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# An application of Delphi Method and Analytic Hierarchy Process in understanding hotel corporate social responsibility performance scale

## **ABSTRACT**

This study aims to identify the essential indicators of hotel Corporate Social Responsibility (CSR) performance measurement with a standardized and composite CSR performance measurement index for the hotel industry. Employing both Delphi and Analytic Hierarchy Process (AHP) methods, three stakeholder groups are surveyed: academicians; hotel managers; and, hotel customers. Results reveal that three traditional CSR domains (legal, ethical, and social/philanthropic) are primary contributors to CSR performance, followed by two new environmental domains (room and restaurant; other general areas), and financial/economic domains as secondary contributors. This study shows the high level of consistency in the responses from stakeholder groups, supporting the effectiveness of the scale as a valuable tool to measure hotel CSR performance. Notably, domain weighted scores do differ slightly by respondent characteristic, indicating that the impacts of CSR are sensitive to respondent diversity.

Keywords: CSR, hotel, Delphi, analytic hierarchy process (AHP), stakeholder

#### Introduction

At no other time in the history of commerce have the pressures of societal concerns for natural resource preservation, fair trade compliance, employee support, and the general welfare of our world been so critically important for business to address (Font & Lynes, 2018). Various and often vocal stakeholders in today's society call upon firms to assume additional responsibilities for the benefit of community and environment through what society sees as entitled business power. In response to this call, the hotel industry has gradually adopted "corporate social responsibility" (CSR) activities with varying degrees of effort (González-Rodríguez et al., 2018; Holcomb et al., 2007; Wong et al., in press). Practices and performances range, with hotels applying a diversity of methods, measures, and approaches. This heterogeneity makes it difficult to compare CSR performance across hotels and highlights the need to develop a standardized measurement scale (De Grosbois, 2012; Lock & Seele, 2016; Madsen, 2009; Wong & Kim, 2020).

While the need to develop a standardized CSR performance measurement instrument in the hotel industry is recognized, efforts to identify hotel CSR performance measurement has been limited (Ko, Chan & Wong, 2019; Wong, Kim & Lee, in press). Previous CSR researchers have adopted different scales that have led to diverse findings (Guzzo, Abbott & Madera, 2019). In addition, most CSR scales have been applied in general business areas, thus lacking specificity to a hospitality context (Latif & Sajjad, 2018; Wong et al., in press). Methodologically, there has been no effort to develop a validated hotel CSR scale using multiple hotel stakeholders to date (Serra-Cantallops et al., 2018). Yet previous research (Gond et al., 2017; O'Connor & Spangenberg, 2008; Turker, 2009) has argued for a diversity of stakeholder perspectives to be considered when developing CSR strategies and evaluating CSR performance. To address this

gap, the current study aims to provide hotels with a multi-dimensional, multi-stakeholder method to measure and evaluate CSR performance by surveying three stakeholder groups (academics, hotel managers and hotel customers) and critically, encompassing a broader range of dimensions than current scales. CSR performance should be reviewed regularly given the changing needs and wants of stakeholders. This research seeks to provide a framework to support this process, thus contributing to the hotel industry insights into sector specific CSR dimensions to improve the evaluation of CSR measurement and performance.

This study has three research objectives: (1) identify the essential indicators of CSR performance measurement, (2) determine the perceived relative importance of CSR performance indicators, and (3) develop a standardized and composite CSR performance measurement index for the hotel industry. To achieve these objectives, this study employed both Delphi and analytic hierarchy process (AHP) techniques. Delphi can generate new, valuable and plausible ideas from the respondents, free from group intervention and strengthening the research validity by enabling a heterogeneity of panelists to contribute without the restriction of geographical distance. AHP is a mathematical technique for pairwise comparisons of multi-criteria, providing relative weights based on the importance of each measurement item to develop a standardized and composite CSR performance index.

## Literature review

# Existing CSR measurements

CSR is now a crucial aspect of business and society, with measurement an essential tool to ensure its validity and reliability (Carroll, 2000). CSR measurement includes the use of single-or multiple-issue indicators. One example of a single-issue indicator is the pollution control

performance from the Council of Economic Priorities and Corporate Crime, which has been used in numerous studies (Baucus & Baucus, 1997; Davidson & Worrell, 1990). However, a unidimensional measurement approach has been shown to have substantial limitations in terms of exploring CSR and understanding the concept (Maignan & Ferrell, 2000). Another popular CSR measurement approach is the content analysis of annual corporate publications. This method is beneficial for deriving new measurement attributes for CSR (Abbott & Monsen, 1979). In recent years, CSR information has become considerably more accessible because of technological advancements and increased attention to CSR reporting (Gray et al., 1995). Ruf et al. (1998) claimed that the content analysis of corporate publications is an objective means of measuring CSR performance because the rating process is standardized after the selection of social attributes. However, Shnayder, Van Rijnsoever, and Hekkert (2015) argued that the information in annual corporate reports differs from tactual CSR performance. That is, companies may inadvertently mislead readers to gain a positive corporate image.

The next measurement involves using scales that evaluate CSR perception. Aupperle (1984) developed a widely accepted scale that follows Carroll's four-dimensional model to reflect managers' perceived CSR value. This CSR scale is the first attempt to grasp the multidimensional nature of CSR. However, Aupperle's (1984) scale is only applicable to the measurement of managers' perspectives. Another measurement was developed to measure managerial attitudes toward CSR by Quazi and O'Brien (2000) who constructed a scale based on two-dimensional factors, namely, a range of outcomes of corporate social commitment and a span of corporate responsibility. Although this scale is advantageous to test a manager's motivation regarding and perception of CSR, the two-dimensional approach of this scale does not clearly define the composition of CSR, thereby limiting its explanatory ability.

The perceived role of ethics and social responsibility (PRESOR) scale was developed to measure the managerial perceptions of the role of social and ethical responsibility in achieving organizational effectiveness (Singhapakdi et al., 1996). Similar to the scale developed by Aupperle (1984), PRESOR focuses on measuring the managerial perceptions of CSR. However, PRESOR's lack of consideration of other perspectives limits its applicability. Moreover, Etheredge (1999) used PRESOR and conducted a replication study to analyze the perceived role of ethics and social responsibility from the managerial perspective. The results failed to depict the original factorial structure of the measurement.

Another well-known scale, developed by Pérez and del Bosque (2013), aims to construct a reliable scale to measure customer perceptions of the CSR performance of their service providers. This scale adapts stakeholder theory, which encompasses customers, shareholders, employees, and society. This scale is suitable for investigating the socially responsible values of customers specifically in the banking industry, and is less suitable for measuring CSR in other industries because each has a unique business system and environment (Whitley, 1992).

Maignan and Ferrell (2000) developed an important scale to measure CSR and adopted the concept of corporate citizenship, which refers to the extent to which companies meet the standard of economic, legal, ethical, and discretionary responsibilities that influence various stakeholders. This approach integrates the four-dimensional CSR concept from Carroll's model (1979) and stakeholder theory, and has been tested and validated empirically in dissimilar cultural settings, such as the US and France. Maignan and Ferrell's (2000) scale marks a substantial contribution to the CSR literature, yet failed to consider environmental impact as a CSR dimension.

Some studies (Alvarado-Herrera et al., 2017; Fatma et al., 2016) developed measurement scales to reflect consumers' perceptions of CSR, however, both studies have limitations.

