

## Article

# Determinants and Impacts of Quality Attributes on Guest Perceptions in Norwegian Green Hotels

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**Abstract:** The study aims to contribute to tourism literature and the Norwegian hospitality industry by integrating and mapping guests' green hotel experiences. Hence, the study deploys mix-methods to aid in depicting guest preferences and perspectives on Norwegian green hotels. Accordingly, these experiences are represented with 1575 guests' venue-specific generated contents (UGC) found within designated hotel pages of TripAdvisor. Scholars conducted descriptive analysis on guest ratings, machine-learning integrated content analysis to map harmonious and divergent qualities of venue-specific green hotel experiences, and explored users' community profiles to enrich and reveal further similarities with guest demographics. Consequentially, the study unveiled key themes and concepts relevant to guests' satisfaction with nine Norwegian green hotels and attributed qualities. Accordingly, the study revealed ten key themes, namely "hotel", "room", "food", "location", "staff", "stay", "service", "recommend", "value", and "experience". To exemplify, the majority of guests were found to be satisfied with their attributed qualities. Regarding hotel themes, guests were dissatisfied with green practices, booking, check-in, and other aspects of attribution. To contribute, the study offers valuable insights for practitioners and provides theoretical implications. Green hoteliers of Norway should firmly grasp green practices, as improvements and diversification strategies with green practices must be present for both online and embodiments of their venues. In an ever-evolving world of digital presence, practitioners must sustain relevance with UGC content encompassing guest experiences.

**Keywords:** green hotels; green perspectives; user-generated content; quality attributions; guest experiences



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## 1. Introduction

The tourism industry embodies diversification strategies to sustain and develop its globally acclaimed sectors [1]. According to the world travel and tourism Council (WTTC), the travel and tourism sector is one of the most important economic sectors, contributing 10.4% of the global gross domestic product (GDP), equivalent to USD 9.2 trillion in 2019. It employs 334 million workers, representing 10.6% of the global labour market, and covers one in four new jobs created worldwide between 2014–2019 [2]. Amongst its acclaimed sectors, Norway's tourism sector generated 316.7 billion Norwegian kroner (USD 36.9 billion) in 2019, equating to 7.9% of Norway's GDP [3]. Furthermore, international tourists spent NOK 69.1 billion (USD 8 billion), which accounts for 4.7% of Norway's total exports for 2019. For the same year, the sector employed over 30,000 workers, equating to 11.1% of national employment, of which 171 thousand worked only in the tourism sector [4]. Thus, tourism is an economically important industry in developed economies such as

that of Norway. Regarding sustainability, the Norwegian tourism sector is accountable for nearly 8% of all globally recognized greenhouse gas emissions (GHG). Tourism and hospitality venues are not as environmentally disastrous as other forms of businesses [5,6]. Yet, hotels are amongst the most environmentally destructive venues in the world [7]. The lodging sector accounts for approximately 20% of tourism emissions [8]. Comparably, accommodation venues of the tourism and hospitality industries house the most resource-intensive and unsustainable segments for the environment [9].

Further, these segments operationalize excessive resource allocation on matters not limited to fabric washing [10], energy waste, and dumping waste to environmentally sustainable parcels and water sources [11]. In relevance, discussion on the criticality of sustainable practices exists. Notion exerts the need to reduce the disastrous consequences of unsustainable practices that harm our global biomass [12]. Subsequently, matters concerning our mother earth became a critical consideration, where adopting sustainable and green strategies became an ever-more evolving concern to conserve water, land, and energy sources [11].

As Manaktola and Jauhari [13] indicated, eco-friendly properties focus on water, energy-saving, and reducing waste. Appositively to mass hotels, “green hotels are eco-friendly accommodation venues where hoteliers lead with energy conserving, water preserving and waste eliminating practices to protect their environments” [14]. Notably, the development of these conceptually eco-friendly hotels increased in relevance to the demands of environmentally aware guests for sustainability [8]. For this reason, the literature indicates the criticality of obtaining green certifications and publicizing green initiatives due to heightened consumer awareness [15,16]. A study capturing 35,000 visitor perceptions revealed that 79% of the guests consider green hotel practices when choosing accommodation [15]. Beyond consumer demands, these practices value hoteliers’ competitiveness in fierce markets. By adopting green initiatives, hoteliers can minimize waste and increase operational efficiency, resulting in cost-saving capabilities [17]. These sustainable efforts can help conserve energy from 20–40% without lacking the hotel performance index. To date, scholars focused mainly on green accommodation trends, green marketing strategies, and guests’ attitudes and behavioral intentions toward green practices [18–21]. In past studies, using social media platforms [22] enabled the optic to inquire about ‘in what manner’ and ‘to what extent people adhere to green practices’ [23]. According to [6], the “actual voice of the green hotel’s guests has been rarely analysed” (p. 192). Some studies analyze online guest reviews from the guest perspective of eco-friendly practices [24].

Yet, a scholarly understanding of perceived green service quality and green satisfaction, which are regarded as essential factors for attaining superior quality service, is still in its infancy. Discovering a green dimension of service quality and customer satisfaction necessitates a comprehensive analysis involving a large volume of data because comprehensive data offers a novel way to comprehend customers’ perceptions of service quality and enhances the predictive validity of the study results [21]. To the authors’ knowledge, the literature is highly scarce examining the green-hotel-specific qualities of service via user-generated content (UGC), precisely, the void within the Norwegian tourism and hospitality sector. Previous contributions focused on the best green hotels with the greenest practices (i.e., platinum-level hotels of the green leaders’ program). Studies [6,24] that contextualized the top ten green hotels in the U.S. are scarce. Authors’ knowledge and literature are void with regard to non-platinum contexts. To contribute to the knowledge of economy of green practices of hoteliers, the study contextualizes green hotels of varying green statuses (gold, silver, and bronze) to examine their unknown quality attributions. Based on the authors’ limited knowledge, no study has examined guests’ perceptions of green hotels concerning detailed experience types (friends, family, couple, business, solo). By and large, qualitative or mix-method studies (i.e., content analysis) centralizing green tourism and hospitality contexts with the contemplation of guests’ gender and origins are incredibly scarce. In this regard, identifying different green hotel segmentation using content analysis is nonexistent in the Norwegian tourism and hospitality context. Extending on this notion, the study

integrates the differentiation of guests on the basis of gender and different experience types. Currently, existing voids and gaps limit Norwegian hoteliers' know-how on the qualities of their green practices via green hotel guests' valuable perspectives.

The study aims to contribute to the tourism literature and the Norwegian hospitality sector by integrating and mapping guests' green hotel experiences via UGCs. The study analyses guest ratings, gender, and regional identification to guests assess levels of satisfaction (high and low) across Norwegian green hotels. In line with this notion, the authors centralize the following research questions:

- RQ 1: What are guests' predominant themes and concepts about their experiences with green hotels in Norway?
- RQ 2: Which main themes and concepts lead to guest satisfaction and dissatisfaction?
- RQ 3: What are the main narratives or preferences shared by the different types of guests, gender, and regions?

## 2. Literature Review

### 2.1. Sustainability in the Hospitality Industry

In the hospitality industry, environmental sustainability practices are crucial in that they stimulate tourism activity and provide various facilities related to recreation, meetings, conferences, and entertainment [25]. One study underlined that the hospitality industry demonstrates the need to adopt sustainable business practices [26]. Thus, hotel businesses must act as protagonists of the sustainable tourism industry [27]. Considering the prime position of hoteling businesses in tourism activities, the sustainability of hotels received much attention from scholars, hoteliers, and legislators [28]. As a result, more and more hoteling businesses are adopting sustainability practices to ensure long-term business viability, reduce cost, optimize resource consumption, build a positive business image, and comply with environmental laws [29]. Despite the direct relevance of sustainability to the hotel industry, it has been observed that the sector needs to be higher in sustainability practices. It has negative consequences for the environment and other stakeholders [30]. It has been argued that the industry has significantly contributed to the deterioration of the environment in many regions [27]. In this context, Lu and Leung [31] noted that water availability could hamper the sustainability development of hotels.

A consistent water supply could leverage the business reputation of hotels in water-shortage areas. The industry is relatively high in resource consumption and use of water, electricity, and gas for lighting, cooling, heating, cooking, and laundry systems [32]. As noted by [33], hoteling accounts for 21% of the total ecological footprints of the tourism industry, which is likely to increase to 25% by the end of 2035. Consequently, Ref. [7] stated that climate changes, resource shortages, and increased carbon emissions can potentially obscure the life of local people living near tourist spots. Thus, sustainability concerns are crucial for the hotel business and other people living in society.

In line with this, environmentally concerned sustainability practices of "green hotels" were founded as facilities that strive to decrease the adverse environmental impact while providing guests with a comfortable stay [14]. Adopting a green approach is related to actively minimizing the negative environmental impact of businesses and promoting a positive impression [34]. One of the reasons why hotel businesses thrive on building a green image is to gain a competitive advantage [35]. Luo and Bhattacharya [36] emphasized that green practices are a strategic hotel value. In contrast, Xu and Gursoy [37] posit that going green is becoming increasingly successful for hotels to increase their competitiveness. Thus, they will gain more market share since they can capture the sustainability-sensitive tourist segments. Green initiatives, such as green marketing, may also help hotels improve their public image and produce positive commercial outcomes [9,38]. As for the practices of green hotels, many organizations in the hospitality and tourism sectors have realized the value of green practices and are working to spread awareness of them. Since its inception in the United States in April 2013, TripAdvisor's green leader program has been the hotel industry's green initiatives program that attracts the most significant interest and

participation [15]. Many hotel chains stepped forward to improve the environmental and social performance metrics by evaluating the performance of going green. For instance, Hilton launched the Light Stay program in 2008, which enabled the business to measure and track the hotel's environmental performance worldwide. Hiltons' environmentally aware acts made an additional \$550 million worth of savings in 2009, which reduced 14.5% of energy usage, 20.9% of carbon emissions, and 27.6% of waste creation [39].

