How does social responsibility investment strategy contribute to hospitality firms' recovery from public health emergencies? The case of COVID-19 pandemic

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ABSTRACT

Using fuzzy-set qualitative comparative analysis, this paper explores which configurations of six dimensions of hospitality firms' corporate social responsibility (CSR) result in higher (or lower) levels of total factor productivity. We demonstrate that different categories of stakeholders and hospitality firms' dynamic capabilities complement each other under the framework of configurational theory. The result shows that: 1) The CSR dimensions of product quality, CSR communication, and environmental protection are critical to high levels of firm performance; 2) After the pandemic, hospitality firms should make investment in CSR communication and environmental protection a priority; 3) Hospitality firms' choice to invest in a specific combination of dimensions of CSR practice should depend on their overall level of corporate governance (high or low). This paper contributes to the strategic management and corporate governance literature by identifying the role of hospitality firms' governance on the linkage between CSR investment strategy and firm performance.

1. Introduction

There is a growing interest in corporate social responsibility (CSR) from practitioners and academics alike (Gillan et al., 2021). Generally, CSR requires firms to go beyond the traditional view of profit as the only goal of the firm, and to emphasize its contribution to the environment and society (Lee, 2022). Many hospitality firms are at the forefront of CSR, partly because of the industrial characteristics being high levels of risk, financial leverage, competition, and labor intensity (Singal, 2015), and partly because of social expectations (Font and Lynes, 2018). Moreover, the relationship between hospitality firms and their environment is bidirectional, wherein the firms' operations are influenced by the environment, while the firms themselves have an impact on the environment and the local community (González-Rodríguez et al., 2018). This underscores the significance of CSR strategies and actions for hospitality firms. Therefore, achieving a balance between economic, environmental and social responsibilities is critical to their competitiveness, reputation, and investor confidence. In this light, appropriate engagement and investment in different CSR practices could be seen as strategic philanthropy or strategic CSR (Maas and Liket, 2011).

However, little is known about how social responsibility investment strategy can contribute to hospitality firms' recovery from the COVID-19 pandemic, especially the empirical evidence or cases from a configuration perspective.

There is no consensus on the effect of CSR practices (or investment strategy) on firm performance. Using a regression model, Inoue and Lee (2011) assessed the influence of several dimensions of CSR practices (such as employee relations, diversity of managers, product quality, community activities, and environmental protection) on tourism firms' profitability. Yeon et al. (2021) investigated the moderating effect of CSR practices on the influence of the pandemic on firms' stock returns. However, variance-based approaches, such as correlation and regression, assume a linear and symmetrical relationship exists between two variables, which means that they are limited to examining competing factors and focusing on their net effect (Kumar et al., 2022). Different from the attention of the net effect estimation of single factor, Saridakis et al. (2020) investigated how executive, firm, and contextual characteristics jointly affect the pattern of CSR engagement. In addition, the characteristics of equifinality, conjunctural causation, and asymmetrical causation, as well as the absence of omitted variable bias (Fainshmidt

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et al., 2020; Pappas and Woodside, 2021), have provided insights into the intricate relationship between CSR practices and firm performance.

While traditionally the firm sought the maximization of shareholder profit, CSR has gradually added the goals of sustainable development and the satisfaction of various stakeholders (Font and Lynes, 2018). Total factor productivity (TFP) is widely recognized as a comprehensive and appropriate performance indicator in the hospitality industry, serving as a measure of firm performance (Chatzimichael and Liasidou, 2019; Joppe and Li, 2016). Currently, productivity analysis of the hospitality industry has received little attention, and the measurement of TFP has largely been restricted to self-report (e.g. questionnaire surveys). In addition, numerous factors related to CSR can influence firm performance, and different combinations of these factors and different levels of the same factors might determine outcomes (Rihoux and Ragin, 2009). Although a single factor may still account for firm performance, it is possible that some of the dimensions of CSR practices (i.e., antecedents or conditions) when combined can better explain why a firm's performance is high or low (Fiss, 2011). Therefore, qualitative comparative analysis (QCA) is introduced, which has both qualitative and quantitative features and is deemed as a case-based and asymmetric data analysis technique (Ragin, 2008). QCA is well suited to investigation of the asymmetric and complex linkages between an outcome (TFP) and its antecedents.

Using fuzzy-set QCA (fsQCA), this paper explores which configurations of hospitality firms' CSR practices lead to different levels of TFP. The principal contributions of this paper are summarized as follows. First, as a supplement to the commonly used measures of financial performance, this paper for the first time proposes the use of TFP as a sustainable and restorative performance indicator, reflecting the utilization of various factors in production. Second, remedying the shortcoming of the traditional use of correlation in regression analysis to describe causality, this paper uses configurational analysis to explore the multiple-conjunctural causation between various dimensions of CSR practice and TFP. Third, combinations of different interests of various categories of stakeholders are considered, which provides a more comprehensive view than studies that consider only individual stakeholders or different stakeholder types, such as primary and secondary (Su and Tsang, 2015), positive and negative (Kang et al., 2010), internal and external (Yoon and Chung, 2018). In doing so, we explore the complexity of the determinants of firms' TFP and capture the multiple effects of various dimensions of CSR practice, rather than merely their net effects.