Alvarado-Herrera et al. (2017) employed a convenience sample of university students at an early stage of scale development thus they are not relevant to the practical interest of CSR in a company. While the two scales comprise three domains, namely, economic, environmental, and social, they fail to fully capture the specifics of the hotel industry. Moreover, their scales reflect only consumers' responses to CSR performance.

Table 1 summarizes existing studies of CSR scale development in terms of dimensionality, measurement, sample, setting, and noted weaknesses. Despite these advances in CSR scale development, no CSR study to date uses both multi-dimensional domains and multi-stakeholder samples to develop their scale. The current study addresses this gap by using three groups of hotel CSR stakeholders (academics, hotel managers, and hotel customers) as well as customized and expanded dimensions to develop a new sector-specific CSR measurement scale.

Table 1

#### CSR dimensions and measures

Although the exact nature and scope of CSR continues to be debated, there is some consensus as to its dimensional structure (Maignan & Ferrell, 2001; Smith, 2003; Wong & Kim, 2020). Carroll's (1998; 1999) CSR four-dimension conceptualization, inclusive of economic, legal, ethical, and philanthropic responsibilities, has been widely accepted and become most popular (Webb, Mohr & Harris, 2008; Wood, 2010). Firstly, the financial/economic domain is the core requirement of sustaining business through seeking fair profit and attracting investors (Dahlsrud, 2008). The legal domain refers to the responsibility of an organization to comply with

laws, regulations, and legal obligations (Ararat, 2008). The ethical domain reflects the responsibility of an organization to exceed legal requirements by respecting the expectations of societal morals and ethical norms (Carroll, 1991). The social/philanthropic domain manifests the responsibility of an organization to support the fine and performing arts, and to partake in community service and volunteerism (Okoye, 2009).

In the context of hotels, Holcomb et al. (2007) performed content analysis on hotels' websites to identify their CSR patterns. The results showed that 80 percent of the hotel companies reported social activities, and classified the hotels' CSR activity patterns into four categories, namely, community, environment, marketplace vision and values, and workforce. De Grosbois (2012) investigated the CSR communication of leading global hotel companies. Hotels' CSR initiatives were categorized into four dimensions, namely, environmental goals, employment quality/diversity and accessibility, society/community well-being, and economic prosperity. The results correspond to Carroll's (1998; 1999) four dimensions of CSR.

Though most CSR studies stem from Carroll's four dimensional CSR model, there are valid alternatives. David, Kline, and Dai (2005) proposed three domains of CSR - moral, discretionary, and relational aspects - aligning with Carroll's ethical and social/philanthropic domains. The relational domain is new, referring to practices that strive to build and maintain long-term relationships with related stakeholders. However, even though relational is considered to be a key domain of customer relationship management, it is not necessarily a CSR domain. Öberseder, Schlegelmilch, Murphy, and Gruber (2014) and Turker (2009) proposed CSR dimensions based on stakeholders' positional perceptions, whether community, employee, shareholder, societal, customer, supplier, government, or environmental. Even though this

approach has the advantage of covering a broad range of CSR aspects, definitions of the domains are vague and measurement items are unclear.

Alvarado-Herrera et al., (2017) also proposed a three-dimensional CSR model which manifests social equity, environmental protection and economic development. In their study social equity and economic development correspond to social/philanthropic and financial/economic domain, whereas environmental protection was considered to be the most important domain in CSR measurement. In addition, an increasing number of customers are keenly interested in environmental protection and hold positive attitudes toward eco-friendly products (Chan, 2001; Manaktola & Jauhari, 2007; Tsai & Tsai, 2008).

Items to measure environmental CSR performance should be different across hospitality businesses because environmental impacts-causing aspects are different. For example, the airline industry is a culprit of air pollution and the restaurant industry is a source of food waste, whereas the casino industry generates a negative image of a gambling and smoking culture. In addition, most previous studies (Kim et al., 2017; Song et al., 2015; Xu, 2014) have failed to adopt imminent environmental issues because they reflect realities of the 1990s.

As a result, this study will adopt Carroll's four-dimensional CSR concept and reinforce environmental dimensions through diving it into two domains such as room and restaurant area dimension, and other general areas dimension.

## Research methods

## Scale development through Delphi and AHP

This study aims to identify the important indicators of CSR performance in *a-priori* six dimensions and determine the weighted score of each dimension and indicator on the basis of their relative importance. The Delphi technique and AHP are adopted to achieve this objective.

First, the Delphi technique is a widely used research method to collect and gather opinion from respondents within their domain of expertise (Hsu & Sandford, 2007). The Delphi technique provides anonymity to selected respondents, thereby minimizing the weakness of conventional means of collecting opinions from group interaction, such as the effect of dominant individuals, group pressure of conformity, and emotional noise from the discussion (Dalkey, 1969). Moreover, the Delphi technique allows the use of electronic communication, such as e-mail and other smart communication tools, to solicit and exchange information that can help ensure research validity by obtaining heterogeneity within the population without the limitation of geographical distance (Maxwell, 2013). This study used three rounds of Delphi survey instead of four, as an approach to managing the decline in response rate when panel members are asked to stay involved for four-rounds (Keeney, Hasson & McKenna, 2001). Thus, this study used the first two rounds of the Delphi survey to investigate the essential indicators of hotel CSR performance measurement, and effectively used the third round to combine Delphi survey with AHP analysis to develop a standardized and composite hotel CSR performance measurement index. The main objective of Delphi, to reach response consensus, was met.

The second method adopted is AHP. Each industry has different characteristics and foci for CSR strategies. Current hospitality studies have indicated that the environmental aspect has become the center of attention compared with other dimensions (Kucukusta et al., 2013; Tsai et al., 2012). Relative importance weights should be applied when evaluating various CSR indicators. That is, important indicators should weigh more and less important indicators should weigh less. This measure can differ across industries, and the current study aims to explore the applicable and accurate CSR measures for the hotel industry. In a management decision-making process, Saaty (1987; 1994) developed the AHP model, which is a mathematical technique for

multi-criteria decision-making based on pairwise comparisons between measurement criteria designed to obtain relative judgments.

AHP assists management to assess subjective and objective evaluation measures and provide a beneficial mechanism for checking the consistency of evaluation measures. AHP is used to construct an evaluation model and criterion weights and integrates various measures into a single overall score to rank decision alternatives. Moreover, applying this method often results in a multi-level hierarchical structure that simplifies a multiple-criterion problem (Chen, 2006). AHP has also been applied to a wide range of decisions and human judgments in the hospitality industry (Chen, 2006; Chen, 2014; Zaman et al., 2016). Tzeng et al. (2002) analyzed AHP in the decision-making process regarding a restaurant location selection. Chen (2006) tested AHP in critical criteria that affect decision-making in a convention site selection. The results showed that AHP is a beneficial tool in evaluating factors and enabling decision-makers to determine the relative importance of each influential factor.