In 2018, 184,299 hotels were operating across the tourism and hospitality sectors [40]. Norwegian statistics for 2019 showed that the Norwegian accommodation sector has approximately 2929 enterprises comprising all accommodations. Roughly 1200 hotels were operating, 1159 hotels and motels with restaurants and 80 hotels and motels without restaurants [4]. In addition, hotels are the most popular and profitable category compared with the range of all other accommodation sectors. With steady growth in revenue over the past ten years, hotels earned approximately NOK 16.4 billion (USD 1.72 billion) in 2019. In 2018, the hotel industry of Norway accounted for more than 31,000 employees [41].

Regarding specific green practices, one study noted that energy conservation, use of green materials, and further attempts to reduce consumption only once were considered the activities a hotel must adopt to be green in Hong Kong [42]. Another research proposed green practices for hotels in Taiwan, which include a commitment to the environment, reuse and recycling, energy conservation, water efficiency, landscape management, organic pest management, avoidance of toxic chemicals, promoting green modes of transportation, and green purchasing [43]. In contrast, Agarwal and Kasliwal [44] found that a hotel's most important green activities were energy conservation, recycling, and training employees for better environmental performance. One research indicated that in North America, hotels are inclined to adopt green practices [7]. Considering those practices, two types of guest preferences appear. Studies also indicate sustainable tourism green efforts regarding light and dark green followers [45,46]. It is also stated that the "light green" as (weaker) and "dark green" as (more vital) in supporting the level of environmental practices ([45], p. 11). Hunter mentions light green followers' emphasis on maintaining good ecological practices in the lodging sector in this study. In contrast, on the other side, dark green supporters or guests emphasize significantly conserving the natural environment and following more eco-friendly rules in performing business operations.

## 2.2. Green Service Quality and Service Quality Attributes

For customers' satisfaction with 'green service quality', it can be said that customers evaluate the quality of the services companies provide on the basis of the degree to which their expectations differ from their views of those services. Several hotel chains are now formulating policies and initiating various initiatives to become more environmentally friendly; nevertheless, it is necessary to understand how customers see these ecologically conscious efforts [47]. Concerning customers' preference for environmentally friendly products and services, firms must adopt green means to deliver services [48]. A study underlined that with time, hotels increase their participation in green activities to strengthen their green service delivery, promoting a green image and causing the customer to be more aware of environmental issues [49]. Thus, more aware customers are willing to pay a premium price for hotel services authenticated as green [50]. Therefore, hotels expect financial and reputation benefits from pursuing a green mode of service delivery.

Green service quality (SQ) is associated with customers' judgment on environmental superiority or excellence of service or brand [51]. Here again, customers compare their expectations with the service experience and judge the service's environmental impact to declare it green or otherwise [52]. In this regard, service quality's green aspect has become vital in modern times. According to research, a hotel's perceived green SQ has been accessed by subjective evaluation of guests regarding hotel green practices [53]. The notions of green service quality relate to the ability of hotels to meet or exceed expectations in providing green services through the employment of green practices. Therefore, guests subjectively evaluate the green aspects of service delivery of a hotel to form a perception of a firm's

overall green service quality [54]. It has been argued that ensuring green service quality by adopting green practices in hotels is quite beneficial for their customer-related outcomes, as it not only generates positive word of mouth but also improves the revisit intentions of customers [8]. Thus, Yu et al. [9] opined that green hotels attract environmentally sensitive customers ready to pay premium prices for green services.

In the wake of environmental concerns, green practices are now largely considered a fundamental element of service delivery and are considered a direct contributor to the behavioral intentions of customers [55]. Many studies argue that the absence of the green element of services causes customer dissatisfaction [56]. On the basis of the prospect theory, which argues that people feel more regret from a negative experience compared with the gratification of a positive experience [57], customer dissatisfaction may be magnified due to the negative green service quality experience. On the other hand, customer satisfaction has become an essential element of competitiveness in the modern business landscape [58]. It also signals the market and financial performance [59].

Lee and Cheng [60] have recently evaluated the quality of green services using the GLSERV scale, derived from a modified version of the LODGSERV scale [61]. In addition to SERVQUAL traits, the scale examined “conveyance of environmental protection knowledge”. In contrast, a study in Malaysia [62] reported that even if guests engage in environmentally conscious behaviors at home, they are not concerned about green practices during their vacations. The environmental practices taken by hotels, such as providing soap dispensers rather than conventional soaps (wrapped) and developing towel reuse programs, were not as important to the guests as the local culture, the food, and the quality of the hotel workers. A study examining the hotel industry in India discovered that the green hotel’s products and services must be of higher quality if they want the customer to choose their environment-friendly hotel [63]. According to the findings of this study, customers of environmentally conscious hotels will not choose a hotel based solely on its green practices; instead, they need to offer comparable service levels and other related amenities. The need to provide environmentally responsible services is quickly gaining prominence.

Some arguments support the notion that providing green service quality excites consumers and acts as a facilitating agent to provoke customer satisfaction (CS) [64]. Subsequently, a study found that green attributes strengthen the impact of SQ on CS [60]. Another academic piece argued that customer satisfaction increases if a green hotel indulges in green practices with a public service motive [65]. Thus, people are satisfied when a product or service demonstrates environmental friendliness and sustainability and fulfils the wants or desires of people appropriately [66]. Several recent studies have explored the link between environmentally friendly corporate practices and satisfied customers [65]. It has been argued that when green hotels participate in green activities for the sake of the community rather than for their benefit, customer happiness rises (such as increasing hotel profits) [47]. As reported, customer satisfaction increases even more when they participate in green activities for public-serving purposes (such as aiding in community development). Guest discontent with environmentally friendly company practices significantly increases when visitors have a negative image of such practices [56].

From the lens of scholars, they employ a range of data-gathering techniques, such as surveys, interviews, and experience or content analysis methods, to understand a phenomenon. In tourism studies, primarily survey analysis method is used. Nevertheless, online reviews offer considerable advantages over surveys regarding the quality of the data they produce. Unlike questionnaires, online reviews are spontaneously posted by guests or individuals and are free from laboratory effects [67]. Online assessments, as opposed to traditional surveys, provide information that may be more objective, significant, and devoid of sample bias since online evaluations are supplied voluntarily and without the influence of laboratory effects [68]. As mentioned by previous tourism and hospitality scholars, UCGs are substantial for their role in visitor experiences and are immaterial and can only assess while users utilize the service. For instance, hotels with more positive feedback depict good monetary results. However, negative and long-stated online feedback



received attention and negatively impacted the hotel business [69]. Many scholars reflect that customer feedback through e-word of mouth (WoM) aids in reducing uncertainty related to risks involved with the services they select, making the decision-making process well-organized and well-planned [70].

### 2.3. Online Reviews in the Hospitality Domain

Modern-day social media and other interactive websites enable guests and customers to post reviews and their experiences on these online forums [71]. One research study reported that guests seek information through an online forum to plan their visit and share their travel experiences with people on social media and other review forums [72]. Another research argued that information provided on the online forum depicts the first-hand experience of the consumers and provides the rich and trustworthy information to prospective guests [73]. These reviews are linked with the travel decisions of guests who use this information to make travel arrangements [70]. As a result, several studies on customer satisfaction used e-WOM data [74,75] to understand the guest's approach toward green hotel practices.

Specifically, positive online reviews were reported to be associated with higher hotel room sales in the hospitality industry [76]. It concluded that customers would likely book a hotel with higher positive reviews. Another study argued that consuming consumer-generated reviews improves awareness and attitude towards the hotel while forming an opinion and making a booking decision [77]. One research study revealed that online user-generated authentic content impacts all phases of the consumer decision process: prior, during, and after decision-making; thus, the quality of purchase decisions is enhanced by consulting online reviews [78]. Considering the green practice, online hotel reviews regarding a hotel's green image could help consumers select green hotels and help the hotels in improving their green service quality. In this regard, a study proposed a method to incorporate information from online reviews to improve the sustainable development of green hotels [79]. Likewise, the research used big data analytics for online reviews and found that the consumers noted and appreciated the hotels' green practices, and such appreciation was highlighted in their online reviews [80]. Thus, the more positive green review could attract more customers and enable the hotel industry to use these reviews to improve their green image and practices. With the increased use of social media sites, consumers can quickly leave their comments online for the public to understand and evaluate services on the basis of their encounters with the service [81].

## 3. Methodology

### 3.1. Research Method

This study used qualitative and quantitative content analysis, known as the mixed content analysis approach. Qualitative methods can help to describe relationships and behaviors in the form of words and logic in the study, while quantitative methods assist in explaining these relationships in the form of facts and figures [82].