Different from existing configurational studies, we also contribute to hospitality management by investigating how hospitality firms' CSR practices can contribute to their recovery from public health emergencies by comparing the situations before and after the COVID-19 pandemic. This paper adds to the understanding of how hospitality firms fulfill "doing well by doing good" in their complex external (the COVID-19 pandemic) and internal (corporate governance) environments. Given that firms' dynamic capabilities must be appropriately combined in order to be effective, this paper also explores how hospitality firms have adjusted their finite resources and decided their CSR investment strategies (taking account of the different stakeholders) in response to the pandemic. We demonstrate that a context-specific firm characteristic (i.e., its level of corporate governance) can have heterogeneous effects on the configurations of CSR dimensions that generate high TFP after the pandemic. Hospitality firms that have high and low levels of corporate governance are defined here by a comprehensive set of measurements. Besides, heterogeneous effects of detailed corporate governance indicators are analyzed to provide additional insights.

The bidirectional relationship between the external and internal environments and the firms themselves highlights the crucial role of CSR strategies and actions for hospitality firms. Given the aforementioned characteristics of hospitality firms, it is essential to comprehend the context-specific factors of public health emergencies and corporate governance that influence the complex and nonlinear relationship between CSR practices and hospitality firm performance. This paper aims to address the following research questions: 1) How do different configurations of the six dimensions of CSR practices in hospitality firms lead to varying levels of TFP? 2) Are there any differences in high TFP configurations when comparing the periods before and after the COVID-19 pandemic? If so, what are the reasons behind these differences? 3) Do high or low levels of corporate governance have heterogeneous effects on the high TFP configurations? If yes, what are the underlying reasons? This paper contributes to the existing literature on strategic management and corporate governance within the framework of configurational theory.

2. Theoretical background and literature review

We first give an overview of the theoretical background, namely stakeholder theory and dynamic capacity theory, and then review the literature on CSR practice, TFP, the relationship between CSR practices and firm performance, and corporate governance. Fig. 1 shows the theoretical framework.

2.1. Stakeholder theory and dynamic capability theory

Stakeholder theory suggests that CSR practices can help firms build relationships with various stakeholders to improve their performance (Jones et al., 2018). Firms' sustainable operation relies on the fulfillment of social responsibility to each contracting party and the allocation of finite resources among different stakeholders. At the same time, due to the complexity of the internal and external environment, various stakeholders may jointly affect the benefits brought by CSR in a complementary and interactive way (Clarkson, 1995). Therefore, firms need to allocate their limited resources appropriately across various dimensions of CSR to achieve the highest resource allocation efficiency and obtain the optimal investment strategy (Peng et al., 2020).

The diversity of stakeholders indicates that different groups have different resources, abilities, and influences on firm performance, and consequently managers should afford them different levels of attention (Iyer and Jarvis, 2019). Each stakeholder interacts and influences the others, because changes in firms' investments in favor of one particular group will inevitably affect the return seen by the other groups. Given their limited resources, firms need a CSR investment strategy to inform their selection of investments directed at the satisfaction of different groups of stakeholders (Zhang et al., 2018). Firms' dynamic capabilities can help explain the formation of the strategic routines when firms seek new configurations of resource as the internal or external environment changes.

Public health emergencies can be regarded as a trigger for the further development of hospitality firms' dynamic capabilities and resilience. Dynamic capability theory extends the static resource-based view (Lin and Wu, 2014; Wu et al., 2023b) and investigates how firms can reconfigure their finite resources from internal and external stakeholders (González-Rodríguez et al., 2019) to adapt to the rapidly changing and turbulent environment, for example the COVID-19 pandemic (Teece, 2007). Considering dynamic capability and strategic management, Liu and Yang (2021) investigated how hotels have modified their technology-based strategies to better recover from the pandemic. Besides, several capabilities involved in CSR have been identified, such as "sense and respond" and execution capabilities (Ramachandran, 2011), as well as scanning, sensing, and reconfiguration capabilities. To be specific, this paper considers the integration and reconfiguration capabilities.

2.2. Configuration perspective and total factor productivity

The principle of casual asymmetry underpins configuration theory (Rihoux and Ragin, 2009), which assumes that a single condition or combination of factors can explain to differing extents the presence or
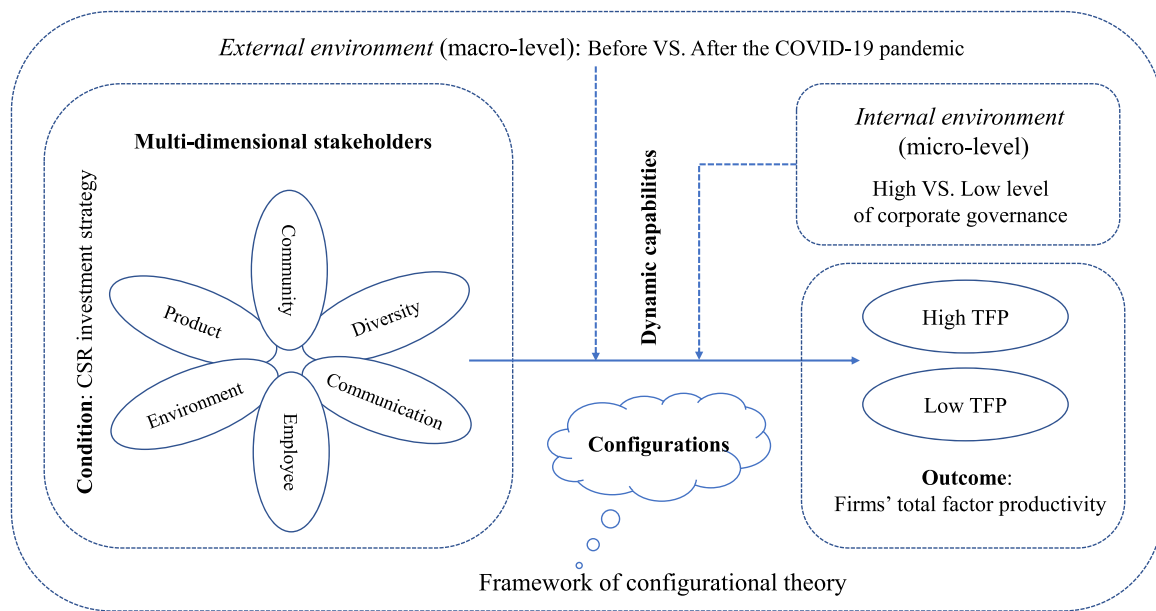
Fig. 1. Theoretical framework of the study.