## Scale development process

The literature review of CSR measurement studies has identified several weaknesses. First, the majority of CSR measures reflect general business, and not the hospitality industry. Limited CSR scales characterize the hotel industry. Given that the majority of CSR studies in a hotel context (Martínez & del Bosque, 2013; Qu, 2014; Su et al., 2015; Xiao et al., 2017; Wong & Kim, 2020) adopted CSR measurements developed for general business, the results of these studies generated diverse and incongruent findings, questioning their reliability and validity. Second, several CSR studies in the hotel industry adapted Carroll's (1991) measurement scale, developed over 25 years ago, thereby failing to represent the current situation. In addition, the hotel industry differs from other manufacturing businesses. For example, the hotel industry includes in its range, characteristics of luxurious and conspicuous consumption. Hotel facilities and services are involved with numerous non-environmentally friendly components in their processes of purchasing, cooking, discarding materials, maintaining facilities, preparing guest rooms, gardening, environmental resource management, and employee training and communication. In fact, most operations are related to environmentally sensitive activities, such as managing food and beverage, consuming water, washing linen, stocking amenities for bathrooms, using electricity, plus landscaping and gardening. Thus, hotel customers and employees actively co-create service elements of CSR while other industries may focus solely on the production process, highlighting the need to develop a sector specific CSR measurement scale.

Many conceptualizations of CSR fail to accommodate new industrial or consumer trends, customer preferences, new social paradigms, and advancements of new technologies. Hotel efforts to implement CSR are propelled by current social and industrial requirements and

consumer concerns. For example, information or electrical technology development now facilitates the reduction of the amount of paper usage through e-mail, e-brochures, e-presentations, or e-check-in/out processes using tablets instead of distributing paper brochures or signing registration documents. To save on electricity, hotels use an automatic light on–off system, motion/heat sensor, LED light bulbs, and water-cooled and centralized air-conditioning systems. Hotel's CSR programs, such as donations or contributions to community causes, fair trade, eco-friendliness, sustainability, greening, or the sharing economy, reflect today's social needs. Therefore, a new CSR measurement instrument should consider these social and industrial trends.

To address these weaknesses, the current study reinforces the environmental domain by classifying it into two components, namely, (1) environmental (room and restaurant) domain and (2) environmental (other general areas) domain for the following reason. With more than 25 measurement items in the environmental domain, subdividing the domain allows for a more precise capturing of CSR dimensionality. Different departments in a hotel have different CSR policies, in particular, rooms and restaurants and other general areas. To verify this approach, four active CSR researchers and seven hotel managers were invited to a meeting to discuss the dimensionality of hotel CSR. Subsequently, a pre-test was carried out with 40 doctoral students majoring in hospitality and tourism management. As a consequence, this study adopted the six-dimensionality structure to measure hotel CSR as shown in Table 2.

Table 2

To manifest social and industrial trends, this study included several new indicators from

analyzing the content of 8 hotel and tourism sustainability and CSR reports, to derive items such as "extent to which the hotel excludes endangered species from the food menus", "extent to which the hotel recommends responsible drinking to customers," "extent to which the hotel fulfills the reuse/recycle program in guests' rooms," and "extent to which the hotel reduces the paper usage in operation (e.g., mobile check in, electronic invoice)". In total, 69 indicators were derived from 23 journal articles and 8 hotel and tourism sustainability and CSR reports (e.g., Knowles et al., 1999; Kroger, 2018; Maignan, 2001; Maignan et al., 1999; Ricaurte, 2011; Kroger, 2018; Shangri-La Hotels & Resorts, 2016).

The Delphi method aims to achieve a consensus of opinions from experts or professionals regarding a specific topic (Ludwig, 1994). Online panel surveys were conducted to garner responses from the three stakeholder groups - academics, hotel managers, and hotel customers-to develop the CSR scale. To ensure validity, the participants met several requirements in order to participate. Academics were required to have research or teaching experience in CSR or sustainable tourism. Hotel managers were required to have at least three years of managerial work experience in a hotel, and basic CSR knowledge. The panel of hotel customers had stayed at a hotel at least twice within the past 12 months and had a basic understanding of CSR.

## Analytical technique

This study adopted the mean value, median value, and Content validity ratio (CVR) as criteria to eliminate and refine the CSR indicators. If the indicators' mean values in the first survey were below 5.50 or the CVR values were below 0, then they were excluded. CVR indicates content validity by calculating the number of respondents who answered 6.00 or above on a 7-point Likert scale. The CVR value is a linear transformation of a proportional level of agreement on the number of respondents within the panel based on the indicators'

appropriateness in computing CSR (Wilson et al., 2012).

Additional indicators were added on the basis of the respondents' responses to the openended questions. In the second survey, the indicators were excluded if their mean value or median value was below 5.50. In addition, if the indicators' CVR values were below 0.29 (Lawshe, 1975), then they were excluded.

The reason for demonstrating the different criteria of the CVR values between the first and second surveys is attributed to the fact that the first survey was deemed unable to cover all essential measurement indicators that were extracted as a result of the thorough review of the previous literature (Miller, 2001). The second survey represented the final decision on whether indicators were included or excluded, thereby requiring a high consensus in showcasing the appropriateness of indicators within each domain. Lawshe (1975) determined that when the sample size is at least 40, the minimum CVR value in reaching a consensus is 0.29. By contrast, Wilson et al. (2012) recommended that the minimum CVR value is 0.23 in the case that the number of respondents is 44. To reach a high consensus from the three stakeholder groups, this study adopted a critical CVR value of 0.29, as suggested by Lawshe (1975).

To ensure the consensus of the Delphi technique in this study, changes in the coefficient of variation (COV) were used to test the stability of the indicators. Table 3 shows that the average COV was 0.20 in the first survey, which decreased to 0.19 in the second survey, thereby indicating the acceptable consensus of the current study (Heiko, 2012; Heiko & Darkow, 2010).

Table 3

After computing the CVR and COV values of the indicators in each domain in the first and second surveys, the third survey was conducted to determine the level of the relative

importance of each domain and indicators through pairwise comparative judgments. This process enabled the panelists to assign relative priority when comparing two indicators or domains (Deng et al., 2002). The respondents could express their preference between every two indicators and translate these preferences into numerical ratings of 1, 3, 5, 7, and 9 and 2, 4, 6, and 8 as intermediate values. Deng et al. (2002) explained that the comparative priority from the pairwise comparisons may lead to a certain degree of inconsistency. Therefore, the inconsistency ratio (IR) was used to check the consistency and reliability of the panelists' judgments. Furthermore, the consistency index (CI) and ratio should be considered. The CI can be calculated to measure each participant's consistency in the pairwise comparison.

Saaty (1980) developed the random index (RI), which refers to a constant value that corresponds to the mean random CI value according to n (see Table 4). A Consistency ratios (CR) value between 0.10 and 0.20 is acceptable, whereas that below 0.10 represents a high consistency of responses (Saaty, 1980; Wind & Saaty, 1980). If the respondents are non-experts, then the threshold value of CR is flexible at 0.20 or below (Ho et al., 2005). After analyzing the CR value, the relative weights of each indicator and domain were integrated thereafter to develop the final weighted score to measure CSR in the hotel industry.

Table 4

#### **Findings**

## Profile of respondents

The profiles of three groups of panelists in the three rounds are described in Table 5.

Table 5

# First Delphi survey

From the results of the first survey, 17 out of the 69 indicators were excluded from the scale for the following reasons. First, the mean or median values of each attribute were below 5.50. Second, the CVR values of these attributes were below 0. Accordingly, a CVR ratio below 0 means that less than half of the respondents perceived the scale as an appropriate indicator for measuring CSR (Lawshe, 1975). Third, the attributes were not entirely related to the CSR measurement. For example, the "extent to which a hotel gains the highest possible profit" is an indicator of financial performance but not necessarily a CSR measurement. Lastly, some attributes overlapped. For example, "The hotel allows the decrease of profitability because of its compliance with ethical standards" overlapped with the indicator "extent to which the hotel is committed to well-defined ethics and principles."