The researcher used non-probability sampling involving judgmental and convenience sampling techniques. The judgmental sampling technique is also a type of convenience sampling in which participants are chosen from the accessible population [83]. The researcher intended to select all green hotels and their comments available. However, this research considered only green hotels with a minimum of 1000 reviews. The reason to approach hotels under this criterion is that web reviews vary significantly due to the fame and time of establishments of the property and the time to join the green leader's program. As a result, we found nine green hotels out of twenty-four having different badges such as "platinum, gold, or silver" with the Green Leaders program. More specifically, convenience sampling has been used to identify the number of TripAdvisor reviews from the nine eco-centric hotels. The researcher collected 1575 English web reviews, 10% from each hotel, as guided by studies of Yi et al. [6] and Arasli et al. [84].

The TripAdvisor website was chosen as a collection source of web reviews analyzed in the present study. This website is considered one of the largest travelling databases for online shared reviews [85]. Moreover, in the virtual travel world, this website covers one-tenth the traffic of all guest communities [86]. Thus, the study selected this platform for gathering comments due to its prestige and immense coverage [87]. In the year 2013, TripAdvisor unveiled the Green Leaders program. Hotels or accommodations concerned with encouraging green efforts in their properties can obtain a green hotels status (bronze, silver, gold, or platinum) depending on their property's level of participation in green practices by filling out the survey designed by TripAdvisor (See Table 1).

**Table 1.** Trip Advisor Green Leaders Program Categories. Source: ([88], p. 157).

Green Level Badges	Evaluation Criteria
Platinum	Must meet up 60% or greater score on green practices survey evaluation
Gold	Must meet up 50% score on green practices survey evaluation
Silver	Must meet up 40% score on green practices survey evaluation
Bronze	Must meet minimum green practices and 30% score on green practices evaluation survey
Green Partner	Meets minimum green practices requirement

In order to explain our grasp of the intricacy of this study subject, a mixed method is advised. The mixed-methods approach includes qualitative and quantitative data collecting and analysis techniques, which may be used concurrently or sequentially within single research. In addition, we anticipate that this methodology will help us validate the results of qualitative and quantitative investigations. Hence, mixed-methods research yields superior results and enhances validity and reliability [84,86].

### 3.2. Data Collection and Sample

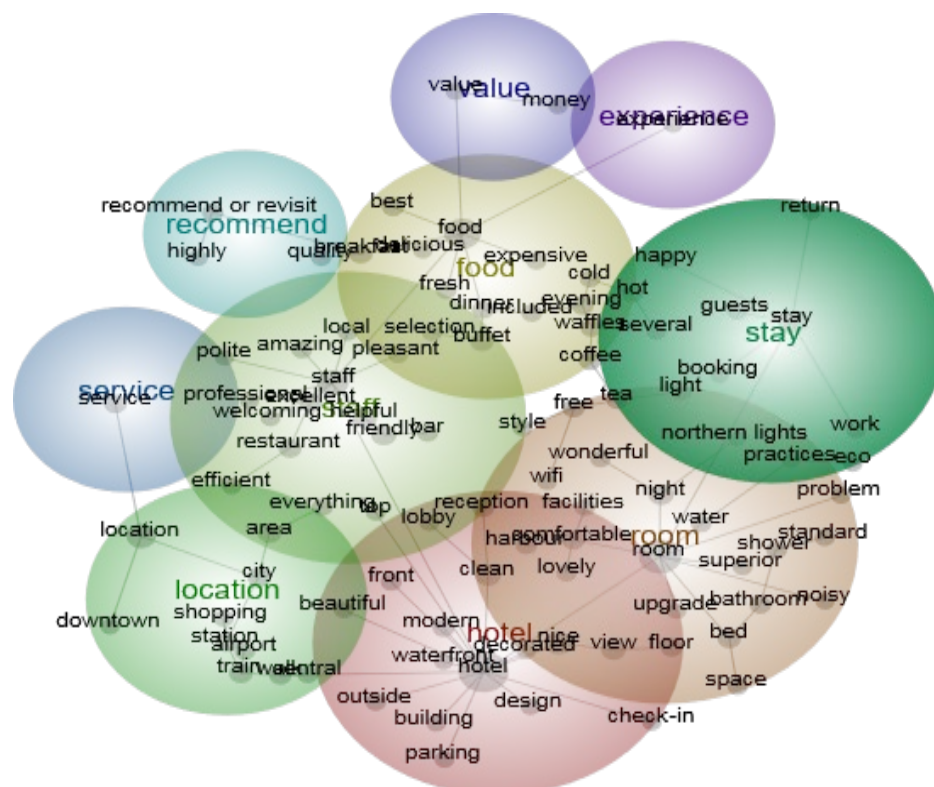
In this study, we explored all 36 areas of Norway available on the TripAdvisor website. In short, we find 89 hotels under the green label in all these cities. However, only 24 hotels have the green certification under the Green Leaders program. To avoid biased results, this research considered only green hotels under the Green Leaders program which have a minimum of 1000 reviews. Following the criteria, these twenty-four hotels narrowed down to nine green hotels with the green leader's program certification status, including platinum, gold, and silver from TripAdvisor (Table 2). These sampled nine hotels under different Green Leaders statuses cover the general green practices followed by minimum green practices from recycling, guest training, and linen and towel reuse to advanced green practices, including energy, water, purchasing, waste, site, education, and innovation [6,24]. The selection of these eco-friendly hotels under the earlier criteria assures that this study obtained enriched data. In our research, 1575 web reviews out of 15,748 comments were collected for investigation, which is ten percent of the total reviews from all nine green hotels. In the current research, by following the comments collection methodology from other scholars, only English narratives were taken into consideration [9].

As suggested by the impactful studies in the literature, it was ensured that a sufficient number of reviews were collected to perform Leximancer analysis and achieved a sample size that matches the prior related studies. For instance, the study by [84] collected 1250 reviews, Ref. [89] gathered 2000 reviews, and [90] analyzed 1776 text comments. The comments were scraped using Python code from December 2021 to February 2022. However, the perspective of green hotel guests in the form of web reviews was extracted and analyzed from January 2014 to February 2022 after the launch of the Green Leaders program in 2013. The collected reviews are saved in excel (CSV, comma delimited) format. These reviews added up to 214,023 words.

Table 2. Sample of Norwegian Green Hotels.

Hotel Name	Star Ratings	Green Leaders Level	Total Comments	Sample Size	Location
A	4.5	Gold	2482	248	Tromso
B	4.5	Platinum	2006	201	Tromso
C	4.5	Silver	1259	126	Tromso
D	4.0	Silver	2249	225	Trondheim
E	4.0	Silver	2168	217	Bergen
F	4.0	Silver	1191	119	Trondheim
G	4.0	Silver	1684	168	Oslo
H	4.0	Gold	1147	115	Kristiansand
I	4.0	Silver	1562	156	Oslo
Total	-	-	15,748	1575	-

Broadly speaking, a number of phases were followed to compose the concept map for our research. First, the Excel file, including reviews from TripAdvisor, was uploaded into the software. Next, we composed concepts in Step Two, reflecting the beginning of the concept definition. Here, particular words serve as keywords that differentiated one concept from another. The subsequent phase is the thesaurus derivation pertaining to each seed. It is possible to construct a concept map by examining the links among words, concepts, and themes using Leximancer analysis. These concepts are shown as little grey nodes on the map, and their relational and semantic combinations are organized into themes and denoted by circles on the map, as depicted in Figure 1 [21,89].



**Figure 1.** Concept Map with Total Number of Concepts.

The CSV database included the gender, region, guest type, review rating, title, review content, and rated criteria (value, rooms, location, cleanliness, service, and sleep quality). Moreover, the guest assigns hotel rating scores on a five-point scale on the basis of their satisfaction level with the hotel experience. The rating range is as follows: 1 = terrible, 2 = poor, 3 = average, 4 = very good, and 5 = excellent. From time to time, different scholars



developed different scales to measure service quality; however, we are discussing one of the scales proposed, “GLSERV”, by [60] to measure green hotels’ service quality. This scale has 25 items that were further divided into 6 dimensions, which are as follows: reliability, empathy, green communication, green energy reduction, assurance, and tangibles. This study is similar to [85] concerning customer satisfaction depending on the quality of the service attributed to green hotels. As suggested, Leximancer 5.0 has been used to analyse hotel reviews to better and more comprehensively understand the guest’s perceptions [90]. When measuring the service quality of green lodgings, the tangibility and intangibility dimension of the service is equally essential to obtain a balanced view of guests’ perceived service quality experience. The unavailability of one-part dimensions can lead to inconclusive SQ results. Thus, the researcher measured the quality of service in terms of tangibility and intangibility and discussed how different services related to the guests’ satisfaction and dissatisfaction.

### 3.3. Data Treatment

This research used Leximancer content analysis software (Edition 5.0), which performs conceptual and relational analyses that reduce subjectivity [89]. It generates the topics and concepts that describe the qualitative aspect through logical patterns of words. However, the logical proximity of concepts and topics and their relationship are described through numbers, such as the percentage of concepts relative to other concepts or identified topics. Leximancer provides data in visual form and explains the relationships among different themes and concepts. It gives an overall view efficiently by providing key concepts in graphic form constructed from the data [91]. Analysis performed using this software provides the basis for recommending gaps in the less explored research area. This software has high reliability because it allows scholars to understand and illuminate the text data and avoid bias in the study [80,92]. The conceptual map was created on the basis of three basic units: words, concepts, and themes. The program identifies relations among these units and logically uses them to generate a visual map known as a conceptual map [89,93].