absence of the same outcome. The principle of equifinality (Ragin, 2008), which argues that multiple combinations of antecedent factors might be equally effective, is inherently complex. Furthermore, the problem of endogeneity can be solved to some extent through the analysis of sufficiency and necessity conditions (Pappas and Woodside, 2021). However, few studies have explored the pathway between CSR practices and hospitality firms' performance, though the use of a configurational perspective in research on both CSR practices and the hospitality industry is on the rise (Geremew et al., 2023; Kumar et al., 2022).

Building on the theories of configuration and complexity, fsQCA extends crisp-set QCA by considering fuzzy-logic principles, which can give deeper and richer insight by capturing complexity (Rihoux and Ragin, 2009). Additionally, with fine-grained data such as firm-level datasets, fsQCA can also handle causal complexity to provide deeper insights (Fiss, 2011). In this paper, the fsQCA method is employed for the study of the inevitably comparatively small sample of listed hospitality firms; the sample is split into subsets in order to generate different combinations of conditions. fsQCA is more robust than variance-based approaches, because the sample's representativeness does not affect all solutions and it is not sensitive to outliers (Fiss, 2011).

The well-documented characteristics of the service industry (i.e., intangibility, heterogeneity, and inseparability) makes low productivity a common feature. These inherent characteristics also make it difficult to measure service outputs and thus may lead to service productivity being underestimated (Joppe and Li, 2016). Unlike partial factor productivity, TFP considers all the output and input factors in an economic activity and more comprehensively reflects the efficiency of a production system. TFP consists of resource allocation and micro production efficiency, and mainly measures economic growth generated by intangible factors such as technological progress, the improvement of human resources and organizational management (Joppe and Li, 2016). In the era of the service economy and the COVID-19, service firms, such as those operating in tourism, hospitality, and retail business, need to improve their TFP if they are to develop sustainably.

The parametric measurement of TFP has been done using growth accounting (Solow growth model), stochastic frontier analysis (SFA), and other production function methods (i.e., Cobb-Douglas, trans-log, and constant elasticity of substitution functions); non-parametric measures include data envelopment analysis (DEA), and the Malmquist and Luenberger productivity index; and semi-parametric measures include

both Olley-Pakes (OP) (Olley and Pakes, 1996) and Levinsohn-Petrin (LP) (Levinsohn and Petrin, 2003) methods. The semi-parametric methods have the advantages of combining parametric and non-parametric methods, and consider the randomness of sample data, as well as the endogeneity and sample selection problems in traditional econometric models (Lu and Lian, 2012). Therefore, OP and LP methods are widely adopted for the estimation of firms' TFP.

2.3. The nexus of CSR practices and performance after the pandemic

Several studies have attempted to quantify the linkage between CSR practices and firm performance. Firm performance has been measured by different techniques, such as event study, DEA, and SFA and in several ways, such as accounting measures, operating performance, short-run or long-run stock returns (Gillan et al., 2021). However, it is vital and of practical value to focus on performance in terms of the sustainable operations of hospitality firms recovering from public health emergencies (Wu et al., 2023a). As emphasized above, TFP is a comprehensive performance index, in that it takes account of all the factors that affect a firm's operational efficiency, such as technical efficiency, resource allocation and organizational management abilities (Lu and Lian, 2012). Therefore, we focus on this particular measure of firm performance (i.e., TFP), and its relation to hospitality firms' CSR.

Several studies have investigated the crucial role of CSR practices for firm performance after the pandemic (Bae et al., 2021). Compared with customer- and employee-related CSR practices, community-related practices have a more immediate impact on stock returns measured by the event study method (Qiu et al., 2021). Zhang et al. (2022) believe that high-level CSR practices have positive effects on hospitality firms' stock returns, and the effects of employee- and environment-related CSR practices on stock returns are especially significant. Community support such as providing free logging increases a hotel's reputational benefits but at the same time reduces tourists' intentions to visit (Chen and Hang, 2021). Similarly, Shin et al. (2021) believed that a hotel's initiative for strategic philanthropy have negative impacts on firm market value and customer bookings. Two studies of CSR practices after the pandemic, by Crane and Matten (2021) and Lee (2022), have taken the perspective of financial economics and strategic management.