The panelists' comments suggested that some attributes were not understood or explicitly presented. Thus, adjustments were necessary to enhance the understanding of the attributes by including practical examples. After the content analysis of respondents' comments, conducted by four CSR scholars, two additional indicators were added to the scale (e.g., "extent to which the hotel uses local materials/products" and "extent to which the hotel provides ethical studies and best practices to employees"). Consequently, 54 attributes were measured in the second survey.

## Second Delphi survey

To ensure the validity of the Delphi method, only respondents who participated in the first survey were invited to join the second survey. Indicators were removed from an initial pool of 54 indicators if they failed to meet the following criteria: (1) CVR value below 0.29 (Lawshe, 1975), (2) mean value of below 5.50, and (3) median value below 5.50. From the initial pool of

54 attributes, 14 were eliminated, and 40 attributes remained. To identify the internal consistency of each indicator in each domain, a reliability test was conducted with Cronbach's alpha values ranging from 0.75 to 0.89. The Cronbach's alpha value of all 40 indicators was 0.95. Thus, this scale achieved high internal consistency of indicators within each domain (Nunnally, 1978). Moreover, the average CVR value increased by 17% in the second survey, thereby indicating that a higher level of consensus was achieved in the second round than in the first round.

## Third Delphi survey (AHP analysis)

Again, only the respondents who answered in the first two surveys were invited to participate in the third round survey. Figure 1 shows a hierarchical decision-making graph. Three hierarchical levels are proposed in this study, namely, organizational level, individual level, and indicators. Saaty (1980) suggested that the maximum number of analytic hierarchy levels is nine. Thus, this study's three-level hierarchical construct, with six second-order dimensions, is acceptable. In AHP, the appropriate solution is provided by two modes of synthesis, namely, distributive and ideal. The distributive mode normalizes the alternative score and creates dependency for rank reversal, whereas the ideal mode preserves ranks and explores relative importance by the score of the best alternative under each domain (Millet & Saaty, 2000). This study adopted the second model to assess the importance level of the domains and indicators.

Figure 1 presents the relative importance of the indicators at the individual level, which shows the financial/economic (11.60%), legal (23.03%), ethical (21.90%), social/philanthropic (17.42%), environmental (room and restaurant) (12.90%), and environmental (other general areas) (13.15%) domains. An overall CR value of 0.103 (Table 6) indicates that the responses have an acceptable consistency level. Table 6 provides details of the relative importance or

weight among domains and within each domain. The responses were acceptably consistent with CR values in each domain ranging from 0.08 to 0.15. Table 6 shows the results of the relative importance of the indicators and their respective rankings.

FIGURE 1 and TABLE 6

Table 7 shows the comparison of the responses among three groups of stakeholders and overall respondents regarding the relative importance of the six major domains. Although the CVR and CR values in this study show the level of consistency in the responses of these cohorts, the differences in perceptions among stakeholders highlights some interesting incongruencies in their responses (AlWaer et al., 2008; Davis, 2014; Renfors, 2018).

The responses of academics regarding the relative importance of the major domains in measuring CSR in the hotel industry are most similar to the overall averages for the total sample. By contrast, the responses of hotel managers and customers differ from the response of academics, and from each other. This finding is attributed to the heterogeneous perspective toward CSR practices from various stakeholder groups (Chang et al., 2014). Hotel managers rank legal factors as most important, and have the lowest ranking for social factors in comparison to other stakeholders, whereas understandably, customers rank room and restaurant environment as being relatively more important and legal as less important than do other stakeholders. Thus, the current study reconfirms that various stakeholders can exhibit different perspectives of some hotel CSR policies, and share others. For example, hotel managers' perceived financial/economic domain is considered the third most important given that financial performance can directly affect managers' benefits, such as year-end bonuses and salary increases. By contrast, academics and hotel customers rated financial/economic domain as the least important because both groups

are not directly impacted by hotel financial performance. However, the three stakeholder groups show a similar pattern in their perceived importance level of other domains. Thus, the result reached an acceptable consistency in terms of the panelists' responses. In summary, the importance of the three traditional CSR domains (i.e., legal, ethical, and social/philanthropic) was confirmed, while two new environmental domains were observed to be indispensable measurements of CSR in the hotel industry, notably ranking higher than the financial/economic domain overall.

TABLE 7

## **Discussion and implications**

Results of this study reveal meaningful implications. First, the methodological approach to validate a hotel CSR scale through three rounds of a Delphi survey and AHP method is notable. The domains and indicators represent the unique characteristics of the hotel industry unlike any other CSR scale. CSR scholars in the hospitality field can adopt this standardized hotel CSR performance measurement instrument. Second, this study demonstrated that the various CSR domains have different relative importance weights when evaluating various CSR indicators. This significant finding reveals that important indicators or domains should weight more while less important indicators or domains should weigh less. With the examination of CSR effects so prevalent in the hospitality industry, future research should consider the relative importance of CSR effects and not assume that all domains have equal contribution.

Third, this study determined that the legal domain was perceived as the most important of the six domains in evaluating hotel CSR performance. Thus, indicators related to legal issues in evaluating hotel CSR performance should be included in the scale. This finding is slightly

contradictory of Maignan's (2001) study, which indicated that American consumers highly value corporate economic responsibility. However, perceptions of CSR are likely to have changed over the last decade because of the increasing exposure of CSR practices through advanced technology and social media. Xiao et al. (2017) analyzed the ranking of consumers' perceived importance of Carroll's (1991) four CSR dimensions in the USA. Their results revealed that the legal domain was the most important, followed by ethical and social, whereas the economic domain was the least important. The results of this study supported Carroll's dimensional structure because the legal, ethical, and social/philanthropic domains were revealed as the most important domains, followed by the environment (room and restaurant; and, other general areas), and financial/economic domains. Legal CSR was perceived as a "must do" practice, whereas ethical CSR was perceived as the second foundation that goes beyond legal CSR. The social/philanthropic and the two environmental domains were perceived as additional practices that a hotel should opt to implement. The financial/economic domain was perceived as the least important domain, reflecting current sentiments that increasingly lean toward meaningful societal goals beyond profit maximization. Although this domain was the least important, it remains indispensable to the measurement of hotel CSR as a fundamental element of business existence.

Fourth, this study emphasized that commitment to environmental issues has become one of the most significant criteria when measuring CSR in the hotel industry. Two additional environmental domains that specify different areas provide a comprehensive view of the CSR effort within the hotel industry (Kucukusta et al., 2013; Tsai et al., 2012; Xiao et al., 2017). However, these domains were ranked as either fourth or fifth out of the six dimensions. This finding contradicts previous studies which have indicated that commitment to environmental

issues is a top concern in measuring hotel CSR performance (Kucukusta et al., 2013; Tsai et al., 2012). Importantly, both environmental domains surpass the financial/economic domain and in this regard are clearly important domains in CSR measurement.