Leximancer is distinctive from other user-generated content analysis tools. Unlike other analysis tools, such as NVivo, ATLAS, and CATPAC, it does not work on the basis of word reputation, terms, or phrase coding; instead, it extracts logical ideas and concepts from the textual data using its algorithm [94]. Concepts emerge due to the number of repetitions in a text, while dominant concepts appear as a theme in bubbles [95]. When handling a large data volume with manual content analysis coding, the researcher has an increased risk of error in coding results [84]. Leximancer resolves the issue of reliability and validity, as the program automatically creates the idea list or concept from the textual data. Thus, it mitigates the bias results issue by avoiding manual intervention [96]. Several past studies mentioned that Leximancer entails minimal manual intervention, which makes it reliable. This tool performs objective content analysis, and the results’ validity is also increased due to removing researcher bias and subjectivity issues [97].

## 4. Results

### 4.1. Demographic Distribution

Table 3 contains the demographic data of 1575 guests who shared their online experiences at selected green hotels. In terms of gender, more than half of the reviewers were male. The sample consisted of 54% men and 39.9% women. The reviewers that were not identifiable were labelled as “unknown”, accounting for 6.1% of the total reviewers. Furthermore, if we look at the origin of the reviewers, most are from Europe (71.1%), which accounts for more than two-thirds of all reviewers. In comparison, Africa has the smallest number of reviewers, comprising 1% of the total sample.

**Table 3.** Frequencies (n = 1575). The guests were delighted with their overall experiences of green hotels by viewing the satisfaction level.

Distribution	Category	Frequency	Percentage
Gender	Female	629	39.9
	Male	850	54
	Unknown	96	6.1
Origin	Europe	1119	71.1
	America	244	15.5
	Asia	115	7.3
	Australia	81	5.1
	Africa	16	1

The high satisfaction level contains 5 (excellent) and 4 (very good) satisfaction ratings, while the low satisfaction level contains 2 (poor) and 1 (terrible) satisfaction ratings (Table 4). As per the data, almost half (48.7%) of the reviewers rated green hotels 5 out of 5, and in total, 85.5% of guests rated them as 5 or 4, while 3.2% rated satisfaction as 1, which means a terrible level, and 11.4% rated them as 2, meaning poor. Thus, considering those figures, the most significant number of the guests were highly satisfied, and a smaller number were low satisfied or dissatisfied. In this study, most guests were a couple (38.8%), while business guests accounting for almost one-fourth (26.6%) of the total guests, were the second highest count. Moreover, family guests and friends accounted for 19.1% and 8.8%, respectively.

**Table 4.** Profile Distributions (n = 1575).

Variable		Reviewers	Percentage
Overall Satisfaction	1	50	3.2
	2	179	11.4
	4	579	36.8
	5	767	48.7
Guests Profile	Business	419	26.6
	Couple	603	38.3
	Family	301	19.1
	Friends	139	8.8
	Solo	113	7.3
Total		1575	100.0

#### 4.2. Concept Analysis

The current content analyses lead to the development of the concept map (Figure 1). This concept map revealed the dominant themes and concepts in the guest online reviews of green hotel experiences. The systematic approach was followed, and results from the analyses revealed ten themes, further divided into 96 concept seeds and organized in the form of conceptualized framework. The resulted themes from the Leximancer analysis are as follows: “hotel”, “room”, “food”, “location”, “staff”, “stay”, “service”, “recommend”, “value”, and “experience”. The analysis results from the customer viewpoint show its uniqueness by taking the tangible and intangible factors of the service based on determinants (service experience), which leads to the resultant factor (revisit or recommendation intention). Concept analysis (Figure 1) reveals the following:

##### 4.2.1. Hotel Theme

Hotel theme is the most important, as it showed 100% relevance to other themes and concepts explored in the study. This dimension showed the highest level of association with other themes. The theme of the hotel based on the occurrence frequency encompasses the concepts of “hotel” (count = 2920; relevance = 100%), “nice” (662, 23%), “clean” (472, 16%), “view” (472, 16%), “modern” (217, 7%), “reception” (214, 7%), “harbor” (178, 6%),

“front” (166, 6%), “outside” (147, 5%), “parking” (91, 3%), “building” (67, 2%), “design” (48, 2%), “decorated” (39, 1%), “waterfront” (34, 1%), and “check-in” (9, 1%). For the hotel theme (Figure 1), the outcome of the analysis shows the high significance of the hotel theme dimension based on the facilities in an eco-friendly property. A similar theme was most important in the findings of a study performed by [84], which examined the Muslim-friendly hotels’ service quality from web reviews. Similarly, [80] found that green properties should have facilities that accommodate the purpose of green practices. This theme concept holds the tangible factors, such as clean, parking, outside “view,” waterfront, harbor, and building, while intangible factors are check-in “service”, reception “staff service”, and modern “hotel”. These components are essential from the customer’s perspective, which leads to high SQ and CS if perceived positively. Examples of the reviews by the guests:

“Recommended! Very nice hotel, still “brand new” (it opened in 2014). Friendly and helpful reception allowed us to check in and drop off our bags when we came from the airport early since the room was available! Nicely decorated room roomy layout. The hotel is very well situated, in the middle of Oslo, easy to walk to all main attractions!” (Male, Sweden).

Due to the relationship of the hotel theme with other themes, such as room, location, and staff theme, some concepts overlap. The hotel theme covers mainly the concepts of view, harbor, clean, friendly, and decorated from the room theme due to closely relational concepts used in themes, while reception and lobby linked with staff theme and beautiful and central linked with location theme. One related review reads:

“Great Hotel was warmly welcomed by the receptionist and checked in very efficiently. I did have a problem with my room; the heater wasn’t working. I reported this to reception and was immediately given another room; there was no hesitation on their part at all. My room has the most wonderful view over the harbor. The room was spotless as you would expect, tea and coffee were plentiful, and the bathroom was spotlessly clean, with a lovely large shower and plenty of towels”. (Female, Belgium).

#### 4.2.2. Room Theme

Room theme is the second most prominent theme in the study. The guests repeatedly mentioned this theme. The theme includes the concepts of “room” (count = 1898; relevance = 65%), “night” (488, 17%), “comfortable” (360, 12%), “bed” (359, 12%), “free” (240, 8%), “floor” (232, 8%), “bathroom” (219, 8%), “tea” (152, 5%), “water” (151, 5%), “shower” (139, 5%), “lovely” (131, 4%), “facilities” (119, 4%), “standard” (127, 4%), “space” (102, 3%), “wonderful” (101, 3%), “superior” (66, 2%), “problem” (82, 3%), “wi-fi” (47, 2%), “upgrade” (40, 1%), and “noisy” (38, 1%). The room concept was the second most frequently mentioned concept, which discusses the amenities highly linked in the form of concepts with green hotel rooms.

This might show that a tangible room is an essential measure of service quality. Other major room amenities in connection to service quality tangibles found are bed, floor, bathroom, water, shower, and wi-fi, while comfortable, lovely “room”, noise is related to intangible characteristics of the room. In the study, the room’s shower, water, and bathroom facilities directly connect with “eco” practices in the stay theme, with stay at hotel room supporting the green services of the property. Previous studies also mentioned room services and associated facilities as central elements of service quality [85,98]; however, these study’s findings could not find the room’s significance to the SQ dimension of green hotels. From the guest perspective studies, the room did not disclose as a major contributor to customer satisfaction due to the main focus on green practices [6,9,99]. However, the [80] study found a strong connection between room amenities, such as water showers and bathrooms, with green practices. Example of positive reviews on room theme includes:

“When we opened the door, our jaws dropped to the floor. We had been put in this beautiful room with multiple windows and a gorgeous panoramic city view. A great place to spend a weekend. Ask for a wonderful room with a view over the harbor; it’s a great clean room with high-quality beds. The bathroom was small but clean, with all the needed

amenities. The small fridge and the possibility of making coffee were a plus. Scandinavian design. Would return" (Male, Spain).

"We had a fantastic eco-friendly room—a deluxe double room facing the harbor. The room was a good size for the 2 of us, and the beds were very comfortable. It was a lovely hotel with perfect access to the city center of Tromsø. The bathroom was nice, with plenty of room, and the shower had good water pressure" (Female, France).

The room theme overlaps with the stay theme. Some concepts are interconnected, such as northern lights, light, and eco-friendly practices, with room amenities, such as water and room. This shows that room theme concepts connect to eco-friendly stays and assist eco-friendly hotel practices. Guest positive behavior with eco-friendly practices leads to high perceived service quality, which increases satisfaction and influences customer loyalty to services [24,85]. As one guest shared:

"Scandic is my favorite place to stay. I love the energy-conscious and recycling nature of the line of Scandic hotels. They make sure to save energy and water and even advise you to hang your towel again if you plan on reusing it to save even more energy, and to me, that means their priorities are in line" (Male, China).

A guest with eco-friendly practices awareness might be disappointed or dissatisfied due to the failure of the property to execute green measures in-room facilities [56].

#### 4.2.3. Food Theme

The food theme was highly expressive in web reviews and highlighted as the third central theme in guest priority. This theme comprises the concepts of "food" (count = 1507; relevance = 52%), "breakfast" (392, 32%), "buffet" (311, 11%), "best" (355, 11%), "coffee" (248, 8%), "evening" (216, 7%), "dinner" (207, 7%), "waffles" (146, 5%), "hot" (163, 6%), "included" (150, 5%), "cold" (133, 5%), "selection" (124, 4%), "fresh" (124, 4%), "expensive" (107 relevance, 4%), and "delicious" (61, 2%).

