accommodation sector across Europe, luxury five star hotels are placed on top of water consumers as their luxurious offer includes golf courses, various bars and restaurants, large swimming pools and spa areas, decoration areas with water fountains and other water decoration objects.

Hence, tourism industry requires dedicated approach to water consumption through water saving management. Kasim, Gursoy, Okumus & Wong (2014) introduced 4R approach to the water management in hotels. First, innovative reducing (IR1) does not require high level of knowledge and technology but demands behavioral change to implement everyday operational activities, e.g. immediate fixings of water leaks and low-consumption taps and showers (Ghiasi, Maragheh, Khezri, Nia & Panahi, 2016) and implementation of guest notices to minimize the use of water. Second, innovative reusing (IR2) requires low knowledge but relatively high technology. E.g., build-in system to treat grey water coming from laundry, sinks and baths. System that filters and cleans the grey water can be reused to flush water in toilets, water green surfaces. Third, innovative reaching (IR3) is knowledge intensive and does not require technological excellence. It requires the effort from management and employees to spread awareness and encourage pro-environmental behaviour. It results in lower water consumption on a daily basis and boosted environmental and social sensibility involving all stakeholders. Fourth approach, innovative recycling (IR4) is knowledge and technology intensive, e.g. it turns polluted water into water that hotel guests can drink. This method is suitable for larger firms that can afford bigger investments.

1.1.2.5 Recycling

Recycling, as well as reusing in the section 1.1.2.6., form part of the waste management system, which encompasses broad set of actions such as waste exchanges, waste reduction, centralized composting centers and awareness raising about the waste minimization. (Kelly, Haider, Williams & Englund, 2007; Ghiasi, Maragheh, Khezri, Nia & Panahi, 2016). With reference to recycling, the recycled product is produced wholly from the material, which is re-processed from the waste. Many times the recycled product can be re-proceed into an item mirroring the original form. For instance, newspapers and notepapers placed in guestrooms are recycled into paper used for packaging or paper towels (Sloan, Legrand & Chen, 2009). According to Qian & Schneider, the presence of recycling-related practices in the hospitality setting can be measured through presence of recycling programs, presence of receptacles and agreements with vendors to take care of packaging

and materials after being used (Qian & Schneider, 2016). According to the Recycling Guidebook for the Hospitality and Restaurant Industry (Snarr & Pezza, 2000), recycling saves raw materials, energy and environmental pollution. Hotels can choose to buy recycled paper products, such as paper towels, toilet tissues, facial tissues, napkins and menu papers. When it comes to recycled glass products the market offers recycled bottles and jars. With reference to plastic recycled products, hotels can choose among recycled carpets, bottles, pencil holders, pencils and plastic envelopes.

1.1.2.6 Reusing

As already mentioned, reusing as well belongs to the waste management. In the category of reusing, linen and towel reuse is one of the most common practices in hotels. Through this practice hotels give direct impression that they care about the environment, while at the same time giving customers the final choice to take the action or not. Furthermore, reuse of linens and towels saves energy and water and decreases the laundry costs (Sloan, Legrand & Chen, 2009; Ghiasi, Maragheh, Khezri, Nia & Panahi, 2016). Hotels usually place a card informing about linen and towel reuse on bed and in washrooms, implying that hotel guests can protect natural resources and prevent exhaustion of the environment with following their instructions. In some cases, hotels even imply to donate part of savings, which are obtained due to reuse, for environmental protection (Goldstein, Griskevicius, & Cialdini, 2007). Snarr & Pezza (2000) suggested hotels to introduce pourers for sugar and salt and small serving dishes for butter and jellies rather than packaged versions. They also suggested the use of cloth towels and air dryers in the restrooms.

In addition, the bottle reuse is as well gaining popularity among environmental conscious hotels. Bottles can be reused directly, e.g. bottles for water, or they can be disposed and recycled, e.g. bottles for beer. Reusing of bottles omits the need for material extraction, industrial treatment, manufacturing and transport, which all directly harm the environment. On the other hand, numerous hotels introduced liquid soaps and shampoos in their guestrooms, which are placed in refillable ceramic bottles (Sloan, Legrand & Chen, 2009). According to the findings of Scandic hotel chain (Cuenlass, n.d.), hotel guests usually use three out of fifteen grams of bar soap during their stay, while the rest is thrown away. Thus, minimizing the size of a soap bar or replacement of a soap bar, shampoos and conditioners with refillable bottles or dispensers can save a significant number of bottles used for amenities. In the case of Scandic hotel chain, millions of bottles have been saved over the period of twelve years.

1.1.3 Competitive advantage versus ethical challenge

Luxury hotels differentiate themselves from other hotel categories with providing the luxurious experience in every aspect. Therefore, the main competitive advantage holds the

scent of luxury. On the other hand, the ethical responsibility calls for the need to take care of the environment. Thus, hotels are implementing environmental, as well as economic and social, codes of conduct into their business strategies as already explained in chapter 1.1. and 1.1.2. Environmental reports of luxurious hotel chains are indicating significant efforts towards pro-environmental behaviour.

For instance, Kempinski, which is one of the Europe's oldest luxury hotel groups, practices sustainability to decrease the environmental impact of its hotels. The luxury hotel chain introduced the Green Inspiration program, which engages staff and guests to take small pro-environmental actions on a daily basis. The program raises awareness through Oak Initiative, where guests can put the symbolic oak tree on their bed if they want to keep the linens and if they allow that air-conditioning, multimedia devices and lights are turned off while the room is not occupied. Also staff collaborates in Oak Initiative by purchasing goods responsibly and from the local suppliers (Kempinski, 2015).

Another example is the luxury hotel chain Mandarin Oriental. For some of their hotels they have introduced recycling in guestrooms, which is carried out for cardboard, cans, glass, organic waste and plastic. Furthermore, they incorporated LED Lighting system (Mandarin Oriental, 2011) and motion controlled lighting (Anderson, n.d.), while most of guest rooms are equipped with automatic systems for lower energy consumption when guest rooms are not occupied (Mandarin Oriental, 2013). According to Mandarin Oriental Hotel Group Sustainability Report (Mandarin Oriental, 2011, p. 32), the hotel reduced 43 per cent of energy by adapting the air conditioning and lighting to room occupancy status. With regards to use of sustainable materials, non-woven newspaper and shopping bags are used and hotels are encouraged to serve guest water in reusable glass bottles (Mandarin Oriental, 2013). Furthermore, the group encourages the building of roof gardens designed to sustain trees (Anderson, n.d.). Hotels are as well encouraged to choose local and sustainable suppliers. Most of fruits and vegetables are delivered from local farmers that focus on sustainable practices (Mandarin Oriental, 2013).

Mariott International hotel chain is as well focusing on long-term pro-environmental solutions and identifies pro-environmental behaviour in the area of energy, water, waste and carbon reduction, construction of green buildings and renovation of current ones in more sustainable way. They encourage the supply chain to act pro-environmentally and introduce innovative conservation initiatives (Mariott International, 2012). What is more, their goals are aiming to inspire and educate their customers to conserve and preserve (Mariott International, 2015). The hotel chain put in place sustainable guest room products, charitable donations of loyalty program rewards points and guest satisfaction surveys. With regards to sustainable guest room products, they introduced EnergyStar rated equipment (TVs, alarm clocks, hair dryers), low-energy bulbs and showerheads that use less water (Mariott International, 2012), programmable thermostats, recycled key cards, recycled material pens and low VOC paint. Mariott International hotels also introduced the

linen and towel re-use. Furthermore, they are purchasing organic and fair-trade food, planting herb or vegetable gardens, purchasing seafood caught in a sustainable way and offering the local food in general. Moreover, suite rooms alert guests to lower the dishwasher use, while common areas save electricity through sensor lighting, less air conditioning and rearrangement of cooling cycles (Mariott International, 2012; Lanahan, n.d.). The latest sustainability report of Mariott International (2014) reveals that they have additionally adopted low flow toilets and low flow faucets. Mariott is very active in building LEED-certified hotels. By the end of 2011, the respective hotel chain already had more than 96 LEED-certified buildings (Mariott International, 2012).

However, although the increasing number of hotels report on their pro-environmental efforts, also criticism has been tracked in this regard. According to the research of Jones, Hillier & Comfort (2013), the sustainable performance of hotels was graded relatively weak due to absence of transparency and credibility in their sustainability reports. Therefore, it seems that even big hotel chains are struggling in finding the right balance between offering the luxurious experience and following the ethical code of conduct towards the implementation of sustainability. Minimizing carbon footprint, while continuing being competitive and profitable is a tough challenge and can be in various cases mirrored in greenwashing (Parguel, Benoit-Moreau & Larceneux, 2011). Past research shows that in hospitality the gap between attitude and action towards pro-environmental behaviour is still presented (Graci & Dodds, 2009).

1.2 Tourist behaviour

The study field of consumer behaviour encompasses the entire perspective of purchasing and consumption behaviour. In particular, consumer behaviour involves specific decisions, ideas, activities and experiences that satisfy one's needs and desires (Solomon, 1996). It embraces all acts that are directly connected to obtaining, consuming and disposing particular commodities, including the decision making process that forms part of it (Swarbrooke & Horner, 2007; Chen & Lin, 2012). However, there are significant differences when comparing consumer behaviour to tourist behaviour and the latter gives foundations to this study.

Tourist behavior is largely covered by tourism studies, but also closely related to the study area of psychology, sociology and anthropology. Clawson (1963) distinguished five stages of travel experience that involve the anticipation stage, stage that involves travelling to the site, stage that involves activities that are undertaken on-site, stage of return travel and stage of recollecting. However, the most complete model was introduced by Moutinho (1987) that consists of three main components starting with a pre-decision and decision process, followed by post-purchase assessment and future decision-making.

The first phase in Moutinho's model encompasses all the actions from stimulation until the actual purchase of a tourism product or service ranked into preference structure, decision and purchase. The second phase in Moutinho's model, namely post-purchase assessment, presents tourist satisfaction or dissatisfaction. This phase is closely related to tourist on-site experience and consists of various dimensions. The North American School identified five SERVQUAL dimensions, i.e. tangibles, assurance, reliability, empathy and as the last one responsiveness (Parasuraman, Zeithaml & Berry, 1985; Parasuraman, Zeithaml & Berry, 1991; Ekinci, Dawes & Massey, 2008). As assurance, reliability, empathy and also responsiveness can fit the same category, i.e. intangibles, the Nordic School (Lehtinen & Lehtinen, 1991) simplified the model highlighting the two dimensions, i.e. what customers receive as an outcome from interaction with service provider and how they receive such services. The satisfaction with mentioned dimensions results in positive, negative or neutral behaviour. The third, recollection phase of Moutinho's model, mirrors the final tourist assessment and future purchasing intention.

The main purpose of this study is to analyze tourist satisfaction. According to Moutinho (1987), tourist satisfaction is based on experience during the trip including the post-trip final assessment and it involves emotional and cognitive component. Further on, overall customer satisfaction is the final evaluation of the journey that encompasses the total purchase, consisting of satisfaction with particular products or services in that specific time period (Fornell, 1992). This study focuses on the second phase that involves satisfaction or dissatisfaction with the on-site tourist experience. There is limited research available on tourist satisfaction specifically in luxury hotels. However, the research of Truong and McColl (2011) shows that luxury consumers buy luxury products and services in order to satisfy their self-esteem. In essence, the decisive factor to choose luxury products and services is their actual quality. Consequently satisfaction is based on luxury products' or services' ability to cater pleasure. Further, the research of Lu, Berchoux, Marek & Chen (2015) explains that tourists that stay in luxury hotels evaluate luxury as a ratio between received value and the price that they pay for it. The research demonstrated that in the mind of a luxury traveler, the constructs of luxury, service quality and customer satisfaction are fairly similar, rather than separate constructs.

In order to put the spotlight on tourist behaviour that supports pro-environmentalism, the link between behaviour and environmental beliefs is needed. The concept that links beliefs and behaviour was introduced by Ajzen (1985) and is known as the theory of planned behaviour.

1.2.1 Theory of planned behaviour

In spite of broad research, the agreement about determinants effecting the adoption of pro-environmental behaviour is still narrow. Individuals' actions are triggered on the basis of anticipated emotions, as they predict how their decisions will make them feel later in the

future, on the basis of positive or negative experiences in the past (Baumgartner et al., 2008). Different variables are describing and anticipating environmental behaviour, such as social context, environmental awareness, values and environmental attitudes. Nevertheless, according to the theory of planned behaviour (Ajzen, 1985; Ajzen, 1991; Ajzen & Fishbein, 2005) that was widely recognized among researchers, particular attitudes have been identified that direct environmental behaviour. The theory states that individual's behavioral intentions and behaviors are created on the basis of one's attitude toward behavior, subjective norms, and perceived behavioral control.

Attitudes are an important factor influencing the tourist behaviour (Fishbein & Ajzen, 1974; Armitage & Conner, 2001). One of the first influential researchers on this topic, Jung (1972), recognized attitudes as readiness of the psyche to either act or react in a certain way. Although individual's attitude is mirroring satisfaction in various aspects, it presents more general assessment of purchased products or services (Westbrook & Oliver, 1991). Breckler (1984) clarified that there are three distinctive components of attitude, namely, cognitive, affective and behavioral. Cognitive refers to thoughts, beliefs and attributes that an individual associates with an object. On the opposite, affective relates to feelings and emotions, while behavioral refers to past experiences or behaviour.

Attitude towards behaviour as the first dimension of the theory of planned behaviour is based on behavioral beliefs, one's conviction about probable result of behaving in a certain way (Ajzen, 2005). In practice this theory relates to the scenario when hotel guests believe that adaptation of pro-environmental behaviour generates positive results, therefore their attitude in relation to such behaviour is supportive. Subjective norms, presenting the second dimension (Ajzen & Fishbein, 2005) have been further developed and divided on injunctive and descriptive norms, as Ravis & Sheeran (2003) review called for more detailed division. Injunctive norms relate to individual's perception on what their referents, e.g. close friends and family, etc., think they should do. In addition, descriptive norms relate to referents' actual behaviour, as perceived by an individual. Last but not least, perceived control acts as an outcome of individual's beliefs about the existence of determinants, which accelerate or block the adoption of a given behaviour (Ajzen & Fishbein, 2005). Theory of planned behaviour indicates that although attitudes are somewhat stable, contextual and environmental elements can additionally influence the evaluation of tourist experience (Sussman & Unel, 2000).

1.2.2 Materialism as value

Attitudes, forming part of Ajzen's model described in the previous chapter, are conditioned by individual's values. Every individual has multiple realities. Specific experience can be favorable and precious for some tourists, while at the same time other tourists may have different view and see no value neither understand it's need (Pearce, 2005). Therefore,

when observing tourist behaviour it is important to take into account deeply embedded social values and personal identity.

According to Rokeach (1973) values speak for “enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to (its) opposite” (p. 5). According to Schwartz & Bilsky (1987), values antecede beliefs and attitudes and influence their development. When putting the values into environmental framework, values indirectly construct pro-environmental behavior by activating environmental beliefs and attitudes (Allen & Ng, 1999). The model, which sets environmental beliefs successive to values was introduced by Stern et al. (1995), who stated that values dictate pro-environmental attitude and general pro-environmental acceptance, and at the same time directly influence intention to pro-environmental behavior and its willingness to pay.

Opposite to pro-environmental values stand materialistic values, where individuals are looking for greater value during the consumption process and the context of consumption is substantial (Micken & Roberts, 1999). Majority of researchers set a firm basis showing that materialism negatively effects pro-environmental behaviour (Shultz & Holbrook, 1999; Porritt, 1984). However, the major issue arises when aggregated outcomes of one’s consumption behaviour have unfavorable collective environmental outcome. Although one’s ignorance of pro-environmental behavior does not negatively effect the environment, the total of all identical unintended consumers’ actions does negatively affect the environment. The negative result is driven by each individual’s self-interest that shapes one’s behaviour (Shultz & Holbrook, 1999). According to Richins (1994), the individuals who are profoundly materialistic are heavily influenced by perceptions of others when choosing products or services. In addition, they prefer possessions that are luxurious and high in prestige. Similarly, Wong and Ahuvia (1998) stated that materialistic individuals are inclined to choose luxury products and services that symbolize their social status. To sum up, materialistic individuals are looking for prestige, luxury and status through symbolic display of their wealth. In addition, according to Barber & Deale (2014), tourists can also feel that presence of sustainable elements can detrude the comfort and luxurious features of their hospitality experience. Thus, the presence of materialistic values that call for abundance and luxury can negatively affect pro-environmental behaviour. However, more detailed explanation between luxury and sustainability is needed to understand the motives behind and to identify the driving factors for choosing luxury products that contradict sustainable ones.

1.2.3 Contradiction of luxury and sustainability

Bernstein (1999) described luxury as something “which is simply not necessary at any level” (p.48). In other words, luxury can be perceived as a kind of waste. Putting the element of luxury to the hospitality setting, it implies something “extra”, i.e. extra services, extra décor, extra work force, extra room amenities. For that reason, the idea of luxury

clashes and contradicts to the idea of sustainability, which follows the principle of “less”, i.e. less waste, less consumption, less harm to the environment and less use of resources (Line & Hanks, 2016). Luxury separates people who afford it from those who cannot. It triggers esteem, reputation and prestige (Vigneron & Johnson, 2004). Therefore, while sustainable development aims to thoroughly control and minimize the consumption, the principle of luxury is excessive use in materials, details, performance and also comfort (Kapferer & Michaut-Denizeau, 2014). This contradiction also applies when combining luxury and sustainability in the hospitality sector, as already explained, the hotel guests perceive that the introduction of green initiatives distorts the element of luxury and comfort during their hospitality experience (Barber & Deale, 2014).

Luxury encompasses various dimensions. First, the functional dimension presents the range to which specific luxury product or service fulfills customer desire about the quality and performance. Luxury consumers expect to receive high quality goods and superior performance (Tynan, McKechnie & Chhuon, 2010; Shukla & Purani 2012). Functional dimension of luxury products is demonstrated in best technology, high quality materials and sophisticated design (Monkhouse, Barnes & Stephan, 2012). When applying functional dimension of luxury goods and services to the hospitality setting, it refers to luxury rooms, luxury room amenities, extraordinary service, prestigious ambiance, etc. Second, hedonic dimension presents the emotional gain, i.e. pleasure (Hirschman & Holbrook, 1982). Through hedonic motive luxury tourists are seeking for higher level of personal comfort and enjoyment, which consequently suppresses pro-environmental behaviour. For example, tourists with hedonic motive can be unwilling to reuse towels as such practice can decrease their comfort (Lindenberg & Steg, 2007). What is more, hedonic motive is significantly strongly stimulated in a hotel setting, as hotels are perceived as locations where consumers can please their hedonic needs through the satisfying tourist experience (Kotler, 1997). Third, the symbolic dimension presents the range to which luxury customer can associate the psychological meaning to a specific luxury product or service (Smith & Colgate, 2007). That means that they can display their social status through symbolic value of particular luxury product or service. Hence, consumers buy luxury products to assert their prosperous lifestyle, look for something different and cast their ideology. Last but not least is the financial dimension. Customers buy luxury products and services to indicate their financial wealth. However, they also demand high quality for the paid price (Tynan, McKechnie & Chhuon, 2010). Therefore, in their view higher value shall always be aligned with the cost of a luxury product and service (Wiedmann, Hennigs & Siebels, 2009). According to the recent research of Yang & Mattila (2016) that applied luxury dimensions to the hospitality setting, customer’s buying intention is most heavily influenced by hedonic value, then by functional value and followed by financial value, while symbolic value did not show high significance. Nevertheless, Cervellon & Shammas (2013) conducted a research to identify the values of sustainable luxury, combining the two clashing concepts. As first, they identified socio-cultural values that stand for national identity and belonging. As second, sustainable luxury

is conditioned by ego-centred values like hedonism that call for guilt-free pleasures and quality that is long-lasting. Last but not least, eco-centered values reflect the good-doing actions and no-damage actions, which also stand for sustainability. Although the value of hedonism is put against the desire for good-doing that calls for ethical actions, the research shows that customers are not willing to sacrifice their desire to experience high quality service for ethics. Davies, Lee & Ahonkhai (2012) further stated that ethics is not positioned highly in consumer priorities when purchasing luxury goods and services. Ethical element presents the lowest priority, positioned after price, brand, value and quality. Furthermore, prestige, product satisfaction, convenience and self-image are emphasized in the eyes of a luxury buyer. Hence, from the concepts' point of view, author concludes that sustainability and luxury cannot currently keep the pace together.

