

Article

Sustainability in Hospitality Marketing during the COVID-19 Pandemic. Content Analysis of Consumer Empirical Research

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Abstract: This study performs content analysis of consumer empirical research dealing with sustainability issues in hospitality marketing literature during the outbreak of COVID-19. Papers published in the Social Sciences Citation Index (SSCI) ranked hospitality journals from January 2020 up to and including May 2021 are reviewed. The total of 46 papers met the search criteria and were subject to content analysis. The reviewed papers are classified based on research topics, variables, and themes; method and study design; data analysis; sample; industry; and location. Consumer perceptions are the dominant research theme, followed by technology innovation, communication and media, consumer emotions and psychological conditions, and other themes. Quantitative research is the main method with online surveys mostly used for study design. Analysis of moderation/mediation is the most frequently employed analytical method, whereas the majority of investigated samples have more than 300 cases. The restaurant industry received the highest attention, followed by hotel and other lodging industries, while the USA and Greater China are the most investigated geographical areas. Research findings are discussed according to the identified research themes and specific directions for future research are provided.

Keywords: sustainability; marketing; hospitality; consumers; empirical research; COVID-19; content analysis



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1. Introduction

Marketing and sustainability have been usually seen as two opposing concepts. While marketing has been considered as one of the main drivers of massive consumption, sustainability has been revolving around efficient consumption [1]. Some authors highlighted the incompatibility of sustainability and marketing by stating that consumption patterns characterizing modern societies are simply unsustainable [2]. However, the definition of marketing has evolved over time and currently places a strong emphasis on the creation of values for customers and society. The most recent understanding of the concept underlines that “marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large” [3]. Accordingly, concepts such as sustainable marketing, green marketing, and sustainable consumption have been emerging as prominent topics in the most recent business and marketing literature, e.g., [4–6]. On the other hand, sustainability “is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations” [7]. According to the stakeholder theory, sustainability is about meeting the needs of all stakeholders of the company, including the company itself, employees, suppliers, customers, and society at large [8]. Meeting customers’ needs is one of the basic marketing principles, meaning that marketing and sustainability can actually work in the same direction in a certain way. In this regard,

Jones et al. [1] have argued that sustainability and marketing might create synergies, as marketing can help in shaping sustainable consumer behavior and influencing consumers' attitudes and beliefs, while commitment to sustainability can help companies to differentiate themselves from the competitors and gain competitive advantage by enhancing brand reputation and creating a strong brand image.

One recent study has discussed sustainability in the hospitality industry and concluded that its definitions were more related to business imperatives than to sustainability concerns [9]. The interplay among three relevant sustainability dimensions, i.e., environmental, social, and economic, has also been challenged, owing to the difficulties associated with being committed to one dimension without jeopardizing another. The environmental dimension of sustainability seems to be dominant in hospitality and it refers to climate change, greenhouse gas emissions, water and energy conservation, waste management and recycling, bio-diversity, and other green practices that reduce impact on environment. Social sustainability deals with health and safety, wellbeing, human rights, fair working conditions, support to local communities, and charitable giving. Finally, economic sustainability is related to employment creation and value creation for both customers and shareholders [9].

In a recent study on sustainability and the COVID-19 crisis, Jones and Comfort [8] pointed out the differences between weak sustainability and strong sustainability, the former giving priority to economic development and the latter placing greater importance on social and environmental issues. While the pandemic has certainly emphasized the need for prompt economic recovery of the hospitality industry, it has also intensified transition to sustainable tourism consumption [10], meaning that we might be experiencing strong sustainability orientation while returning to a new normality [9]. In this regard, in their conceptual study on the effects of COVID-19 on hotel marketing and management, Jiang and Wen [11] predicted that eco-tourism would become more popular after the COVID-19 pandemic because of its environmental sustainability and the harmony it brings between people and nature.

While the pandemic has turned the entire world upside down, it seems that it has brought together marketing and sustainability to strive jointly for a successful recovery of hospitality businesses. As an example, one recent study has proposed the combination of marketing strategies and sustainability-oriented measures as the strategy for recovery and innovation in the proactive phase of hotel pandemic crisis management [12]. The role of consumers in this process of combination and reconciliation of marketing and sustainability is deemed critical. The consumers are not only in the center of marketing research, but they are also key players in moving towards sustainability [1], which means that consumer research that bridges marketing and sustainability in hospitality requires immediate attention. Accordingly, the most recent research calls from major hospitality journals stress the need for examining consumer behavior during the COVID-19 outbreak, e.g., [8,11,13], more specifically how consumers perceive hospitality firms' reactions to the pandemic and how pandemic changed their behaviors [8,11]. The current paper addresses these research calls by conducting content analysis of consumer empirical research during the COVID-19 pandemic, with the focus on papers dealing with marketing and sustainability published in major hospitality journals.

2. Research Method

This study adopted the technique of content analysis to address its objectives. This technique implies a systematic process of collecting, categorizing, coding, analyzing, and summarizing data into meaningful information [14,15].

During the first step of this systematic process, the data sources were restricted to re-research articles published in leading hospitality journals from January 2020 up to and including May 2021, including early cite papers. At the time the research was conducted, nine hospitality journals were included in Web of Science's Social Sciences Citation Index (SSCI) and had their Journal Citation Reports (JCR) impact factors [16]. These journals

are, namely: the *International Journal of Hospitality Management*, *International Journal of Contemporary Hospitality Management*, *Journal of Hospitality Marketing & Management*, *Journal of Hospitality & Tourism Research*, *Journal of Hospitality and Tourism Management*, *Scandinavian Journal of Hospitality and Tourism*, *Cornell Hospitality Quarterly*, *Journal of Hospitality and Tourism Technology*, and the *Journal of Hospitality, Leisure, Sport & Tourism Education* [16].

We followed a rigorous search protocol to accomplish our research goal. Since the objective of this research was to understand empirical research on consumers in hospitality marketing and sustainability literature affected by the COVID-19 pandemic, the first search criterion was to identify those articles that mentioned the COVID-19 pandemic (without considering editorials). The search was conducted on each journal's/publisher's website using the following three keywords: COVID-19, pandemic, and coronavirus, with appearances of any of them in the title, abstract, and/or authors' identified keywords. This search yielded 168 articles.

In the second step, we reviewed 168 articles to make sure that they actually had the COVID-19 pandemic in the focus of their research. We removed 22 articles according to the following exclusion criteria: the research was conducted before the COVID-19 pandemic; the research was not designed to examine the impact of the pandemic; and some keywords were merely mentioned in the text (mostly at the beginning or at the end of the paper, under future research possibilities) without being in the focus of the study. Therefore, we considered 146 articles to be relevant for our research as they had a clear focus on the COVID-19 pandemic.

The third step was to identify articles with different facets of marketing environment and marketing functions, as suggested by Line and Runyan [17] in their study on hospitality marketing research. We analyzed full texts of 146 identified papers and classified 101 papers as marketing-oriented. The papers dealing simultaneously with human resource management (HRM) and internal marketing were not included, unless they had a clear marketing focus. At this stage, we did not limit our research on consumers because we wanted to see how many papers dealing with marketing in general addressed sustainability at the same time.

In the fourth step, we inspected how many of 101 papers were sustainability-related, focusing on those with strong sustainability orientation where social and environmental issues are dominant, as suggested by Jones and Comfort [8]. The papers with the focus on economic issues do not have to be necessarily sustainable, but simply deal with recovery strategies, which is an inevitable response to critical situations such as the one provoked by the COVID-19 pandemic. Therefore, we did not consider papers dealing with economic issues only, although we did include those that in addition to social and environmental concerns were also dealing with economic sustainability. Out of 101 papers, we identified 88 papers dealing directly with sustainability issues. This is an important finding as it actually shows that marketing and sustainability are taking the same path in hospitality literature during the COVID-19 pandemic.

The last two steps were to identify empirical research and consumer research, respectively. Out of 88 papers, 10 were conceptual and 78 empirical. Among empirical studies, 46 of them investigated consumers.

Inclusion and exclusion criteria employed during data collection and refinements are reported in Table 1, while the number of identified papers per journal during each stage of the data collection process is reported in Table 2.

Our final sample was comprised of 46 articles that were subject to content analysis. The content analysis consisted in reading and rereading the articles, defining categories, coding process, and analysis of the results. Both authors went through this process first separately and then jointly, and made consensual decisions during each stage, assuring peer debriefing, prolonged engagement, and persistent observation for credibility and harmonization, as suggested by Lincoln and Guba [18] and Manning [19]. Overall, we established the following categories: research topics, variables, and themes; method and

study design; data analysis; sample; industry; and location (see Table 3). The subsequent sections of this paper will disclose the results of the content analysis.