Some of the studies focused on the importance of food in hotels. As stated by [100], in the luxury hotel experience, food quality positively affects guest satisfaction. One of the study findings explains that in the hotel industry, food and beverages are considered the main factors in customer satisfaction and influence the recommend and revisit intention of the guests [101]. In addition, restaurant, breakfast, buffet, dinner, and drinks are linked to themes and concepts, which might show that served food and beverages are local and organic, supporting the responsible sourcing of hotels in the purchase category. Other studies' results show that food is an essential attribute of green hotel SQ dimension [80,84]. One guest added:

"In addition, all the food served is organic. Moreover, the food is there all day, including breakfast, lunch, coffee and evening meals. All traditional Norwegian food, like baked salmon or beef. As a Norwegian, I can sign off on that" (Male, Italy). Another guest shared:

"The selection of food is fantastic; the quality is amazing and all around one of the best breakfasts I have had in any hotel! I will return to this hotel next time in Oslo!" (Female, Jordan).

#### 4.2.4. Location Theme

Location theme contains the concepts of "location" (count = 970; relevance = 33%), "train" (395, 14%), "area" (413, 14%), "city" (307, 11%), "walk" (285, 10%), "station" (272, 9%), "central" (171, 6%), "airport" (156, 5%), "shopping" (124, 4%), "beautiful" (86, 3%), "efficient" (49, 2%), and "downtown" (39, 1%). Location is one of the most important factors for guests when selecting a hotel [102]. Customer decision to stay in eco-friendly properties is based mainly on convenient location [48,103,104]. The findings of the [105] study reported that a hotel could differentiate in a competitive market or can solve the problem of poor location by offering an eco-lodge to the customers or integrating more sustainable efforts in its current business actions. One related review reads:

“Great and very modern hotel in Oslo, centrally located, within walking distance to the city centre (+/− 5 m) and near the bus and train station. The airport shuttle stops right at the back of the hotel, with a fast and reliable connection. It is very convenient when using the airport shuttle”. (Female, South Africa).

A further guest stated: “Fantastic location situated in the same building as the Bipotent mall. The train station is in the next building—the buildings are also connected. There are bus stops for all routes within a very short walking distance. What I loved most was not having to put on my heavy winter clothes and go for dinner or shopping in the porten mall!”.

#### 4.2.5. Staff Theme

Staff theme includes the concepts of “staff” (count = 947; relevance = 32%), “friendly” (465, 16%), “helpful” (371, 13%), “excellent” (313, 11%), “restaurant” (300, 10%), “everything” (195, 7%), “bar” (180, 6%), “amazing” (148, 5%), “top” (109, 4%), “lobby” (105, 4%), “pleasant” (92, 3%), “local” (76, 3%), “style” (50, 2%), “welcoming” (47, 2%), and “professional” (33, 1%). In online guest reviews, the staff theme was mentioned often, and the staff’s personal characteristics (friendly, helpful, welcoming, professional, pleasant) were closely linked with the theme. The concept of staff is usually positively perceived in online comments. Similar results were found in the study of [84], which investigates the quality of Muslim-friendly hotel service. These findings are consistent with other service quality studies, such as [81,83,89].

The service quality of hotel personnel is also measured in other service quality scales [106]. The study findings indicate that the staff is a significant deciding factor in the service quality of green hotels. Staff is not considered a service; however, actions and inaction of staff influence service quality. From SQ’s perspective, it contains the intangible aspect of the service found in the concepts, such as friendly, helpful, professional, welcoming, and pleasant. According to [80], the personal characteristics of the devoted and experienced staff add value to hotel services. A typical example of the comments shared:

“What makes this hotel stand out is the staff. They are so helpful, friendly and welcoming, especially the general manager (...) organized a night-time cross-country ski trip which was the highlight of our trip (it was free!). She even let me borrow an extra ski for the whole week” (Female, Israel).

#### 4.2.6. Stay Theme

Stay theme comprised the concepts such as “stay” (count = 978; relevance = 33%), “light” (109, 4%), “guests” (99, 3%), “work” (94, 3%), “several” (59, 2%), “eco-friendly” (49, 2%), “happy” (53, 2%), “return” (67, 2%), “booking” (41, 1%), “practices” (32, 1%), and “northern lights” experience (36, 1%).

The stay theme findings show intangibles quality, such as happy, return, booking “experience”, and services offered as vital as tangibles, such as eco, practices, and northern light “experience” received by the green hotel customers. As [107] stated, the property’s eco-friendly image positively influences the customer’s green purchasing behavior. Moreover, various groups of green customers perceive ecological practices, such as the availability of recycling facilities and energy-conscious lighting of the property, as highly effective [9,24]. However, this statement partially agrees with the results of the analysis. As one customer mentioned:

“This is a nice hotel, with all facilities near you. The hotel has a strong environmental quality. If you want a good hotel, well placed in Oslo Center, near the railway station, this hotel is for you” (Male, New Zealand).

Due to the interrelation between a room and stay there, some concepts such as eco-practices and light of stay theme overlap and directly connect to concepts such as water, shower, and bathroom concepts of room theme. As mentioned by [80], facility (room) is an essential dimension of SQ. If the green property meets the customer expectations of the green facility, it can lead to customer satisfaction.



The study's findings are in line with [80], as the customers were complaining about the room facilities in connection with green practices and were dissatisfied. As the findings of [108] show, hotels need to design more user-friendly facilities to increase the involvement of guests in eco-friendly measures carried out by the property, which needs more conveniences and facilities. Moreover, by improving user-friendly green experiences, hoteliers can offset guests' perception that participation in green practices reduces the luxury linked with the stay [108]. Typical comments on some "eco" practices concerning guests:

"I cannot emphasize enough how ridiculous Norway is for its lack of value... and how much trying to be "Eco" has enabled these horrible hotels to limit rooms to a tiny size, with little or no a/c, paper-towel thin towels, a squeeze bottle on the wall with a solution that is supposed to wash hands, hair and everything" (Female, Australia).

Overall, the analysis shows that some customers needed more awareness [109] regarding green practices, while eco-practices related to room facilities were of the most concern for guests.

"The breakfast is simply great; The light of the reading desk did not work, and the shower water was unstable and constantly changing from hot to cold water. Moreover, the hotel interior is quite gloomy: the lights in the common areas, the breakfast room, and the room were dark (you cannot read in this light)" (Female, Germany)

In the stay theme, the concept of the northern light is discussed, which provides the northern light or aurora borealis, provide memorable tourism experience for the guests, specifically during the winter season [110]. Northern light experience is the principal visitor attraction in northern Scandinavia and the specialty of Norway for visitors.

#### 4.2.7. Service Theme

Service theme includes the concepts of "service" (count = 383; relevance = 13%), and "polite" (32, 1%). The results depict that the service theme overlaps with the staff theme, which shows a positive relationship between the quality of the service provided by the staff that adds up to the satisfaction of customers. The staff itself is not the service; however, the quality of the service is affected by the response or interaction of the staff. Similar results were found in a recently conducted service quality study by [81], as service themes linked to staff and food service as a primary dimension. Moreover, the guests perceive the service sentiment positively, and the results are congruent with the study [83]. The researcher finds that the staff and food service are the main CS contributors. A guest wrote:

"Quality of both the food and service was second to none. Nothing was too much trouble for the very attentive and polite staff. I have always found the staff exceedingly service-minded and solution-oriented. Whatever your issue, it gets solved, and in my experience, quickly" (Male, Czech Republic).

#### 4.2.8. Recommend Theme

Recommend theme encompasses the concepts of "recommend" (count = 263; relevance = 9%), "quality" (136, 5%), and "highly" (63, 2%). This theme shows the guests' futuristic behavior or post-consumer experience phase based on their satisfaction with the provided services. The recommended theme overlaps with the food theme as their quality concept relates to the breakfast. As a service quality dimension, food and staff is a substantial part of the service and influence the recommendation intentions [84,111]. As stated by the [106], revisit or recommendation intention depend on the quality of the offered service, and if the customer got satisfied, they would recommend the hotel. An example from reviews:

"The best hotel in Trondheim, known for their top-notch quality breakfast. Excellent service, food and location. Highly recommended. The breakfast is rated a winner many years in a row in Norway, and if they don't have what you want, you shouldn't eat it!" (Female, Italy).

#### 4.2.9. Value Theme

Value Theme: The value theme includes the concept of “value” (count = 137; relevance = 5%), and “money” (71, 2%). Almost all the reviewers who discussed the value theme in comments positively mentioned the value for money concept. Value is the intangible aspect connected with the food theme (tangible) that shows the food service creates value for money to the guests. Customers perceive high value when the services’ quality exceeds expectations and include additional benefits [9]. One guest wrote:

“Excellent Hotel and great value for money. The Hotel is very convenient for all transport and the City Centre. There are many attractions in, and around, Bergen that would be interesting for all types of visitors” (Male, Finland).

Experience Theme: The theme and the concept of the same name describe the overall experiences associated with the green hotel stay. This theme encompasses “experience” (count = 107; relevance = 4%). The results are congruent with the conducted study by [111], which explains experiences as an essential part of the stay for visitors. In the analysis, customers were mainly impressed by the staff, food, and northern light experiences. Experiences associated with green hotel environmental efforts, such as organic food, mostly perceived positively and added up to guests’ satisfaction [24,56]. Comments from the guests about experiences:

“There were lots of families staying there when we were, and it was obvious that the hotel can cater for families with children, as well as the usual business and adult leisure guests. All around a great experience” (Female, Spain).