1.2.4 Sustainable on-site behaviour

As explained in chapter 1.1., most governments have recognized the importance of sustainability and are aiming to reduce and control the negative impact on the environment generated by different sector, including the hospitality sector. Thus, also hotels experienced increasing pressure to introduce tools for environmental protection and to promote pro-environmental behaviour. However, their endeavor does not mean that hotel guests have equal awareness, respond emotionally to issues related to environmental protection and engage in pro-environmental behaviour. As Harré and Secord stated back in 1972, human beings do not passively respond to stimuli, but can be perceived as agents who direct and control their own behaviour.

Pro-environmental behaviour encompasses actions that minimize the negative impact on the environment and also actions that neutralize the impact on the environment (Line & Hanks, 2016). It aims to minimize the consumption of energy and natural resources, minimize the waste and also to promote the use of non-toxic products (Stern, 2000). However, often tourists lack skills to behave responsibly when arriving at the moment when arriving to the hotel. Moreover, tourists may simply ignore recommended actions that lead the way towards sustainability or they may intentionally behave selfishly (Pearce, 2005). Furthermore, tourist behaviour also depends on the contextual setting (Kaplan, 2000), pro-environmental behaviour changes according to different settings. According to the past research (Mathieson and Wall, 1982), people lean to behave in less restrained way and feel more liberated when they are away from their home. Similar finding were reported from Miao & Wei (2013), who confirmed that pro-environmental behaviour is more prevalent in household setting in contrast to the hotel setting, as in hotels the need for individual's comfort and convenience is evoked. People practice less pro-environmental behaviour in a hotel setting as they are less restrained by social responsibilities. Therefore, the reason for disparity in behaviour lies in contrasting motives, i.e. pro-environmental behaviour in households is directed by normative motive, while pro-environmental behaviour in hotels is weakened due to the presence of the hedonic motive. As explained in

the previous chapter 1.2.3, the contrast of hedonic motive can be even greater in the luxury setting. What is more, the perception of trade off between sustainability and luxury that affects tourist pro-environmental attitude and behaviour also depends on the context of location. For instance, tourism to urban destinations stimulates more negative attitude and behaviour towards green practices, compared to the nature-based tourism (Line & Hanks, 2016). As nature-based tourism is based on natural attractions and greenery (Line & Costen, 2014) it contrasts heavily the urban destinations where highlights are man-made elements (Miller et al., 2015).

Laroche, Bergeron & Barbaro-Forleo (2001) stated that attitude towards pro-environmental behaviour depends on one's perceived importance of the environment. The level of such attitude is set by whether customers perceive pro-environmental actions to be imperative for themselves or for the whole population. Hence, pro-environmental attitude is mainly established by the level of awareness regarding particular issues, such as awareness about the level of environmental issues severity, the level of firms' responsibility towards the environmental issues and customer sensibility towards environmental issues. Thus, there is a link amidst values, attitudes and tourist behaviour (Hedlund, 2011). Tourists who have higher environmental awareness and positive attitude towards environment are more inclined to adopt pro-environmental behavior, compared to tourists who are less pro-environmentally attentive (Luzar et al., 1998; Lee & Moscardo, 2005). In addition, Manaktola & Jauhari (2007) stated that customers who are more conscious and sensible towards the environment prefer to make environmentally friendly purchases. Results are consistent with a study of Han, Hsu & Lee (2009) who found that customers who have positive attitudes towards green behaviour and positive image about hotels that implement green practices are willing to stay in such hotels, recommend them and are willing to pay more. However, the recent findings of Baker, Davis, & Weaver (2014) revealed that eventhough many tourists conceive that hotels should adopt green practices and follow the path towards pro-environmental behaviour, do not necessary stay in such hotels and are not necessary willing to pay extra for it.

Middleton (1998) has concretely assorted tourist actions that lead to pro-environmental behaviour. Actions start with tourists' recognition of their behaviour that causes harm to the environment, and continue with set of practices such as refusing, reducing, replacing, reusing, recycling, re-engineering, retraining, rewarding and at the final stage re-educating, thus behaving pro-environmentally on a long term as a consequence of tourist experience. From theory to practice, Chen (2015) identified top green practices that tourists value the most during their stay in a hotel. According to his findings those are well developed recycling program, provision of the local food, environment-friendly cleaning supplies, lighting that is energy efficient, plumbing fixtures that save water and the recycled products. With the exception of recycling and efficient lighting, the study of Millar and Baloglu (2011), which measured preferred environmental practices for hotel guests that are willing to stay in green rooms, demonstrated different results as preferred environmental

practices were green certifications, recycling in the lobby, shampoo dispensers and electricity controlling key cards, linen and towel reuse and efficient lighting.

1.2.5 Customer satisfaction

Satisfaction is a post-experience attitude that presents the most fundamental pillar of customer behaviour, as it ultimately determines the profit and market share of a particular enterprise and is therefore crucial for corporate survival (Anderson, Fornell & Lehmann, 1994). In this respect also the knowledge about customer expectations is vital, as it shows how customers define quality of a particular product or service (Hayes, 1997). Furthermore, customer satisfaction provokes repeat purchases and customer loyalty (Assael, 1987, p. 47):

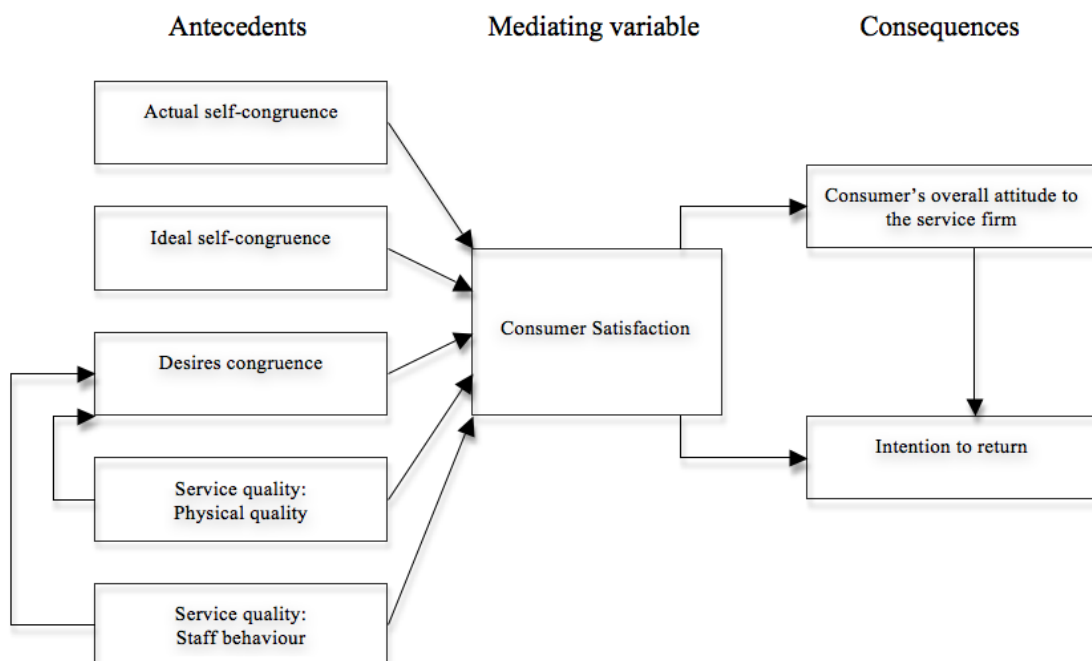
“Satisfaction reinforces positive attitudes toward the brand, leading to a greater likelihood that the same brand will be purchased again ... dissatisfaction leads to a negative brand attitudes and lessens the likelihood of buying the same brand again.”

Hotels have adopted numerous tools to measure customer satisfaction. Such tools involve the usage of satisfaction cards in the guest rooms, post-departure satisfaction questionnaires, adoption of service recovery methods, etc. (Berezina, Bilgihan, Cobanoglu & Okumus, 2016). However, according to the previous research, most of hotel guests do not complain directly to the service provider to express the elements of dissatisfaction (Ekiz, Khoo-Lattimore & Memarzadeh, 2012), which prevents hotels to have clear understanding about their attributes that have positive or negative impact on hotel guests. Dissatisfied customers are valuable to the company to a certain level, as they help hotels understand what are the problematic issues that require improvement (Harrison-Walker, 2001).

From the psychological point of view, customer satisfaction is a construct that is associated with the sense of well-being and pleasure. It is an outcome of what customer hopes for and expects from specific product or service (WTO, 1985). Despite multiple theories for customer satisfaction have been introduced, the most extensively used one was presented by Oliver (1980), who developed the expectancy disconfirmation theory that has enucleated the definition of customer satisfaction, which was confirmed by numerous research studies. The expectancy disconfirmation theory states that customers purchase products and services with pre-purchase expectations about expected performance. Afterwards, customers compare outcomes against expectations. In a scenario when the outcome matches expectations, the result is confirmation. Oppositely, the scenario of disconfirmation occurs if there are differences between expectations and outcomes. In addition, positive disconfirmation takes place when product or service performance is better than what is expected, while negative disconfirmation takes place when product or

service performance is less than what is expected. Satisfaction is a consequence of confirmation or positive disconfirmation of consumer expectations, while dissatisfaction is a consequence of a negative disconfirmation of consumer expectations. In addition, Maister (1985) puts a subjective note stating that perceptions and expectations are subjective and present psychological phenomena rather than reality. Hence, they can be influenced externally and manipulated. Furthermore, Fournier & Mick (1999) highlighted the importance of emotions in customer satisfaction, stating that besides the cognitive aspect of satisfaction, the emotional aspect of satisfaction is highly important and is specific to cultures, values and also metaphors. To sum up what has been established by now, customer satisfaction with outcomes that are gained from a specific experience emerges from a comparison of those outcomes with expectations. It is important not to confuse customer satisfaction with the overall attitude, as the latter can be created without direct consumption but formed by past experiences. Nevertheless, customer satisfaction can present one of the antecedents of overall attitude towards the service provider (Ekinci, Dawes & Massey, 2008). This study is based on the model of Ekinci, Dawes & Massey (2008) that is in alignment with Oliver's model (1980), as it differentiates consumer satisfaction from the consumer's overall attitude towards particular service provider through specific antecedents (Figure 1). The model exposes the connection between antecedents and consequences of customer satisfaction in the hospitality setting.

Figure 1. The extended model of the antecedents and consequences of consumer satisfaction for hospitality services



Source: Ekinci, Y., Dawes, P. L. & Massey, G. R. (2008). *An extended model of the antecedents and consequences of consumer satisfaction for hospitality services*, p. 39.

According to the model, consumer satisfaction has different antecedents, such as ideal self-congruence, actual self-congruence, desires self-congruence and service quality, which encompasses physical quality and staff behaviour. Further, satisfaction and customers' overall attitude towards a specific hospitality provider are positively correlated with intention to return. Hence, customer satisfaction is a mediator between its antecedents and consequences. The model emphasizes that customer satisfaction most firmly mediates the link between physical quality, staff behaviour and ideal self-congruence as antecedents and the intention to return as a consequence. Brunner-Sperdin, Peters & Strobl (2012), additionally placed the emotional state between antecedents and customer satisfaction, however, as the emotional state is ideally measured at on-site experience, it is not the focus of this research.

1.2.5.1 Antecedents of customer satisfaction

Despite many efforts of the research circle, until today it is still not completely clear what specifically contributes to customer satisfaction. In general, it has been agreed that customer satisfaction depends on determinants that are represented by different attributes, which can determine customer satisfaction.

According to Fornell et al. (1996), customer satisfaction has three antecedents, perceived quality/performance, perceived value and as well customer expectations. All three have direct and positive effect on customer satisfaction. The perceived quality construct is supported by two components of customer experience, namely, customization, which stands for degree to which the product or service serves heterogeneous needs, and reliability, which stands for degree to which the product or service is reliable and contains no deficiencies. The determinant of perceived value is closely related to the price paid. Szymanski & Henard (2001) recognized expectations, disconfirmation of those expectations, performance, affects and equity as main antecedents that influence customer satisfaction. Later research showed concerns whether identified factors are antecedents or if they form part of the customer satisfaction itself. Performance in many cases mirrors the service quality as it presents the scope of service with its attributes to meet demands of customers, while triggering the positive experience. The model of Ekinci, Dawes & Massey (2008) that author adopts is originally outlining five main antecedents that affect customer satisfaction, i.e. actual and ideal self-congruence, desires congruence, physical quality and staff behaviour (Figure 1). The first two dimensions are based on a self-concept, which was initiated by Sirgy (1982), who stated that individuals contrast external elements of specific attribute versus their self-concept. The idea was later developed further explaining that the higher is similarity between the image of a product or service and the self-concept, the greater is likelihood of the consumption. Therefore, tourists buy products and services that are fitting to their self-concept. While actual self-congruence is the image of individual-self, desires-congruence contrast self-congruence as it presents the image of what an individual would like to be. Service quality and desires congruence are

related but nevertheless distinctive dimensions. While service quality is associated with the specific service performance, desires congruence covers multiple benefits that tourist wants to receive from a specific product or service (Ekinici, Dawes & Massey, 2008). Service deficiency can result in a negative image of service quality, it can further decrease customer satisfaction and consequently restrain repurchasing plans (Prentice, 2013). Hence, author believes that it is essential for hotel managers to recognize service quality attributes that increase or decrease customer satisfaction.

In this research the author focuses on environmental practices that are categorized under the antecedent of service quality. Sudin (2011) stated that service quality is the best indicator of customer satisfaction. Numerous research studies have put service quality into the center of attention when evaluating customer satisfaction (Crick & Spencer, 2011; Slevitch, Mathe, Karpova & Scott-Halsell, 2013; Bharwani & Jauhari, 2013; Prentice, 2013; Torres & Kline, 2013; Dortyol, Varinli, & Kitapci, 2014; Taylan, Varinli, & Kitapci, 2014; Ban & Ramsaran, 2016; Bodet, Anaba & Bouchet, 2016). Thus, the author isolates the service quality antecedent in order to obtain detailed understanding of its impact on customer satisfaction. Further insight on service quality attributes is provided in the following chapter.

1.2.5.2 Service quality attributes

As explained in chapter 1.2.5.1., service quality is one of the antecedents of customer satisfaction. It is defined as a degree of disparity between customer's perception and expectation for a specific service or product (Parasuraman, Zeithaml & Berry, 1985). Therefore, performance that is associated with the service and its attributes, and aims to satisfy customer demands and trigger the positive experience, is related to perceived service quality. Nasution and Mavondo (2005) stated that hotels should prioritize the provision of service quality and its factors that are most valued by their customers. Service quality has a positive correlation with customer satisfaction (Taylan, Varinli & Kitapci, 2014; Lu et al., 2015). Hence, in order to enhance customer satisfaction, the delivery of superior service is essential. What is more, quality service also increases customer loyalty (Žabkar, Brenčič & Dmitrović, 2010). Hence, the concept of service quality, customer satisfaction and customer loyalty are closely related to each other. Service quality influences customer loyalty via customer satisfaction (Caruana, 2002; Ekinici, Dawes & Massey, 2008).

There are numerous categorizations of service quality attributes that were introduced through the years. Levitt, Swan and Combs (1976) identified tangible and intangible qualities and introduced instrumental and expressive attributes' categories. They explained that expressive attributes apply to psychological signification, therefore they concern experiences linked to intangible elements. On the contrary, instrumental attributes apply to

the physical products. In addition, Levitt (1982) also introduced the ring model, encompassing “musts” that present essential attribute of a specific product or service, which are surrounded with “delights” that present pleasant and unexpected surprise.

Llosa took different approach and identified four different categories of attributes, i.e basic attributes, key attributes, plus attributes and as last, secondary attributes. “Basic” service attributes are determining in decreasing overall satisfaction when being evaluated negatively, while they only slightly affect customer satisfaction when being evaluated positively. “Plus” attributes are determining as they contribute significantly to the overall satisfaction. However, in a scenario when they are not evaluated positively they are not significant. “Key” attributes are always determining and play a major role in building customer overall satisfaction. Least but not last, “secondary” attributes do not have any significant impact on customer satisfaction (as cited in Robinot & Giannelloni, 2010, p.160). According to findings of Robinot & Giannelloni (2010), the use of clean and renewable energy is placed among “plus” attributes, while most of environmental practices including quality certification, comfortable bedding and linen reuse is placed among basic attributes. Hence, as most attributes are placed among “basic” attributes they form part of the whole service, rather than presenting differentiating criteria. In addition, such attributes do not increase satisfaction if perceived favorably, while they decrease satisfaction if they are not perceived favorably. On this basis, hotel managers were suggested not to promote pro-environmental attributes directly to the customers in order not to risk triggering the negative perceptions during customer decision-making process.

However, most attention received a quality management framework SERVQUAL, as already mentioned in the chapter 2.1., which involves five dimensions, i.e. tangibles, assurance and reliability followed by empathy and responsiveness (Parasuraman, Zeithaml & Berry, 1985; Parasuraman, Zeithaml & Berry, 1991), which was later simplified by the Nordic School (Lehtinen & Lehtinen, 1991) into two dimensions, i.e. what customers receive and also how they receive it. SERVQUAL framework received further modifications and was transformed into a service quality performance-based measure SERVPERF (Cronin & Taylor, 1992). Modifications were also made with regards to sustainability. As explained in the section 1.1. and 1.1.2, there is increased use of environmental practices reported from the hospitality sector. It is clear that this trend requires new measures for the eco-component of hotel service quality. Hence, the ring’s model (Levitt, 1983) was enhanced by the research of Slevitch, Mathe, Karpova & Scott-Halsell (2013), who analyzed customer satisfaction towards different types of attributes, namely, core, facilitating and green, and revealed that green attributes affect customer satisfaction in the same way as facilitating attributes, therefore not being expected but when encountered providing an unexpected delight. Khan (2003) explored service quality expectations of the eco-tourists by modifying SERVQUAL scale with the ECOSERV. The ECOSERV model identified six dimensions, i.e. eco-tangibles, assurance, reliability, followed by responsiveness, empathy and tangibles. Although Kano developed the model

on the segment of eco-tourists, it was shown the dimension of eco-tangibles was the most important, encompassing environmentally friendly physical facilities and equipment that minimizes environmental degradation.

In different categorizations above the author tracks very similar underlying concepts. Normally, hotels would put most attention and financial resources on attributes that customers value the most. In this way hotels can increase customer satisfaction, customer loyalty and consequently profit from the financial gains and high market positioning. For that reason it is crucial for hoteliers to understand what customers value the most. However, the topic of this study focuses on luxury hotels that initially implemented environmental practices due to pressures from the governments, larger public and as well their own responsibility towards ethical actions as the author explained in previous chapters. Hence, despite green attributes, i.e. environmental practices, are implemented by hotels the author presumes that in a luxury setting where there is a danger to distort guests' comfort, such practices do not play the role of "delights" (Levitt, 1982) "plus" or "basic" attributes (Robinot & Giannelloni, 2010) or "facilitating" attributes that mirror the green attribute according to Slevitch, Mathe, Karpova & Scott-Halsell (2013). The author presumes that environmental practices in a luxury setting can cause a reverse effect, which is to decrease customer satisfaction. According to the findings of Berezina, Bilgihan, Cobanoglu & Okumus (2016), satisfied customers are highly focused on intangible elements of their hotel stay when giving recommendations, while the focus of dissatisfied customers mainly involves tangible elements of their hotel stay. Therefore, it is important to recognize which environmental practices have the strongest negative impact on customer satisfaction, so hoteliers can minimize their presence or introduce them to their guests in a different way. As the main aim of this study is not to analyze overall satisfaction with a service provider, the author aims to analyze in detail how particular environmental practice affects customer satisfaction. Thus, foundations of this study derive from SERVQUAL, specifically from the dimension of "tangible" attributes. As Taylan, Varinli & Kitapci (2014) explained, tangible attributes are the most important factor influencing customer satisfaction. Similarly, Worsfold, Fisher, McPhail, Francis & Thomas (2016) identified physical quality, which is placed among tangible elements, as the strongest contributor to customer satisfaction. Nevertheless, as the author is analyzing tourist satisfaction towards green attributes, i.e. environmental practices, the modified version of SERVQUAL, ECOSERV, is used, explicitly highlighting the additional dimension "eco-tangibles" (Khan, 2003) that will identify the antecedents in our study.