Fifth, several common indicators in the financial/economic domain that were adopted in previous studies (e.g., Maignan, 2001; Maignan & Ferrell, 2001; Martínez & del Bosque, 2013) were removed from the current scale because these indicators were deemed unrelated to CSR. For example, "level of obtaining the greatest possible profits" did not contribute to CSR because financial/economic CSR does not require profits to be maximized. Instead, it must provide services or products that meet social expectations and needs at a reasonable price. In the results, four indicators remained within the financial/economic domain. The most important indicator was "degree of the hotel's honesty in informing its shareholders of its economic situation," which is consistent with the results of Mercer and Stuart (2003), who emphasized honest communication to different stakeholders as a significant indicator of CSR. However, the second most important indicator contradicted the result of a previous study. Maignan et al. (1999) indicated that customer satisfaction as an indicator for measuring business performance is a nonsignificant indicator for measuring economic CSR. Nevertheless, "use of customer and employee satisfaction as an indicator of the hotel's business performance" was perceived as the second most important indicator. Given that the business and social environments have changed in the past 20 years, people are increasingly aware of customer and employee satisfaction rather than being concerned only with financial performance.

Sixth, the "extent to which the hotel ensures food safety and hygiene" was predictably perceived as the most important among the nine indicators in the environment domain. Food safety and hygiene help to avoid potentially severe health hazards, which is the first rule in the

food and beverage industry. However, the "extent to which the hotel excludes endangered species from food menus (e.g., shark's fin soup)" was perceived as the second most important indicator in the environment domain. People are becoming aware of the importance of biodiversity because of the enhanced promotion of protecting endangered animals. Biological life on Earth is highly interdependent and humans are responsible for protecting endangered species and ensuring biodiversity.

Seventh, the "extent to which the hotel provides green training to employees" was revealed to be of utmost importance among the indicators in the hotel's environmental (other general areas) domain. This finding indicated that "soft skill" is a vital criterion in evaluating hotel CSR effort. Although the majority of previous studies (Costa & Menichini, 2013; De Grosbois, 2012; Manaktola & Jauhari, 2007; Martínez & del Bosque, 2013) have only considered "hard skill" when measuring CSR, other studies have analyzed the effects of employees' green training and supported the notion that such training improves the performance of green strategies and management (Teixeira et al., 2012; Teixeira et al., 2016). The exclusion of green training from the scales for assessing hotel CSR implies that hotels miss out on insights into their actual CSR performance.

Eighth, the "degree to which the hotel effectively implements internal policies to prevent discrimination in employees' compensation and promotion process," "extent to which the hotel ensures that employees can fulfill their duty within the standards defined by law," and "extent to which the hotel complies with all laws regulating hiring and employee benefits" are perceived as the most important indicators in the legal domain. Employees are key stakeholders of the legal CSR in the hotel industry (Chen & Hung-Baesecke, 2014), thereby justifying why indicators

related to employee benefits and freedom from discrimination within legal requirements are perceived as the most important.

Ninth, indicators in the ethical domain are evenly distributed in the index. Similar to the legal domain, treating employees fairly and preventing discrimination are the most important indicators. This result reinforces the idea that employees are the most important stakeholders in legal and ethical CSR efforts. That is, the exclusion of employee consideration will lead to poor performance regarding the hotel's CSR effort.

Tenth, several indicators that were widely used as social CSR indicators in previous studies (Maignan, 2001; Maignan & Ferrell, 2001; Singh & del Bosque, 2008) were excluded, suggesting that, disappointingly, the hotel industry may not have made significant strides in community support efforts as other sectors. For example, the "extent to which the hotel helps to solve social problems" and the "proportion of hotel's budget allocated for donations and social work to benefit poor people" were dropped. Respondents may feel that the government is more accountable for handling these social issues than the hotel industry. The "effort that the hotel makes for philanthropic society beyond profit generation" was also excluded, however, the social responsibility of profit-making organizations to contribute to philanthropic endeavors, as times change, this perspective may too.

Eleventh, the results of this study add value to current scales by showing the specificity of CSR practices in the hotel industry. For example, the Sustainability Accounting Standards Board (SASB) developed a Materiality Map for 79 industries that includes the hotel industry. It shows that the hotel and lodging industry considers energy management, water and wastewater management, ecological impacts, labor practices and climate change as material issues (SASB 2018). However, this study reveals the continued importance of legal and ethical issues as ranked

by hotel CSR stakeholders, in addition to environmental domains that correspond to the materiality map but are measured at a more operational level (e.g. rooms and restaurants).

Lastly, the responses of academics, hotel managers, and hotel customers toward hotel CSR performance varied. This finding indicates that the respondents from different stakeholder groups are likely to produce different results. The results are sensitive to the diverse characteristics of the respondents, and their different levels of interest and benefits regarding hotel CSR efforts. Significantly, this study is the first to incorporate both multi-dimensions and multi-stakeholders' (employees, customers, and academics) opinions to develop and standardize a CSR scale specifically for the hotel industry by achieving consensus through three rounds of Delphi surveys. This method overcomes the weakness of past studies, which were limited to one stakeholder group as the research sample in their CSR scale development (Pérez & del Bosque, 2013; Singhapakdi et al., 1996).

## Conclusion, limitations and future study

This study contributes to the understanding of essential indicators of hotel CSR performance measurement and develops a standardized and composite hotel CSR performance measurement index. Three traditional hotel CSR domains (legal, ethical, and social/philanthropic) are primary contributors to hotel CSR performance, followed by two new environmental domains (room and restaurant, and other general areas), and financial/economic domains as secondary contributors. Although the CVR and CR values show high levels of consistency in the responses, analysis by stakeholder group highlight some incongruences in perceptions, reflecting different levels of perceived interests and benefits.

As this study is an initial and creative endeavor, it is vulnerable to limitations. First, requiring respondents to participate in all rounds of the Delphi–AHP surveys was practically a challenge because longitudinal surveys result in lower participation. Thus, a future study is recommended to employ a semi-structured interview method despite its prolonged research duration. Second, this study is the first to combine the perspectives of various stakeholders in a CSR measurement scale for the hotel industry. Hence, future research should test this scale in different study contexts, such as countries or hotel brands, to enhance generalizability. Nevertheless, this new CSR scale for the hotel industry represents a timely and important step forward for both tourism research and practice.

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Table 1. Summary of existing CSR performance scale development