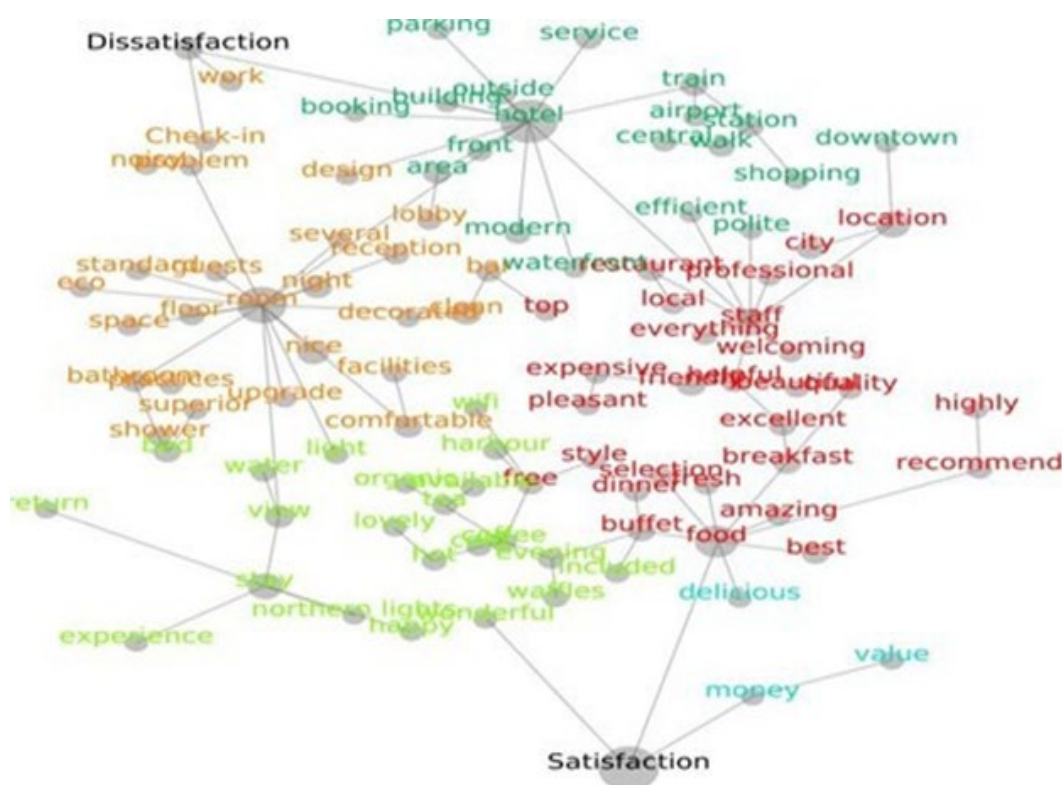
To address the first research question RQ1, which was to identify the major themes and concepts associated with the service quality of green hotels in Norway, the following major themes were identified for example “room”, “food”, “staff”, “location”, and “stay”. However, here are some other related concepts that put indirect emphasis on the major themes, for example, “service”, “recommend”, “value”, and “experience” (Female, Italy).

#### 4.3. Satisfaction or Dissatisfaction: Analysis

The study’s next objective was to determine whether guests who rate their green hotel experiences as satisfactory (excellent and very good) or unsatisfactory (poor and terrible) share different descriptions in the online reviews. In the analysis, the researcher used excellent (5/5) and very good (4/5) ratings to measure the high and low satisfaction levels. In comparison, poor (2/5) and terrible (1/5) ratings as dissatisfaction tagged the analysis. The analysis shows that the satisfied guests shared narratives more often regarding food, staff, stay, location, recommendations, and value, while dissatisfied shared concepts regarding work, room, and hotel themes (Figure 2).

An assessment of the satisfaction group shows that their highly related concepts are as follows; delicious (100%), harbor (98%), northern lights (97%), shopping (96%), waffles (95%), downtown (95%), comfortable (94%), helpful (93%), recommend (92%), location (91%), buffet (90%), wi-fi (89%), value (89%), organic (88%), breakfast (87%), staff (87%), clean (87%), return (84%), quality (82%), and service (79%). Overall, this group used the most expressive terms for their experiences. For instance, delicious breakfast, fantastic harbor view, free wi-fi, helpful staff, highly recommended, central location, and value for money. Example of a satisfied guest comment:

“Informal hotel with good standard and service and friendly, helpful staff. Good value for money with three meals included: breakfast, coffee with waffles in the afternoon and a supper/dinner dish in the evening. They helped make my busy business trip fantastic. The rooms were also lovely, with great views of the city. It’s also a great location; I highly recommend this” (Female, Sweden).



**Figure 2.** Gaussian conceptual map of different satisfaction groups.

In contrast, the dissatisfied guests shared reviews mainly related to room facilities and eco practices related to the room. The dissatisfied guests shared reviews contain the concepts of eco (51%), noisy (39%), work (37%), practices (34%), booking (32%), check-in (33%), parking (29%), bathroom (26%), “room” light (26%), shower (25%), floor (24%), front (28%), expensive (22%), room (21%), service (21%), bed (19%), and water (18%). The dissatisfied group used expressive terms, such as noisy rooms, expensive parking, water fluctuating, and dark rooms. Typical examples of dissatisfied customer reviews:

"I cannot emphasize enough how ridiculous Norway is for its lack of value... and how much trying to be "Eco" has enabled these horrible hotels to limit rooms to a tiny size, with little or no a/c, paper-towel thin towels, a squeeze bottle on the wall with a solution that is supposed to wash hands, hair, and everything. The hall is outside our room, with clean and dirty laundry. As long as people continue to go to Norway and stay at these dumps, I guess they will remain the same" (Female, Sweden).

“The room seemed old and a bit worn down. Despite being on the 6th floor, the room was very dark and did not let much light in. My biggest issue was the bathroom, where you had to stand in a tub to shower, with the water temperature jumping up and down (and so did I). Despite a fully booked hotel, they must ensure their guests don’t get scolded by the hot water” (Male, Poland).

According to [56], eco-friendly practices positively followed by the guests are fundamental rather than plus and contribute to satisfaction but not as the main factor; however, if guests perceive them negatively, it causes dissatisfaction. The results show that eco-friendly practices related to room facilities caused dissatisfaction among guests. Similarly, the findings of [80] reported that room facility (water, shower, and spa) SQ related to green practices lead to dissatisfaction. However, the analysis shows the food connection with organic (purchase category) as a green measure of the hotel and leads to satisfaction. This leads to addressing the second research question, i.e., RQ2, which aims to identify the themes and concepts that lead to the satisfaction and dissatisfaction of the guests.



#### 4.4.2. Business Guests

The shared reviews are highly linked to the work, room, and staff themes. This guests category is more likely to share concepts related to work (47%), design (44%), local (34%), noisy (34%), eco (33%), check-in (33%), facilities (32%), experience (31%), water (30%), service (30%), bar (29%), practices (28%), bathroom (28%), polite (28%), modern (27%), professional (27%), return (27%), “service” quality (26%), breakfast (26%), lobby (26%), happy (25%), building (25%), location (23%), clean (22%), and wi-fi (21%). One business guest shared:

“This is exactly what I call a good hotel for business and conferences. Not huge but not small either, in a central location in this beautiful city. It was a new, fresh, interesting design and nice rooms. Conference hall with all necessary amenities and most important, fast and free internet. I cannot write it down how great it was!” (Male, Australia).

By using different guests’ tags, we discovered the theme scheme as follows concerning the conceptual framework: “hotel”, “room”, “location”, “food”, “staff”, “service”, “recommend”, “value”, “work”, and “experience”.

#### 4.4.3. Family Guests

This category shares narratives mainly regarding the themes of hotel and value. They highly relate their experiences to the concepts of parking (26%), money (25%), organic (25%), booking (24%), quality (24%), central (23%), problem (22%), value (22%), shopping (22%), space (22%), delicious (21%), helpful (20%), breakfast (19%), clean (19%), dinner (19%), bed (19%), airport (19%), stay (18%), recommend (18%), lobby (18%), night (18%), and expensive (17%). A review reads:

“Excellent Hotel and great value for money. The overall service was great, and the breakfast was outstanding! The staff made dinner reservations for us when we couldn’t. The location was wonderful; we walked everywhere, waterfront, cathedral, small shops in the old town for shopping, and grocery store. Our only complaint was the lack of practically priced parking but understand this is a problem for all of Trondheim” (Female, United States).

#### 4.4.4. Friend Guests

This category, based on guests’ positive experiences, comprises the concepts of northern lights (25%), wi-fi (19%), light “room” (17%), superior (16%), shower (15%), reception (15%), lobby (14%), evening (14%), free (13%), waffles (14%), outside (13%), downtown (13%), shopping (12%), walk (12%), coffee (12%), lovely (11%), stay (11%), food (10%), night (9%), bar (8%), and view (8%). A review reads:

“We arrived late at night (midnight) off the Hurtigruten boat and were offered food—which was fresh and tasty. B & B also means waffles in the afternoon and home-cooked light 3-course dinner in the evening. We felt very much at home and enjoyed the free wifi—which seems universal in Norway. The final positive trump card was Northern Lights over the harbour just outside the hotel!” (Female, Argentina).