1.2.5.3 Consequences of customer satisfaction

According to the past research, customer satisfaction can have different aftermaths, as it can result in improved or distorted overall attitude towards a service provider (Ekinici, Dawes & Massey, 2008) complaining behaviour, repurchasing plans or also word of mouth. Among those, the repurchasing intention, which is directed towards customer

loyalty is the most powerful dimension (Szymanski & Henard, 2001). Customer satisfaction builds foundations towards customer loyalty, hence towards a long-term relationship. Furthermore, customer loyalty enhances the image of specific service provider (Guzzo, 2010). In the opposite scenario of customer dissatisfaction, repurchasing plans are not initiated.

Customers are defined as loyal when they purchase a product or service in specific time period continuously (Gupta & Zeithalm, 2006). From the psychological point of view, customer loyalty is defined as an intention to execute distinctive set of certain behaviours (Jacoby & Chestnut, 1978). Caruana (2002) stated that “loyal customers that indulge in repeat purchases are the bedrock of any business” (p. 811). To maintain customer loyalty hotels are aiming to obtain high level of customer satisfaction for their hospitality service. Despite many tourists are looking for new destinations when choosing the next holidays, many of them also decide to repeat their destination due to certain level of customer loyalty (Fyall et al. 2003). Five crucial elements stimulate the repetition of the trip, i.e. uncomfoting feeling to risk making bad choice in selecting the new and unknown destination, opportunity to meet same people as well the next time, emotional devotion to a particular place, chances to further investigate the area, the need to present specific destination to others (Oppermann, 1998, Fyall et al., 2003). When specific hotel gains loyal customers, hotel profitability is higher as it is cheaper to maintain the existing clientele, rather than investing into finding a new one (Tyrrell & Woods, 2005). According to Ekinici, Dawes & Massey (2008) service quality attributes should be satisfactory for being positively correlated with customer loyalty. Hence, customer satisfaction is crucial for establishing the loyalty. However, customer loyalty can also be triggered by communications and loyalty programs. In the opposite scenario of customer dissatisfaction, various dissatisfying experiences put a negative connotation on overall attitude of the hospitality provider and consequently negatively affect the intention to return, i.e. customer loyalty. Oh (1999) conducted a research among luxury hotels and reported that customer satisfaction was positively correlated with customer loyalty and positive word of mouth. In support, the findings of Worsfold, Fisher, McPhail, Francis & Thomas (2016) revealed that guest satisfaction with physical attributes of the hotel had the biggest impact towards customer loyalty.

Despite there are various consequences of customer satisfaction, for the purpose of this study the author focuses on customer loyalty, as it presents the most powerful outcome of customer satisfaction. According to past research, the correlation between customer satisfaction and customer loyalty is positive. However, as the author explores the impact of environmental practices on customer satisfaction and loyalty in a luxury setting, and as explained in the previous chapters, the author presumes that environmental practices negatively affect customer satisfaction in such setting, the author consequently predicts that customer dissatisfaction also negatively affects customer loyalty.

1.2.5.4 Overall satisfaction and satisfaction with individual attributes

Hospitality experience is a sum of satisfactions with individual attributes of all products and services that compose the whole tourist experience. Satisfaction can be measured in two ways, on attribute-level approach or product-level approach (LaTour & Peat, 1979). According to the past research, an attribute-level approach provides better results for measuring customer satisfaction. First, it is easier for customers to evaluate their perceptions and post-experiences on the attribute level and second, it is easier for researchers to form a concept on the basis of customer evaluations of the relevant attributes (Gardial, Clemons, Woodruff, Schumann & Burns, 1994; Parasuraman, Zeithaml & Berry, 1988). What is more, an attribute-level approach enables higher degree of specificity to analyze the results, in contrast to overall satisfaction approach (LaTour & Peat, 1979). Hence, for the purpose of this study, the author measures satisfaction at the attribute level, with the aim to have better understanding on how the phenomenon of combining luxury and sustainability can be explained through analyzing environmental practices in luxury hotels and their influence on customer satisfaction and customer loyalty.

2 HYPOTHESES AND RESEARCH MODEL OF CUSTOMER SATISFACTION

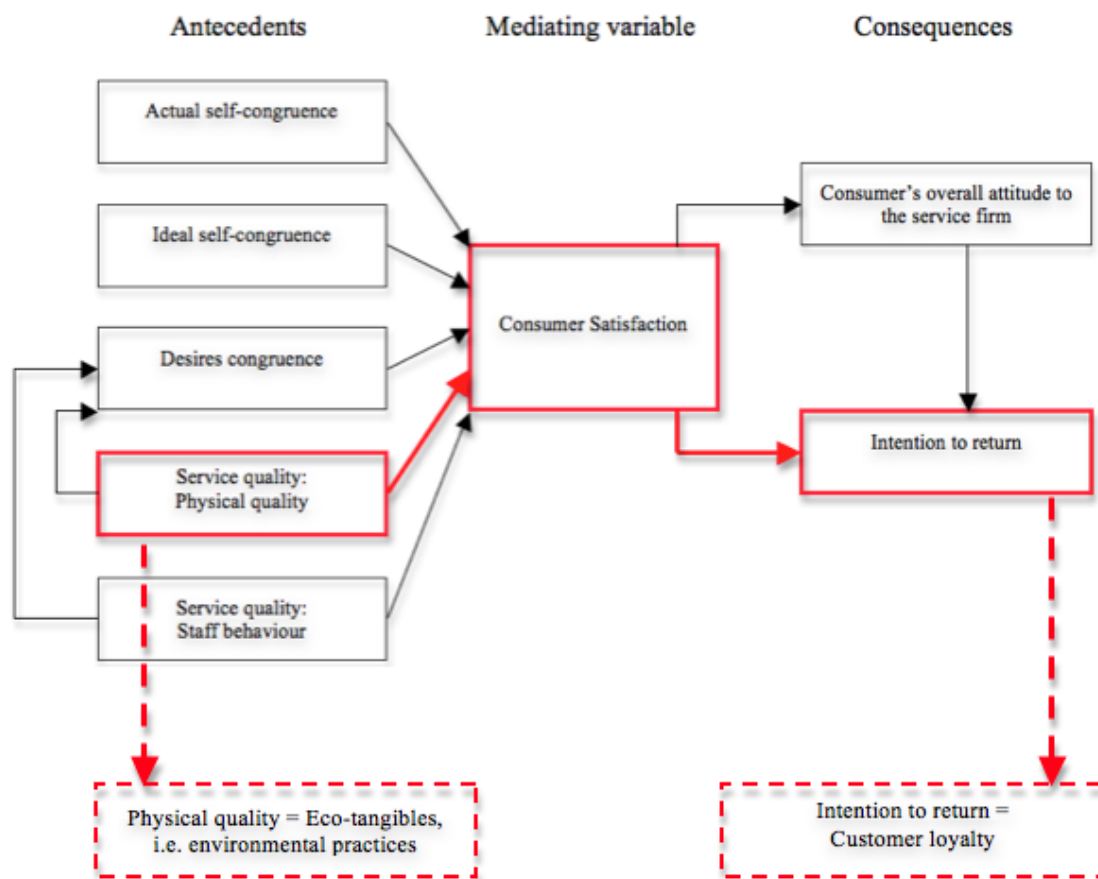
The main purpose of this dissertation is to examine customer satisfaction in relation to environmental practices in luxury hotels, including its impact on customer loyalty. To achieve this, the study utilizes the extended model of the antecedents and consequences of consumer satisfaction for hospitality services (Figure 1), introduced by Ekinci, Dawes & Massey (2008).

As explained in chapter 1.2.5., the model of the antecedents and consequences of customer satisfaction for hospitality services suggests that consumer satisfaction has various antecedents, namely actual and ideal self-congruence, desires congruence, physical quality and staff behavior. All of them (but actual self-congruence) have a positive impact on consumer satisfaction and consequently on customer's overall attitude to the service firm, and as well on the intention to return.

This study transmits the model's general framework to the specific setting of luxury hotels and in detail focuses solely on physical quality. As explained in the literature review, physical quality is the strongest contributor to customer satisfaction (Worsfold, Fisher, McPhail, Francis & Thomas, 2016). Furthermore, Dubois et al. (2005) stated that although this dimension presents one of the crucial elements ensuring customer satisfaction in hotels, it is even more crucial in luxury hotels, where luxury guests demand nothing but high quality. As the aim of this study is to analyze environmental practices, the author refines the term "physical quality" into Khan's (2003) category of "eco-tangibles", which

allows the author to investigate the impact of environmental practices such as energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing on customer satisfaction and customer loyalty. Thus, the author establishes three constructs, environmental practices, i.e. eco-tangibles, customer satisfaction and customer loyalty, i.e. intention to return (Figure 2). According to the model of Ekinci, Dawes & Massey (2008), they are all positively related.

Figure 2. Adaptation of the extended model of the antecedents and consequences of consumer satisfaction for hospitality services



Due to transmission of the model to the luxury setting and the focus on environmental practices the author denies the positive outcome between the three constructs. As explained in chapter 1.2.3., the element of luxury in the hospitality setting, follows the principle of “extra”, i.e. extra services, extra décor, extra amenities, etc. Hence, the idea of luxury clashes and contradicts to the idea of sustainability, which follows the principle of “less”, i.e. less waste, less consumption, less harm to the environment and less use of resources, etc. (Line & Hanks, 2016). Therefore, while sustainable development aims to thoroughly control and minimize the consumption, the principle of luxury is excessive use in all aspects (Kapferer & Michaut-Denizeau, 2014). As a consequence, hotel guests perceive that presence of environmental initiatives can distort the element of luxury and comfort during the experience of their hotel stay (Barber & Deale, 2014), which negatively affects

customer satisfaction and consequently also customer loyalty. In summary, guest requirements in luxury hotels are different due to their high expectations and expected luxurious treatment. The author therefore develops the new conceptual model to test if the presence of environmental practices in luxury hotels decreases customer satisfaction. Hence, the author introduces the following hypotheses:

- H1. Satisfaction of luxury hotels guests with energy saving practices is ≤ 3 .
- H2. Satisfaction of luxury hotels guests with sustainable supplier-hotel collaborations is ≤ 3 .
- H3. Satisfaction of luxury hotels guests with sustainable design and materials is ≤ 3 .
- H4. Satisfaction of luxury hotels guests with water saving is ≤ 3 .
- H5. Satisfaction of luxury hotels guests with recycling is ≤ 3 .
- H6. Satisfaction of luxury hotels guests with reusing is ≤ 3 .

As seen from the theoretical part, the overall tourist satisfaction is created on the basis of aggregated satisfactions with individual attributes (Lewis, 1987), therefore the author also hypothesizes the following:

- H7. Satisfaction of luxury hotels guests with combined environmental practices is ≤ 3 .

It is also noted from the theoretical part that there is a positive relation between tourist satisfaction and loyalty (Heskett et al., 1994). Thus, it follows to hypothesize the next:

- H8. Customer loyalty of luxury hotel guests towards customer satisfaction with environmental practices is ≤ 3 .

According to the theory, the author presumes that energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing all have a positive relationship towards overall customer satisfaction with environmental practices. Hence, the author further introduces the hypotheses stated below, through which she also provides practical implications in identifying the environmental practice that has the strongest impact on the overall customer satisfaction with environmental practices.

- H1.1. Energy saving has a positive relationship with the overall customer satisfaction with environmental practices.
- H2.1. Sustainable supplier-hotel collaborations have a positive relationship with the overall customer satisfaction with environmental practices.
- H3.1. Sustainable design and materials have a positive relationship with the overall customer satisfaction with environmental practices.
- H4.1. Water saving has a positive relationship with the overall customer satisfaction with environmental practices.

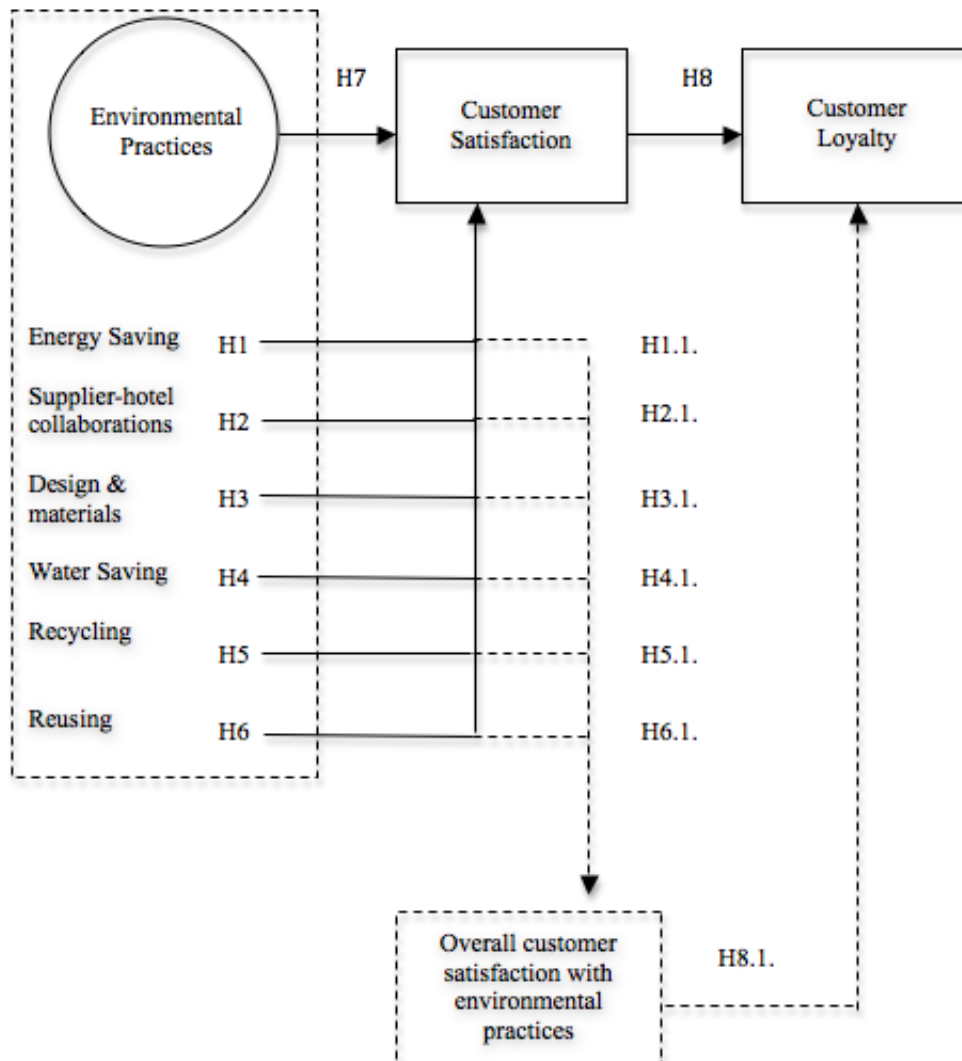
H5.1. Recycling has a positive relationship with the overall customer satisfaction with environmental practices.

H6.1. Reusing has a positive relationship with the overall customer satisfaction with environmental practices.

H8.1. Customer loyalty has a positive relationship with the overall customer satisfaction with environmental practices.

On the basis of proposed hypotheses the author introduces the following structural model (Figure 3) to investigate tourist satisfaction and customer loyalty in relation to environmental practices in luxury hotels, as well as environmental practices' relationship towards overall customer satisfaction with environmental practices. This model links the adopted model of the antecedents and consequences of consumer satisfaction for hospitality services (Ekinci, Dawes & Massey, 2008) with proposed hypotheses.

Figure 3. Proposed model for customer satisfaction towards environmental practices in a luxury setting



3 METHODOLOGY

This study is deductive and aims to identify if environmental practices decrease customer satisfaction and consequently also customer loyalty. In addition, it also aims to analyze the relationship between specific environmental practices implemented in luxury hotels towards overall customer satisfaction with environmental practices, as well as the impact of the latter on customer loyalty. Despite there is vast research already available for the three constructs, i.e. environmental practices, customer satisfaction and customer loyalty, the literature is limited when incorporating the element of environmental practices together with the element of the luxury setting. Hence, the author first develops the hypotheses that are set on the basis of existing theories about service quality attributes (i.e. environmental practices), customer satisfaction, customer loyalty and their relations. The study identifies the expected pattern for the three mentioned constructs and in the following sections those constructs are tested in a specific setting, i.e. luxury hotels. The author first employs descriptive statistics and then tests hypotheses with the Statistical Package of the Social Sciences (SPSS) through t-statistics, principal component analysis (PCA) and linear regression analysis, in combination with the multiple regression analysis. Last but not least, with deductive approach the author deducts conclusions from pre-set presumptions, in order to reject or fail to reject the null hypotheses and discusses the results in the analysis section.

3.1 Research paradigm

Paradigm is defined as “a basic set of beliefs that guides action, whether of the everyday garden variety or action taken in connection with a disciplined inquiry” (Guba, 1990, p.17). In this study the researcher follows the basic belief of post-positivism, which emerged from positivism.

Ontologically, the study is based on critical realism, as the author believes that reality, which is independent from our thinking, exists. However the author cannot completely reveal it due to researcher’s flaws. The author believes that all observations can have an error and that existing theories associated with the constructs of service quality attributes, customer satisfaction and customer loyalty are revisable. Hence, different observations are required, as existing theories need to be examined and criticized in order to generate most probable estimation of reality (Guba & Lincoln, 1994). Epistemologically, the author believes in objectivity. Findings are analyzed and evaluated on the grounds of existing knowledge described in the previous chapters and their critics (Guba, 1990). Despite the author cannot achieve objectivity in any absolute sense, she can at least approach it. Therefore, if the findings are confirmatory of pre-existing theories, they are very likely close approximation of reality. However, if they are not confirmed with hypotheses they can always be subject to falsification (Guba & Lincoln, 1994). Methodologically, the

quantitative method is approached, and described in detail in the following section.

3.2 Research design

Studies that measure satisfaction are usually either empirical or descriptive. For the latter, researchers can assess in detail what tourists state about their experiences (Ryan, 1995). However, this research is empirical, as it follows the empirical cycle (Groot, 1969) of collecting empirical facts to form and induct the hypotheses, deduct consequences through obtained empirical data, test the hypotheses and at the end evaluate the outcomes. With empirical analysis the author integrates research and practice to generate a study that respects contextual differences.

When measuring customer satisfaction it is important to understand that tourists take into consideration their past experience in order to assess future experiences with a specific service provider. Therefore, past experiences set certain expectations. However, researchers most often measure customer satisfaction jointly with expectations, which can misrepresent the precision of ultimate results. Expectations observed from the after-experience period can be different, as the experience holds the power to modify tourists' perspective (Hughes, 1991). However, Pearce (2005) states that this approach is most relevant for frequently bought products that are already well known to the customer. Due to limited resources, for the purpose of this study the author cannot fully assure that informants stayed in a luxury hotel that has implemented environmental practices during their last tourist experience. Moreover, the author presumes that staying in a luxury hotel is not an "everyday experience" for the informants. Hence, the author measures customer satisfaction jointly with expectations.

3.2.1 Questionnaire

The obtained data set measures several constructs. For the analysis the author identifies two dependent variables, i.e. overall customer satisfaction with environmental practices and customer loyalty. The author selects independent variables, i.e. environmental practices, on the basis of identified attributes in previous studies (Khan, 2003; Slevitch, Robinot & Giannelloni, 2010; Millar & Baloglu, 2011; Mathe, Karpova & Scott-Halsell, 2013; Ban & Ramsaran, 2016; Bodet, Anaba & Bouchet, 2016), complemented with currently used environmental practices in the hotel industry, as described in the section 1.1.2 and 1.1.3. The author places each attribute under specific category, i.e. energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing.

Hence, the research instrument is a self-administered questionnaire (Appendix A), which encompasses four to five items for each variable and is measured on a five-point Likert

scale (1 = strongly disagree, 5 = strongly agree; and 1 = very unsatisfied, 5 = very satisfied). Most often satisfaction is measured on a Likert scale that allows respondents to evaluate their attitude (Veal, 1997). Hence, the author chooses a five point Likert scale to measure all the constructs in the questionnaire. For the purpose of this study, the author prefers a five-point Likert scale over a seven-point Likert scale. Despite seven-point Likert scale is more precise, the questionnaire follows the rule of simplicity and clearness, since informants are approached in public spaces, i.e. airport and entrance area of the hotels, with possible distractions from the external environment that the researcher cannot control. Moreover, according to Dawes (2008), who compared results of a 5-, 7-, and 10-likert scale, explained that no format generated data with much lower variances about the mean. Hence, none of the options is less desirable when gathering data, which is further utilized for the regression analysis. Dawes' findings further show that kurtosis and skewness are almost identical among the three scales, therefore the three options are almost equivalent.