The linkage between CSR practices and firm performance is usually assumed to be a simple linear one, and therefore suited to regression analysis. Accordingly, configurational analysis has been used by

scholars to investigate it. Pathways for the improvement of firms' sustainable performance in the environmental and social (Halme et al., 2020) and employee dimensions (Lee and Chen, 2018) have been investigated using the fsQCA method. Evidence from the food industry shows that the investor dimension takes precedence, while the social responsibility of charitable donation is not a necessary condition for high firm performance (Zhang et al., 2018). For mining firms, configurational analysis indicates that doing more in or for the community and achieving good CSR communication are beneficial for a firm's profitability, while investing in diversity of managers and product quality fails to do so (Peng et al., 2020).

There is perhaps an inherent contradiction between having to engage with social and environmental issues (through CSR practices) on the one hand and maintaining sustainable operations and profits on the other (Lee, 2022). Most previous studies neglect how different combinations of groups of stakeholders might explain a firm's CSR investment strategy and its possible outcome (Saridakis et al., 2020). Nevertheless, the QCA method has been adopted to explore the pathways from social responsibility to the firm's market value (Zhang et al., 2018), and the result shows that the multiple dimensions of CSR practices combine in various ways to contributes to the improvement of firm performance. All those explorations have, though, failed to investigate the effect of the pandemic.

2.4. Heterogeneous effect of contextual characteristics

Specific contextual factors, such as firm fundamentals, manager traits (Fabrizi et al., 2014), and organizational political ideology (Gupta et al., 2017), may influence CSR investment strategies as well as firm performance. For example, Fabrizi et al. (2014) investigated the relationship between the CEO's personal incentives and the firm's engagement in social responsibility. Gupta et al. (2017) demonstrated how firm members' political beliefs affect a firm's social responsibility initiatives, and the moderating roles of CSR, human capital intensity, and CEO's tenure. Using fsQCA, Dwekat et al. (2020) confirmed that audit committee and board characteristics have critical effects on CSR disclosure. Therefore, only when the interaction among various stakeholders and the heterogeneous effect of contextual factors is fully considered can the CSR investment strategy be optimized (Zhang et al., 2018).

Corporate governance and CSR practices in the context of the pandemic have been of great academic interest, especially in relation to the hospitality industry (Li and Singal, 2022). Again, hospitality industry' characteristics make corporate governance different from that in other industries (Yeh and Trejos, 2015). First, hospitality firms operate in a particularly dynamic market, where customers' desires constantly change, and this has been especially true of the business environment during the pandemic environment. Timely decisions are essential if managers are to respond effectively to changing demands. Second, fierce market competition means that intensive monitoring and supervision are required to ensure customer satisfaction and service quality. Here, the governance system is an important safeguard, through the monitoring of managerial activities. Third, hospitality firms interact at a high level with various stakeholders and the external environment; thus, a diversity of manager and employee incentives are an important way to cope with the ever-changing internal and external environment. Furthermore, hospitality firms operate within a servuction process and are highly influenced by their location, leading to a significant impact on both the environment and the local community (González-Rodríguez et al., 2018). These distinct characteristics substantiate the importance of implementing CSR strategies and actions within the hospitality industry.

Several components of corporate governance, such as gender diversity, board size, and the proportion of large shareholders, and their effects on firms' profitability have been investigated (Dwekat et al., 2020; Yeh and Trejos, 2015). We do not aim to investigate the effects of a specific component of corporate governance on performance. Instead,

the level of corporate governance is measured and used as a categorical variable (a firm's governance is either higher or lower than the average). Due to corporate governance's crucial role in firm performance (Li and Singal, 2022), it is important to investigate how different levels of corporate governance influence the linkage between various CSR practices (in combination, in different configurations) and hospitality firm performance.

3. Methodology

3.1. Sample and data

The CSR data is collected from the CESG sub-database of the CNRDS platform, which provides environmental, social, and governance data on listed firms in China (Peng et al., 2020). The CESG database measures the implementation of CSR based on the six dimensions of product quality, community activities, diversity of managers, CSR communication, employee relations, and environmental protection, with consideration given to a firm's "strengths" on each dimension. Also, we consider a firm's "concerns" on each dimension (Peng et al., 2020), i.e., negative forms of social responsibility practices, such as social irresponsibility and corporate misconduct (Ferrés and Marcet, 2021). We sum the scores on all of the indicators for each dimension to obtain an overall score for each of the six dimensions. A rating of "concern" on an indicator is given a negative numerical value.

Publicly traded hospitality firms on China's stock market constitute the observations before and after the pandemic (i.e., from 2018 to 2021). Firm-specific financial data derives from the CSMAR database. Hospitality firms are selected based on the industry classification of RoyalFlush.com. We match the firms retrieved from the CSMAR database with the CESG database and remove observations with missing values. Given the small number of hospitality firms listed, and the exclusion of those with missing data, we are left with a sample of only 30 firms for the study period. These are detailed in Supporting information S1. As recommended by Rihoux and Ragin (2009) for QCA studies with small samples (10–40 cases), we limited the study model to six antecedent conditions.

3.2. Estimation of firms' TFP and governance level

Focusing on the micro-perspective, the technological level of a firm can be recognized in advance, and then the firm chooses the factor input level appropriate to that technological level (Lu and Lian, 2012). Therefore, the methods used to estimate TFP from the macroscopic perspective (i.e., country, region, city, and industry) using growth accounting and parametric regression models are not applicable to the measurement of firms' TFP. In this paper, the LP and OP methods (Levinsohn and Petrin, 2003; Olley and Pakes, 1996) are used to measure the TFP of hospitality firms. The relevant indicators are collected from the CSMAR database (the detailed measurements can be seen in Supporting information S2). Hospitality firms' TFP calculated by the LP method is the dependent variable, and the OP method is used for a robustness check. It is important to consider that the impact of CSR practices on firm value may not be immediate, and there may be a time lag between the implementation of CSR practices and their effects. To address this, we utilize the average value of TFP for sample hospitality firms over two consecutive years to represent firm value. Specifically, the TFP of a firm before (after) the COVID-19 pandemic is averaged for the years 2018 and 2019 (years 2020 and 2021).