Table 1. Inclusion and exclusion criteria during data collection process.

Inclusion Criteria	Exclusion Criteria
Papers published in nine SSCI ranked hospitality journals from January 2020 up to and including May 2021	Editorials
Papers with keywords (COVID-19, pandemic, coronavirus) appearances in the title/abstract/keywords	Papers without keywords (COVID-19, pandemic, coronavirus) appearances in the title/abstract/keywords
Papers with a clear focus on the COVID-19 pandemic	Papers with the research conducted before the COVID-19 pandemic Papers that were not designed to examine the impact of the pandemic Papers where the keywords were merely mentioned in the text
Papers from the marketing subject area	Papers from the human research management (HRM) and other subject areas
Papers dealing with sustainability	Papers dealing only with economic recovery strategies
Papers with empirical research	Conceptual papers
Papers with consumer or consumer-related sample	Papers with managers sample only

Table 2. Number of identified papers per journal during data collection process.

Journal	Keywords ¹	Relevance ²	Mktg ³	Mktg Sust ⁴	Mktg Sust Emp ⁵	Mktg Sust Emp Cons ⁶
IJHM	97	94	65	58	52	30
IJCHM	32	24	17	15	12	5
JHMM	3	3	2	2	2	2
JHTR	9	8	4	1	0	0
JHTM	15	13	11	10	10	7
SJHT	4	1	1	1	1	1
CHQ	1	0	0	0	0	0
JHTT	0	0	0	0	0	0
JOHLSTE	7	3	1	1	1	1
Total	168	146	101	88	78	46

Note. IJHM = *International Journal of Hospitality Management*, IJCHM = *International Journal of Contemporary Hospitality Management*, JHMM = *Journal of Hospitality Marketing & Management*, JHTR = *Journal of Hospitality & Tourism Research*, JHTM = *Journal of Hospitality and Tourism Management*, SJHT = *Scandinavian Journal of Hospitality and Tourism*, CHQ = *Cornell Hospitality Quarterly*, JHTT = *Journal of Hospitality and Tourism Technology*, JOHLSTE = *Journal of Hospitality, Leisure, Sport & Tourism Education*, ¹ Papers with identified keywords appearances in the title/abstract/keywords, ² Paper within the focus of this research, ³ Marketing, ⁴ Sustainability, ⁵ Empirical, ⁶ Consumer.

Table 3. Reviewed papers per categories.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
INTERNATIONAL JOURNAL OF HOSPITALITY MANAGEMENT								
1.	Altuntas & Gok [20]	Quarantine decisions, domestic tourist mobility	T5	Quantitative/ Secondary data	DEMATEL method analysis	Tourist mobility data	Travel	Turkey
2.	Belarmino et al. [21]	Online meal delivery platforms, quarantine, sharing economy ethos, price-value, food quality, service speed, perceived ease of use, confirmation of beliefs, satisfaction	T3	Quantitative/ Two online surveys	Multiple linear regressions. Moderation (χ^2 test).	314 + 315 consumers	Restaurant (Food delivery)	USA
3.	Breir et al. [22]	Business model innovation, crisis, recovery, inhibitors, enhancers, <i>stammgasts</i> ¹ , free time resources, overall pressure to change, extensive support, high liquidity	T5	Qualitative/ Multiple case study. Two semi structured interviews. Secondary data.	Within-case and cross-case analysis.	Six <i>stammgasts</i> + six managers/owners + website/social media data	Restaurant, bar, and hotel	Austria
4.	Brewer & Sebby [23]	Online food orders, menu visual appeal, menu informativeness, perception of COVID-19 risk, desire for food, perceived convenience of online ordering, purchase intentions	T3 T4 T1	Quantitative/Online survey	EFA. CFA. SEM.	420 residents	Restaurant (Food delivery)	USA
5.	Byrd et al. [24]	COVID-19 risk perceptions (food risk, food safety, food in general, restaurant food, food delivery, food packaging)	T1	Quantitative/Online survey	Descriptive statistics. ANOVA. ANCOVA. Multiple pairwise comparison tests.	958 residents	Restaurant	USA
6.	Cai & Leung [25]	Online delivery providers, construal mindset (how vs. why), regulatory focus (promotion vs. prevention focus), message framing, self-efficacy, perceived benefit, perceived risk, purchase intention, risk propensity	T3 T4	Quantitative/Two online experiments	ANCOVA. PROCESS. Moderation. Mediation.	258 + 319 residents	Restaurant (Food delivery)	USA
7.	Cai et al. [26]	Green/healthy promotion strategies, green/healthy physical environment (green and healthy space, green and healthy room, design environmental value), wellbeing perception, satisfaction, loyalty	T4 T1	Quantitative/ Online survey	CFA. SEM.	Consumers	B & B	China

Table 3. Cont.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
8.	Chen et al. [27]	Contact tracing, perceptions (perceived ethics of data collection, perceived data protection policy, perceived governmental trust, perceived prevalence of information disclosure), trust (cognitive and affective trust), cooperative behavior intentions (willingness to disclose/falsify)	T1	Mixed method ² / Semi-structured interviews and online survey	Thematic analysis. CFA. PLS-SEM. Descriptive statistics.	24 consumers + 365 USA residents	Restaurant, café and bar	Australia, New Zealand, UK, USA, Canada
9.	Dedeoğlu & Boğan [28]	Motivations (sociability, convenience, food visual appeal, pleasure, affect regulation, social image), visit intention, trust in government, risk perception of COVID-19	T1	Quantitative/Online survey	CFA. SEM. Measurement invariance. Moderation (cluster analysis and multi-group analysis).	681 residents	Restaurant	Turkey
10.	Foroudi et al. [29]	Perception of shock of disaster, adoptive beliefs, anticipated emotions (positive and negative), future desire, non-pharmaceutical intervention, perceived health risk, lockdown restrictions	T1 T2	Quantitative/Online survey	CFA. SEM. Moderation (interaction effect analysis).	415 consumers	Restaurant	UK
11.	Hsieh et al. [30]	Perceived threats, customer individual response efficacy, government and social trust, hotel response efficacy, intention to stay	T1	Quantitative/Online survey	CFA. SEM. Mediation (indirect effect plugin).	700 consumers	Hotel	USA
12.	Jiménez Barreto et al. [31]	Communication of cleaning programs, communication styles (numerical vs. verbal), brand personality, attitudes, intentions	T4	Mixed method / Two studies. Online experiment.	Grounded theory. Computerized psycho-linguistic analysis. ANOVA. MANOVA.	80 + 186 consumers	Hotel	USA
13.	Kang et al. [32]	Prevention measures, normative appeals (descriptive vs. conjunctive), freedom threat, negative cognition, attitude, age, risk perception of COVID-19, gender	T4 T2 T1	Quantitative / Online experiment	T-tests. PROCESS. Serial mediation. Moderation. Moderated serial mediation.	324 consumers	Restaurant	South Korea
14.	Kim et al. [33]	Artificial intelligence, perceived risk of COVID-19, safety and social distancing, robot service, human service, perceived threat	T3 T1	Quantitative/Six studies. Four online experiments.	Regression. ANOVA. χ^2 test. PROCESS. Mediation. Moderation.	134 + 134 + 162 + 171 + 113 + 150 consumers	Hotel	USA
15.	Kim et al. [34]	Drone food delivery, perceived innovativeness, attitude, subjective norm, perceived behavioral control, behavioral intentions	T3	Quantitative/Two online surveys	CFA. SEM. Measurement invariance. Moderation (multi-group analysis).	320 + 336 consumers	Restaurant (Food delivery)	South Korea
16.	Li et al. [35]	Scarcity cues (occupancy rate), safety perception, popularity, quality, purchase intentions, consumer choices, consumption context	T1	Quantitative/Three online experiments	ANOVA. T-tests. χ^2 test. PROCESS. Mediation. Moderated mediation.	Residents: 120 USA + 192 UK + 271 USA	Restaurant and hotel	USA and UK