The questionnaire starts with a filtering question "In which star category of a hotel do you usually stay during your travels?", which allows the author to filter tourist profiles used for the analysis, who are the guests of luxury hotels, i.e. the guests of four- and five-star hotels. Further, the questionnaire is logically divided into two main sections. The first section mostly covers questions regarding independent variables, i.e. environmental practices. The "general outlook" part of the first section aims to identify informants' attitude towards pro-environmental behaviour. It aims to provide general information about respondents' care for severity of environmental issues, awareness about hotel's activity and respondents' perception of their own responsibilities towards environment when being on holidays, for the author to better understand the profile of informants. It does not aim to measure correlation with customer satisfaction. Following parts of the first section specify particular situations that involve environmental practices and are organized into the following categories, "energy consumption", "suppliers", "design and materials", "water consumption", "recycling" and "reusing". The following part "overall feeling" refers to all mentioned environmental practices and aims to measure overall impact of environmental practices on customer satisfaction. Last but not least, "future behaviour" part intends to measure the correlation between customer satisfaction related to implemented environmental practices and customer loyalty. The second section of the questionnaire involves questions that characterize respondents' demographic profiles, i.e. gender, age, education level, income and frequency of leisure/business travelling per year.

The author conducted a pilot survey on 10 informants to pre-test integrity and clarity of the questionnaire and timing needed to complete the questionnaire. Six informants were aged 45-64 years old, while four informants were 25-44 years old. Four informants had Master's degree, while others were collage graduates. Out of ten informants there were seven females and three males. All of them were most often staying in luxury hotels during their leisure travel. The gross annual income of eight informants was between 30,001 EUR and 60,000 EUR. Two informant's gross annual income was under 30,000 EUR. Their

feedback was implemented into the revision of the questionnaire. Nevertheless, suggested changes were minor and mostly related to grammatical changes.

3.2.2 Statistical method

The author converts the obtained data into the Statistical Package for Social Sciences (SPSS) for the analysis of results. First, the author employs descriptive statistics and then tests the hypotheses through t-statistics. In order to further analyze the data, the author uses PCA to transform the correlated variables into a smaller number of variables, named principal components. PCA is found suitable across different industries in aiming to identify the correlation structure of variables. The variable's importance is graded by its residual variance size (Wold, Esbensen & Geladi, 1987). The principal components, calculated for each category, i.e. energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling, reusing and customer loyalty, are used for further analysis. On this basis, the author runs the linear regression analysis, as advised by Baron & Kenny (1986), to analyze the relationship between specific environmental practices and overall customer satisfaction with environmental practices, i.e. to study their direction and strength. Regression analysis already proved suitable in the tourism field when analyzing the link between tourist satisfaction and environmental attributes (Slevitch, Mathe, Karpova & Scott-Halsell, 2013). Various authors used the linear statistical methods like correlation or linear regression analysis when analyzing the link between service attributes and customer satisfaction. Thus, they postulated the correlation to be symmetric. However, various critics questioned the suitability of linear regression when using a Likert scale data. The reason behind being that Likert scale does not provide continuous measure scales, and as intervals within the scale values are not equivalent it may distort the results. Thus, a non-parametric statistics was suggested as more appropriate (Jamieson, 2004). In addition, Bartikowski, B. & Llosa (2004) identified the existence of semi-linear attributes that require different statistical approach. While linear attributes are invariant and can be either always important, i.e. crucial attributes, or always not important, i.e. neutral attributes, on the other hand, semi-linear attributes are variant and are divided into two categories. First, dissatisfiers, that have a strong influence on customer satisfaction, however only in a scenario when they are negatively assessed. Second, satisfiers that influence customer satisfaction when they are assessed positive, while as negatives they are not much significant. However, despite mentioned critics on using the linear regression for Likert scale data, Labovitz (1975) showed that Likert scale variables, which are ordinal, can be treated as continuous variables with interval scale, and providing equal correctness. This statement was justified on an argument that Likert data is a linear monotonic transformation of the underlying variables, which are continuous. Hence, it is rightful to use and analyze Likert data as continuous. Furthermore, Lubke & Muthen (2004) proved that correct values of parameters can be obtained with Likert scale data also when using parametric statistics. Similarly, Glass et al. (1992) stated that with ANOVA and F tests we can provide precise p-values, when certain conditions are met. In

addition, Norman (2010) demonstrated that parametric statistics are sufficiently versatile, robust and comprehensive towards the small sample size, towards the data that is not normally distributed and towards the data obtained with Likert scales, which is ordinal. On this basis the best fitting model for this study is linear regression, as the author aims to study the direction and magnitude of the relationship between each individual environmental practice towards the overall satisfaction with environmental practices, in combination with a multiple regression, to test how much of the variation in overall satisfaction with environmental practices is explained by each environmental practice, i.e. energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing.

3.3 Sampling and data collection

Data gathering is essential for the research, as obtained data enables better understanding of the theories that are established in the theoretical framework (Bernard, 2002). Godambe (1982) suggested to use random, i.e. probability sampling, whenever possible, as it minimizes biases and enables to transmit the findings from the sample to the whole sampling population. Furthermore, as the sampling of this study requires involvement of a specific group of tourists, i.e. only those that stay in luxury hotels, the author uses purposive probability sampling. Purposive sampling is defined as an intentional choice of an informant on the basis of characteristics he/she possesses (Bernard, 2002). Hence, the author is targeting wealthier looking tourists. As described by Campbell (1955), qualitative as well as quantitative sampling methods can be approached through purposive sampling. Previous studies across industries showed that purposive sampling is fitting the analysis with regression model (Neupane et al. 2002), which is also used in this study to look for correlations between environmental practices, customer satisfaction and customer loyalty. Hence, for this study the best fitting approach is the purposive probability sampling.

The sampling frame for the data is obtained from two sources in order to achieve sample that is highly representative. Firstly, the author approaches tourists at Barcelona El Prat airport (Barcelona, Spain). Barcelona El Prat is the main airport in Catalonia (Spain) and therefore has high concentration of international passengers. The airport is connected to countries within Europe, America, North Africa and Asiatic Southeast countries. In 2015, Barcelona El Prat airport handled 39.7 million of passengers, an increase of 5.7 per cent in comparison with the year of 2014. The airport involves 83 operation airlines and is directly connected to 199 destinations. Top ten international routes are Italy, United Kingdom, Germany, France, Russian Federation, Poland, United States, Greece, Marocco and Belgium, respectively. Majority of the passengers are leisure travellers (56 per cent), followed by business travellers (22 per cent) (Aena, 2015). Due to immense and diversified volume of passengers, the author presumes to obtain good representation of population. Respondents are approached personally during their waiting time for the flight upon

departure or waiting time for transfer to the city. In order to ensure the inclusion of tourists that only stay in 4- and 5-star hotels, the author filters the respondents by the first question in a given questionnaire, which states “In which star category of a hotel do you usually stay during your travels?”. Secondly, questionnaires are also handed to tourists in nearby distance of the entrance of four- and five-star hotels in Barcelona. In the Luxury Branding report (Luxury Branding, 2015) that ranked most luxurious hotel brands across the globe, the author recognizes the hotel brands that are located in Barcelona. For instance, the Ritz-Carlton was ranked 1st, Mandarin Oriental was ranked 11th, Fairmont Hotels & Resorts were ranked 49th and W hotel was ranked 57th (Luxury Branding, 2015). Hence, approached five-star hotels for the purpose of our study are Hotel Arts Barcelona (Ritz-Carlton), Mandarin Oriental, Fairmont Rey Juan Carlos I and W hotel. Approached four-star hotels were Renaissance Barcelona Hotel, H10 Uruquinaona Plaza, AC Hotel Barcelona Forum and Best Western Premier Dante. As the author filters hotels by the European “star system” and focuses on above mentioned luxury hotels, many of which are also presented in other European countries where quality standards are comparable, the author expects to obtain representative results for European luxury hotels. Immediate completion of the questionnaire is kindly requested. The data collection takes place during the month of January 2017. The author guarantees confidentiality to all participants, in order to eliminate their hesitation to participate in a survey. After tourists are approached, they are given the questionnaire only after receiving their permission.

4 ANALYSIS AND DISCUSSION

In this chapter the author presents dissertation’s results. As already mentioned, the author first introduces descriptive statistics, then tests the hypotheses through t-statistics and further conducts the PCA, on the basis of which she runs the linear regression in combination with the multiple regression. As a research tool the author uses the software package SPSS for Macs. In the first part this chapter presents the socio-demographic profile of informants, which is followed by the hypotheses evaluation and discussion of results.

4.1 Socio-demographic profile

In total, 203 questionnaires were given to tourists. However, 151 questionnaires were corresponding to the criteria. i.e. informants are tourists that usually stay in 4- and 5-star hotels. Out of those, 145 questionnaires were fully completed. 82 informants (56.6 per cent) are usually staying in 4-star hotels, while 63 informants (43.4 per cent) usually stay in 5-star hotels. Thus, the author gathers relatively balanced presence of both categories, i.e. 4- and 5-star hotels that fall into the category of luxury hotels.

Gender divide of informants is 86 (59.3 per cent) males and 59 (40.7 per cent) females. With reference to the age group, 7 informants (4.8 per cent) belong to the age group 18-24 years old, 60 informants (41.4 per cent) to the age group 25-44 years old, 65 informants (44.8 per cent) to the age group 45-64 years old and 13 informants (9.0 per cent) to the age group 65 years old and above (Table 1). The most extensive age group of informants staying in 4-star hotels is presented by the age group of 25-44 years old (51.2 per cent), while the most extensive group of informants staying in 5-star hotels is presented by the age group of 45-64 years old (52.4 per cent).

Table 1. Informants' age

| | | 18-24 | 25-44 | 45-64 | 65 and above |
|-------|------------|-------|-------|-------|--------------|
| Total | Count | 7 | 60 | 65 | 13 |
| | % of Total | 4.8% | 41.4% | 44.8% | 9.0% |

Note. n = 145

In the sample, 33 informants (22.8 per cent) are high school graduates, 50 informants (34.5 per cent) are college graduates, 19 informants (13.1 per cent) have other college and 43 informants (29.7 per cent) are postgraduates (Table 2). The most extensive group by education in 4-star hotels are college graduates (41.5 per cent), while the most extensive group by education in 5-star hotels are post graduates (46.0 per cent).

Table 2. Informants' education level

| | | High school | College | Other college | Post graduate |
|-------|------------|-------------|---------|---------------|---------------|
| Total | Count | 33 | 50 | 19 | 43 |
| | % of Total | 22.8% | 34.5% | 13.1% | 29.7% |

Note. n = 145

In terms of gross annual income, 26 informants (17.9 per cent) have an income under 30,000 EUR, 96 informants (66.2 per cent) have an income between 30,001 EUR and 60,000 EUR, while 23 informants (15.9 per cent) have an income between 60,001 EUR and 100,000 EUR (Table 3). The most extensive group by income is 30,001 EUR – 60,000 EUR in both, 4- and 5-star hotels (64.4 per cent and 68.3 per cent, respectively). However, the author notices a distinct difference in other income groups. While 26 informants (31.7 per cent) of those that usually stay in 4-star hotels have an income under 30,000 EUR, only 3 informants (3.7 per cent) have an income between 60,001 EUR and 100,000 EUR. In contrast, there are no informants with an income lower than 30,000 EUR that usually stay in 5-star hotels. In addition, 20 informants (31.7 per cent) of those that usually stay in 5-star hotels have an income between 60,0001 EUR and 100,000 EUR.

Table 3. Informants' gross annual income (in EUR)

| | | Under 30,000 | 30,001 - 60,000 | 60,001 - 100,000 |
|-------|------------|--------------|-----------------|------------------|
| Total | Count | 26 | 96 | 23 |
| | % of Total | 17.9% | 66.2% | 15.9% |

Note. n = 145

81 informants (55.9 per cent) travel for leisure 4-10 times per year, 44 informants (30.3 per cent) travel for leisure 1-3 times per year, while 20 informants (13.8 per cent) travel for leisure more than 10 times per year (Table 4). The most extensive group of informants that usually stay in 4-star hotels travels for leisure 4-10 times per year (64.6 per cent). Within informants that usually stay in 5-star hotels closely dominate the groups of those that travel for leisure 1-3 times per year (30.3 per cent) and those that travel for leisure 4-10 times per year (44.4 per cent).

Table 4. Informants' frequency of leisure travel per year

| | | 1-3 times | 4-10 times | More than 10 times |
|-------|------------|-----------|------------|--------------------|
| Total | Count | 44 | 81 | 20 |
| | % of Total | 30.3% | 55.9% | 13.8% |

Note. n = 145

In contrast to leisure travel, 76 informants (52.4 per cent) travel for business 1-3 times a year, 41 informants (28.4 per cent) travel for business 4-10 times a year, while 28 informants (19.3 per cent) travel for business more than 10 times per year (Table 5). Most extensive group of informants that usually stay in 4-star hotels travels for business 1-3 times per year (63.4 per cent). On the opposite, the biggest share of informants that usually stay in 5-star hotels are travelling either 1-3 times per year (38.1 per cent) or 4-10 times per year (36.5 per cent).

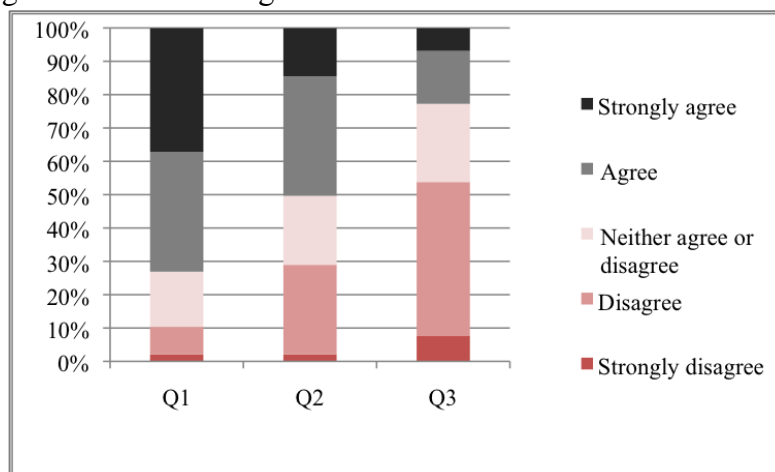
Table 5. Informants' frequency of business travel per year

| | | 1-3 times | 4-10 times | More than 10 times |
|-------|------------|-----------|------------|--------------------|
| Total | Count | 76 | 41 | 28 |
| | % of Total | 52.4% | 28.3% | 19.3% |

Note. n = 145

In the sample, most of informants are well informed about the environmental issues and understand the need to take care of the environment. A high percentage, 73 per cent, of informants marks "strongly agree" and "agree" that our planet is lacking natural resources and are worried about the environmental issues (Q1). Only 10 per cent of informants marks "disagree" or "strongly disagree" for this statement. In addition, most of informants, 50 per cent, are aware and agrees that hotels are introducing environmental practices to reduce their impact on the environment (Q2). However, despite most of informants seem to have pro-environmental attitude according to Q1 and Q2, 53 per cent of informants denies taking part in pro-environmental initiatives when being on holidays (Q3) (Figure 4).

Figure 4. Informants' general environmental awareness and attitude



4.2 Empirical analysis

This study uses the statistical software SPSS for all calculations. First, the author calculates percentages and medians for all 35 questions in the first section of the questionnaire (Q1, Q2, Q3 presented in section 4.1.) and 6 questions in the second section of the questionnaire (results presented in the section 4.1.). Second, the author tests the hypotheses by comparing t-values with the critical values, on the basis of which she rejects or fails to reject the null hypotheses. Third, the author conducts the PCA. This technique allows the author to reduce multidimensional data to lower dimensions but at the same time preserve most of the information. Hence, the author calculates the principal component to be representative for each category of environmental practices, i.e. energy saving, sustainable hotel-supplier collaborations, sustainable design and materials, water saving, recycling and reusing. The fitness of PCA is evaluated before conducting the analysis. Forth, the author runs the linear regression to study the relationship between individual environmental practices and the overall customer satisfaction with environmental practices. Fifth, the author conducts the multiple regression to analyze how much of the variation in overall satisfaction with environmental practices is explained by energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing. At the end the linear regression is conducted again to analyze the relationship between overall customer satisfaction with environmental practices and customer loyalty.

4.2.1 Sample size

For PCA, Gorsuch (1983) suggested the sample size of 100. However, Hatcher (1994) stated that the sample size should be five times larger than the number of variables. In addition, Hutcheson and Sofroniou (1998) recommended that the sample size should be 150 and possibly even higher if data is strongly correlated. Furthermore, recommendations for linear regression and multiple regression also vary. The general rule of thumb

prescribes the minimum sample of 50, however, this number is recommended to increase with higher inclusion of independent variables (Van Belle, 2008). Green (1991) suggested multiple regression sample size as $N > 50 + m$, where m is independent variable. In a scenario when analyzing the individual predictors, Green recommended $N > 104 + m$. Harris (1985) made similar recommendation as Green, however, he additionally specified sample size for regression that involves six or more independent variables, where a minimum size of 10 for each independent variable is prescribed. In addition, when possible a size of 30 for each independent variable is more powerful. Further recommendations varied largely. While Nunnally (1978) suggested the sample size of minimum 300, even in scenarios with moderate number of independent variables, Wampold and Freund's (1987) revealed that in some scenarios the appropriate size can be even lower than 10:1 ratio. The author concludes that although she utilizes the maximum of six independent variables, the sample of 145 is considered adequate for this research.

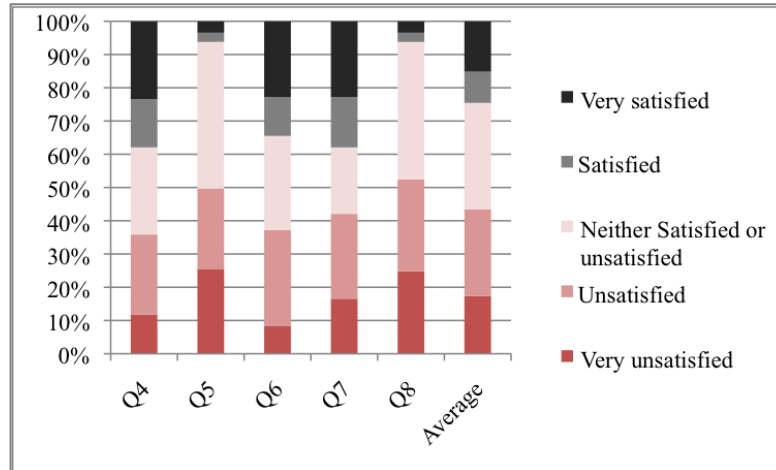
4.2.2 The relationship between energy saving and customer satisfaction

H1. Satisfaction of luxury hotels guests with energy saving practices is ≤ 3 .

H1.1. Energy saving has a positive relationship with the overall customer satisfaction with environmental practices.

The author first analyzes the data through descriptive statistics to find what is the median and what is the proportion of dissatisfied informants. The median of customer satisfaction with energy saving practices is 3 (level "neither satisfied or unsatisfied" on a Likert scale). However, this value masks a lot of heterogeneity among the informants. In fact, on average 43 per cent of informants score the option "very unsatisfied" or "unsatisfied", while only 25 per cent of informants on average score the option "satisfied" or "very satisfied". 32 per cent of informants are "neither satisfied or unsatisfied" on average. Values indicate that the largest proportion of informants negatively perceive the implementation of energy saving practices. Informants are most dissatisfied with small size of the swimming pool (Q8) and limited control on regulating room's temperature (Q5). On average, 52 per cent and 50 per cent of informants are either "very dissatisfied" or "dissatisfied" with mentioned practices, respectively (Figure 5).

Figure 5. Customer satisfaction with energy saving



In order to test if energy saving decreases customer satisfaction, the author introduces the following hypotheses:

Null Hypothesis (NH): Satisfaction of luxury hotels guests with energy saving practices is >3 .

Alternative Hypothesis (AH): Satisfaction of luxury hotels guests with energy saving practices is ≤ 3 .

Table 6. Hypothesis testing H1.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .752 | .434 | 1.734 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 6), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are unlikely to be satisfied with the presence of energy saving practices.

In order to study the relationship between energy saving and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Energy saving has no relationship with the overall customer satisfaction with environmental practices.

AH: Energy saving has a positive relationship with the overall customer satisfaction with environmental practices.

Table 7. Hypothesis testing H1.1.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .569 | .065 | 8.650 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 7), the author rejects the null

hypothesis with a probability of 0.1%. This tells the author that energy saving is unlikely to have no relationship with the overall customer satisfaction with environmental practices.