Using principal component analysis, we construct a comprehensive index that covers the dimensions of incentive, supervision, and decision-making to measure the level of corporate governance (Zhou et al., 2020). The incentive mechanism in corporate governance is represented by executive shareholding ratio and executive compensation; the supervisory role of the board of directors is proxied by the size of the board and the proportion of independent directors; the proportion of institutional

shareholding and the degree of equity checks and balances (i.e., the sum of the shareholding proportion of the second to fifth major shareholders divided by the shareholding proportion of the controlling shareholders) are used to represent the supervisory role of ownership structure; whether the general manager and the chairman are the same person is used to represent general manager's decision-making power. For the following analysis of the heterogeneous effect, the sample is split around the average score for corporate governance, to define two sub-samples of firms, those with a high and those with low level of corporate governance.

3.3. Implementation of the fsQCA model

We use fsQCA 3.0 software to explore the configurations leading to firm's TFP in terms of the six dimensions of CSR practice. The indicators of product quality, community activities, diversity of managers, CSR communication, employee relations, and environmental protection are selected as the casual conditions. The measurement of the indicators is detailed in Supporting information S3. The casual conditions and the outcome (high or low level of TFP) are the independent and dependent variables. Unlike in variance-based approaches, various configurations of factors (conditions or indicators) are investigated to model and explain the complex casual relationships.

The basic implementation of the fsQCA model can be summarized as follows. *Step* 1: Calibration of the variables. Calibration transforms the raw numerical data into set membership scores (i.e., from 0 to 1) based on qualitative anchors (Ragin, 2008). *Step* 2: Analysis of necessary conditions. A condition can be deemed "necessary" only when its consistency is 0.9 or above. *Step* 3: Construction of the truth table. After creating the truth table from the raw data, frequency and consistency thresholds are selected for further analysis (Rihoux and Ragin, 2009). *Step* 4: Identification of "sufficient" configurations. Quine-McCluskey algorithm and the Boolean minimization technique are used to identify sufficient configurations. The following formula is used to compute the consistency and coverage indexes for sufficiency analysis:

$$Consistency(X_i \leq Y_i) = \frac{\sum [min(X_i, Y_i)]}{\sum (X_i)} \ and \ Coverage(X_i \leq Y_i)$$
$$= \frac{\sum [min(X_i, Y_i)]}{\sum (Y_i)}$$

where X_i and Y_i denote the calibrated antecedent and outcome conditions for unit *i*, respectively.

4. Empirical results

4.1. Descriptive statistics

Table 1 presents the descriptive statistics for the conditions and outcome. TFP has a mean value of 10.23 and a standard deviation of 1.21 in 2018, and a mean value of 9.85 and a standard deviation of 1.37 in 2020. This indicates that hospitality firms' TFP declined slightly after

the onset of the pandemic. The mean values of the product quality, community activities, diversity of managers, CSR communication, employee relations, and environmental protection indicators are 6.50, 3.73, 2.27, 3.93, 5.43, and 3.46 in 2018, and 7.03, 4.36, 2.23, 5.40, 4.67, and 3.50 in 2020, respectively. The product quality, community activities, and CSR communication dimensions are significantly improved, while the employee relations dimension declined slightly. Thus, there are clear distinctions among the various dimensions of CSR practice between the pre- and post-pandemic situations, which may affect the pathways leading to different levels of TFP.

4.2. Calibration and necessity analysis

Calibrated measures are adopted to transform the data, and the direct calibration method is commonly used (Rihoux and Ragin, 2009). In this paper, we choose the values of 0.95, 0.50, and 0.05 as the three breakpoints or thresholds and calibrate the data using the "calibrate" function in the fsQCA software. Table 2 presents the calibration results. Because it is difficult to analyze the conditions with an intermediate-set membership (i.e., set exactly on 0.5), we add a constant of 0.001 to those conditions to retain more cases (Fiss, 2011).

Table 3 shows the results of the necessity analysis. It is indicated that no condition is necessary to explicate the firm's level of TFP, because the consistency indexes are all less than 0.9 (Ragin, 2008). That is, the presence or absence of any one of these six antecedent conditions is not "necessary" to explicate firms' outcomes. It also implies that each factor has soft explanatory power in relation to the outcome (firms' TFP). Moreover, the coverage indexes for most of the conditions are relatively high, that is, exceed 0.5, which verifies the representativeness of the indicators (Rihoux and Ragin, 2009). Therefore, there is a need to analyze the combinations of conditions, or configurations, that lead to higher or lower TFP.

4.3. Sufficiency analysis and comparisons

After running the fuzzy-set algorithm, we can generate the truth table, which provides all possible configurations (Pappas and Woodside, 2021). In this paper, the frequency threshold and the minimum cutoff

Table 2
Calibration of variables.