Table 3. Cont.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
17.	Pappas & Glyptou [36]	Accommodation decision-making, perceptions, general risks, price issues, quality issues, sanitation risks, hygiene, coronavirus	T1	Quantitative ³ /Telephone survey	Descriptive statistics. EFA. fsQCA. NCA.	385 residents	Lodging	Greece
18.	Radic et al. [37]	Dining experiencescape (perceived crowdedness, dining atmospherics, interaction with guests), emotions, approach behavior, perceived health risk	T1 T2	Quantitative/Online survey	CFA. SEM. Measurement invariance. Moderation (cluster analysis and χ^2 test).	402 female consumers	Cruise	North America and Europe
19.	Sharma et al. [38]	Food delivery apps, over-ordering, food waste, hygiene consciousness, trust, price advantage, interface, quality, attitude, shopping routine, perceived severity of COVID-19, moral norms	T3 T1	Quantitative/Online survey	CFA. SEM. PROCESS. Mediation. Moderation.	440 food delivery apps users	Restaurant (Food delivery)	India
20.	Shin & Kang [39]	Technology innovation, social distancing, mobile/kiosk check-in systems, robot cleaning systems, risk reduction strategy, perceived health risk, expected interaction, expected cleanliness, booking intention	T3 T1	Quantitative/Three online experiments	T-test. ANOVA. PROCESS. Mediation. Moderation.	118 + 160 + 159 consumers	Hotel	N/S
21.	Sung et al. [40]	Media exposure to COVID-19, media attention to COVID-19, fear, risk perceptions of COVID-19, restaurant preventive behavior	T4 T2 T1	Quantitative/Online survey	CFA. SEM. Mediation.	366 consumers	Restaurant	Taiwan
22.	Taylor Jr. [41]	Preferences, perceptions, servicescape, social distancing, aesthetics, comfort, safety, cleanliness, dine-in likelihood, age	T1	Quantitative/Online quasi-experiment	Descriptive statistics. T-tests. PROCESS. Mediation. Cross-tabulation.	324 consumers	Restaurant	USA
23.	Tuzovic et al. [42]	Collective wellbeing, collective wellbeing domains, social distancing, service ecosystems	T1	Qualitative/Semi-structured online interviews	Thematic analysis.	15 consumers	Restaurant	Germany
24.	Wang et al. [43]	Crowdedness, safety measures, perception of distance, perception of COVID-19 severity, perception of safety (eat-in and order take-away), comfort, popularity, price, reputation, food quality, effort, effectiveness, social responsibility, patronage choices	T1	Quantitative/Online experiment	ANOVA. Multi-nominal logistic regressions. PROCESS. Mediation.	593 USA consumers + 591 Australian consumers	Restaurant and food delivery	USA and Australia
25.	Wei et al. [44]	Perceived importance of preventive measures, dining involvement, brand trust, intentions to dine-out, country of origin	T1	Quantitative/Online survey	CFA. SEM. PROCESS. Mediation. Moderation (hierarchical multiple regression).	296 consumers	Restaurant	USA

Table 3. Cont.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
26.	Wong & Yang [45]	Quarantined lodging stay, perceived health status, anxiety, loneliness, service quality, length of stay	T1 T2	Quantitative/ Online survey	CFA. SEM. Moderation.	320 guests	Hotel, inn, hostel, and guest house	China
27.	Yang et al. [46]	Luxury hotel restaurant, online-to-offline (O2O) food delivery platforms, luxury dining experiences	T3	Qualitative/Two studies. Content analysis and semi-structured phone interviews.	Thematic analysis.	754 consumer reviews + 16 F & B professionals	Hotel restaurant	China
28.	Yu et al. [47]	Perceived hygiene attributes (hygiene of customer-use spaces, personal hygiene of staff, hygiene of workspaces), cognitive image, affective image, word of mouth, revisit intention	T1	Mixed method/ In-depth interviews with focus groups and online survey	Qualitative data analysis. EFA. CFA. SEM.	Five consumers, four staff members, two professors + 314 consumers	Hotel	N/S
29.	Zhang et al. [48]	Social distancing, density, perceived territoriality, attitudes, revisit intention, power, perceived risk of indoor and outdoor dining	T1	Quantitative/Online quasi-experiment	PROCESS. Interaction. Moderation. Mediation.	327 consumers	Restaurant	N/S
30.	Zhao & Bacao [49]	Food delivery apps, perceived task-technology fit, confirmation, performance expectancy, effort expectancy, social influence, trust, satisfaction, continuance intention	T3	Quantitative/ Online survey	EFA. CFA. SEM.	532 food delivery apps users	Restaurant (Food delivery)	China
INTERNATIONAL JOURNAL OF CONTEMPORARY HOSPITALITY MANAGEMENT								
31.	Cheng et al. [50]	Hospitable telemedicine experience, empowerment (perceived competence and control), human-technology interactions, human-human interactions, isolation reduction, anxiety reduction	T3 T2	Quantitative/ Online survey	Stepwise multiple regression and simple linear regression.	409 consumers	Healthcare	USA
32.	Choe et al. [51]	Drone food delivery, perceived risk (financial, time, privacy, performance, psychological), image, intentions to use	T3	Quantitative/Two online surveys	CFA. SEM. Measurement invariance. Moderation (multi-group analysis).	331 + 343 consumers	Restaurant (Food delivery)	South Korea
33.	Huang & Liu [52]	CSR marketing, donation appeals, typeface (hand-written vs. machine-written), message framing (warmth-focused vs. competence-focused), brand trust, consumer responses, donation intention, brand loyalty.	T4	Quantitative/Online experiment	ANOVA. PROCESS. Moderated mediation.	170 consumers	Restaurant	USA

Table 3. Cont.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
34.	Wong et al. [53]	Grief for sport event, grief for politics and media, grief for crisis, grief cycle (denial, anger, bargaining, depression, acceptance), emotional crisis	T2	Qualitative/Content analysis and social network analysis	Thematic analysis. Social network analysis.	736 user-generated messages from Twitter	Sport	USA
35.	Yang et al. [54]	Restaurant demand, stay-at-home order, restaurant visits, restaurant sales	T3	Quantitative/Secondary data	Descriptive statistics. Econometric modeling. Moderation.	Foot traffic and card transaction data	Restaurant	USA
JOURNAL OF HOSPITALITY MARKETING & MANAGEMENT								
36.	Atadil & Lu [55]	Hotel safety, safe hotel image, medical preparedness, hygiene control, health communication, self-service technology, hotel selection behavior	T1 T4 T3	Quantitative/ Online survey	EFA. Multiple linear regression.	500 guests	Hotel	USA
37.	Kim et al. [56]	Perceived COVID-19 threat, quality/price, preference, safety-seeking	T1	Quantitative/ Five studies. Online survey and experiments. Secondary data.	Regression. ANOVA. ANCOVA. PROCESS. Mediation. Reverse mediation. Google Trends analysis.	86 + 145 + 179 + 152 + 235 consumers + Google Trends data	Hotel	USA
JOURNAL OF HOSPITALITY AND TOURISM MANAGEMENT								
38.	Khanra et al. [57]	Adoption postponement of mobile payment services, barriers (usage, value, risk, tradition, image), visibility, privacy concerns, security concerns	T3	Mixed method/ Open-ended essay and online survey	Qualitative data analysis. CFA. SEM. PROCESS. Moderation.	20 + 308 consumers	Lodging and transportation	India
39.	Kim et al. [58]	Clean safety message framing, sales promotion strategy, repurchase intentions, sales	T4	Quantitative/Two experiments	ANOVA. Duncan's test. Regression. Time series analysis.	336 consumers	Restaurant	South Korea
40.	Kim & Lee [59]	Perceived threat of COVID-19, preferences, private dining, private table, restaurant choice	T1	Quantitative/ Four studies. Two online surveys and two experiments.	Regression. ANOVA.	199 + 252 + 174 + 187 residents	Restaurant	USA
41.	Leung & Cai [60]	Digital food delivery, competency, perceived risk, purchase intention, self-efficacy, risk propensity, pandemic severity, consumer knowledge of COVID-19	T3	Quantitative/Online survey	CFA. PLS-SEM. Moderation (multi-group analysis).	703 residents	Restaurant (Food delivery)	USA

Table 3. Cont.