No.	Author(s)	Theme	Dimensions	No. of items	Sample(s)	Research Setting	Weakness
1	Maignan and Ferrell (2000)	Scale development	<ol> <li>Economic</li> <li>Legal</li> <li>Ethical</li> <li>Discretionary</li> </ol>	18	330 managers (210- US, 120-France)	Marketing	<ol> <li>Ignored environmental aspect</li> <li>Single stakeholder group in sample (managers)</li> </ol>
2	Quazi & O'Brien, 2000	Cross- national testing CSR model	<ol> <li>Business of business is business</li> <li>CSR is beneficial to business</li> <li>Wider responsibility has its own benefits</li> <li>Social responsibility costs money</li> <li>Responsibility beyond regulation</li> <li>Business must do more</li> <li>Exercise CSR increases societal expectation</li> </ol>	20	320 Chief executive officers in food and textile manufacturers (102 - Australia, 218 - Bangladesh)	Food and textile	<ol> <li>Ignored environmental aspect</li> <li>Single stakeholder group in sample (Chief executive officers)</li> </ol>
3	Singhapakdi, Vitell, Rallapalli, & Kraft (1996)	Scale development	<ol> <li>Social responsibility and profitability</li> <li>Long-term gains</li> <li>Short-term gains</li> </ol>	13	442 Professional members of the American Marketing Association	General business	<ol> <li>Sub-domain of CSR is too general</li> <li>Single stakeholder group in sample (Professional members)</li> </ol>
4	Martínez, Pérez, & Rodríguez del Bosque (2013)	Scale development	<ol> <li>Economy</li> <li>Society</li> <li>Environment</li> </ol>	17	1921 students, self- employed, worker, retired, pensioner, unemployed	Hospitality	<ol> <li>Ignored legal aspect</li> <li>Unclear cut between ethical and social aspect</li> <li>Single stakeholder group in sample (customers)</li> </ol>
5	Alvarado- Herrera et al. (2017)	Scale development	<ol> <li>Social equity</li> <li>Environmental protection</li> <li>Economic development</li> </ol>	22	1147 Tourists	Tourism	<ol> <li>Ignored legal and ethical aspect</li> <li>Single stakeholder group in sample (tourists)</li> </ol>
6	Fatma, Rahman, Khan (2016)	Scale development	<ol> <li>Economic</li> <li>Social</li> <li>Environmental</li> </ol>	20	396 hotel guests	Tourism	Ignored legal and ethical aspect     Single stakeholder group in sample (hotel guests)
7	Turker (2009)	Scale development	<ol> <li>CSR to society</li> <li>CSR to employee</li> <li>CSR to customers</li> <li>CSR to government</li> </ol>	18	269 business professionals	General business	<ol> <li>Ignored legal and ethical aspect</li> <li>Single stakeholder group in sample (business professionals)</li> </ol>
8	Pérez, Martínez, & Del Bosque (2013)	Scale development	<ol> <li>Customers</li> <li>Shareholders</li> <li>Employees</li> <li>Society</li> <li>General</li> </ol>	22	1124 customers	Banking	Single stakeholder group in sample (customers)

9	Öberseder, Schlegelmilch, Murphy, & Gruber (2014)	Scale development	<ol> <li>Community</li> <li>Employee</li> <li>Shareholder</li> <li>Environmental</li> <li>Societal</li> <li>Customer</li> <li>Supplier</li> </ol>	39	Study 1 - 483 consumers, Study 2 - 1131 consumers	Manufacturer, fast-moving consumer goods company, and banking	1.	Single stakeholder group in sample (customers)
10	Skudiene & Auruskeviciene (2012)	Scale development	<ol> <li>Internal CSR- employees</li> <li>External CSR - customers</li> <li>External CSR - local communities</li> <li>External CSR - business partners</li> </ol>	15	274 employee	General business	1. 2.	Ignored legal, ethical and environmental aspect Single stakeholder group in sample (employees)
11	Davenport (2000)	Scale development	<ol> <li>Ethical business behavior</li> <li>Stakeholder commitment</li> <li>Environmental commitment</li> </ol>	20	40 experts	General business	<ol> <li>2.</li> </ol>	Items to measure environmental aspect are too general and simplified (2 items only) Single stakeholder group in sample (experts)
12	David, Kline, & Dai (2005)	Dual-Process Model of CSR and Purchase Intention	<ol> <li>Moral/ethical practices</li> <li>Discretionary practices</li> <li>Relational practices</li> <li>Familiarity with CSR</li> </ol>	11	359 students	General business	1. 2.	Ignored legal and environmental aspect Single stakeholder group in sample (students)
13	El Akremi,Gond, Swaen, De Roeck, & Igalens (2018)	Scale development	<ol> <li>Community-oriented CSR</li> <li>Natural environment-oriented CSR</li> <li>Employee-oriented CSR</li> <li>Supplier-oriented CSR</li> <li>Customer-oriented CSR</li> <li>Shareholder-oriented CSR</li> </ol>	35	261 employees	Construction industry	1.	Single stakeholder group in sample (employees)
14	Lee, Sung, Kim, Jung, & Kim (2016)	Scale development	<ol> <li>Usefulness</li> <li>Credibility</li> <li>Fairness</li> </ol>	21	253 Experts in communication	Media	1.	unable to generalize to other industry
15	Pérez & Del Bosque (2013)	Scale development	<ol> <li>Customers</li> <li>Shareholders and supervising boards</li> <li>Employees</li> <li>Society</li> </ol>	20	1124 banking service users	Banking	1. 2.	Ignored legal and environmental aspect Single stakeholder group in sample (customers)
16	Chow & Chen (2012)	Scale development	<ol> <li>Social development</li> <li>Economic development</li> <li>Environmental development</li> </ol>	15	314 managers	General business	1. 2.	Ignored legal and ethical aspect Single stakeholder group in sample (managers)

Table 2. Definition of the six dimensions of hotel CSR

Domain	Definition
	Responsibility that an organization should fulfill in the financial or economic aspect, such as
	financial sustainability, operation efficiency, and profitability to enable long-term business
Financial/Economic domain	success and survival.
	Responsibility that an organization should fulfill in the legal aspects, such as compliance with
Legal domain	laws, regulations, and legal obligations.
	Responsibility that an organization should fulfill in the ethical aspects; that is, going beyond
	the legal aspect, such as respecting norms and meeting the expectation of societal mores and
Ethical domain	ethical norms.
	Responsibility that an organization should fulfill in the social/philanthropic aspect, such as
	providing assistance for the fine and performing arts and participating in community services
Social/Philanthropic domain	and volunteerism.
Environmental	Responsibility that an organization should fulfill in the specific environmental measures in the
(room and restaurant)	hotel room and restaurant.
Environmental	Responsibility that an organization should fulfill in the specific environmental measures in
(other general areas)	hotel general areas other than the hotel room and restaurant.

Table 3. Level of agreement of the Delphi studies (Coefficient of Variation)

ъ .		Round 1	Round 2	Change
Domain	Indicator	COV	COV	COV
	Length of the hotel's survival and long-term success	0.27	0.28	1
	Proportion of hires that are local residents	0.18	0.24	1
п	Degree of the hotel's honesty in informing its shareholders of its economic situation	0.21	0.26	-
Financial / Economic domain	Extent to which the hotel makes continuous improvements in product quality	0.22	0.26	1
c d	Degree to which the hotel monitors employees' productivity	0.28	N/A	N/A
nomi	Use of customer satisfaction as an indicator of the hotel's business performance	0.21	0.22	<b>↓</b>
[03]	The hotel's level of improvement in financial performance	0.25	N/A	N/A
al / E	Extent to which the hotel strictly monitors whether operating costs are properly spent	0.24	N/A	N/A
ınci	Growth of the occupancy rate	0.27	N/A	N/A
ina	Growth rate of RevPAR	0.28	N/A	N/A
<b></b>	Growth rate of return on assets	0.23	N/A	N/A
	Extent to which a hotel gains the high possible profit	0.33	N/A	N/A
	Extent to which the hotel uses local materials/products (e.g., food, flower, furniture)	N/A	0.23	N/A
	Extent to which the hotel donates leftover food to the community	0.22	0.16	<b>↓</b>
	Extent to which the hotel utilizes food waste (e.g., conversion to fertilizer)	0.15	0.15	-
	Extent to which the hotel excludes endangered species from the food menu (e.g., shark's fin soup)	0.19	0.18	<b>↓</b>
	Extent to which the hotel ensures food safety and hygiene	0.20	0.21	1
. <b>i</b>	Extent to which the hotel recommends responsible drinking to customers	0.30	N/A	N/A
tal domain	Extent to which the hotel provides nutritional information on its menu	0.22	N/A	N/A
	Extent to which the hotel reduces water usage per available room	0.21	0.19	<b>↓</b>
Environmen	Extent to which the hotel reduces energy usage per available room	0.20	0.18	<b>↓</b>
viro	Extent to which the hotel reduces greenhouse gas emission per available room	0.18	0.17	<b>↓</b>
A	Extent to which the hotel reduces solid waste per available room	0.15	0.19	1
	Extent to which the hotel reduces bathroom amenities per available room (e.g., disposable shampoo, soap)	0.22	0.25	1
	Extent to which the hotel reduces surplus towels per available room	0.23	N/A	N/A
	Extent to which the hotel implements an electronic management system in guests' rooms (e.g., motion sensors)	0.24	N/A	N/A
	Extent to which the hotel fulfills the reuse/recycle program in guests' rooms (e.g., reuse/recycle card reminder)	0.14	0.17	1