Condition	Panel A: Thresholds for data in 2018			Panel B: Thresholds for data in 2020		
	0.95	0.50	0.05	0.95	0.50	0.05
Product	10.45	6.00	2.00	11.00	7.00	3.50
Community	7.00	3.00	1.00	6.45	4.00	2.50
Diversity	4.00	2.00	1.00	4.00	2.00	1.00
Communication	7.90	3.00	1.50	8.00	5.00	3.50
Employee	7.45	6.00	2.00	7.00	5.00	2.00
Environment	6.45	3.00	1.00	7.00	4.00	0.50
TFP	11.92	10.25	7.91	12.15	9.70	7.48

Table 1
Descriptive statistics of conditions and outcome.

Condition / Outcome	Panel A: 2018				Panel B: 2020			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Product	6.50	2.36	1.00	11.00	7.03	2.02	3.00	11.00
Community	3.73	1.67	1.00	7.00	4.36	1.22	2.00	7.00
Diversity	2.27	1.00	1.00	4.00	2.23	1.02	1.00	4.00
Communication	3.93	1.82	1.00	9.00	5.40	1.28	3.00	8.00
Employee	5.43	1.58	1.00	8.00	4.67	1.53	2.00	7.00
Environment	3.46	1.71	1.00	7.00	3.50	1.86	0.00	7.00
TFP	10.23	1.21	7.90	11.96	9.85	1.37	7.28	12.34

Note: Here and in the tables below, the "conditions" are dimensions of CSR practice: Product = product quality; Community = community activities; Diversity = diversity of managers; Communication = CSR communication; Employee = employee relations; Environment = environmental protection.

Table 3
Analysis of necessity conditions.

Panel A: Necessity analysis before the COVID-19 pandemic, in 2018				
Condition	Higher TFP		Lower TFP	
	Consistency	Coverage	Consistency	Coverage
Product	0.807	0.778	0.602	0.515
~ Product	0.497	0.585	0.740	0.773
Community	0.752	0.714	0.653	0.550
~ Community	0.526	0.631	0.660	0.703
Diversity	0.695	0.700	0.600	0.537
~ Diversity	0.540	0.603	0.665	0.659
Communication	0.791	0.753	0.630	0.533
~ Communication	0.510	0.609	0.708	0.750
Employee	0.721	0.777	0.569	0.545
~ Employee	0.577	0.602	0.767	0.709
Environment	0.780	0.781	0.555	0.493
~ Environment	0.494	0.555	0.754	0.752
Panel B: Necessity analysis after the COVID-19 pandemic, in 2020				
Condition	Higher TFP		Lower TFP	
	Consistency	Coverage	Consistency	Coverage
Product	0.727	0.755	0.542	0.532
~ Product	0.549	0.559	0.750	0.722
Community	0.744	0.707	0.620	0.558
~ Community	0.535	0.598	0.674	0.714
Diversity	0.710	0.718	0.590	0.563
~ Diversity	0.568	0.594	0.705	0.697
Communication	0.784	0.761	0.575	0.527
~ Communication	0.513	0.560	0.740	0.764
Employee	0.732	0.774	0.546	0.546
~ Employee	0.570	0.571	0.773	0.732
Environment	0.749	0.876	0.417	0.461
~ Environment	0.539	0.494	0.887	0.770

Note: "~" represents the negation of the condition.

value for consistency are set at a value of 1 and 0.8, respectively (Ragin, 2008). The truth table is then sorted by raw consistency with a minimum suggested value of 0.75. Afterwards, we choose 1 or 0 to define whether a combination explains the outcome of interest or not with the help of the consistency thresholds (Pappas and Woodside, 2021). Finally, we can obtain the "sufficient" configurations for higher and lower TFP before and after the pandemic. In Table 4, we can see that the overall solution consistencies in panel A and panel B and both the presence and absence of firms' TFP are all higher than 0.8, which is a measure of statistical significance. The overall solution coverages are all higher than 0.5, which describes the explanatory ability of the configurations.

As shown in panel A of Table 4, two configurations are associated with high TFP, and five configurations with low TFP ("absent" TFP). At least four dimensions of CSR practices when combined can explain the outcome of high TFP. Product quality, CSR communication, and environmental protection are essential conditions, that is, they appear in both solutions. For the LA5 configuration, the peripheral presence of diversity of managers, CSR communication, and employee relations and the core or peripheral absence of other dimensions can explain the outcome of low TFP. Thus, after assessing the configurations that lead to low TFP, we can conclude that the absence of two core conditions (i.e., community activities and environmental protection) could cause low TFP.

As shown in panel B of Table 4, three configurations can cause high FTP and three low TFP. For high TFP, CSR communication and environmental protection are essential conditions (the appear in all three solutions). Specifically, for the HB3 configuration, the core presence of environmental protection, community activities, and CSR communication, and the core or peripheral absence of other conditions lead to high TFP. Conversely, the core (or necessary) absence of environmental protection leads to low TFP. After the COVID-19 pandemic, attention to CSR communication (i.e., internal environment) and environmental

Table 4
Analysis of the combination of solutions.