N.	Authors	Research Topics and Variables	Theme	Method/Design	Data Analysis	Sample	Industry	Location
42.	Qi & Li [61]	Emotional experiences, emotions (initial and subsequent), attitude, behavior, information-processing, sensemaking, message framing, emotional contagion, sensitivity	T2 T4	Qualitative/In-depth online interviews	Thematic analysis. Theoretically informed analysis.	28 travelers	Travel	New Zealand, Australia, China, Norway (mainly)
43.	Rastegar et al. [62]	Case fatality rate, perceptions, media, trust, crisis management, healthcare system, solidarity, willingness to support a destination, travel intention	T1 T4	Quantitative/ Online survey	CFA. PLS-SEM. T-test. Measurement invariance. Moderation (multi-group analysis).	522 consumers	Destination/Travel	China, Italy, Iran, USA, UK, South Korea, Germany, New Zealand
44.	Yu et al. [63]	Perceived risk of coronavirus (physical, psychological, financial, performance), post-traumatic stress disorder (PTSD) (intrusive thoughts, avoiding reminders, negative thoughts and feelings, arousal and reactive symptoms), revisit intention, emotion regulation ability	T1 T2	Quantitative/ Online survey	CFA. SEM. Measurement invariance. Moderation.	320 consumers	Hotel	South Korea
SCANDINAVIAN JOURNAL OF HOSPITALITY AND TOURISM								
45.	Ianioglo & Rissanen [64]	Global trends, tourism development (analysis, planning, organizing and leading, monitoring), impact (socio-economic, environmental, cultural), sustainable tourism, visitor satisfaction	T5	Mixed method/ Online survey and semi-structured interviews. ⁴ Secondary data.	Qualitative data analysis. Descriptive statistics.	18 experts + data on travel booking sites	Destination	Finland
JOURNAL OF HOSPITALITY, LEISURE, SPORT & TOURISM EDUCATION								
46.	Tavitiyaman et al. [65]	Personality traits (agreeableness, neuroticism, extraversion, openness, conscientiousness), anxiety (learning, technical, financial), perceived learning, student satisfaction	T2	Quantitative/ Online survey	CFA. SEM.	283 university students	Hospitality education	China (Hong Kong)

Note. T1 = Consumer perceptions, T2 = Consumer emotions and psychological conditions, T3 = Technology innovation, T4 = Communication and media, T5 = Other. EFA = Exploratory Factor Analysis, CFA = Confirmatory Factor Analysis, SEM = Structural Equation Modeling, PLS-SEM = Partial Least Squares Structural Equation Modeling, fsQCA = fuzzy-set Qualitative Comparative Analysis, NCA = Necessary Condition Analysis, N/S = Not Specified, B & B = Bed and Breakfast, F & B = Food and Beverage, CSR = Corporate Social Responsibility. ¹ Regular customers. ² Mixed method used across the pilot (qualitative) and the main study (quantitative). ³ Mixed-method used for data analysis. ⁴ Primary data collected before the pandemic.

3. Findings

The purpose of this paper was to identify hospitality literature that deals with marketing and sustainability issues during the COVID-19 pandemic by focusing on empirical research concerning consumers. Our results show that all 46 reviewed articles dealt with social sustainability to a greater or lesser extent and that they were mainly concerned with consumers' health, safety, and wellbeing, as well as consumers' perceptions of companies' responses to the pandemic. More detailed information regarding specific research topics, major variables examined in all the studies, and emerging themes are provided in the subsection below.

In addition to social issues, only some of the reviewed papers also addressed environmental or economic sustainability issues. Thus, a few works examined variables such as green promotion strategies and green physical environment [26], food waste [38], and sustainable environmental tourism growth [64]. Other studies did not include environmental issues as main research topics, but did consider some of its aspects such as eco-packing [46] and eco-friendly bacterial treatment [58]. On the other hand, some papers focused on explicit economic benefits for customers during the pandemic, mostly in terms of the price-quality relationship and best value-for money [21,29,36,38,46,56]. Others considered consumers' financial concerns about the purchase over a certain period of time [24], charitable donation intentions [52], financial support of regular customers to hospitality businesses [22], willingness to support destination to encourage recovery [62], as well as economic motivation and concerns regarding food-delivery services [46]. Finally, some papers examined value barriers of innovation and innovation economic risks [57], business model recovery tools [22,46], survival strategies [58,59], sharing economy ethos [21], economic implications of quarantine decisions and lockdown restrictions [20,29], and sustainable tourism growth on the economic level [64].

We can conclude that social sustainability predominates in the most recent consumer empirical research in hospitality marketing literature. On the following pages we discuss the results of the content analysis by going through each identified category, starting with research topics, variables, and themes.

3.1. Research Topics, Variables, and Themes

The analysis of the first identified category (research topics and variables) resulted in identification of different themes. We established four major themes: T1 = consumer perceptions, T2 = consumer emotions and psychological conditions, T3 = technology innovation, T4 = communication and media, as well as several minor themes that we grouped under T5 = other.

The first theme (Consumer perceptions) was further divided in two subthemes: one addressing consumer generic perceptions and another dealing with consumer specific perceptions. The first subtheme refers to consumer perceptions of the COVID-19 pandemic and prevention measures adopted by authorities, while the second subtheme focuses on consumer perceptions of specific products/services during the COVID-19 pandemic and prevention measures adopted by companies. The third theme (Technology innovation) was also divided in two subthemes: technology advances for food delivery and other technology advances. Perceptions of technology and innovation-related aspects were included under the third theme. Research topics and variables examined under their themes and respective subthemes are reported below.

1. Consumer perceptions:

- *Consumer generic perceptions of the COVID-19 pandemic and prevention measures adopted by authorities:* (long-term) perceived risk of COVID-19, perceived severity of COVID-19, perceived shock of disaster of COVID-19, perceived threat of COVID-19, perceived health status, perceived health risk, perceived healthcare system, perceived solidarity, perceived wellbeing, perceived crisis management, perceived governmental trust, perceived governance wellbeing;

- *Consumer specific perceptions of products/services during the COVID-19 pandemic and prevention measures adopted by companies:* perceived risk (general, sanitation, dining, food, restaurant food, food delivery, food packaging, health), perceived threat, perceived safety (food, restaurant, hotel), safety/prevention measures, perceived effort/effectiveness/response efficacy/social responsibility, perceived hygiene (customer-use spaces, staff, workspaces), perceived comfort/distance/density/territoriality/crowdedness/social distancing, perceived experiencescape/servicescape/green and healthy physical environment, perceived quality/scarcity/popularity/price/reputation/image, perceived ethics of data collection, perceived data protection policy, perceived prevalence of information disclosure, perceived wellbeing;
- 2. *Consumer emotions and psychological conditions:* emotional experiences, emotions (initial and subsequent), anticipated emotions (positive and negative), emotional crisis, emotional contagion, emotion regulation ability, post-traumatic stress disorder (intrusive thoughts, avoiding reminders, negative thoughts and feelings, arousal and reactive symptoms), anxiety, loneliness, isolation, freedom threat, fear, grief (denial, anger, bargaining, depression, acceptance);
- 3. *Technology innovation:*
 - *Technology advances for food delivery:* online food delivery (including perceived benefit/convenience, perceived risk, perceived task-technology fit), drone food delivery (including perceived risks, image, perceived behavioral control, perceived innovativeness);
 - *Other technology advances:* artificial intelligence, technology innovation, self-service technologies, mobile/kiosk check-in systems, robot cleaning systems, robot service, telemedicine experience, human-technology interactions, mobile payment services;
- 4. *Communications and media:* green/healthy promotion strategies, health communication, communication of prevention measures, communication of cleaning programs, clean safety message framing, message framing (warmth-focused vs. competence-focused), regulatory focus (promotion vs. prevention focus), construal mindset (how vs. why), communication styles (numerical vs. verbal), normative appeals (descriptive vs. conjunctive), donation appeals, typefaces (handwritten vs. machine-written), media exposure to COVID-19, media attention to COVID-19, menu visual appeal, menu informativeness;
- 5. *Other:* this group includes other themes revolving around the following research topics: quarantine decisions, business model innovation, as well as global trends and tourism development.

More than half of the articles (i.e., 27) addressed the first theme (i.e., consumer perceptions), while the third theme (i.e., technology innovation) was the second most popular theme, researched in approximately one-third of the studies (i.e., 15). The fourth theme (i.e., communications and media) was investigated in 11 papers; 10 works dealt with the second theme (i.e., consumer emotions and psychological conditions), while only three were coded under other (see Table 4). Finally, 16 studies researched two or three themes at the same time.

3.2. Method and Study Design

The vast majority of articles applied quantitative research method (i.e., 36), while only 10 studies had qualitative and mixed method approaches (five each) (see Table 5).

Table 4. Research theme.