#### 4.4.5. Solo Guests

The concepts encompass mainly hotel and location themes, such as downtown (18%), highly (15%), decorated (13%), station (12%), shopping (12%), check-in (11%), bus (11%), train (12%), modern (11%), noisy (11%), beautiful (10%), recommend (10%), service (10%), happy (9%), location (9%), central (9%), walk (8%), airport (8%), stay (8%), tea (7%), breakfast (7%), and space (7%). A guest reported his experience:

“Their reputation comes from somewhere; I can tell you it’s not misguided. The hotel is centrally located within walking distance of everything you’d need, including central bus and train stations. Overall enjoyable stay, I’ll be back” (Female, United States).



#### 4.5. Evaluation of Norwegian Green Hotels Experiences by Gender

The current research's next objective was to determine the male and female guests' preferences for green hotel experiences in Norway, i.e., RQ3. Two tags were used to address this research objective that describes the guest's gender: male and female [86]. In this part, the unknown gender tag was ignored due to being composed of undefined gender and containing a minor percentage of 6.1% of the total reviewers, which does not affect the results of the study (Figure 4). The analysis shows that the male guests shared narratives frequently related to the concepts of efficient (67%), downtown (67%), quality (65%), northern lights (64%), parking (64%), noisy (63%), bar (61%), station (60%), expensive (58%), modern (58%), work (57%), hotel (55%), staff (54%), restaurant (54%), service (53%), location (53%), and recommend (52%). One reviewer shared:

"The hotel is central and direct at the Hurtigruten terminal, with modern style and friendly personnel. It is well situated and a short walk to restaurants, bars, and shops. The room was very comfortable and pleasant. It is the perfect place to launch your northern lights expedition. Parking takes work.

They have no own parking area. Very comfortable staying at this hotel. Recommended" (Male, Denmark).

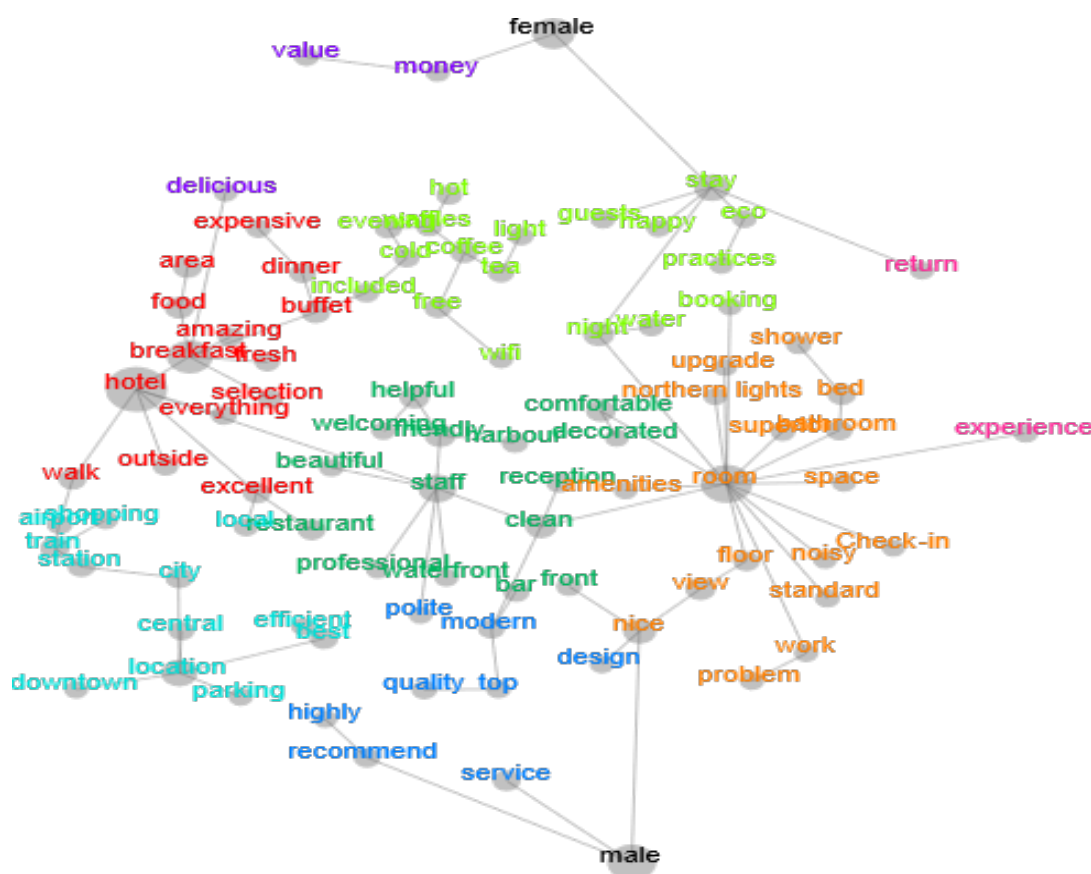


Figure 4. Norwegian Green Hotel Perspectives on Males and Females.

An evaluation of the perception related to the female category shows that they are repeatedly sharing the concepts of organic (63%), delicious (57%), upgrade (55%), wi-fi (51%), amenities (50%), eco "practices" (48%), bed (49%), waffles (49%), value (45%), shopping (45%), helpful (45%), comfortable (44%), friendly (43%), bathroom (42%), walk (41%), room (40%), breakfast (40%), free (39%), booking (39%), and money (38%). Example review shared by the female guest:

"Fantastic hotel which is excellent value for money. The staff are very friendly and helpful. We stayed in a room overlooking the great harbour with superb views. Included

in the price were afternoon waffles, which proved to be very popular with guests, and an evening meal, which was very good. Overall wonderful experience" (Female, Finland).

Females were more concerned with sustainable practices, and narratives related to staff and room were common for both genders. Similarly, the [86] research found food and staff as the most important themes for both males and females. In [114], the survey-based study reported that in the context of eco-centric properties experiences, females are more environmentally conscious than males, which confirms the results of our study.

#### 4.6. Evaluation of Norwegian Green Hotel Experiences by Guest Origins

The previous sections reveal that various guests have varying attitudes regarding the green hotel's quality of service, although no one in the study used the guest's home countries to analyse green hotel experiences concerning guests' attitudes and opinions of different geographical locations. This section covers RQ3, which investigates the experiences of the green hotel's visitors from different regions. Some of the studies stated that the origin of the guests should be studied since regions are different from each other [115]. According to [83,86], studies in a similar line explain that customer or guests' behavior is affected by nationality. Reference [116] mentioned that customer perception of quality might be affected due to the change of regions.

As depicted in Figure 5, the findings of the green hotel's guest experiences based on different nationalities show that Europe was a most prominent region, with 100% relevance to the text of the reviews. America was the second most highly mentioned region, with 26% relevancy, followed by Asia (12%), Australia (8%), and lastly, with the slightest relevance, was Africa (1%).



**Figure 5.** Perceptions of Norwegian Green Hotel Experiences by Origin.

#### 4.6.1. European Guests

European guests shared the concepts as follows; polite (91%), professional (85%), welcoming (83%), quality (82%), local “purchase” (80%), organic (75%), reception (75), bar (74%), bed (74%), booking (73%), recommend (73%), service (73%), shower (72%), bathroom (71%), waffles (71%), breakfast (71%), expensive (71%), view (71%), location (68%), and room (68%). Example review shared:

“Cozy little hotel with friendly staff, great location, food as quality breakfast and evening buffet. My favorite hotel in Scandinavia. Apart from having breakfast included, the evening supper and afternoon waffles were a bonus, as Norway is fairly expensive to eat out. I’ve been using this hotel for eight years, and the quality has always been great. I highly recommend Bastion for business and pleasure travels” (Male, Denmark).

#### 4.6.2. American Guests

The most common concepts shared by guests of American origin are “green” practices (38%), lobby (37%), dinner (33%), check-in (33%), buffet (27%), station (26%), front “staff” (25%), walk (25%), eco (24%), value (23%), food (21%), return (21%), airport (21%), shopping (20%), building (19%), clean (19%), comfortable (19%), and experience (19%). An example of American guest comments: “The hotel is close enough to walk to the airport and the train station. Also, having an easy walking distance to most museums, landmarks and shopping. The reception staff was excellent and accommodating. The beds were adjustable and very comfortable. The food was fantastic, especially breakfast. wonderful stay and found excellent value would return!” (Male, United States).

#### 4.6.3. Australian Guests

These guests shared narratives in their reviews regarding, northern lights (17%), lovely (12%), happy (11%), wi-fi (11%), walk (10%), airport (10%), value (9%), light (8%), modern (8%), friendly (8%), upgrade (8%), bathroom (7%), waffles (7%), water (7%), tea (7%), pleasant (7%), staff (6%), dinner (6%), coffee (6%), room (5%), and recommend (5%). One Australian guest shared:

“Buffet breakfast was lovely with a wide choice of meals; there is also a waffle bar in the afternoon when you can make your waffle. A dinner buffet is also provided, a great treat after spending the day outside on various tours. It was a lovely hotel in a fantastic location; we even managed to see the Northern Lights at the front of the hotel on the last night!” (Male, Australia).

#### 4.6.4. Asian Guests

This group mentioned mainly the concepts of tea (13%), wi-fi (13%), organic (13%), booking (12%), check-in (11%), shopping (11%), money (11%), view (11%), noisy (11%), northern lights (8%), location (8%), central (8%), upgrade (8%), clean (7%), selection (7%), walk (7%), night (7%), staff (7%), breakfast (7%), free (7%), building (6%), and value (6%). Example of comments from the Asian group: “Upon check-in, we were offered an upgrade with a harbour view for a minimal cost, and it was worth it. Moreover, the hotel is in the heart of the shopping street with major brands like H&M, Zara, etc. all walking distance from the hotel. The best part is the breakfast, a lavish spread with plenty of organic food. Don’t miss the chance to stay there”.