Panel A: Configurations before the COVID-19 pandemic, in 2018							
Condition	Higher TFP		Lower TFP				
	HA1	HA2	LA1	LA2	LA3	LA4	LA5
Product	●	●	⊗	⊗	⊗	•	⊗
Community		●	⊗	⊗	•	⊗	⊗
Diversity	●			•	⊗	⊗	•
Communication	●	•	⊗	⊗	•	⊗	•
Employee	⊗	•	⊗	⊗	⊗	⊗	•
Environment	●	●	⊗		⊗	•	⊗
Raw coverage	0.344	0.479	0.434	0.318	0.337	0.226	0.248
Unique coverage	0.086	0.222	0.052	0.028	0.078	0.005	0.043
Consistency	0.987	0.916	0.942	0.926	0.924	0.973	0.977
Overall solution coverage	0.566		0.594				
Overall solution consistency	0.921		0.889				

Panel B: Configurations after the COVID-19 pandemic, in 2020						
Condition	Higher TFP			Lower TFP		
	HB1	HB2	HB3	LB1	LB2	LB3
Product	●	●	⊗	⊗	•	⊗
Community	⊗	●	●	⊗	•	⊗
Diversity		•	⊗	⊗	⊗	•
Communication	●	●	●	⊗	⊗	•
Employee	•		⊗	•	⊗	⊗
Environment	●	●	●	⊗	⊗	⊗
Raw coverage	0.342	0.467	0.222	0.273	0.275	0.309
Unique coverage	0.071	0.197	0.024	0.090	0.091	0.144
Consistency	0.956	0.944	0.991	0.939	0.935	0.964
Overall solution coverage	0.591			0.525		
Overall solution consistency	0.955			0.942		

Note: Core condition (presence) = ●; peripheral condition (presence) = •; Core condition (absence) = ⊗; peripheral condition (absence) = ⊗; blank space represents "don't care" condition.

protection (i.e., external environment) was of great importance to TFP.

4.4. Discussion of the configurations for high TFP

As shown in panel A of Table 5, 14 cases can explain high TFP: path 1 contains four cases and path 2 contains 10 cases. Similarly, as shown in panel B, 14 cases can explain high TFP: path 3 contains two cases, path 4 contains 11 cases, and path 5 contains one case. Both path 2 and path 4 have a relatively high coverages, because most of the cases are covered. This is consistent with the results presented in Table 4, where, according to the coverage of each configuration for high TFP in both panel A and panel B, the HA2 configuration of panel A and HB2 configuration of panel B have the highest raw and unique coverages among other configurations, respectively. Therefore, path 2 and path 4 have the highest explanatory power for the configurations for high TFP in both the pre- and the post-pandemic situations.

In Table 5, path 2 indicates that hospitality firms should prioritize attention to the dimensions of product quality, community activities, and environmental protection, and secondarily to the dimensions of CSR communication and employee relations. The dimension of diversity of managers is unimportant, in relation to TFP, and so can be neglected, at least on this path. Path 4 indicates that hospitality firms should prioritize attention to the dimensions of product quality, community activities, CSR communication, and environmental protection, and secondarily to diversity of managers. The dimension of employee relations here has no importance, and so can be neglected on this path. Comparing path 2 and path 4, the diversity of managers and employee relations are unimportant, while the other conditions are core or peripheral elements that must appear.

Product quality, such as after-sales support and sales service, is a reliable guarantee of hospitality firms' profits, because tangible products and intangible services are direct sources of income (Peng et al., 2020). Taking part in community activities, such as charitable donation and the staff's volunteering activities, can enhance firm reputation and generate ethical capital, and so benefit the firm's long-run returns (Chen and Hang, 2021). Environmental protection (the "green office") can involve savings such as reduced energy costs and also convey a positive signal that the firm supports sustainable development, such as environmentally beneficial products and reduced pollutant emissions (Halme et al., 2020). CSR communication, by disclosing issues related to social responsibility, such as CSR reports and columns, and the "social contribution" value per share, can work as a communication and management tool for both internal and external stakeholders, and improve firms' image and competitiveness (Lin-Hi and Blumberg, 2018).

However, hospitality firms' attention to the diversity of managers and employee relations differs before and after the COVID-19 pandemic when pursuing firms' high performance. Increasing the diversity of managers, such as female executives and innovative HR projects, can help firms to cope with various changes in the ever-changing internal

and external environment (Yeh and Trejos, 2015). Given that the COVID-19 pandemic has had a huge shock on the vulnerable hospitality industry, it is essential to focus on the diversity of managers to interact with various stakeholders effectively. Therefore, diversity of managers works as a core condition for the high TFP configurations after the COVID-19 pandemic. Providing an excellent working environment, good communications and protecting employee benefits can help improve employee relations and increase staff's organizational identity, efficiency, and service performance (Jang et al., 2022). However, the pandemic has forced firms to lay off workers. Therefore, the dimension of employee relations is not a necessary condition for the high TFP configurations after the COVID-19 pandemic.

4.5. Heterogeneous effect of corporate governance level

We divide the sample in two: 13 cases are in the group of firms with a high level of corporate governance and 17 cases are in the low corporate governance group. Repeating the implementation steps of the fsQCA model, we obtain high TFP configurations for the two sub-samples. It should be noted that we choose the values of 0.75, 0.50, and 0.25 as the three breakpoints and calibrate the raw data of each sub-sample. Table 6 shows that two (three) configurations are associated with high TFP in the group of firms with high (low) levels of corporate governance. CSR communication is a core condition in all the solutions, which denotes that hospitality firms focus on transmitting reliable CSR information to stakeholders to enhance their reputation (Lin-Hi and Blumberg, 2018), which in turn contributes to high TFP. Environmental protection is also a critical dimension for hospitality firms.

CSR practices should be appropriate to the firm's organizational,

Table 6
Configurations leading to high TFP for firms with high and low levels of corporate governance.