Research Theme	Number	Percentage
T1. Consumer perceptions	27	58.7%
T2. Consumer emotions and psychological conditions	10	21.7%
T3. Technology innovation	15	32.6%
T4. Communications and media	11	23.9%
T5. Other	3	6.5%

Note. The sum does not equal 100% as some papers researched more than one theme.

Table 5. Method.

Method	Number	Percentage
Quantitative method	36	78.2%
Qualitative method	5	10.9%
Mixed method	5	10.9%
Total	46	100.0%

Concerning study design, most articles used primary data (i.e., 28), mainly through online surveys and in-depth/semi-structured interviews, while the use of secondary data was rather limited (in only five studies). Experimental/quasi-experimental design was used in 13 papers, while only two studies performed content analysis (see Table 6). Five papers implemented several study designs simultaneously.

Table 6. Study design.

Study Design	Number	Percentage
Primary	28	60.9%
Secondary	5	10.9%
Experiment/quasi-experiment	13	28.3%
Content analysis ¹	2	4.3%

Note. The sum does not equal 100% as some papers employed more than one study design. ¹ Out of two studies, one also employed social network analysis.

3.3. Data Analysis

In the next step, we analyzed major data analysis methods and techniques, i.e., those that were used to address research questions and hypotheses in the main studies and were relevant for data processing. Moderation/mediation/interaction was the most frequent analytical method used in more than half of the articles (i.e., 26), of which 13 adopted PROCESS macro model. Regarding moderating effects, five works used multi-group analysis, while six studies tested measurement invariance, which is a necessary condition for moderation analysis [66]. Factor analyses were employed in almost half of the studies (i.e., 22). As expected, CFA was always used as the first stage of SEM, which was employed in 20 studies, meaning that only two studies utilized EFA. Out of 20 studies employing SEM, only three used the PLS technique. Variance/covariance analyses were conducted in 11 studies. Different types of other regression analyses were performed in nine studies, while T-test/ χ^2 test/cross tabulation were used in eight studies. Descriptive statistics analysis was adopted in six papers, while thematic analysis was used in five papers. Finally, approximately one-third of the studies (i.e., 15) adopted other analytical methods and techniques (see Table 7). All but three studies used more than one method or technique.

Table 7. Data analysis.

Data Analysis	Number	Percentage
Moderation/Mediation/Interaction ¹	26	56.5%
Factor analysis (EFA/CFA ²)	22	47.8%
Structural Equation Modeling-SEM ³	20	43.5%
Variance/Covariance (ANOVA/ANCOVA/MANOVA)	11	23.9%
Other regression	9	19.6%
T-test/ χ^2 test/Cross tabulation	8	17.4%
Descriptive statistics	6	13.0%
Thematic analysis	5	10.9%
Other	15	32.6%

Note. The sum does not equal 100% as most of the papers employed more than one analytical method or technique. ¹ Out of 26 papers, 13 used PROCESS macro model, five used multi-group analysis for moderation and six tested measurement invariance for moderation. ² CFA was used as a part of SEM. ³ Out of 20 papers, three employed PLS-SEM.

3.4. Sample

Most articles used sample sizes of either 301 to 500 respondents (i.e., 18) or more than 500 respondents/cases (i.e., 17, including two that investigated customer reviews and comments from Twitter). Equal number of studies utilized samples of 101 to 300 respondents or fewer than 100 respondents (four each), whereas sample size was not specified in three studies (see Table 8).

Table 8. Sample size.

Sample Size	Number	Percentage
Up to 100	4	8.7%
From 101 to 300	4	8.7%
From 301 to 500	18	39.1%
More than 500 ¹	17	37.0%
Not specified	3	6.5%
Total	46	100.0%

Note. ¹ Two research papers have customer reviews and comments from Twitter as their samples.

3.5. Industry

More than half of the articles (i.e., 26) researched restaurant and similar industries (i.e., café and bar), including food services, while approximately one-third of the studies (i.e., 15) examined hotel and other lodging industries (i.e., B & B, inn, hostel, and guest house). Only a few papers investigated destination and travel in general (i.e., four), whereas cruise, education, healthcare, sport, and transportation industries were covered by five studies (one each) (see Table 9). Three studies researched more than one industry simultaneously.

3.6. Location

Most articles researched samples in the USA (i.e., 21), followed by those that had samples in Greater China (i.e., eight) and South Korea (i.e., six). Other countries that have been under investigation in more than one study were UK, Australia, New Zealand, Germany, India, and Turkey, while six papers researched Austria, Canada, Finland, Greece, Iran, Italy, and Norway (see Table 10). Among all the studies, six of them had samples in two or more countries.

Table 9. Industry under investigation.

Industry	Number	Percentage
Restaurant and similar	26	56.5%
Hotel and other lodging	15	32.6%
Destination and travel	4	8.7%
Other ¹	5	10.9%

Note. The sum does not equal 100% as some papers researched more than one industry. ¹ Other includes cruise, education, healthcare, sport, and transportation industries.

Table 10. Country under investigation.

Country	Number	Percentage
USA	21	45.7%
Greater China ¹	8	17.4%
South Korea	6	13.0%
UK	4	8.7%
Australia	3	6.5%
New Zealand	3	6.5%
Germany	2	4.3%
India	2	4.3%
Turkey	2	4.3%
Other ²	6	13.0%
Not specified	4	8.7%

Note. The sum does not equal 100% as some papers researched more than one country. ¹ Greater China includes Mainland China, Hong Kong, Macau, and Taiwan. ² Other includes Austria, Canada, Finland, Greece, Iran, Italy, and Norway.

In the following section, objectives and findings of the reviewed studies are discussed according to the identified research themes.

4. Discussion

4.1. Consumer Perceptions

4.1.1. Consumer Generic Perceptions

Consumer generic perceptions of the COVID-19 pandemic were examined in relationship with other aspects of consumer behavior directly affecting hospitality businesses, including consumers' preferences [56,59], motivations [28], intentions [27,28,30,62], beliefs, emotions, and desires [29].

More specifically, two studies examined how perceived threat of COVID-19 shaped consumers' preferences in hotel and restaurant settings [56,59]. The findings showed that the pandemic provoked an increase in consumers' safety-seeking and preferences for more expensive hotel accommodation [56]. Furthermore, consumers who perceived high levels of threat of the COVID-19 pandemic had higher preferences for private dining facilities in restaurants [59].

Among the studies that examined consumer intentions during the pandemic, Dedeoğlu and Boğan [28] found that two motivations (i.e., sociability and affect regulation) influenced positively visit intention to upscale restaurants and that the impact of some motivation factors were moderated by risk perception and trust in government. Based on protection motivation theory, Hsieh et al. [30] analyzed the antecedents of consumer intentions to stay at a hotel during the pandemic. Their results showed that intentions regarding hotel stays were affected negatively by perceived threat of the pandemic and positively by customers' individual response efficacy (measured in terms of wearing a mask, keeping

social distance, and washing hands frequently), government and social trust, as well as hotel response efficacy (evaluated through a number of hygiene, health, and safety measures) [30]. Rastegar et al. [62] examined the perceptions of prospective tourists shaped by media towards trust, crisis management, healthcare system, and solidarity during the COVID-19 pandemic and the impact of these perceptions on willingness to support a destination and travel intention. They found more positive perceptions in the countries with lower case fatality rate. On the other hand, a positive direct impact of trust and solidarity on willingness to support a destination and an indirect impact on travel intention were confirmed in the countries with higher rate of case fatality [62].

On the basis of the theory of perceived risk, Foroudi et al. [29] showed that the perception of the shock of the COVID-19 pandemic had a positive impact on consumers' beliefs, which subsequently affected both negative and positive anticipated emotions.

Several studies considered perceived risk and severity of COVID-19 when examining variables classified under the second, third, and/or fourth research themes [23,32,33,38,40,45,63]. Thus, Yu et al. [63] analyzed the relationship between perceived risks of COVID-19 (more specifically, physical risk, psychological risk, financial risk, and performance risk) and PTSD. They found a strong negative impact of perceived risk on the four PTSD dimensions (intrusive thoughts, avoiding reminders, negative thoughts and feelings, arousal, and reactive symptoms) [63]. Among the studies dealing with technology aspects, Kim et al. [33] demonstrated that consumer preferences for robot over human services in hotels were enhanced when perceived risk of COVID-19 and perceived threat were high. In a study on online food delivery, perceived risk of COVID-19 was found to influence consumer desire for food and perceived convenience of online food ordering [23]. One work addressing food delivery apps arrived at unexpected results when testing the moderating impact of perceived severity of COVID-19 [38]. Despite the ongoing threat of the COVID-19 pandemic, perceived severity did not increase the strength of the negative impact of hygiene consciousness on trust nor the positive impact of hygiene consciousness on quality issues [38]. One study analyzed guest experiences during a quarantined lodging stay and found that perceived health status was leading to anxiety and that this process was affected by the length of stay [45]. In two studies that simultaneously covered three research themes (i.e., perceptions, emotions, and communication) [32,40], consumer risk perceptions of COVID-19 were considered as covariance variables [32] or mediators of the model [40].