#### 4.6.5. African Guests

The last group in this research is African visitors. This group commonly shared concepts such as money (4%), parking (3%), selection (3%), value (3%), noisy (3%), eco (2%), central (2%), design (2%), food (2%), return (1%), guests (1%), lobby (1%), experience (1%), floor (1%), bed (1%), comfortable (1%), expensive (1%), city (1%), and airport (1%). A typical comment shared by the guest:

“What a nice hotel this is; after a long road trip through Norway, it was a welcome overnight stay. The hotel itself is good value for money. The staff were amiable and helpful. For me, the central heating was turned a bit too high. Also, be aware that if you park in the public parking garage, you are going to pay per hour; we were hit with a parking bill of 250 Kroner (around 27 Euro)” (Male, South Africa).

According to [117] report, in the year 2020, considering the visitor’s arrival in Norway based on the region, roughly 85% of the guests were from Europe and America; both north and south accounted for the second-biggest markets, while the African region represented

the lowest number of inbound tourists in Norway (p. 13). Thus, the results of European guests are the biggest market of international tourists for Norway and are similar to the collected data findings. The study shows European guests were happy with the staff and organic food. At the same time, Americans were more concerned about green practices. Thus, these results can assist the hoteliers in segmenting the market and customizing their services for visitors based on that.

## 5. Conclusions and Discussion

### 5.1. Discussion

As an answer to the first research question, the conceptual map revealed dominant themes. The results disclose that customers frequently mentioned the hotel, room, food, location, and staff and mainly showed a positive connection regarding the quality of service delivered. The room theme was unique as perceived positively and negatively by the guests. Guests mentioned the unsatisfactory green practices concerning room amenities, such as shower, bathroom, light, water, and floor, similar to the findings of [80]. Moreover, the staff theme showed a positive connection in terms of services offered by the staff expressed as personal characteristics (e.g., friendly, helpful, professional, welcoming) and interlinked with the service theme as courteous staff service. The food theme was depicted as highly recommended in terms of delicious quality breakfast concepts and had a direct connection with value for money and experiences offered as food and service by the staff. The results of food, service, and staff themes were consistent with the findings of [84,86].

In addition, our research advances knowledge on guests' preferences associated with "satisfaction" and "dissatisfaction" and finds characteristics through themes and concepts that customers like or dislike. Dissatisfaction encompasses work, rooms, and hotel themes. Dissatisfaction is related mainly to green practices associated with room amenities and check-in, parking, and booking experiences [80]. However, green practices are highly appreciated regarding the availability of organic food (local food sourcing purchasing category). As [9] mentioned, customers are not satisfied with all green practices. Thus, despite fewer green reviewers, the posted descriptions reveal that hotels largely failed to satisfy customers with green offerings.

Furthermore, as an answer to Research Question Three, the researcher evaluated whether the service quality perception of customers changes on the basis of different guest types, gender, and region in green hotel experiences. The exact guest types of experiences were studied, including couple, business, family, friend, and solo. The guests shared narratives depicting that room, food, and staff are the most common themes for all types of guests.

Moreover, it provides valuable insight regarding gender perspective. The findings showed that females share narratives about "eco" practices, which shows they are more environmentally sensitive [114]. For both genders, food, staff, and room theme are typical.

Lastly, our research contributes to the literature by identifying that green hotel experiences vary depending on the ethnicity of the guests. The findings show that narratives shared by guests from different regions vary due to differences in culture and background preferences [83,86]. Thus, the most frequently mentioned concepts offer opportunities for "market segmentation" based on the preferences of different types of visitors.

In general, the study's results align with the studies of [9,24,85] as they reported that not all categories of green practices lead to customer satisfaction. They also found that customers mention less about the green initiatives of the hotels in their comments. Similarly, [80] findings match our study results and depict that organic food leads to satisfaction, while the room facility's green practices cause dissatisfaction.

### 5.2. Theoretical Implications

The study's findings provide valuable insights, contribute to the already prevailing knowledge, and develop our understanding of how guests perceive the service quality of green hotels based on their online shared narratives. This research adds to eco-friendly

hotels' service quality to cover the existing gap in the literature on green hotels' service quality. It provides the base for further investigation to others on improving the quality of the services in the related sector. In addition, this research studied another geographical location, which has not been investigated in earlier related work, as these studies explored mainly U.S. green hotels. In addition, a detailed analysis was performed using content analysis on guest perspectives, such as guest type, gender, and regions of the reviewers.

Moreover, the results demonstrate the importance of web reviews in hospitality research instead of gathering data by the researcher using survey questionnaires and detailed interviews. The analytical competencies of the Leximancer instrument enabled the researcher to identify the main themes and concepts of guest perception with minimal manual intervention. In the overall visitor experiences analysis, some themes showed more significance than others, demonstrating the high importance of those services for customers. In short, Leximancer provides a more thoughtful visual representation of major themes and concepts.

### 5.3. Managerial Implications

The current research findings highlight numerous implications for green hotel managers/decision-makers. Customer experiences posted in the comments provide insight into consumer post-purchase behavior regarding positive and negative quality perceptions of green hotel services. Thus, the shared content in the form of reviews is not only a cost-effective technique to obtain customer feedback on services but also allows hotels to improve the quality of services offered in crucial areas to create positive purchase intentions among guests. Results of the research suggest areas of improvement on which hoteliers need to focus when developing strategies.

For practitioners, the guests mentioned the service attributes contributing to satisfaction and dissatisfaction with the quality of the service. This shared information could help hoteliers develop their strategies by identifying these key service elements, such as hotel facilities, rooms, food, location, experience, service, and staff. In addition, buying and providing local organic food as a green attribute that guests value as an essential feature can guide hoteliers. Sourcing organic food locally as an environmentally friendly measure could be well understood by guests and contribute to satisfaction and positive customer feedback in online reviews [80,109]. Thus, as a recommendation, hotels should focus more on responsible sourcing. Second, guests uniquely perceive the room theme positively and negatively through their comments. However, the results show that the guest was dissatisfied with the eco-friendly practices related to the room facilities, such as water, shower, and bath. The study's results are consistent with [80]; they also found that room amenities related to green practices led to dissatisfaction, which is the critical SQ dimension. Since green accommodations do not provide a quality facility in their service, this may lead to customer dissatisfaction [118].

Additionally, in response to customer awareness, hotel operators could train guest volunteers and make them aware of the practices adopted on the hotel premises, which could also serve the purpose of positive feedback on social media platforms [80]. In other ways, the hotel could use different channels, such as brochures, multimedia, and seminars, to increase knowledge and understanding of green practices. Another suggestion is to train the staff to implement green practices; as [9] mentioned, when the property employees are knowledgeable and aware of how to follow and implement the eco-friendly experience, that can help to increase guest awareness [119]. Green practices can create a negative perception as the guests perceive that it benefits only the hotel by charging more for a stay in the name of these efforts. Thus, the hoteliers can change the perception of guests, communicating the narrative and providing exceptional service to make them understand how it will be an advantage to customers and assist the properties in saving the environment [6].

Fourth, the results indicate that customers were dissatisfied with check-in delays. As [56] found, essential attributes such as the check-in process experienced negatively by the guest lead to dissatisfaction. In green hotels, check-in waiting time led to lower



satisfaction [80]. As a suggestion, hotel managers could inform guests of the hotel's green practices at check-in to raise customer awareness and positively address the waiting time issue.

Finally, green accommodation managers can target the family segment by offering them various deals in the form of family packages, such as upgrades for family rooms, and promotion of family-focused activities, and outing activities for children, such as arranging games and play areas. In addition, hotel operators can offer packages for families due to the high relevance of organic food outcomes. For couples, the hotel can offer packages, such as dining with wine as a romantic experience and northern lights experiences guidance [112]. Couples and families are the prominent guests of green hotels. Therefore, the hotel can design its facilities to meet the needs of these groups more specifically. Hoteliers can target European and American guests, representing the largest segment in the results and exhibiting more environmentally friendly behavior. Some studies indicate that European guests are more mentally conscious, e.g., [120]. Hotel managers can offer them different packages based on the findings of their preferences, such as locally sourced food, extensive room amenities, and price promotions.

#### 5.4. Limitations and Recommendations

For limitations and future research, the current study is subject to several limitations that should be considered. First and foremost, the current investigation was performed on only nine hotels with 1575 web reviews, so the results should be interpreted carefully. Further studies may include more and different hotels with various classes (four stars or five stars), sizes, locations, and scales to make finding more general. Moreover, this study looked only at TripAdvisor, a single social media site. Further research could examine user-generated content from other social media platforms (e.g., Twitter, Instagram, Expedia, Trivago, Yelp, and [Booking.com](https://www.booking.com)) to assess compatibility with the current research findings.

The current study was conducted in Norway, so the results cannot be generalized. Future studies may be conducted in other geographic locations, such as European or Asian countries, to compare and find changes in guest perceptions. In addition, only English reviews available on TripAdvisor were considered in this study. However, future studies could include comments from other languages, as many of the reviews come from non-linguistic countries and other cultures, to check the validity of our research findings. Last but not least, in this context, further research could apply other qualitative methods to gain a deeper understanding and deepen the findings of the guest perspective of green hotels. For studies in the future, delineating these limitations and responding to these queries can contribute to developing contemporary marketing strategies for green hoteliers.

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