ъ.		Round 1	Round 2	Change
Domain	Indicator	COV	COV	COV
	Extent to which the hotel reduces natural resource consumption.	0.22	0.25	1
	Degree to which the hotel communicates with customers regarding its environmental practices	0.17	0.17	-
	Extent to which the hotel uses renewable energy in a productive process that is environmentally friendly	0.15	0.15	-
nain	Degree of the hotel's interest in protecting the natural environment	0.16	0.18	1
y dor	Degree to which the hotel has a positive predisposition to use, purchase, or produce environmentally friendly goods	0.18	0.16	<b>↓</b>
polic	Degree of a hotel customer's or employee's satisfaction with environmental effort	0.19	0.21	1
[a]	Effort that the hotel spends on environmental certification	0.19	0.24	1
lem1	Effort that the hotel spends on annual environmental audit	0.16	0.21	<b>↑</b>
Environmental policy domain	The amount of the hotel's average expenditure on and investment in environmental aspects	0.19	0.21	1
Envi	Extent to which the hotel reduces paper usage in operation (e.g., mobile check in, electronic invoice)	0.21	0.16	<b>↓</b>
	Extent to which the hotel supports local and sustainable suppliers	0.18	0.17	1
	Extent to which the hotel uses environmentally friendly equipment (e.g., LED light bulbs)	0.17	0.13	1
	Extent to which the hotel provides green training to employees	N/A	0.15	N/A
	Extent to which the hotel's employees understand environmental law	0.20	0.19	<b>↓</b>
	Extent to which the hotel ensures that employees can fulfill their duty within the standards defined by local law	0.15	0.21	1
	Extent to which the hotel follows its contractual obligations	0.17	0.16	<b>↓</b>
<b>-</b>	Extent to which the hotel avoids cheating on the law to improve performance	0.21	N/A	N/A
omain	Extent to which the hotel complies with the principles defined by the business practice	0.20	0.20	-
	Extent to which the hotel encourages workforce diversity (e.g., age, gender, race)	0.17	0.18	1
Legal D	Extent to which the hotel complies with all laws regulating hiring and employee benefits	0.16	0.18	1
	Extent to which the hotel meets legal standards for the product	0.19	0.18	1
	Degree to which the hotel effectively implements internal policies to prevent discrimination in employees' compensation and promotion process	0.15	0.13	1
	Degree of the hotel's honesty in fulfilling its contractual obligations	0.20	N/A	N/A

ъ.	T. P	Round 1	Round 2	Change
Domain	Indicator	COV	COV	COV
	Extent to which the hotel does not compromise ethical standards to achieve corporate goals	0.21	0.25	1
	Extent to which the hotel allows ethical problems that can negatively affect financial/economic performance	0.25	0.19	↓
	Extent to which the hotel offers equal opportunities for promotion and hiring	0.15	0.18	1
	Extent to which the hotel treats its employees fairly (without discrimination and abuse regardless of gender, race, origin, or religion)	0.13	0.22	1
i.	Extent to which the hotel prioritizes ethical principles over economic performance	0.21	0.21	-
oma	Extent to which the hotel is committed to well-defined ethics and principles	0.19	0.20	1
Ethical Domain	Extent to which the hotel effectively implements confidential means for employees to report misconduct at work (e.g., stealing, sexual harassment)	0.19	0.15	ļ
Ā	Extent to which the hotel provides accurate information to customers	0.15	0.13	<b>↓</b>
	Extent to which the hotel follows a comprehensive code of conduct	0.14	0.17	1
	Extent to which the hotel is recognized as a trustworthy company	0.17	0.22	1
	Extent to which the hotel considers coworkers and business partners as an integral part of the employee evaluation process	0.23	0.22	<b>↓</b>
	Level of effectiveness of procedures to respond to customer complaints	0.23	0.14	<b>↓</b>
u	Proportion of hotel's budget allocated for donations and social work to benefit poor people	0.22	0.21	<b>↓</b>
omai	Extent to which the hotel allocates resources for philanthropic activities	0.20	0.16	<b>↓</b>
hropic Domain	Effort that the hotel makes in society beyond profit generation	0.25	N/A	N/A
hrop	Extent to which the hotel is committed to improving the welfare of the community	0.18	0.15	1
ilant	Extent to which the hotel participates in managing public affairs	0.24	N/A	N/A
/ <b>Ph</b>	Extent to which the hotel helps to solve social problems	0.31	N/A	N/A
Social/Philan	Extent to which the hotel participates in community services and volunteerism	0.21	0.16	<b>↓</b>
<b>•</b>	Extent to which the hotel actively sponsors or finances local and social events (e.g., sport, music)	0.26	0.23	<b>↓</b>
	Overall	0.20	0.19	$\downarrow$

Table 4. RI values for the different values of n

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RI	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49	1.51	1.48	1.56	1.57	1.59

**Table 5. Profile of the respondents** 

Demographic	information	First	survey (n=5	0)	Secon	d survey (n=	44)	Third survey (n=27)		
		Academicians	Hotel managers	Hotel customers	Academicians	Hotel managers	Hotel customers	Academicians	Hotel managers	Hotel customers
n		19	15	16	15	14	15	11	7	9
Gender	Female	36.8%	53.3%	43.7%	40.0%	57.1%	53.3%	54.5%	42.8%	55.6%
	Male	63.2%	46.7%	56.3%	60.0%	42.9%	46.7%	45.5%	57.2%	44.4%
Age	20-29	/	/	31.5%	/	/	33.3%	/	/	44.4%
	30-39	/	/	36.8%	/	/	40.0%	/	/	55.6%
	40-49	/	/	10.5%	/	/	20.0%	/	/	/
	50-59	/	/	5.3%	/	/	6.7%	/	/	/
Origin	Asia	63.2%	/	31.6%	73.3%	/	60.0%	72.7%	/	55.6%
	North America	26.3%	/	15.8%	20.0%	/	20.0%	18.2%	/	11.1%
	Africa	10.5%	/	10.5%	/	/	6.7%	/	/	/
	Europe and Oceania	5.3%	/	36.8%	6.7%	/	13.3%	9.1%	/	33.3%
Position	Professor	26.3%	/	/	20.0%	/	/	18.2%	/	/
	Associate Professor	36.8%	/	/	46.7%	/	/	45.5%	/	/
	Assistant Professor	36.8%	/	/	33.3%	/	/	36.4%	/	/
Department	Front of House	/	60.0%	/	/	42.8%	/	/	42.8%	/
	Back of House	/	40.0%	/	/	57.2%	/	/	57.2%	/
Working	< 10 years	/	33.3%	/	/	42.9%	/	/	28.6%	/
experience	10 -20 years	/	46.7%	/	/	42.9%	/	/	42.8%	/
	> 20 years	/	13.3%	/	/	14.2%	/	/	28.6%	/