Further the author first conducts PCA, on the basis of which she runs the linear regression. In the first phase, the author conducts PCA on 5 questions (Q4, Q5, Q6, Q7 and Q8) in the questionnaire (Appendix A) that measure customer satisfaction in relation to energy saving, i.e. the use of saving lamps, limited control on regulation of hotel room's temperature, use of key cards that turn off power in the room when it is not occupied, limited use of lighting in public areas and the size of the swimming pool. The correlation matrix's evaluation demonstrates that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 8). Kaiser-Meyer-Olkin (KMO) test is used to measure the suitability of the data for PCA, through measuring sampling adequacy for each variable. KMO values between 0.8 and 1 indicate that sampling is adequate. The overall KMO measure is 0.883 with individual KMO measures all greater than 0.8, which are placed in the category of "meritorious" and "marvelous" according to Kaiser's classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, revealing that the data is likely factorizable.

Table 8. Correlation matrix of satisfaction with energy saving

| | Q4 | Q5 | Q6 | Q7 | Q8 |
|----|-------|-------|-------|-------|-------|
| Q4 | 1.000 | .859 | .761 | .835 | .779 |
| Q5 | .859 | 1.000 | .855 | .834 | .824 |
| Q6 | .761 | .855 | 1.000 | .807 | .815 |
| Q7 | .835 | .834 | .807 | 1.000 | .868 |
| Q8 | .779 | .824 | .815 | .868 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 85.9 per cent of the total variance (Table 9). In addition, also the visual examination of the scree plot (Appendix B) confirms the inclusion of one component (Cattell, 1966). Hence, the one-component outcome fulfilled the criteria to utilize it for the interpretation of data.

Table 9. Total variance explained (selected component for energy saving)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.296 | 85.913 | 85.913 | 4.296 | 85.913 | 85.913 |
| 2 | .250 | 4.998 | 90.912 | | | |
| 3 | .224 | 4.470 | 95.382 | | | |
| 4 | .127 | 2.539 | 97.921 | | | |
| 5 | .104 | 2.079 | 100.000 | | | |

In the last phase, the author runs linear regression to understand the impact of energy saving practices on overall customer satisfaction with environmental practices. To assess linearity, a scatterplot of overall customer satisfaction with environmental practices against

the level of satisfaction with energy saving practices with superimposed regression line is plotted. Visual inspection of these two plots does not indicate a linear relationship between the variables, due to the use of a Likert scale to measure independent and dependent variable. The latter applies to all analyzed relations in this chapter. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots no outliers. The prediction equation (Table 10) is the following (1):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.569 x (\text{satisfaction with energy saving practices}) \quad (1)$$

Table 10. Regression coefficient for energy saving

| Model | B | t | Sig. |
|---------------|-------|--------|------|
| (Constant) | 1.945 | 29.686 | .000 |
| Energy Saving | .569 | 8.650 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with energy saving practices statistically significantly predicts overall customer satisfaction with environmental practices (2):

$$F(1, 143) = 74.818, p < .001 \quad (2)$$

Customer satisfaction with energy saving practices accounts for 34.3 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 33.9$ per cent (Table 11), a large size effect according to Cohen (1988). According to author's previous findings that luxury hotel guests are unlikely to be satisfied with the presence of energy saving, the term "dissatisfaction" is more suitable for interpretation. Thus, an extra unit in standard deviation in dissatisfaction with energy saving practices increases overall customer dissatisfaction with environmental practices by 0.569 units.

Table 11. Model summary for energy saving

| R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|----------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .586 ^a | .343 | .339 | .789 | .343 | 74.818 | 1 | 143 | .000 |

Note. Dependent Variable: Customer Satisfaction, n = 145

a. Predictors: (Constant), Energy Saving

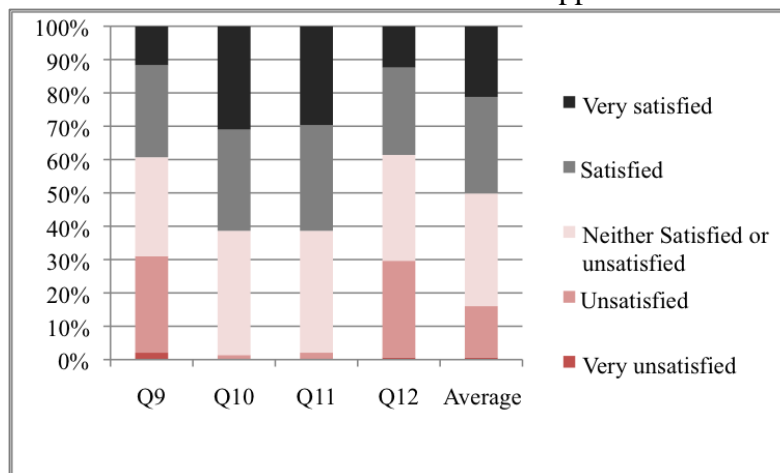
4.2.3 The relationship between sustainable supplier-hotel collaborations and customer satisfaction

H2. Satisfaction of luxury hotels guests with sustainable supplier-hotel collaborations is ≤ 3 .

H2.1. Sustainable supplier-hotel collaborations have a positive relationship with the overall customer satisfaction with environmental practices.

The author analyzes the data through descriptive statistics to find what is the median and what is the proportion of dissatisfied informants. The median of customer satisfaction with sustainable suppliers is 3.5 (level between “neither satisfied or unsatisfied” and “satisfied” on a Likert scale). This value does not indicate that most tourists negatively perceive the implementation of sustainable supplier-hotel collaborations. While only 16 per cent of informants are either “very dissatisfied” or “dissatisfied” with sustainable supplier-hotel collaborations during their stay in a luxury hotel, 50 per cent of informants are either “very satisfied” or “satisfied” with presence of sustainable supplier-hotel collaborations during their stay in a luxury hotel. 34 per cent of informants are “neither satisfied or unsatisfied”. Values demonstrate that the largest proportion of informants positively perceives the implementation of sustainable supplier-hotel collaborations, therefore the author reports that for sustainable supplier-hotel collaborations positive perception prevails. Nevertheless, sustainable supplier-hotel collaborations that have the most negative impact on customer satisfaction are the provision of local products only (Q9) and seasonal products only (Q12). 31 per cent and 30 per cent of informants are either “very dissatisfied” or “dissatisfied” with mentioned practices, respectively (Figure 6).

Figure 6. Customer satisfaction with sustainable supplier-hotel collaborations



In order to test if sustainable supplier-hotel collaborations decrease customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with sustainable supplier-hotel collaborations is >3 .

AH: Satisfaction of luxury hotels guests with sustainable supplier-hotel collaborations is ≤ 3 .

Table 12. Hypothesis testing H2.

| Average | Std. dev. | t |
|---------|-----------|------|
| .497 | .502 | .990 |

Note. n = 145

The critical value for failing to reject the null hypothesis with a 0.1% probability of making a mistake is 1.645. Because the t-statistics is below this value (Table 12), the author cannot reject the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are likely to be satisfied with the presence of sustainable supplier-hotel collaborations.

In order to study the relationship between sustainable supplier-hotel collaborations and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Sustainable supplier-hotel collaborations have no relationship with the overall customer satisfaction with environmental practices.

AH: Sustainable supplier-hotel collaborations have a positive relationship with the overall customer satisfaction with environmental practices.

Table 13. Hypothesis testing H2.1.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .460 | .071 | 6.435 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 13), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that sustainable supplier-hotel collaborations are unlikely to have no relationship with the overall customer satisfaction with environmental practices.

The author further conducts PCA on 4 questions (Q9, Q10, Q11 and Q12) in the questionnaire (Appendix A) that measure satisfaction in relation to sustainable supplier-hotel collaborations, i.e. provision of local products, provision of organic products, provision of fair-trade products and provision of seasonal products. The correlation matrix's evaluation shows that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 14). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.627 with individual KMO measures all greater than 0.6. According to Kaiser's classification (1974), those measures are placed in the category of "mediocre". Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, the data is likely factorizable.

Table 14. Correlation matrix of satisfaction with sustainable supplier-hotel collaborations

| | Q9 | Q10 | Q11 | Q12 |
|-----|-------|-------|-------|-------|
| Q9 | 1.000 | .320 | .386 | .766 |
| Q10 | .320 | 1.000 | .628 | .307 |
| Q11 | .386 | .628 | 1.000 | .431 |
| Q12 | .766 | .307 | .431 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 60.6 per cent of the total variance (Table 15). Also the visual examination of the scree plot (Appendix B) confirms the inclusion of one component (Cattell, 1966). Thus, the one-component outcome fulfilled the criteria to utilize it for the interpretation of data.

Table 15. Total variance explained (selected component for sustainable supplier-hotel collaborations)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.425 | 60.616 | 60.616 | 2.425 | 60.616 | 60.616 |
| 2 | .978 | 24.461 | 85.077 | | | |
| 3 | .370 | 9.242 | 94.319 | | | |
| 4 | .227 | 5.681 | 100.000 | | | |

In the next phase, the author runs linear regression to understand the impact of sustainable supplier-hotel collaborations on overall customer satisfaction with environmental practices. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots no outliers. The prediction equation (Table 16) is the following (3):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.460x \text{ (satisfaction with sustainable supplier-hotel collaborations)} \quad (3)$$

Table 16. Regression coefficient for sustainable supplier-hotel collaborations

| Model | B | t | Sig. |
|-----------------------|-------|--------|------|
| (Constant) | 1.945 | 27.315 | .000 |
| Sustainable Suppliers | .460 | 6.435 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with sustainable supplier-hotel collaborations statistically significantly predicts overall customer satisfaction with environmental practices (4):

$$F(1, 143) = 41.413, p < .001 \quad (4)$$

Customer satisfaction with sustainable supplier-hotel collaborations accounts for 22.5 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 21.9$ per cent (Table 17), a medium size effect according to Cohen (1988). An extra unit in standard deviation in satisfaction with sustainable supplier-hotel collaborations increases overall customer satisfaction with environmental practices by 0.460 units.

Table 17: Model summary for sustainable supplier-hotel collaborations

| R | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .474 ^a | .225 | .857 | .225 | 41.413 | 1 | 143 | .000 |

Note. Dependent Variable: Customer Satisfaction, n = 145

a. Predictors: (Constant), Sustainable Suppliers

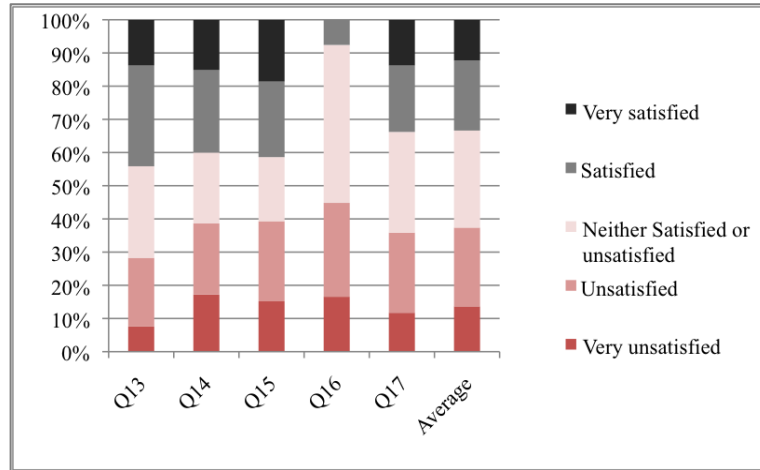
4.2.4 The relationship between sustainable design & materials and customer satisfaction

H3. Satisfaction of luxury hotels guests with sustainable design and materials is ≤ 3 .

H3.1. Sustainable design and materials have a positive relationship with the overall customer satisfaction with environmental practices.

Descriptive statistics shows that median of customer satisfaction with sustainable design and materials is 3 (level “neither satisfied or unsatisfied” on a Likert scale). However, also this value masks a lot of heterogeneity among the informants. On average 38 per cent of informants score the option “very unsatisfied” or “unsatisfied”, while only 33 per cent of informants on average score the option “satisfied” or “very satisfied”, and 29 per cent of informants on average score “neither satisfied or unsatisfied”. Values indicate that the largest proportion of informants negatively perceives the implementation of sustainable design and materials. Informants are most dissatisfied with implementation of parking fees (Q16), linen bedding made out of cotton (Q15) and mirrors that are small in size (Q14). 45 per cent, 39 per cent and again 39 per cent of informants are either “very dissatisfied” or “dissatisfied” with mentioned practices, respectively (Figure 7).

Figure 7. Customer satisfaction with sustainable design and materials



In order to test if sustainable design and materials decrease customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with sustainable design and materials is >3 .

AH: Satisfaction of luxury hotels guests with sustainable design and materials is ≤ 3 .

Table 18. Hypothesis testing H3.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .662 | .475 | 1.395 |

Note. n = 145

The critical value for failing to reject the null hypothesis with a 0.1% probability of making a mistake is 1.645. Because the t-statistics is below this value (Table 18), the author cannot reject the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are likely to be satisfied with the presence of sustainable design and materials.

In order to study the relationship between sustainable design and materials and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Sustainable design and materials have no relationship with the overall customer satisfaction with environmental practices.

AH: Sustainable design and materials have a positive relationship with the overall customer satisfaction with environmental practices.

Table 19. Hypothesis testing H3.1.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .557 | .066 | 8.395 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 19), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that sustainable design and materials are unlikely to have no relationship with the overall customer satisfaction with environmental practices.

The author conducts PCA on 5 questions (Q13, Q14, Q15, Q16 and Q17) in the questionnaire (Appendix A) that measure satisfaction in relation to sustainable design and materials, i.e. wooden surfaces in hotel room, size of mirrors in bathroom, material of linen bedding, parking fees and no-vehicles areas around the hotel property. The correlation matrix's evaluation demonstrates that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 20). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.815 with individual KMO measures all greater than 0.7, which are placed in the category of "middling" and "meritorious", according to Kaiser's classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Also revealing that the data is likely factorizable.

Table 20. Correlation matrix of satisfaction with sustainable design and materials

| | Q13 | Q14 | Q15 | Q16 | Q17 |
|-----|-------|-------|-------|-------|-------|
| Q13 | 1.000 | .885 | .728 | .613 | .586 |
| Q14 | .885 | 1.000 | .733 | .696 | .568 |
| Q15 | .728 | .733 | 1.000 | .612 | .702 |
| Q16 | .613 | .696 | .612 | 1.000 | .574 |
| Q17 | .586 | .568 | .702 | .574 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 73.7 per cent of the total variance (Table 21). In addition, also the visual examination of the scree plot (Appendix B) confirms the inclusion of one component (Cattell, 1966). The one-component outcome fulfilled the criteria to utilize it for the interpretation of data.

Table 21. Total variance explained (selected component for sustainable design and materials)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.689 | 73.777 | 73.777 | 3.689 | 73.777 | 73.777 |
| 2 | .530 | 10.594 | 84.371 | | | |
| 3 | .432 | 8.640 | 93.011 | | | |
| 4 | .245 | 4.908 | 97.919 | | | |
| 5 | .104 | 2.081 | 100.000 | | | |

In the next step the author conducts linear regression to understand the impact of implementation of sustainable design and materials on overall customer satisfaction with environmental practices. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots no outliers. The prediction equation (Table 22) is the following (5):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.557x \text{ (satisfaction with sustainable design and materials)} \quad (5)$$

Table 22. Regression coefficient for sustainable design and materials

| Model | B | t | Sig. |
|--------------------|-------|--------|------|
| (Constant) | 1.945 | 29.388 | .000 |
| Design & Materials | .557 | 8.395 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with sustainable design and materials statistically significantly predicts overall customer satisfaction with environmental practices (6):

$$F(1, 143) = 70.468, p < .001 \quad (6)$$

Customer satisfaction with sustainable design and materials accounts for 33.0 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 32.5$ per cent (Table 23), a large size effect according to Cohen (1988). Hence, an extra unit in standard deviation in satisfaction with sustainable design and materials increases overall customer satisfaction with environmental practices by 0.557 units.

Table 23: Model summary for sustainable design and materials

| R | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .575 ^a | .330 | .797 | .330 | 70.468 | 1 | 143 | .000 |

Note. Dependent Variable: Customer Satisfaction, n = 145

a. Predictors: (Constant), Design & Materials

4.2.5 The relationship between water saving and customer satisfaction

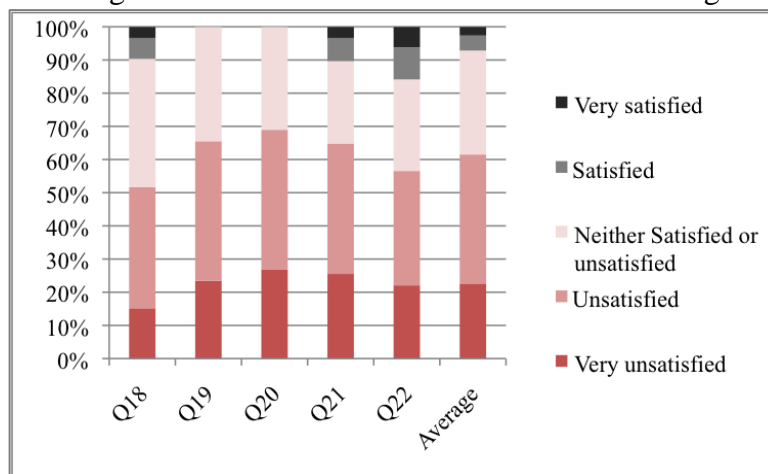
H4. Satisfaction of luxury hotels guests with water saving is ≤ 3 .

H4.1. Water saving has a positive relationship with the overall customer satisfaction with environmental practices.

According to descriptive statistics, the median of customer satisfaction with water saving is 2 (level “unsatisfied” on a Likert scale). On average, 62 per cent of informants are either

“very dissatisfied” or “dissatisfied” with presence of water saving practices during their stay in a luxury hotel. In contrast, only 7 per cent of informants are either “very satisfied” or “satisfied” with presence of water saving practices during their stay in a luxury hotel. In addition, 31 per cent of informants mark “neither satisfied or unsatisfied”. Values demonstrate that the largest proportion of informants negatively perceives water saving practices. Informants are most dissatisfied with low-flow shower taps in the bathroom (Q20) and gray (reused) water used for flushing toilets (Q19), as well as for watering green areas around hotel’s property (Q21). On average, 69 per cent, 66 per cent and 65 per cent of informants are either “very dissatisfied” or “dissatisfied” with mentioned practices, respectively (Figure 8).

Figure 8. Customer satisfaction with water saving



In order to test if water saving decreases customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with water saving is >3 .

AH: Satisfaction of luxury hotels guests with water saving is ≤ 3 .

Table 24. Hypothesis testing H4.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .931 | .254 | 3.662 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 24), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are unlikely to be satisfied with the presence of water saving practices.

In order to study the relationship between water saving and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Water saving has no relationship with the overall customer satisfaction with environmental practices.

AH: Water saving has a positive relationship with the overall customer satisfaction with environmental practices.

Table 25. Hypothesis testing H4.1.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .566 | .065 | 8.588 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 25), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that water saving is unlikely to have no relationship with the overall customer satisfaction with environmental practices.

The author runs PCA on 5 questions (Q18, Q19, Q20, Q21 and Q22) in the questionnaire (Appendix A) that measures satisfaction in relation to water saving practices, i.e. notes left in hotel rooms that encourage the minimization of water consumption, the use of reused water for flushing toilets, low flow shower taps, the use of reused water for watering green areas around hotel's property and limited space for golf. The correlation matrix's evaluation demonstrates that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 26). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.809 with individual KMO measures all greater than 0.7, which are placed in the category of "middling" and "meritorious", according to Kaiser's classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, revealing that the data is likely factorizable.

Table 26. Correlation matrix of satisfaction with water saving

| | Q18 | Q19 | Q20 | Q21 | Q22 |
|-----|-------|-------|-------|-------|-------|
| Q18 | 1.000 | .620 | .543 | .644 | .504 |
| Q19 | .620 | 1.000 | .836 | .722 | .680 |
| Q20 | .543 | .836 | 1.000 | .790 | .717 |
| Q21 | .644 | .722 | .790 | 1.000 | .813 |
| Q22 | .504 | .680 | .717 | .813 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 75.3 per cent of the total variance (Table 27). In addition, also the scree plot (Appendix B) confirms the inclusion of one component (Cattell, 1966). The one-component outcome fulfilled the criteria to utilize it for the interpretation of data.