Finally, two studies addressed both generic and specific consumer perceptions [27,42]. Chen et al. [27] studied antecedents of customer's cooperative behavior intentions in contact tracing, considered as an important measure to public health and safety in the times of COVID-19. This work considered perceptions of both authorities' measures (i.e., perceived governmental trust) and companies' measures (i.e., perceived ethics of data collection, perceived data protection policy, and perceived prevalence of information disclosure). Perceived prevalence of information disclosure influenced both cognitive and affective trust, which subsequently affected customer willingness to disclose and falsify, although in different ways. In particular, cognitive trust in the company enhanced willingness to disclose information and reduced willingness to falsify, while affective trust increased both willingness to disclose and falsify [27]. Another contribution that covered both subthemes of the first theme is the paper of Tuzovic et al. [42]. This study examined consumer perceptions of wellbeing to develop a collective wellbeing framework in the restaurant industry. The resulting framework was composed of multiple domains of a service system on the following three levels: (1) macro-institutional (i.e., governance wellbeing, related to public health policies); (2) meso-restaurant (i.e., resource wellbeing, comprising hygiene and safety and social wellbeing, related to atmospherics), and (3) micro-guest level (i.e., physiological wellbeing or peace of mind, collaborative wellbeing, subject to influence of others, physical wellbeing or being safeguarded, and spatial wellbeing or social distancing) [42].

4.1.2. Consumer Specific Perceptions

The second identified subtheme deals with consumer perceptions of specific products/services during the pandemic and prevention measures implemented by hospitality companies. Some papers covering this subtheme examined how perceptions of social distancing and other prevention measures adopted in restaurants influenced customer preferences [41], attitudes [48], intentions [44,48], trust [44], and patronage choices [43]. For example, Taylor Jr. [41] found that customers preferred partitions between tables to mannequins being placed at tables. Zhang et al. [48] explored the role of power, density, and perceived territoriality in shaping consumers' attitudes and revisit intentions. They discovered more positive answers of powerless people to a restaurant with high built density and similar attitudes and revisit intentions of powerful people across the two density conditions [48]. Moreover, Wei et al. [44] found that the perceived importance of preventive measures adopted by restaurants affected brand trust, although it failed to influence customers' intentions directly. Wang et al. [43] studied social distancing and three different restaurant customers' patronage choices (eat-in vs. order takeaway vs. not patronize) and found that perceived safety, comfort, and popularity underlined the impact of safety measures on consumer patronage choices. Some cross-cultural differences also emerged from their study, with Americans being more sensitive to crowdedness and Australians being more sensitive to different types of safety measures [43].

Byrd et al. [24] analyzed consumer risk perceptions of food in general and restaurant food in particular. They found that consumers were more concerned about contracting COVID-19 from restaurant food and its packaging than from food in general. Consumer risk perceptions changed across three categories: gender, belonging to a high-risk category of COVID-19, and having financial concerns about the purchase of food in the following months [24].

Other papers addressed the impact of consumers' perceptions of hotel safety [55] and hygiene [47] on consumer behavior. Perceived hotel safety was found to effect hotel selection behaviors, with hygiene control being the strongest driver [55]. Perceived hygiene attributes influenced positively hotel cognitive and affective image, which resulted in a positive word of mouth and revisit intention [47].

Radic et al. [37] approached a different industry, i.e., cruise ships, and examined perceptions of female travelers' dining experiencescape. Perceptions of dining environment and interaction with other guests resulted in positive emotional responses and approach behavior. Perceived crowdedness, considered as an additional element of experiencescape, was not found to impact travelers' emotions, while perceived health risk was found to moderate the relationship between dining environment and emotions on one hand and interaction with other guests and emotions on the other [37].

Some works were concerned with the role of consumer perceptions in decision-making process [35,36]. Pappas and Glyptou [36] identified four areas of relevance in accommodation decision-making, i.e., health and safety, the price-quality nexus, risk aspects, and quality related health and safety. Li et al. [35] studied the impact of scarcity cues (i.e., occupancy rate) on consumer purchase decisions in hotels and restaurants and considered perceptions of safety, popularity, and quality as mediators. Unlike the findings of the existing literature, they found negative effects of scarcity cues on purchase decisions since consumers considered scarcity in hotel and restaurant businesses to be an indicator of lack of safety, which, in turn, negatively influenced their decisions [35].

As in the case of consumer generic perceptions of COVID-19, some studies on consumer specific perceptions also covered simultaneously several research themes [26,39]. For example, Cai et al. [26] studied the role of consumers' wellbeing perception with regard to B & B in their study on green and healthy B & B promotion strategies for tourist loyalty. They found that consumers' perceptions of wellbeing were influenced by green and healthy physical environment (measured in terms of green and healthy space, green and healthy room, and design environmental value). Wellbeing was found to influence tourist satisfaction, which was finally leading to tourist loyalty [26]. Finally, through the lens of

the theory of perceived risk, Shin and Kang [39] found that low levels of perceived health risk in hotels were associated with low levels of expected human interaction that is enabled through mobile or kiosk check-in system, as well as with high booking intentions. They also found that perceived health risk was directly affected by expected cleanliness [39].

4.2. Consumer Emotions and Psychological Conditions

The second identified research theme was focused on examining the antecedents and consequences of consumer emotions and psychological conditions during the COVID-19 pandemic. Particular attention has been paid to anxiety, which was examined in different research contexts [45,50,65]. Wong and Yang [45] tested a model of guests' experiences under enforced isolation and found a significant impact of anxiety on loneliness, with service quality acting as a buffer that mitigates this impact. In a study on hospitable telemedicine experience, anxiety and loneliness were found to be reduced by patients' sense of empowerment [50]. In a hospitality education context, anxiety was caused by different students' personality traits [65]. Low levels of learning and financial anxiety influenced perceived online learning, which resulted in increased student satisfaction [65].

By applying psychological reactance theory, Kang et al. [32] analyzed consumers' responses to different normative appeals (descriptive vs. injunctive) related to COVID-19 prevention in restaurants. They found that an increase in freedom threat was more likely to be caused by injunctive appeals, which exert a higher pressure to comply and are usually perceived as compulsory [32].

Some studies examined the impact of positive and negative emotions on consumer behavior [29,37,40,63]. Positive emotions were found to influence future desire towards visiting restaurants [29] and future approach behavior of female guests of cruise ships [37]. Fear was found to affect risk perceptions, which subsequently caused restaurant preventive behaviors [40]. Among four PTSD dimensions, avoiding reminders arousal and reactive symptoms were confirmed to have a negative impact on hotel guest intentions, while emotion regulation ability moderated the relationship between perceived risk and intrusive thoughts [63].

One work proposed a new framework of individuals' emotional experiences during a crisis and tested it in the specific context of travelers during the COVID-19 pandemic [61]. Travelers' emotions were found to have two different phases: initial emotions and subsequent emotions. The proposed model explained different factors influencing travelers' sensemaking process and related emotions, attitudes, and behaviors. These factors were: framing effect, emotional contagion, and sensitivity [61]. Finally, on the basis of user-generated messages from Twitter, Wong et al. [53] studied emotional reactions of the prospective attendees to cancellation of a sport event. The authors developed a triple grief cycle (i.e., event-related, socio-politics-related, and crisis-related) manifested through five stages: denial, anger, depression, bargaining, and acceptance [53].

4.3. Technology Innovation

4.3.1. Technology Advances for Food Delivery

The research theme on online food delivery mostly addressed drivers of consumer intentions [23,25,49,60], satisfaction [21], and food ordering behavior during the pandemic [38,54]. Research on drone food delivery was focused on studying the impact of this type of service on intentions [34,51] and image [51].