Table 6. Analysis of the relative importance or weight

Domain	Items	Relative importance (Relative weight)	Rank within a domain	CVR	CR		
	Proportion of hiring local residents	2.18%	3	0.32			
Financial/ Economic	Degree of the hotel's honesty in informing its shareholders of its economic situation	3.82%	1	0.32			
domain (11.60%)	Use of customer and employee satisfaction as an indicator of the hotel's business performance	3.71%	2	0.32	0.15		
	Extent to which the hotel uses local materials/products (e.g., food, flower, furniture)	1.89%	4	0.36			
	Extent to which the hotel donates leftover food to the community	0.85%	9	0.59			
	Extent to which the hotel utilizes food waste (e.g., conversion to fertilizer)	0.96%	8	0.68			
	Extent to which the hotel excludes endangered species from the food menu (e.g., shark's fin soup)	1.42%	2	0.41			
	Extent to which the hotel ensures food safety and hygiene	3.42%	1	0.32			
Environmental domain	Extent to which the hotel reduces water usage per available room	1.27%	4	0.55	0.13		
(12.9%)	Extent to which the hotel reduces energy usage per available room	1.23%	6	0.55			
	Extent to which the hotel reduces greenhouse gas emission per available room	1.24%	5	0.55			
	Extent to which the hotel reduces solid waste per available room	1.18%	7	0.41			
	Extent to which the hotel fulfills the reuse/recycle program in guests' rooms (e.g., linen/towel reuse/recycle card reminder)	1.34%	3	0.50			
	Extent to which the hotel reduces natural resource consumption.	1.78%	2	0.32			
	Degree to which the hotel communicates with customers regarding its environmental practices	1.03%	9	0.55			
	Extent to which the hotel uses renewable energy in a productive process that is environmentally friendly	1.31%	7	0.32			
Environmental	Degree of the hotel's effort in protecting the natural environment	1.54%	3	0.45			
policy domain	Degree to which the hotel has use, purchase, or produce environmentally friendly goods	1.48%	4	0.50	0.12		
(13.15%)	Extent to which the hotel reduces paper usage in operation (e.g., mobile check in, electronic invoice)	1.46%	5	0.32			
	Extent to which the hotel supports local and sustainable suppliers	1.08%	8	0.45			
	Extent to which the hotel uses environmentally friendly equipment (e.g., LED light bulbs)	1.43%	6	0.64			
	Extent to which the hotel provides green training to employees	2.04%	1	0.50			
Domain	Items	Relative importance (Relative weight)	Rank within a domain	CVR	CR		

-	Extent to which the hotel ensures that employees can fulfill their duty within the standards defined by law	4.31%	2	0.45	
	Extent to which the hotel follows its contractual obligations	3.04%	6	0.32	
Legal	Extent to which the hotel encourages workforce diversity (e.g., age, gender, race)	3.35%	5	0.45	
Domain (23.03%)	Extent to which the hotel complies with all laws regulating hiring and employee benefits	4.10%	3	0.50	0.07
	Extent to which the hotel meets legal standards for the product	3.73%	4	0.45	
	Degree to which the hotel effectively implements internal policies to prevent discrimination in employees' compensation and promotion process	4.51%	1	0.59	
	Extent to which the hotel does not compromise ethical standards to achieve corporate goals	2.44%	6	0.36	
	Extent to which the hotel offers equal opportunities for promotion and hiring	2.53%	3	0.59	
	Extent to which the hotel treats its employees fairly (without discrimination and abuse regardless of gender, race, origin, religion, disability and sexual orientation)	2.84%	2.84% 1 0.6	0.68	
Ethical	Extent to which the hotel is committed to well-defined ethics and principles	2.57%	2	0.50	
domain (21.9%)	Extent to which the hotel effectively implements confidential means for employees to report misconduct at work (e.g., stealing, sexual harassment)	2.49%	5	0.50	0.09
	Extent to which the hotel provides accurate information to customers	2.51%	4	0.50	
	Extent to which the hotel follows a comprehensive code of conduct	2.08%	9	0.64	
	Extent to which the hotel is a trustworthy company	2.35%	7	0.41	
	Extent to which the hotel provides ethical studies and best practices to employees	2.11%	8	0.45	
Social	Extent to which the hotel allocates resources for philanthropic activities	5.49%	2	0.32	
Domain	Extent to which the hotel is committed to improving the welfare of the community	5.47%	3	0.41	0.08
(17.42%)	Extent to which the hotel participates in community services and volunteerism	6.46%	1	0.50	
-	Overall (Mean)				0.103

CSR measurement scale Organizational Level Financial/ Social/ Environmental Environmental Legal domain Ethical domain Economic Philanthropic (Room and (other general Restaurant) areas) domain domain Individual Level Index score Index score Index score Index score Index score Index score 11.6% 23.03% 21.90% 17.42% 12.90% 13.15% ETH 1: 2.44% ENVPO\_1: 1.78% ENV\_1: 0.85% LEG\_1: 4.31% FIN 1: 2.18% ETH\_2: 2.53% ENVPO\_2: 1.03% SOC\_1: 5.49% ENV 2: 0.96% LEG 2: 3.04% ENVPO\_3: 1.31% ETH 3: 2.84% ENV\_3: 1.42% Indicators FIN\_2: 3.82% LEG\_3: 3.35% ENVPO 4: 1.54% ETH\_4: 2.57% SOC\_2: 5.47% ENV 4: 3.42% ENVPO 5: 1.48% ETH\_5: 2.49% ENV\_5: 1.27% LEG\_4: 4.10% FIN 3: 3.71% ENVPO 6: 1.46% ETH 6: 2.51% ENV 6: 1.23% SOC 3: 6.46% LEG\_5: 3.73% ETH 7: 2.08% ENVPO 7: 1.08% ENV\_7: 1.24% FIN\_4: 1.89% LEG 6: 4.51% ENVPO 8: 1.43% ETH 8: 2.35% ENV 8: 1.18% ENVPO\_9: 2.04% ETH 9: 2.11% ENV\_9: 1.34%

Figure 1. Results of the AHP hierarchy in the hotel CSR measurement scale

**Table 7. Comparison of the responses among three cohorts** 

Overall (n=27)			Academic	demics (n = 11) Hotel Managers (n=7)			Hotel Customers (n = 9)		
Rank	Major domains	Relative importance	Major domains	Relative importance	Major domains	Relative importance	Major domains	Relative importance	
1	Legal	23.03%	Legal	21.99%	Legal	30.60%	Ethical	21.85%	
2	Ethical	21.90%	Ethical	20.72%	Ethical	23.82%	Social	19.15%	
3	Social	17.42%	Social	19.81%	Financial/ Economic	12.07%	Legal	18.41%	
4	Environmental policy	13.15%	Environmental policy	14.40%	Social	11.44%	Environmental	14.97%	
5	Environmental	12.90%	Environmental	12.30%	Environmental	11.18%	Environmental policy	13.37%	
6	Financial/ Economic	11.60%	Financial/ Economic	10.77%	Environmental policy	10.89%	Financial/ Economic	12.24%	