Table 27. Total variance explained (selected component for water saving)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.764 | 75.281 | 75.281 | 3.764 | 75.281 | 75.281 |
| 2 | .544 | 10.880 | 86.161 | | | |
| 3 | .380 | 7.592 | 93.753 | | | |
| 4 | .190 | 3.808 | 97.560 | | | |
| 5 | .122 | 2.440 | 100.000 | | | |

The author runs the linear regression to understand the impact of water saving on overall customer satisfaction with environmental practices. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots no outliers. The prediction equation (Table 28) is the following (7):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.566x \text{ (satisfaction with water saving)} \quad (7)$$

Table 28. Regression coefficient for water saving

| Model | B | t | Sig. |
|--------------|-------|--------|------|
| (Constant) | 1.945 | 29.613 | .000 |
| Water Saving | .566 | 8.588 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with water saving statistically significantly predicts overall customer satisfaction with environmental practices (8):

$$F(1, 143) = 73.746, p < .001 \quad (8)$$

Customer satisfaction with water saving accounts for 34.0 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 33.6$ per cent (Table 29), a large size effect according to Cohen (1988). According to the previous findings that luxury hotel guests are unlikely to be satisfied with the presence of water saving practices, the term “dissatisfaction” is more suitable for interpretation. Hence, an extra unit in standard deviation in dissatisfaction with water saving increases overall customer dissatisfaction with environmental practices by 0.566 units.

Table 29: Model summary for water saving

| R | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .583 ^a | .340 | .791 | .340 | 73.746 | 1 | 143 | .000 |

Note: Dependent Variable: Customer Satisfaction, n = 145

a. Predictors: (Constant), Water Saving

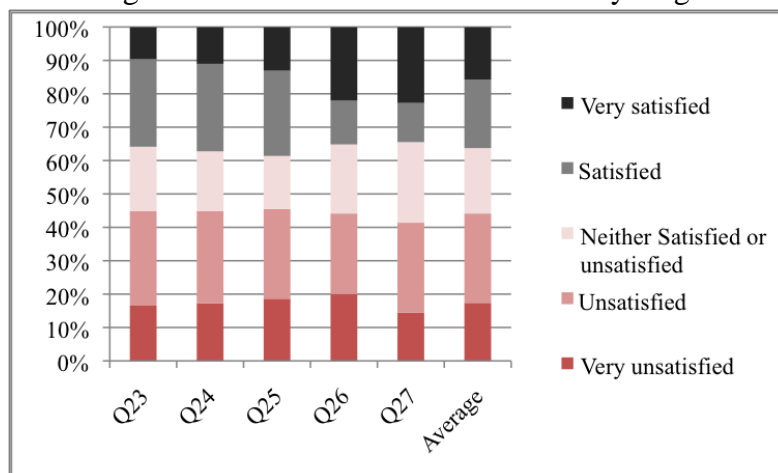
4.2.6 The relationship between recycling and customer satisfaction

H5. Satisfaction of luxury hotels guests with recycling is ≤ 3 .

H5.1. Recycling has a positive relationship with the overall customer satisfaction with environmental practices.

According to descriptive statistics, the median of customer satisfaction with recycling is 3 (level “neither satisfied or unsatisfied” on a Likert scale). However, also this value masks a lot of heterogeneity among the informants. On average 44 per cent of informants score the option “very unsatisfied” or “unsatisfied”, while only 36 per cent of informants score on average the option “satisfied” or “very satisfied”, and 20 per cent of informants on average are “neither satisfied or unsatisfied”. The values indicate that again the largest proportion of informants negatively perceives the implementation of recycling. Despite recycling practices are quite balanced in proportional dissatisfaction, the author reports that informants are most dissatisfied with recycled paper towels in the bathroom (Q25), recycled pencils (Q23) and recycled toilet tissues (Q24). On average, 46 per cent, 45 per cent and again 45 per cent of informants are either “very dissatisfied” or “dissatisfied” with mentioned practices, respectively (Figure 9 on the next page).

Figure 9. Customer satisfaction with recycling



In order to test if recycling decreases customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with recycling is >3 .

AH: Satisfaction of luxury hotels guests with recycling is ≤ 3 .

Table 30. Hypothesis testing H5.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .648 | .479 | 1.353 |

Note. n = 145

The critical value for failing to reject the null hypothesis with a 0.1% probability of making a mistake is 1.645. Because the t-statistics is below this value (Table 30), the author cannot reject the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are likely to be satisfied with the presence of recycling.

In order to study the relationship between recycling and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Recycling has no relationship with the overall customer satisfaction with environmental practices.

AH: Recycling has a positive relationship with the overall customer satisfaction with environmental practices.

Table 31. Hypothesis testing H5.1.

| Average | Stand. dev. | T-test |
|---------|-------------|--------|
| .669 | .059 | 11.384 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 31), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that recycling is unlikely to have no relationship with the overall customer satisfaction with environmental practices.

In order to analyze the relationship between recycling and customer satisfaction, the author first conducts PCA on 5 questions (Q23, Q24, Q25, Q26 and Q27) in the questionnaire (Appendix A) that measure customer satisfaction in relation to recycling, i.e. recycled pencil sets, recycled toilet tissues, recycled paper towels, recycled bedroom slippers and the presence of receptacles in guest rooms. The correlation matrix's evaluation demonstrates that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 32). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.843 with individual KMO measures all greater than 0.7, which are placed in the category of "middling" and "meritorious", according to Kaiser's classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, revealing that the data is likely factorizable.

Table 32: Correlation matrix of satisfaction with recycling

| | Q23 | Q24 | Q25 | Q26 | Q27 |
|-----|-------|-------|-------|-------|-------|
| Q23 | 1.000 | .951 | .918 | .852 | .850 |
| Q24 | .951 | 1.000 | .969 | .883 | .867 |
| Q25 | .918 | .969 | 1.000 | .906 | .888 |
| Q26 | .852 | .883 | .906 | 1.000 | .943 |
| Q27 | .850 | .867 | .888 | .943 | 1.000 |

Also in this section, PCA identifies one component with an eigenvalue greater than one. This component explains 92.2 per cent of the total variance (Table 33). In addition, also the scree plot (Appendix B) confirms the inclusion of one component (Cattell, 1966). The one-component outcome fulfills the criteria to utilize it for the interpretation of data.

Table 33. Total variance explained (selected component for recycling)

| Compo-nent | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|------------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.611 | 92.229 | 92.229 | 4.611 | 92.229 | 92.229 |
| 2 | .231 | 4.618 | 96.847 | | | |
| 3 | .082 | 1.638 | 98.485 | | | |
| 4 | .053 | 1.058 | 99.543 | | | |
| 5 | .023 | .457 | 100.000 | | | |

The researcher conducts the linear regression to understand the impact of recycling on overall customer satisfaction with environmental practices. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). No outliers are spotted. The prediction equation (Table 34) is the following (9):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.669 x (\text{satisfaction with recycling}) \quad (9)$$

Table 34. Regression coefficient for recycling

| Model | B | t | Sig. |
|------------|-------|--------|------|
| (Constant) | 1.945 | 33.210 | .000 |
| Recycling | .669 | 11.384 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with recycling statistically significantly predicts overall customer satisfaction with environmental practices (10):

$$F(1, 143) = 129.604, p < .001 \quad (10)$$

Customer satisfaction with recycling accounts for 47.5 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 47.2$ per cent (Table 35), a large size effect according to Cohen (1988). Hence, an extra unit in standard deviation in satisfaction with recycling increases overall customer satisfaction with environmental practices by 0.669 units.

Table 35. Model summary for recycling

| R | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .690 ^a | .475 | .705 | .475 | 129.604 | 1 | 143 | .000 |

Note. Dependent Variable: Customer Satisfaction, n = 145. a. Predictors: (Constant), Recycling

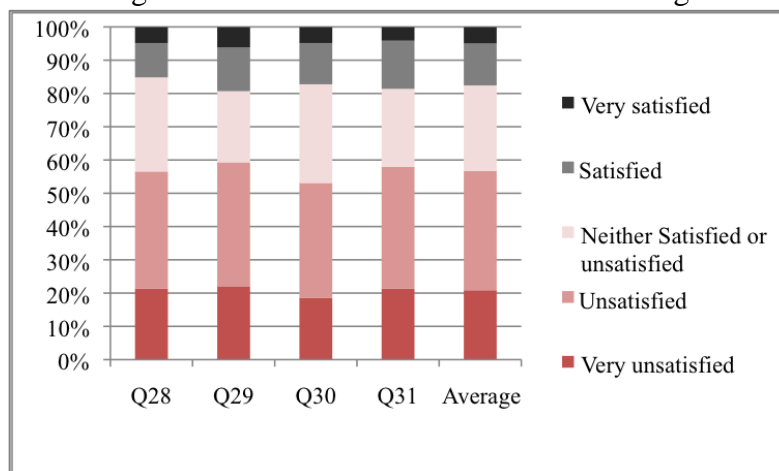
4.2.7 The relationship between reusing and customer satisfaction

H6. Satisfaction of luxury hotels guests with reusing is ≤ 3 .

H6.1. Reusing has a positive relationship with the overall customer satisfaction with environmental practices.

According to descriptive statistics, median of customer satisfaction with reusing is 2 (level “unsatisfied” on a Likert scale). On average 57 per cent of informants score the option “very unsatisfied” or “unsatisfied”, while only 18 per cent of informants on average score the option “satisfied” or “very satisfied”. 25 per cent of informants are “neither satisfied or unsatisfied” on average. Values demonstrate that the largest proportion of informants negatively perceives reusing. Informants are most dissatisfied with shampoo dispensers instead of bottled versions (Q29) and the use of bottled glass jars in hotel’s restaurant (Q31). On average, 59 per cent and 58 per cent of informants are either “very dissatisfied” or “dissatisfied” with mentioned practices, respectively (Figure 10).

Figure 10. Customer satisfaction with reusing



In order to test if reusing decreases customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with reusing is >3 .

AH: Satisfaction of luxury hotels guests with reusing is ≤ 3 .

Table 36. Hypothesis testing H6.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .821 | .385 | 2.132 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 36), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are unlikely to be satisfied with the presence of reusing.

In order to study the relationship between reusing and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Reusing has no relationship with the overall customer satisfaction with environmental practices.

AH: Reusing has a positive relationship with the overall customer satisfaction with environmental practices.

Table 37. Hypothesis testing H6.1.

| Average | Std. dev. | t |
|---------|-----------|--------|
| .722 | .054 | 13.333 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 37), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that reusing is unlikely to have no relationship with the overall customer satisfaction with environmental practices.

PCA is conducted on 4 questions (Q28, Q29, Q30 and Q31) in the questionnaire (Appendix A) that measure satisfaction in relation to reusing, i.e. notes left in hotel rooms that encourage the linen and towel reuse, shampoos placed in dispensers instead of bottled versions, the use of cloth towels instead of paper towels in hotel's public toilets and the use of bottled glass jars instead of one-time-use plastic bottles in hotel's restaurant. The correlation matrix's evaluation shows that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 38). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.827 with individual KMO measures all greater than 0.7, which are placed in

the category of “middling” and “meritorious”, according to Kaiser’s classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, revealing that the data is likely factorizable.

Table 38. Correlation matrix of satisfaction with reusing

| | Q28 | Q29 | Q30 | Q31 |
|-----|-------|-------|-------|-------|
| Q28 | 1.000 | .674 | .845 | .808 |
| Q29 | .674 | 1.000 | .600 | .574 |
| Q30 | .845 | .600 | 1.000 | .812 |
| Q31 | .808 | .574 | .812 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 79.2 per cent of the total variance (Table 39). The scree plot (Appendix B) additionally confirms the inclusion of one component (Cattell, 1966). The one-component outcome fulfilled the criteria to utilize it for the interpretation of data.

Table 39. Total variance explained (selected component for reusing)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.169 | 79.224 | 79.224 | 3.169 | 79.224 | 79.224 |
| 2 | .487 | 12.179 | 91.403 | | | |
| 3 | .196 | 4.909 | 96.312 | | | |
| 4 | .148 | 3.688 | 100.000 | | | |

The author conducts the linear regression to understand the impact of reusing on overall customer satisfaction with environmental practices. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots one outlier. However, its impact is low, as the case’s standardized residual is -3.012, while normal cases have standard deviation of ± 3 standard deviations. Hence, the author keeps the outlier for further analysis. The prediction equation (Table 40) is the following (11):

$$\text{Predicted overall customer satisfaction with environmental practices} = 1.945 + 0.722 x (\text{satisfaction with reusing}) \quad (11)$$

Table 40. Regression coefficient for reusing

| Model | B | t | Sig. |
|------------|-------|--------|------|
| (Constant) | 1.945 | 36.025 | .000 |
| Reusing | .722 | 13.333 | .000 |

Note. Dependent Variable: Customer Satisfaction. n = 145. B = Unstandardized Coefficient.

Customer satisfaction with reusing statistically significantly predicts overall customer satisfaction with environmental practices (12):

$$F(1, 143) = 177.776, p < .001 \quad (12)$$

Customer satisfaction with reusing accounts for 55.4 per cent of the variation in overall customer satisfaction with environmental practices with adjusted $R^2 = 55.1$ per cent (Table 41), a large size effect according to Cohen (1988). According to author's previous findings luxury hotel guests are unlikely to be satisfied with the presence of reusing, the term "dissatisfaction" is more suitable for the interpretation. Thus, an extra unit in standard deviation in dissatisfaction with reusing increases overall customer dissatisfaction with environmental practices by 0.722 units.

Table 41. Model summary for reusing

| R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------------------|----------|-------------------|----------------------------|-----------------|----------|-----|-----|---------------|
| .744 ^a | .554 | .551 | .650 | .554 | 177.776 | 1 | 143 | .000 |

Note. Dependent Variable: Customer Satisfaction, n = 145

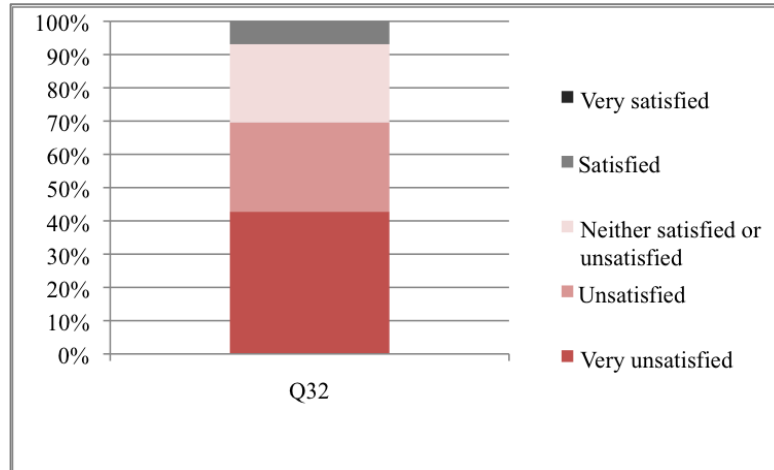
a. Predictors: (Constant), Reusing

4.2.8 The relationship between combined environmental practices and customer satisfaction

H7. Satisfaction of luxury hotels guests with combined environmental practices is ≤ 3 .

The author first analyzes the data through descriptive statistics to find what is the median and what is the proportion of dissatisfied informants. The median of customer satisfaction with combined environmental practices is 2 (level "dissatisfied" on a Likert scale). In addition, the author notices strong contrast between "very unsatisfied" and "unsatisfied" informants compared to those that are "satisfied" or "very satisfied". While 70 per cent of informants are "very unsatisfied" and "unsatisfied", only 7 per cent are "satisfied", while none of informants marks the level "very satisfied". 23 per cent of informants are "neither satisfied or unsatisfied". Values indicate that the largest proportion of informants negatively perceive the implementation of combined environmental practices (Figure 11).

Figure 11. Customer satisfaction with combined environmental practices



In order to test if combined environmental practices decrease customer satisfaction, the author introduces the following hypotheses:

NH: Satisfaction of luxury hotels guests with combined environmental practices is >3 .

AH: Satisfaction of luxury hotels guests with combined environmental practices is ≤ 3 .

Table 42. Hypothesis testing H7.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .931 | .254 | 3.662 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 42), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are unlikely to be satisfied with the presence of combined environmental practices.

On this basis and as a conclusion for H1.1., H2.1., H3.1., H4.1., H5.1. and H6.1., the author further investigates which environmental practice has the strongest impact on overall satisfaction with environmental practices. She conducts the multiple regression, which is used to predict the dependent variable based on multiple independent variables. First, the author confirms that there is homoscedasticity, as assessed by visual examination of a scatterplot of standardized residuals versus standardized predicted values and normality of the residuals (Appendix C). Further, the author tests multicollinearity, in order to examine to which extent one variable can be explained by other variables in the study. The first step to test it is through the correlation matrix for the independent variables. Although the correlation between recycling and reusing is higher than .70 and therefore signals the possibility of correlation between the two variables, the author keeps both variables in order to achieve the dissertation's objectives. The author justifies the decision on the statement of Hair, Hult, Ringle and Sarstedt (2013, p.196) that the presence of high correlations is generally set .90 and higher. In addition, multicollinearity is also analyzed

through tolerance and variance inflation factor (VIF), which should not be higher than 10 (Hair et al., 2013). The data (Table 44) shows that all VIF values, including those for recycling and reusing, are lower than 10, therefore passing the test of multicollinearity. The author spots one outlier. However, its impact is low, therefore the outlier is kept for further analysis.

The author runs the multiple regression to predict the overall customer satisfaction with environmental practices from the implementation of environmental practices related to energy saving, sustainable hotel-supplier collaborations, sustainable design and materials, water saving, recycling and reusing. R^2 for the overall model is 60.0 per cent, with an adjusted R^2 of 58.3 per cent (Table 43), a large size effect according to Cohen (1988).

Table 43. Model summary for combined environmental practices

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------------------|----------|-------------------|----------------------------|
| .775 ^a | .600 | .583 | .627 |

Note: Dependent Variable: Customer Satisfaction, n = 145

- a. Predictors: (Constant), Reusing, Sust. Suppliers., Water Sav., D & M, Energy Sav., Recycling

The multiple regression model statistically significantly predicts the overall customer satisfaction with environmental services (13):

$$F(6,138) = 34,497, p < .001 \quad (13)$$

Three variables, i.e. water consumption, recycling and reusing, add statistically significantly to the prediction, $p < .05$. In addition, three variables, i.e., energy saving, sustainable hotel-supplier collaborations and sustainable design and materials do not add statistically significantly to the prediction, $p > .05$. The author presents regression coefficients and standard errors in Table 44.

Table 44. Regression coefficients for combined environmental practices

| Model | B | Std. Error | t | Sig. | VIF |
|--------------------------------|-------|------------|--------|------|-------|
| (Constant) | 1.945 | .052 | 37.359 | .000 | |
| Energy Saving | .083 | .084 | .992 | .323 | 2.560 |
| Sustainable Suppliers | -.063 | .073 | -.858 | .392 | 1.946 |
| Sustainable Design & Materials | .008 | .081 | .097 | .923 | 2.391 |
| Water Saving | .149 | .073 | 2.053 | .042 | 1.928 |
| Recycling | .200 | .092 | 2.172 | .032 | 3.104 |
| Reusing | .449 | .095 | 4.732 | .000 | 3.293 |

Note: Dependent Variable: Customer Satisfaction, n=145

The findings demonstrate that the strongest correlation is recognized for reusing. An extra unit in standard deviation of dissatisfaction with reusing increases overall customer

dissatisfaction with environmental practices for 0.449 units, when all other independent variables are held constant. Second strongest correlations is identified for recycling, as an extra unit in standard deviation of dissatisfaction with recycling increases overall customer dissatisfaction with environmental practices for 0.200 units, when all other independent variables are held constant. Third strongest correlation is recognized for water saving practices, as an extra unit in standard deviation of dissatisfaction with water saving practices increases overall customer dissatisfaction with environmental practices for 0.149 units, when all other independent variables are held constant. Energy saving, sustainable supplier-hotel collaborations and sustainable design and materials are not recognized as significant.

Acknowledging that the independent variables in multiple regression are highly correlated with each other, which makes it difficult to capture their impact on overall customer satisfaction with environmental practices, the author compares their values with correlations calculated in chapters 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.2.6 and 4.2.7, where the highest impact was reported by reusing (.722), recycling (.669), energy saving (.569), water saving (.566), sustainable design and materials (.557) and sustainable hotel-supplier collaborations (.460), respectively. On this basis, the author concludes that the highest impact on overall satisfaction with environmental services has reusing.