Satisfaction has been confirmed as the most influential factor of consumer continuance intention of using food delivery apps, followed by performance expectancy, perceived task-technology fit, trust, and social influence [49]. In addition to the perception of COVID-19 risks, the menu's visual appeal and informativeness were found to be indirect drivers of consumers' purchase intentions as their impact was mediated by consumers' desire for food and perceived convenience of online food ordering [23]. Significant interaction effects between construal mindsets and regulatory focuses on purchase intentions of online food deliveries have also been confirmed [25]. On the other hand, the perceived risk of

digital ordering was found to have a negative impact on consumer intentions [60]. This impact was moderated by individuals' self-efficacy in severe pandemic zones and by risk propensity in mild pandemic regions [60].

Regarding drivers of customer satisfaction with online meal delivery platforms, Belarmino et al. [21] discovered that sharing economy ethos, price-value, food quality, ease of use, and confirmation of beliefs influenced satisfaction before the quarantine, while food quality, service speed, ease of use, and confirmation of beliefs were significant drivers of satisfaction during the quarantine.

Based on behavioral reasoning theory, Sharma et al. [38] examined the drivers of online food ordering behavior during the pandemic that might provoke food waste. The results showed that positive attitude toward food delivery apps was leading to the tendency of consumers to order more, thus increasing food waste. Surprisingly, moral norms associated with food waste did not have a significant moderating impact and ordering more food than necessary did not make consumers feel guilty about food waste [38].

Yang et al. [54] studied the early effects of the COVID-19 pandemic and stay-at-home orders on daily restaurant demand. Their study was based on the health belief model and showed association between increases in daily new COVID-19 cases and decreases in daily restaurant demand. Stay-at-home orders were associated with a 3.25% drop in demand. The effects of the pandemic and stay-at-home orders were moderated by a number of restaurant and consumer-related factors. For example, the negative impact of the pandemic was weaker for fast-food restaurants than for full-service establishments. However, it was stronger in communities with more Asian Americans, democratic voters, and a higher proportion of eat-in restaurant customers in the past year [54].

Yang et al. [46] examined luxury hotel restaurants entering online-to-offline (O2O) food delivery platforms as a mean for revenue salvage. After performing content analysis of customer reviews, they found a number of salient factors such as outcome quality, interaction quality, food packing (with a special interest in eco-packaging and hygiene packing, in addition to solid and premium packing), brand credibility, delivery, hygiene, value for money, quality of experience, satisfaction, and loyalty [46].

Two papers analyzed drone food deliveries and compared the data before and after the outbreak of COVID-19 [34,51]. Perceived innovativeness of drone food delivery had a positive impact on consumer attitudes, whereas attitudes, subjective norm, and perceived behavioral control positively affected behavioral intentions [34]. The COVID-19 pandemic moderated only the relationship between attitudes and behavioral intentions, being stronger after the outbreak of COVID-19 than before [34]. In addition, perceived risk from drone food delivery services (i.e., financial, time, privacy, performance, and psychological risks) influenced image of this type of services, with the moderating effect of the COVID-19 pandemic [51]. In particular, time, performance, and psychological risks were found to negatively affect image before the pandemic, whereas performance risks and psychological risks were found to have a negative influence on image only after the pandemic. The impact of image on intentions to use was confirmed both before and after the COVID-19 breakdown [51].

4.3.2. Other Technology Advances

Papers dealing with other technology advances were mostly centered on technology innovations in hotels [33,39,55]. Kim et al. [33] studied artificial intelligence in hotels and examined consumer preferences for robot service vs. human service. Unlike the studies conducted before the pandemic, their study showed that consumers preferred robot-staffed over human-staffed service. Concerns about safety and social distancing were found to mediate the impact of the risk of COVID-19 on the preference for the robot-staffed hotel [33]. Similarly, Shin and Kang [39] examined technology innovation for social distancing (through mobile or kiosk check-in systems) and cleanliness (through robot cleaning systems). Their results showed that reduction of expected human interaction, enabled by technology innovation, was associated with increased booking intentions. Moreover, high

levels of expected cleanliness that was facilitated through advanced cleaning technologies were found to moderate the relationship between expected interaction and perceived health risk. The perceived risk-reduction mechanism was also corroborated in the post-pandemic scenarios [39]. Atadil and Lu [55] examined underlying dimensions of customers' perceptions of a safe hotel during the pandemic and found that, in addition to medical preparedness, hygiene control, and health communication, self-service technology was one of its key dimensions (although the less relevant one).

By extending the innovation resistance theory, Khanra et al. [57] investigated the adoption postponement of mobile payment of accommodation and transportation services. Their findings revealed several significant drivers of adoption postponement of this type of services, i.e., usage barrier, image barrier, privacy concerns, and visibility. Security concerns were found to moderate the relationship between image barrier and mobile payment service adoption postponement [57].

Finally, Cheng et al. [50] studied the impact of consumers'–patients' experience with telemedicine (through human–human and human–technology interactions) on their sense of empowerment (perceived competency and perceived control). They found that telemedicine significantly empowered patients during the pandemic [50].

4.4. Communication and Media

Persuasive effects of different message strategies received the greatest attention under the fourth research theme [25,31,32,52,58,61], with a particular focus on message framing.

Message framing has been confirmed as an influential factor in traveler's sensemaking process and emotion development [61], as well as in CSR marketing [52]. Huang and Liu [52] analyzed donation appeals in restaurants by examining the impact of different typefaces (handwritten vs. machine-written) and message frames (warmth-focused vs. competence-focused) on brand trust and consumer responses (i.e., donation intention and loyalty). Their findings showed that donation appeals with handwritten typeface and warmth-focused messages on one hand and those with machine-written typeface and competence-focused messages on the other encouraged charitable donation intention and brand loyalty. Brand trust was found to mediate the impact of message framing and typeface used in donation appeals on both donation intention and brand loyalty [52]. Cai and Leung [25] studied the interplay of construal mindsets and message frames across severe and mild pandemic regions. They discovered that promotion-framed messages were more persuasive when matching a concrete "how" construal mindset in severe regions and an abstract "why" construal mindset in mild pandemic regions. Kim et al. [58] researched clean safety food message framing as the restaurants' survival strategy. Their findings confirmed usefulness of this strategy in sales promotions because it was found to have a positive impact on customers repurchase intentions and sales [58].

Jiménez-Barreto et al. [31] analyzed the impact of hotel marketing communications presenting COVID-19 cleaning programs on consumers' attitudes and intentions. In particular, they explored different communication styles (i.e., numerical vs. verbal) used by hotels with different brand personalities (i.e., sincere vs. exciting) and discovered that numerical quantifiers in communication of cleaning policies were more useful, especially for exciting hotel brands [31]. Kang et al. [32] analyzed consumers' responses to different normative appeals (descriptive vs. injunctive) relating to COVID-19 prevention in restaurants and found that more coercive, injunctive appeals caused an increase in freedom threat and a less favorable attitude than descriptive appeals, which convey less explicit requests. Their results also showed that consumers' age moderated the effectiveness of normative appeals since younger people were more likely to perceive a stronger threat to freedom than older [32].

Other studies addressed sustainable communication strategies [26] and the impact of marketing communications on consumer behavior [23,55]. Cai et al. [26] adopted a sustainable approach in their study on green and healthy B & B promotion strategies for tourism sustainable recovery and raised attention on the importance of these strategies to rely on a

green/healthy physical environment. In the study of Brewer and Seby [23], restaurant menu visual appeal and informativeness have been investigated as key marketing communication stimuli during online food ordering in the times of COVID-19. While menu visual appeal was found to exert a positive impact on desire for food, menu informativeness positively influenced food order convenience [23]. Moreover, health communication was confirmed as one of four critical aspects of a safe hotel image and was found to be the second most important driver of future hotel selection behaviors [55].

Finally, only two studies considered the role of media during the outbreak of COVID-19 [40,62]. Sung et al. [40] explored the role of media in restaurant preventive behavior and found that consumer exposure and attention to both traditional and new media communications influenced preventive behaviors through affective (i.e., fear) and cognitive responses (i.e., risk perceptions). Rastegar et al. [62] concluded that perceptions shaped by media towards countries with higher vs. lower COVID-19 case fatality rates largely affected perceived image of a destination and desire to travel post-pandemic.

4.5. Other

Three papers in this group addressed different research topics (i.e., business model, quarantine decisions, as well as global trends and tourism development). Two of them covered destination and travel industry [20,64], while one was conducted in restaurant, bar, and hotel industries [22].

On the basis of mobility of domestic tourists in Turkey, Altuntas and Gok [20] analyzed quarantine decisions to decrease the negative effect of a pandemic on the hospitality industry, with implications on both social and economic level.

Ianioglo and Rissanen [64] discussed main tourism trends and sustainable tourism development of a Finnish city after the pandemic and proposed a tourism development framework. Drawing on the mixed method study, their findings suggested three priority groups of actions: enhancing visibility in the market, strengthening image of the city, and developing facilities in the city. They identified the main travel trends in the post-pandemic era such as digitalization, responsible and sustainable tourism, domestic tourism, thriving wellness, changed views on mobility, and changed business travel [64].

In a multiple case study design conducted in restaurants, bars, and one hotel, Breir et al. [22] developed a business model innovation, which was considered as a mean for sustainable development and preparation of hospitality firms for the future. They found that extensive support and high liquidity were inhibitors of the model, while the most prominent enhancers were free time resources, overall pressure, and *stammgasts* (i.e., regular customers). *Stammgasts* played a fundamental role not only because of their loyalty and the revenue they generate, but also because they acted as brand ambassadors and sources of ideas. They were concerned with the manager's wellbeing and provided psychological support, while in some cases they even offered financial support to hospitality businesses [22].

5. Conclusions and Future Research Possibilities

Sustainability has been the subject of a great concern in hospitality marketing literature in the times of COVID-19, with a strong focus on its social dimension. The reviewed papers suggest changes in consumer behavior during the COVID-19 outbreak. Consumer perceptions have been transformed and the development of negative emotions provoked unusual responses toward hospitality businesses. In the restaurant industry, the pandemic has encouraged preferences for private dining tables and for restaurants with private rooms [59]. Consumers no longer perceive ordering online food deliveries as a risky activity [25]. However, a worrying finding is that they are neither concerned with the food waste resulting from the increased use of food delivery apps [38]. In hotel and lodging industry, the pandemic has also provoked an increase in consumers' safety-seeking and preferences for more expensive hotel accommodation [56] and for robot over human services in hotels [33]. Consumers now form a novel safety inference about demand-driven scarcity cues

and this new inference manages to overshadow quality and popularity inferences, which were highly important before the pandemic [35]. Media plays a significant role in shaping consumer perceptions about the pandemic [40,62], while message framing as a communication strategy is critical in generating consumers' intentions [25,58] and emotions [61], as well as in sales promotions [58] and CSR marketing [52]. Summary of the findings of the content analysis are reported below, together with future research possibilities.

With respect to research themes, consumer perceptions are the most significant theme that emerged from the content analysis. This theme has been divided into two sub-themes: one dealing with consumer generic perceptions of the pandemic and prevention measures adopted by authorities, other concerning consumer perceptions of specific products/services and prevention measures adopted by companies. However, this theme is hardly even covered in destination and travel industry, e.g., [62], which emerges as a future research possibility.

An interesting finding is that consumer emotions and psychological conditions are the only theme examined in all industries (except for transportation in particular), i.e., restaurant, lodging, travel, cruise, education, healthcare, and sport. However, owing to the rather limited number of studies addressing this theme with the number of industries covered, future research is necessary to generalize the findings within each industry.

Regarding technology innovation, although food delivery has received the highest attention, only two studies examined drone food deliveries [34,51]. In sustainability literature, drone food delivery is considered as an eco-friendly option of food delivery in the future [67]. The reviewed papers also highlighted the social dimension of sustainability embedded in these services owing to non-human contact and increase security and safety during the COVID-19 pandemic [34,51]. Thereby, this research topic requires major and immediate attention in hospitality and sustainability literature. Moreover, no study is found on adoption of other technology innovations in restaurants different from online or drone food delivery, which needs to be examined in future studies. Finally, as only three studies [33,39,55] analyzed advanced technologies in hotels, more research is needed on consumers' acceptance of innovative technology solutions in hotel operations during the pandemic.

Communication and media-related issues also require further investigation. Although the reviewed studies did address different communication and message strategies, research on marketing communications in general and integration of marketing communications through different tools and channels in particular is limited. Consumers are constantly facing contradictory and confusing messages coming from different sources. How this affects consumer behavior needs to be examined as a matter of priority. Moreover, a surprising finding is that only two studies analyzed the role of media in shaping consumer perceptions during the pandemic [40,62]. Considering importance of the media during the COVID-19 breakdown, future studies should address the impact of media on different consumer responses in greater detail.

Finally, other themes that remained uncovered should also be addressed in future research such as, for example, the role of employees in service delivery from the consumer point of view as well as consumer's willingness to pay for the existing services during the pandemic and for the new ones that may be created. Hospitality industry has been adjusting to the changes provoked by the pandemic and consumers' acceptance of novel products and services needs to be tested. This does not necessarily refer to technology-related and social distancing possibilities, but other hospitality innovative solutions, such as completely new businesses or repositioning of the existing ones. Social sustainability has emerged as the dominant sustainability dimension, while environmental sustainability seems to have been rather forgotten in the latest empirical consumer research in hospitality marketing literature. Further research needs to examine more closely both consumers' and hospitality companies' involvement in environmentally sustainable practices during and after the pandemic. Finally, content analysis reveals that sustainability issues are mostly examined in relationship with consumer attitudes and intentions. Key marketing concepts

that have received a great interest in the latest hospitality marketing literature, such as consumer brand engagement, customer-based brand equity, or value co-creation, seem to be completely neglected in the current hospitality literature dealing with sustainability. Future works should explore the relationship between these variables and sustainability and the role of consumer in the process of creation of sustainability-based values.

Regarding research method and study design, the content analysis shows the dominance of quantitative methods, with primary data collected through online surveys. The use of qualitative and mixed methods is rather limited. Considering the uncertainty related to the pandemic, more qualitative research is necessary through in-depth interviews to better understand consumer motivations and impressions. The use of mixed methods is also highly encouraged, especially in studies on consumer emotions and psychological conditions, since no study from the second research theme adopted this research method.

Advanced data analysis methods and techniques have been frequently employed in the reviewed studies, with the dominance of analysis of moderation/mediation/interaction effects and combination of CFA and SEM. However, not all papers that tested moderating effects explicitly used measurement invariance analysis, which suggests whether moderation analysis is actually meaningful and valid or not [66]. Future works should assess measurement invariance before testing moderation effects. Another rather surprising result is the limited use of PLS-SEM, considering a number of benefits of using this specific technique in hospitality research [68]. However, this finding can be explained by the fact that many of the studies which did not adopt this technique used SEM for theory confirmation. These studies were drawing up on already existing theories, models, and/or frameworks, namely: protection motivation theory [28,30,40], perceived risk theory [29,51], theory of planned behavior [34], terror management theory [45], social exclusion theory [45], behavioral reasoning theory [38], innovation resistance theory [57], stimulus-organism-response model [23,37,40], unified theory of use and acceptance of technology model [49], expectancy confirmation model [49], task-technology fit model [49], big five model of personality traits [65], and appraisal tendency framework [40]. Rather than for theory confirmation, PLS-SEM is more appropriate for theory development in hospitality and tourism research [68]. Thereby, new concepts and new models emerging from the COVID-19 crisis should be proposed and tested by the PLS-SEM technique in future research.

The reviewed papers mostly utilized sample sizes with more than 300 respondents. In addition to consumers and consumer-related data, some studies also investigated managers/owners [22,46], staff members and professors [47], tourism experts [64], and hospitality students [65]. More research approaching different hospitality actors may be useful to address examined topics from a more holistic perspective. One study examining university students' satisfaction [65] belongs to the higher educational literature with a clear marketing focus. Students have started to be considered as consumers who seek high-quality services [69], meaning that pursuing satisfaction among students has become an imperative for universities worldwide [70]. They are also key actors in sustainability education [71], which suggests that more research is needed on students' opinions on sustainability issues in hospitality.

Restaurant and food services is the most frequently researched industry. Future works should pay more attention on consumers' perceptions of sustainability pandemic and post-pandemic practices in hotels and other accommodation establishments. Moreover, since this paper has considered only hospitality journals, content analysis on marketing and sustainability should be extended to tourism related SSCI journals to obtain more insights on the COVID-19 effects from other tourism industries.

North America (especially USA) and Asia (especially Greater China and South Korea) have received the highest research attention, followed by Europe and Australasia, while South America and Africa remain completely uncovered. Moreover, the research in Europe has been mostly conducted in Northern and Central Europe, whereas key destinations in the Mediterranean such as Spain, France, and Croatia are unexplored. Future works should investigate how sustainability and hospitality marketing efforts are addressed in

these countries. Finally, more studies are necessary across multiple geographical settings to provide cross-cultural insights and comparisons.

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