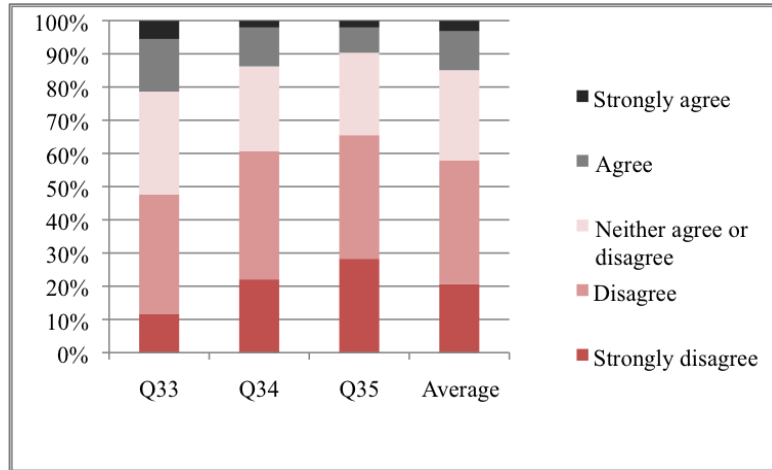
4.2.9 The relationship between customer satisfaction and customer loyalty

H8. Customer loyalty of luxury hotel guests towards customer satisfaction with environmental practices is ≤ 3 .

H8.1. Customer loyalty has a positive relationship with the overall customer satisfaction with environmental practices.

According to descriptive statistics, the median of customer loyalty is 2 (level “unsatisfied” on a Likert scale). The author reports that a large proportion of informants are not willing, do not plan and will not make an effort to stay in a hotel that promotes environmental practices. While on average 58 per cent of informants mark “strongly disagree” and “disagree” for such future behaviour, only 15 per cent mark “strongly agree” and “agree”. According to Figure 12, it is evident that through the stages of increased level of customer loyalty, i.e. from willingness to stay (Q33), planning (Q34), up until making an effort to stay in a hotel that promotes environmental practices (Q35), informants increasingly disagree with such loyal future behaviour.

Figure 12. Customer loyalty



In order to test if customer satisfaction with environmental practices decreases customer loyalty, the author introduces the following hypotheses:

NH: Customer loyalty of luxury hotel guests towards customer satisfaction with environmental practices is >3 .

AH: Customer loyalty of luxury hotel guests towards customer satisfaction with environmental practices is ≤ 3 .

Table 45. Hypothesis testing H8.

| Average | Std. dev. | t |
|---------|-----------|-------|
| .848 | .360 | 2.356 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 45), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that luxury hotel guests are unlikely to be loyal when encountering environmental practices.

In order to study the relationship between customer loyalty and overall customer satisfaction with environmental practices the author further introduces the following hypotheses:

NH: Customer loyalty has no relationship with the overall customer satisfaction with environmental practices.

AH: Customer loyalty has a positive relationship with the overall customer satisfaction with environmental practices.

Table 46. Hypothesis testing H8.1.

| Average | Std. dev. | t |
|---------|-----------|--------|
| .826 | .052 | 16.031 |

Note. n = 145

The critical value for rejecting the null hypothesis with a 0.1% probability of making a mistake is 1.645. As the t-statistics is above this value (Table 46), the author rejects the null hypothesis with a probability of 0.1%. This tells the author that customer loyalty is unlikely to have no relationship with the overall customer satisfaction with environmental practices.

The author further conducts PCA, on the basis of which she runs the linear regression. PCA is conducted on 3 questions (Q33, Q34 and Q35) in the questionnaire (Appendix A) that measure satisfaction in relation to customer loyalty, i.e. willingness to stay in a hotel that implements environmental practices, plan to stay in a hotel that implements environmental practices and willingness to make an effort to stay in a hotel that implements environmental practices. The correlation matrix's evaluation shows that all variables have at least one correlation coefficient, which is greater than 0.3 (Table 47). The overall Kaiser-Meyer-Olkin (KMO) measure is 0.746 with individual KMO measures all greater than 0.6, which are placed in the category of "mediocre", "middling" and "meritorious", according to Kaiser's classification (1974). Bartlett's Test of Sphericity is statistically significant ($p < .0005$). Thus, revealing that data is likely factorizable.

Table 47. Correlation matrix of customer loyalty

| | Q33 | Q34 | Q35 |
|-----|-------|-------|-------|
| Q33 | 1.000 | .842 | .802 |
| Q34 | .842 | 1.000 | .902 |
| Q35 | .802 | .902 | 1.000 |

PCA identifies one component with an eigenvalue greater than one. This component explains 89.9 per cent of the total variance (Table 48). The scree plot (Appendix B) additionally confirms the inclusion of one component (Cattell, 1966). The one-component outcome fulfills the criteria to utilize it for the interpretation of data.

Table 48. Total variance explained (selected component for customer loyalty)

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.698 | 89.942 | 89.942 | 2.698 | 89.942 | 89.942 |
| 2 | .208 | 6.950 | 96.892 | | | |
| 3 | .093 | 3.108 | 100.000 | | | |

Further the author conducts the linear regression to understand the impact of overall customer satisfaction with environmental practices on customer loyalty. There is homoscedasticity, as assessed by visual examination of a scatterplot of standardized

residuals versus standardized predicted values and normality of the residuals (Appendix C). The author spots no outliers. The prediction equation (Table 49) is the following (14):

$$\text{Predicted customer loyalty} = -1.607 + 0.826 x \quad (14)$$

(overall customer satisfaction with environmental practices)

Table 49. Regression coefficient for overall customer satisfaction with environmental practices

| Model | B | t | Sig. |
|-----------------------|--------|---------|------|
| (Constant) | -1.607 | -14.355 | .000 |
| Customer Satisfaction | .826 | 16.031 | .000 |

Note. Dependent Variable: Customer Loyalty. n = 145. B = Unstandardized Coefficient.

Overall customer satisfaction with environmental practices statistically significantly predicts customer loyalty (15):

$$F(1, 143) = 256.996, p < .001 \quad (15)$$

Overall customer satisfaction with environmental practices accounts for 64.2 per cent of the variation in customer loyalty with adjusted $R^2 = 64.0$ per cent (Table 50), a large size effect according to Cohen (1988). According to author's previous findings that luxury hotel guests are unlikely to be loyal when encountering environmental practices the term "dissatisfaction" is more suitable for interpretation. Hence, an extra unit in overall customer dissatisfaction with environmental practices decreases customer loyalty by 0.826 units.

Table 50: Model summary for customer satisfaction with environmental practices

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------------------|----------|-------------------|----------------------------|
| .802 ^a | .642 | .640 | .600 |

Note. Dependent Variable: Customer Loyalty, n = 145

a. Predictors: (Constant), Customer Satisfaction

4.3 Contribution to theory and practice

This dissertation investigates the impact of environmental practices on customer satisfaction in luxury hotels. The first set of findings supports H1, H4 and H6, demonstrating that energy saving, water saving and reusing are likely to decrease customer satisfaction in luxury hotels. Nevertheless, the author fails to support H2, H3 and H5 as the findings indicate that luxury hotel guests are not likely to be unsatisfied with the presence of sustainable supplier-hotel collaborations, sustainable design and materials and recycling. In addition, the findings further support H7, demonstrating that combined environmental practices in luxury hotels are likely to decrease customer satisfaction, and H8, which

indicates that customer satisfaction related to environmental practices is likely to decrease customer loyalty.

Results are aligned with the model of Ekinci, Dawes & Massey (2008), confirming the strong linkages among environmental practices, customer satisfaction and customer loyalty. The outcome of this dissertation is also aligned with Jones, Hillier & Comfort (2014) who emphasized the danger of guest dissatisfaction when introducing environmental practices in leading hotel chains, i.e. luxury hotels in our study. However, the author develops further implications. Environmental practices that trigger most of dissatisfaction among informants are energy saving, water saving and reusing. For mentioned practices, specific actions that drag most of discontent are low-flow shower taps, reused water used for flushing toilets and watering green areas around hotel's property, use of shampoo dispensers, use of bottled glass jars in hotel's restaurant, small size of the swimming pool and limited control on regulating room's temperature.

In addition, through the second set of findings the author reveals that all environmental practices are likely to have a positive relationship towards overall customer satisfaction with environmental practices. Among them, the strongest impact on overall customer satisfaction with environmental practices has reusing, while recycling, energy saving, water saving, sustainable design and materials and sustainable supplier-hotel collaborations, respectively, have lower levels of impact. Accordingly, the author suggests that reusing presents the most crucial category among environmental practices that requires additional attention when luxury hotels plan to implement sustainable actions that involve environmental practices. As the first set of findings demonstrates that reusing is likely to decrease customer satisfaction, precautionous implementation is advised, as the strength of its impact on customer satisfaction might threaten guests' loyalty, which can be reflected in lower post-purchasing plans, leading to loss of profits and decreased market share. Furthermore, hotel managers can take advantage of findings about sustainable hotel-supplier collaborations, which proved to be well accepted. In particular, the provision of organic and fair-trade products are highly positively accepted, while local and seasonal food generates lower satisfaction levels, which was also predicted by Sloan, Legrand & Chen (2009), as the provision of local and seasonal food can limit the choices. Although the author fails to support H2, H3 and H5, which indicates that sustainable supplier-hotel collaborations, sustainable design and materials and recycling are not likely to decrease customer satisfaction, the descriptive statistics demonstrates that for sustainable design and materials and recycling the biggest proportion of customers are not satisfied with presence of such practices. Hence, the author suggests precautionous implementation also for sustainable design and materials and recycling.

This dissertation shows a significant contrast in expectations of physical quality, i.e. environmental practices, for guests that stay in luxury hotels compared to other segments of hotel guests. The results do not fully comply with findings of Millar and Baloglu (2011)

that indicated guests' preference for green certification, recycling in the lobby, shampoo dispensers, electricity controlling key cards, linen and towel reuse and efficient lighting, most of which are graded poorly in this study. In fact, the largest proportion of informants negatively perceives the presence of shampoo dispensers, electricity controlling key cards and linen and towel reuse. Green certification and recycling in the lobby are not analyzed in this study. However, supportive finding relates to the efficient lighting, which is perceived positively for the largest proportion of informants also in this study. Further, the author observes that numerous practices that are suggested as guests' favored by Millar and Baloglu (2011) belong to the category of reusing, which gives support to this study, as the author highlights the importance of reusing, which has the strongest impact on overall customer satisfaction with environmental practices, despite being perceived negatively in a luxury setting. Next, dissertation's results partly contradict Chen's findings (2015) regarding top environmental practices that tourists value the most during their stay in a hotel, namely, well developed recycling program, provision of the local food, environment-friendly cleaning supplies, lighting that is energy efficient, plumbing fixtures that save water and recycled products. Although the author fails to support that recycling is likely to decrease customer satisfaction, the results indicate that the largest proportion of informants is dissatisfied with recycled products or recycling programs. In addition, the author reports that luxury hotel guests are likely to be unsatisfied with fixtures that save water. However, the author finds similarities towards popularity of local food and again, efficient lighting. Environmental-friendly cleaning supplies are not measured in this study. This indicates that guests who stay in luxury hotels have different expectations and are sensitive to larger amount of environmental practices, as their presence causes the discrepancy between the expectations of the luxurious physical quality versus outcomes, which causes disconfirmation and consequently dissatisfaction, as also defined by Oliver (1980).

Nevertheless, the author finds similarities with the research of Baloglu & Jones (2014), indicating that in a luxury market any practice that even slightly threatens guest satisfaction is to be rejected, as guests' satisfaction on every step is the center of attention. The findings of this dissertation are also consistent with results of Robinot & Giannelloni (2010), who placed most of environmental practices among "basic" attributes, which do not increase satisfaction if perceived favorably, while they decrease satisfaction if they are perceived unfavorably, which was proven for most of environmental practices analyzed in this dissertation as described above. Although the author uses different statistical method that cannot be directly compared, similarities can be noticed also regarding future implications. Robinot & Giannelloni (2010) suggest not to promote environmental attributes directly to customers, in order to avoid the risk of triggering their negative perceptions. The results of this study are aligned with this recommendation as dissatisfaction with environmental practices among guests that stay in luxury hotels calls for precautionous implementation of environmental practices and their limited promotion on a short-term.

According to dissertation's findings, a significant share of informants indicates the need to take care of the environment, however, as the author mentions above, their actual attitude towards environmental practices reveals that most of practices trigger dissatisfaction. Thus, the findings of this study demonstrate that environmental awareness among hotel guests in luxury hotels is superficial and calls for higher level of commitment. The findings are in contrast with Manaktola & Jauhari (2007) who demonstrated that customers with higher environmental concerns are inclined to buy eco-friendly products and services. Although the informants in this study express care for the environment, most of them are not willing to stay, plan or make an effort to stay in a luxury hotel that promotes environmental practices. Hence, this dissertation supports the findings of Davies, Lee & Ahonkhai (2012) implying that customers do not position ethics highly when it comes to luxury goods and services. Further, this dissertation also supports findings of Mathieson & Wall (1982) and Wei (2013), confirming that when guest stay in luxury hotels their need for comfort is prioritized, while the social responsibilities are suppressed. Henceforth, their social responsibility is weakened due to prevalence of the hedonic motive supported by the ego-centered values, as classified by Cervellon & Shammas (2013).

The results of this dissertation outline that high level of dissatisfaction with environmental practices among guests that stay in luxury hotels, with the strongest impact of reusing, calls for caution of hotel managers when implementing such practices. The main change is required on customers' side, hence the need for higher awareness should be prioritized, as also highlighted by Pearce (2005) and Ban & Ramsaran (2016). The author recommends that besides spreading awareness there is also a necessity for hotel guests to be informed about the progress and improvements when achieving sustainable targets, as also suggested by Jones, Hillier & Comfort (2013). Moreover, next to educational campaigns and supportive materials, environmental programs should involve rewards and initiatives to be more engaging and score better results. Through such actions the long-term transformation is needed from ego-centered values towards eco-centered values, which will allow the complete transition to environmentally sound management also for the luxury hotels, without taking the risk of generating dissatisfaction among hotel guests.

4.4 Limitations and recommendations for future research

Despite this study reaches its aims, the author recognizes few limitations. For the purpose of this study the author incorporates six major environmental practices, i.e. energy saving, sustainable supplier-hotel collaborations, sustainable design and materials, water saving, recycling and reusing, that involve four to five questions each to support the category. The author limits the questions per category on purpose, as informants are approached on the street or at El Prat airport (Barcelona, Spain), where long questionnaires would not be user friendly and might therefore obstruct data gathering. Research conducted on a broader

scale should involve higher number of supportive questions in order to cover each category more extensively.

Furthermore, data for this research is gathered in Barcelona solely. Although the city receives an international set of tourists that are targeted, the study did not control or track informant's country of residence. In addition, the study of Bodet, Anaba & Bouchet (2016) showed that the contribution of hotel attributes towards customer satisfaction varies by country of residents, however, in this research the country of residence does not condition the hypotheses. For instance, informants from Nordic countries might have their environmental standards set higher than informants from other European countries.

Moreover, despite the author confirms that the sample size 145 is adequate, larger sample could guarantee higher accuracy of results. Author's possibility to reach higher number of informants is limited, as online surveys that present more convenient tool for data gathering would generate lower percentage of informants that usually stay in luxury hotels.

In terms of future research, as this study puts the focus on luxury hotels that involved four- and five star hotels, future research should further in detail investigate the differences in customer satisfaction towards environmental practices for all hotel star categories.

In addition, when SERVPERF method was applied in the ecotourism setting it involved three dimensions, i.e. eco-friendly practices, eco-activities and eco-learning (Ban & Ramsaran, 2016). This research focuses mainly on the first dimension of eco-friendly practices. However, the author recommends that future research should further incorporate the dimension of eco-activities and eco-learning, in order to provide more holistic insight.

CONCLUSION

The main purpose of this dissertation is to understand if implementation of environmental practices decreases customer satisfaction and customer loyalty in luxury hotels and to reveal specifically which environmental practice has the strongest impact on overall customer satisfaction with environmental practices. In order to obtain more holistic insight, the author also studies the impact of overall satisfaction with environmental practices on customer loyalty.

The theoretical foundation of this study is a model developed by Ekinici, Dawes & Massey (2008), which is adopted to study specific antecedents and consequences of customer satisfaction in a luxury setting. The author tests the model using a large survey about customer satisfaction with respect to environmental practices adopted by luxury hotels.

Data reveals that energy saving, water saving and reusing are all likely to decrease customer satisfaction in luxury hotels, with the exception of sustainable hotel-supplier collaborations, sustainable design and materials and recycling. Data also confirms that customer satisfaction with environmental practices decreases customer loyalty. In addition, authors' findings demonstrate that while all environmental practices have a positive relationship towards overall customer satisfaction with environmental practices, reusing has the strongest impact.

Previous research on this topic did not isolate luxury setting when analyzing environmental practices and customer satisfaction. This dissertation fills this gap in the literature and has strong practical implication for hoteliers and investors. Viability of environmental practices in luxury hotels is delicate as most of them are likely to generate dissatisfaction. Hence, to start with the focus on sustainable hotel-supplier collaborations is advised, as it is perceived most positively. Special precaution is needed for reusing, as it influences customer satisfaction with the highest intensity. When assessed negatively, such practice can trigger strong negative impact on customer loyalty.

From broader perspective, this study demonstrates that luxury and sustainability in the hospitality setting are still at an early stage of being harmonized. Nevertheless, increased awareness about environmental issues and expansion of eco-centric values among hotel guests can accelerate the process towards more sustainable future.

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APPENDIXES

LIST OF APPENDIXES

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APPENDIX A: QUESTIONNAIRE

In the questionnaire below, give a rating about your opinion. Questions in the first section relate to situations that you have encountered or could encounter when staying in a hotel. In the second section, demographic questions follow. Please be sure to answer each question.

I. SECTION: QUESTIONS ABOUT YOUR STAY IN A HOTEL

1. In which hotel star category do you usually stay during your travels?

- 1-star hotel
 2-stars hotel
 3-stars hotel
 4-stars hotel
 5-stars hotel
 Other: _____

2. Check the boxes below (1 means strongly disagree, 5 means strongly agree).

| General outlook | | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|-----------------|--|-------------------|----------|---------------------------|-------|----------------|
| 1. | Our planet is lacking natural resources, like water, trees, etc., therefore I am worried about the environmental issues. | 1 | 2 | 3 | 4 | 5 |
| 2. | Nowadays hotels are introducing actions (environmental practices) to reduce their impact on the environment. | 1 | 2 | 3 | 4 | 5 |
| 3. | When being on holidays, I take part in pro-environmental initiatives. | 1 | 2 | 3 | 4 | 5 |

2. Check the boxes below (1 means very unsatisfied, 5 means very satisfied).

| | | Very unsatisfied | Unsatisfied | Neither satisfied or unsatisfied | Satisfied | Very satisfied |
|-------------------------------|---|------------------|-------------|----------------------------------|-----------|----------------|
| Energy consumption | | | | | | |
| 4. | How would you feel if there were energy saving lamps in your hotel room? | 1 | 2 | 3 | 4 | 5 |
| 5. | How would you feel if not having full control on regulating your hotel room's temperature? | 1 | 2 | 3 | 4 | 5 |
| 6. | How would you feel if your key card would turn off power in your hotel room when you leave out? | 1 | 2 | 3 | 4 | 5 |
| 7. | How would you feel if some public areas of the hotel were not fully enlightened? | 1 | 2 | 3 | 4 | 5 |
| 8. | How would you feel if hotel's swimming pool was small in size? | 1 | 2 | 3 | 4 | 5 |
| Suppliers | | | | | | |
| 9. | How would you feel if having <u>only</u> the local products offered in hotel's restaurant? | 1 | 2 | 3 | 4 | 5 |
| 10. | How would you feel if having the organic products offered in hotel's restaurant? | 1 | 2 | 3 | 4 | 5 |
| 11. | How would you feel if having the fair-trade products offered in hotel's restaurant? | 1 | 2 | 3 | 4 | 5 |
| 12. | How would you feel if having <u>only</u> seasonal products offered in hotel's restaurant? | 1 | 2 | 3 | 4 | 5 |
| Design & materials | | | | | | |
| 13. | How would you feel if most surfaces in your hotel room were made out of wood? | 1 | 2 | 3 | 4 | 5 |
| 14. | How would you feel if mirrors in the bathroom were small in size? | 1 | 2 | 3 | 4 | 5 |
| 15. | How would you feel if there was the linen bedding made out of cotton? | 1 | 2 | 3 | 4 | 5 |
| 16. | How would you feel if being required to pay a parking fee when staying in a hotel? | 1 | 2 | 3 | 4 | 5 |
| 17. | How would you feel if the hotel had a policy of no-vehicle areas around the property? | 1 | 2 | 3 | 4 | 5 |

| | | Very unsatisfied | Unsatisfied | Neither satisfied or unsatisfied | Satisfied | Very satisfied |
|--------------------------|---|---------------------|-------------|---|-----------|-------------------|
| Water consumption | | | | | | |
| 18. | How would you feel if receiving a note from the hotel, encouraging minimization of water consumption during your stay? | 1 | 2 | 3 | 4 | 5 |
| 19. | How would you feel if there was gray (reused) water used for flushing the toilet? | 1 | 2 | 3 | 4 | 5 |
| 20. | How would you feel if there were low-flow shower taps in the bathroom? | 1 | 2 | 3 | 4 | 5 |
| 21. | How would you feel if there was gray (reused) water used for watering green areas around hotel's property? | 1 | 2 | 3 | 4 | 5 |
| 22. | How would you feel if not having spacious golf area available close by the hotel? | 1 | 2 | 3 | 4 | 5 |
| Recycling | | | | | | |
| 23. | How would you feel if there was a recycled pencil set on a desk in your hotel room? | 1 | 2 | 3 | 4 | 5 |
| 24. | How would you feel if there were recycled toilet tissues in the bathroom? | 1 | 2 | 3 | 4 | 5 |
| 25. | How would you feel if having recycled paper towels in the bathroom? | 1 | 2 | 3 | 4 | 5 |
| 26. | How would you feel if bedroom slippers were made out of recycled materials? | 1 | 2 | 3 | 4 | 5 |
| 27. | How would you feel if there were receptacles for recycling in your hotel room? | 1 | 2 | 3 | 4 | 5 |
| Reusing | | | | | | |
| 28. | How would you feel if receiving a note from the hotel, encouraging linen and towel reuse during your stay? | 1 | 2 | 3 | 4 | 5 |
| 29. | How would you feel if there was a shampoo in a dispenser instead of bottled version? | 1 | 2 | 3 | 4 | 5 |
| 30. | How would you feel if there were cloth towels instead of paper towels in hotel's public toilets? | 1 | 2 | 3 | 4 | 5 |
| 31. | How would you feel if the water in hotel's restaurant is given in a bottled glass jar instead of one-time-use plastic bottle? | 1 | 2 | 3 | 4 | 5 |
| Overall feeling | | | | | | |
| 32. | In general, how would you feel if staying in a hotel, which implements above mentioned environmental practices? | 1 | 2 | 3 | 4 | 5 |

2. Check the boxes below (1 means strongly disagree, 5 means strongly agree).

| | Future behaviour | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree |
|-----|---|----------------------|----------|---------------------------------|-------|-------------------|
| 33. | I am willing to stay in a hotel that promotes environmental practices when travelling. | 1 | 2 | 3 | 4 | 5 |
| 34. | I plan to stay in a hotel that promotes environmental practices when travelling. | 1 | 2 | 3 | 4 | 5 |
| 35. | I will make an effort to stay in a hotel that promotes environmental practices when travelling. | 1 | 2 | 3 | 4 | 5 |

II. SECTION: DEMOGRAPHICS

1. Your gender:

- male
- female

2. Your age:

- below 18 years old
- 18-24 years old
- 25-44 years old
- 45-64 years old
- 65 years old and above

3. Your education level:

- less than high school
- high school graduate
- college graduate
- other college (e.g. vocational school)
- post graduate (Master's or Doctorate)
- other: _____

4. Your gross annual income:

- under EUR 30,000
- EUR 30,001 – EUR 60,000
- EUR 60,001 – EUR 100,000
- over EUR 100,000

5. On average, how many times per year do you stay in hotels for leisure purpose?

- 1-3 times per year
- 4-10 times per year
- more than 10 times per year

6. On average, how many times per year do you stay in hotels for business purpose?

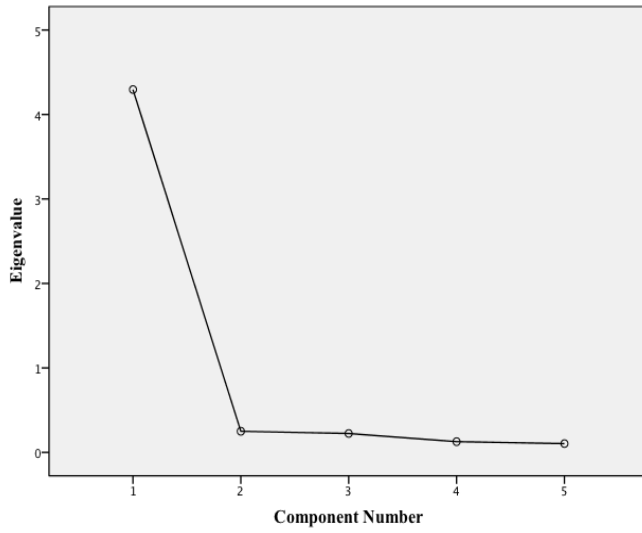
- 1-3 times per year
- 4-10 times per year
- more than 10 times per year

Thank you!

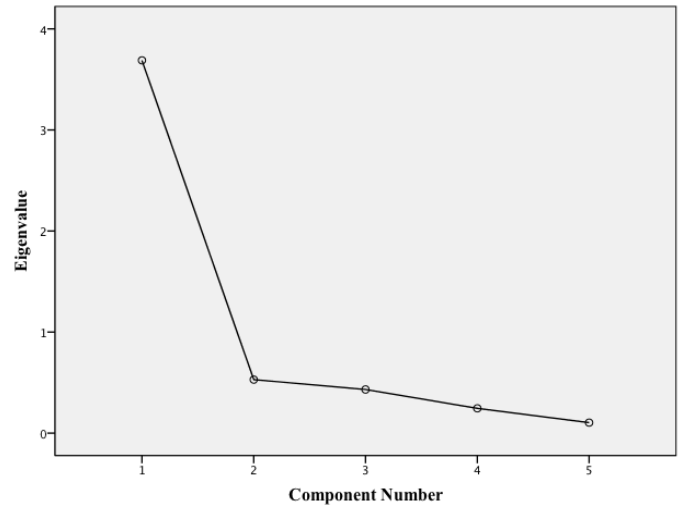
APPENDIX B: Scree plots of PCA

(The scree plots below are confirming the inclusion of one component for respective categories in principal component analysis)

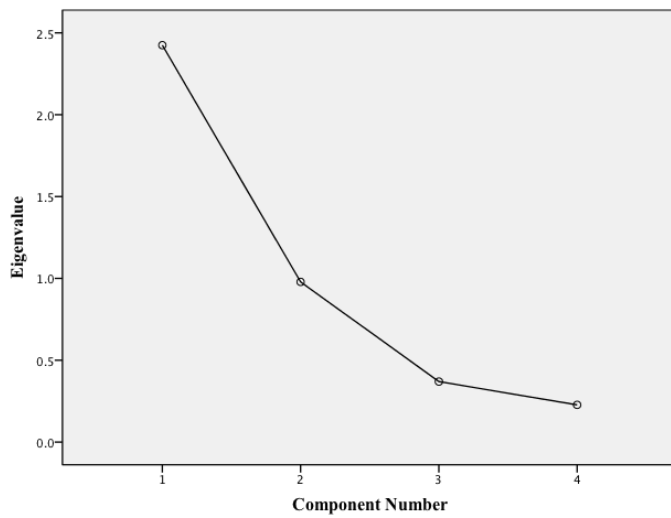
1. Energy saving



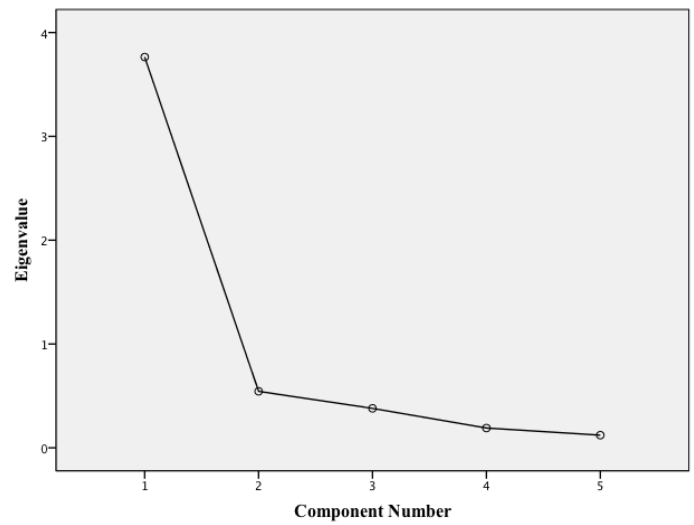
3. Sustainable design and materials



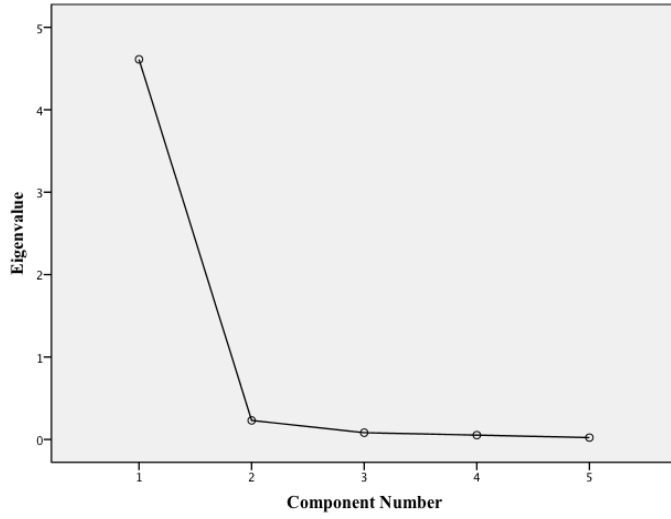
2. Sustainable supplier-hotel collaborations



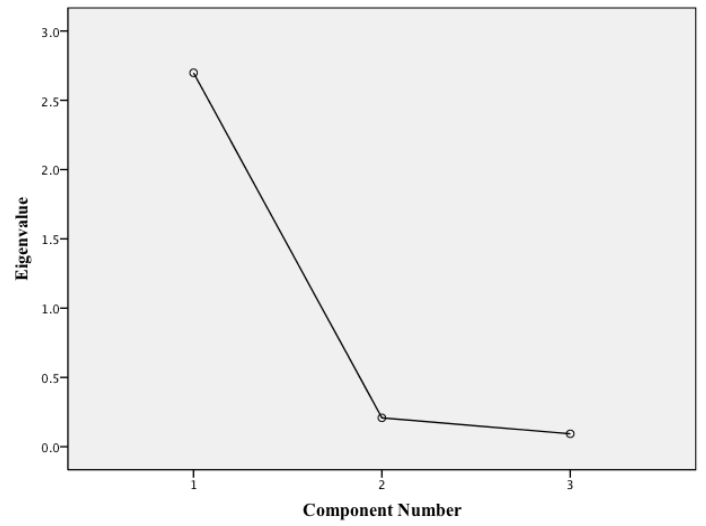
4. Water saving



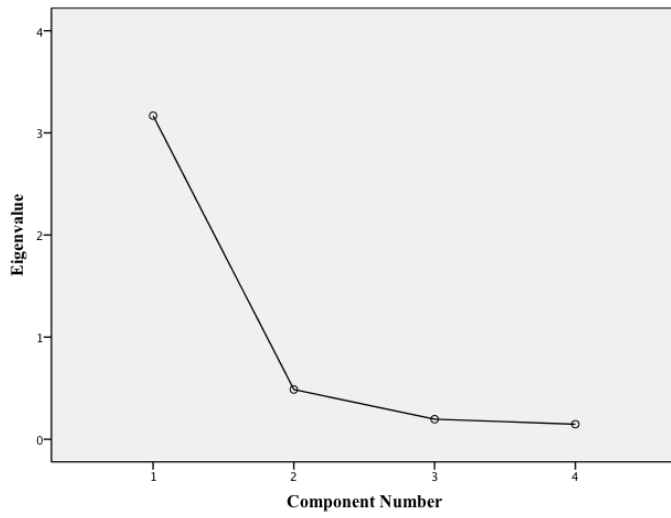
5. Recycling



7. Customer loyalty

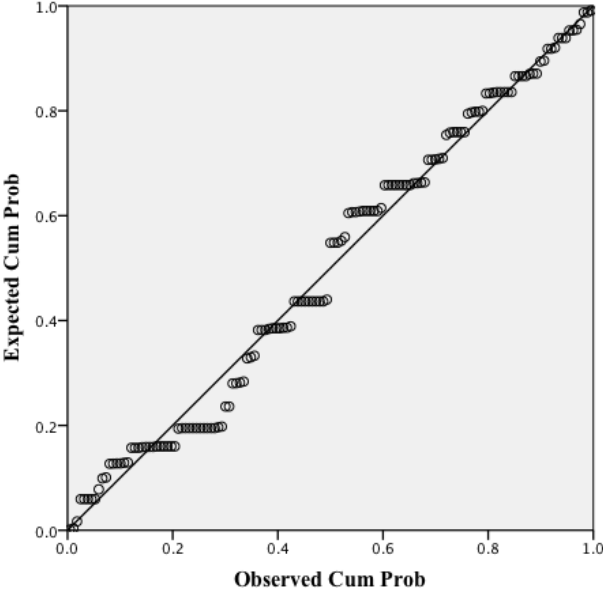


6. Reusing

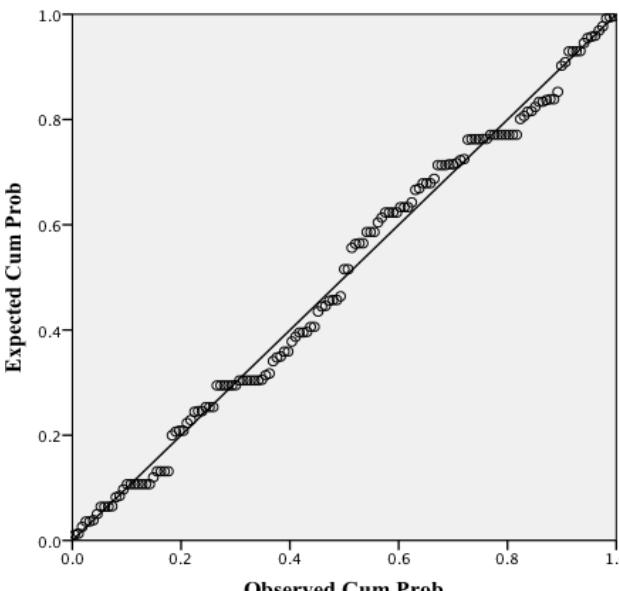


APPENDIX C: Normal P-P plots of regressions' standardized residuals
(Dependent variable for all plots is customer satisfaction)

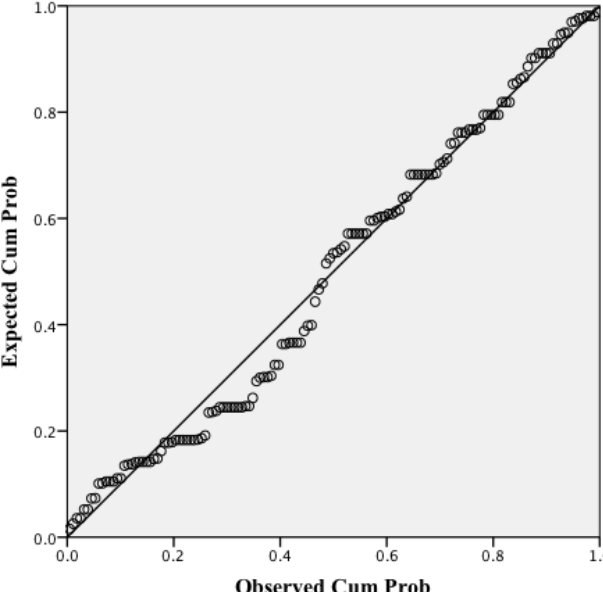
1. Energy saving



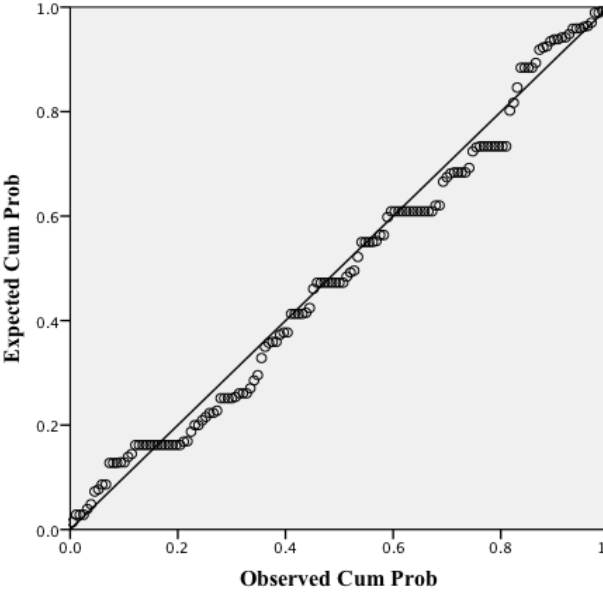
3. Sustainable design and materials



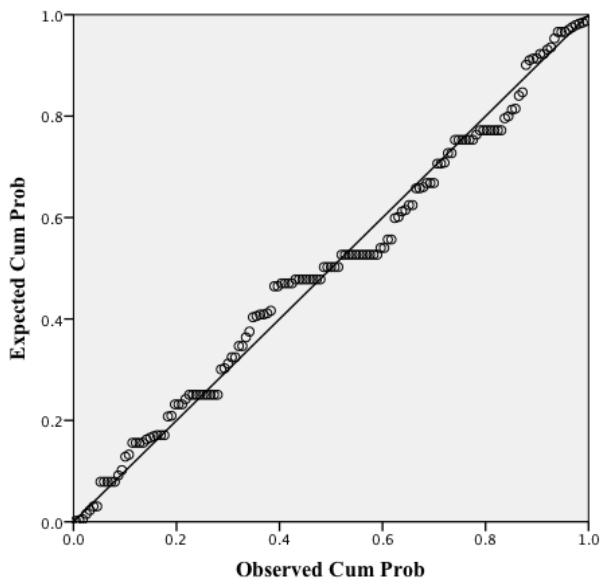
2. Sustainable supplier-hotel collaborations



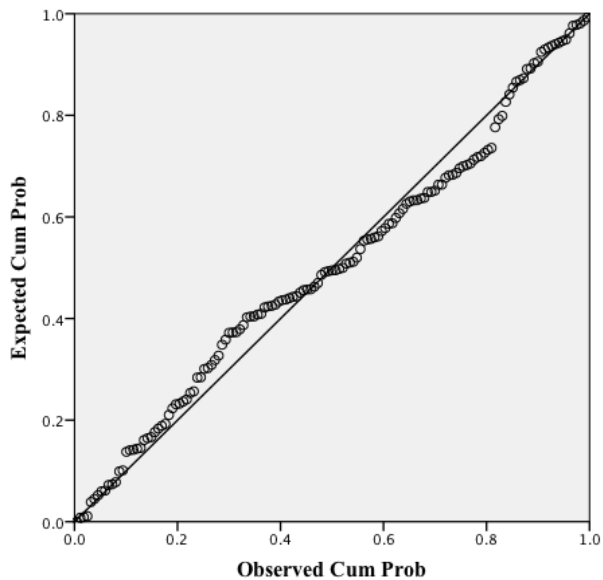
4. Water saving



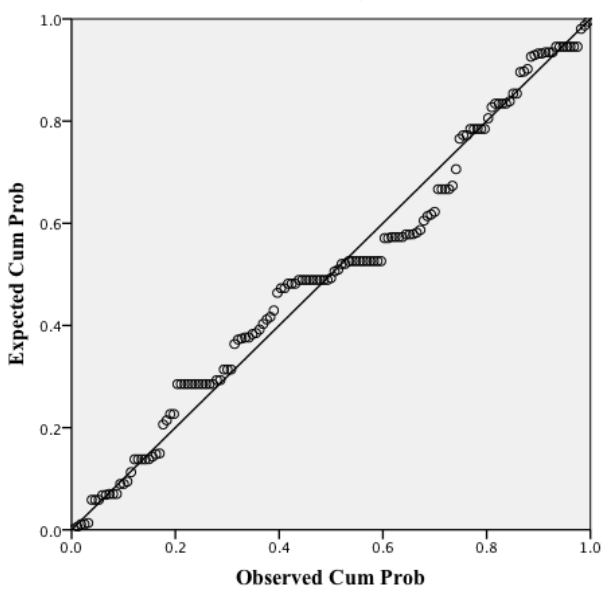
5. Recycling



7. Combined environmental practices



6. Reusing



8. Customer loyalty