Condition	Panel A: High corporate governance		Panel B: Low corporate governance		
	HA1	HA2	LB1	LB2	LB3
Product	●	●		⊗	⊗
Community	⊗			•	●
Diversity		•	●	●	⊗
Communication	●	●	●	●	●
Employee	●	●	•		⊗
Environment	●	●	●	●	⊗
Raw coverage	0.312	0.408	0.516	0.192	0.089
Unique coverage	0.136	0.232	0.375	0.044	0.056
Consistency	0.951	0.962	0.955	0.888	0.986
Overall solution coverage	0.544		0.624		
Overall solution consistency	0.971		0.961		

Table 5
High TFP configurations with typical cases.

Panel A: High TFP configurations before the COVID-19 pandemic in 2018	
Path 1	Product*Diversity*Communication* ~Employee*Environment
	Cases: 7 (0.65, 0.93), 2 (0.501, 0.43), 3 (0.501, 0.89), 30 (0.501, 0.94)
Path 2	Product*Community*Communication*Employee*Environment
	Cases: 1 (0.85, 0.87), 14 (0.82, 0.93), 12 (0.65, 0.96), 16 (0.501, 0.48), 19 (0.501, 0.14), 22 (0.501, 0.95), 23 (0.501, 0.72), 24 (0.501, 0.52), 28 (0.501, 0.95), 29 (0.501, 0.71)
Panel B: High TFP configurations after the COVID-19 pandemic in 2020	
Path 3	Product* ~Community*Communication*Employee*Environment
	Cases: 12 (0.73, 0.9), 30 (0.501, 0.94)
Path 4	Product*Community*Diversity*Communication*Environment
	Cases: 28 (0.73, 0.86), 1 (0.68, 0.93), 3 (0.501, 0.89), 7 (0.501, 0.91), 9 (0.501, 0.61), 20 (0.501, 0.9), 22 (0.501, 0.96), 23 (0.501, 0.78), 24 (0.501, 0.53), 25 (0.501, 0.54), 29 (0.501, 0.71)
Path 5	~Product*Community* ~Diversity*Communication* ~Employee*Environment
	Cases: 14 (0.501, 0.84)

Note: Cases with membership values greater than 0.5 are included in each configuration; "* " means logical operator AND.

strategic, and institutional context (Saridakis et al., 2020). Corporate governance is a critical component of management, closely connected with issues of control, structure, direction, and leadership (Yeh and Trejos, 2015). The hospitality industry has the characteristics of high financial leverage, high competition, and capital intensity, and this may affect which CSR practices and corporate governance mechanisms are adopted (Li and Singal, 2022). As shown in panel A of Table 6, firms with a high level of governance tend to emphasize product quality and employee relations, indicating a balanced consideration of internal and external stakeholders (i.e., consumers and employees). As shown in panel B of Table 6, hospitality firms with a lower level of governance tend to emphasize the dimensions of community and diversity, which also indicates a balanced consideration of external and internal stakeholders (but here community and managers).

After the pandemic, hospitality firms should quickly improve their dynamic capabilities and adjust their CSR investment strategies to facilitate their recovery. The division of stakeholders, such as primary and secondary (Su and Tsang, 2015), internal and external (Yoon and Chung, 2018), can usefully inform CSR investment strategies. Multi-dimensional CSR practices and firms' dynamic capabilities are complementary to each other under the framework of configurational theory. After the pandemic, hospitality firms should make investment in CSR communication and environmental protection a priority. The specific combination of the various dimensions of CSR practices that a firm should consider will depend on their level of corporate communication; consideration should be given to the tradeoff between internal and external stakeholders.

4.6. Further analysis and robustness check

In this study, we examine the heterogeneous effects of individual corporate governance indicators to shed more light on the role of detailed governance factors in CSR practices. We specifically analyze executive compensation, board size, institutional shareholding, and dual role as representative indicators of incentive mechanisms, the supervisory role of the board of directors, the supervisory role of ownership structure, and manager's decision-making power, respectively. The detailed analysis of the heterogeneous effects of these corporate governance indicators can be found in Supporting information S4. Our findings indicate that CSR communication and environmental protection are generally crucial factors leading to high TFP in the post-pandemic era. These results are consistent with the main findings of the composite index. However, there are differences in explaining the reasons behind these relationships when considering specific indicators. It is challenging to provide specific details on various CSR investment strategies in heterogeneous scenarios. Hospitality practitioners can analyze their CSR investment strategies based on the specific governance dimensions they are interested in.

We conduct several tests to verify the robustness of the results. First, we consider the time lag between CSR practices and firm performance. The average value of current year and year-1 lag for the firm's TFP is employed to handle the issues of reverse causality and simultaneity. Second, firms' TFP is measured using an alternative indicator, namely by the OP method. Third, the crossover point is adjusted by an increase and decrease of 5% points to test the sensitivity of different calibrations of the sets. The results with all these robustness tests are consistent with the main findings detailed above.

5. Conclusion and implications

This paper highlights the combinations of various dimensions of CSR practice that lead to different levels (high vs. low) of firm performance. The improvement of hospitality firm's TFP is the key point of firm's sustainable operation, value enhancement, and drivers of competitiveness (Wu et al., 2023b), especially in times of public health emergencies (He et al., 2022). We conclude that the effect of various dimensions of

CSR practice on firm's performance is diverse and nonlinear, and the casual paths are revealed. With a comparison of pre- and post-pandemic situations, it is possible to show how the various dimensions of CSR practices interact with each other to affect TFP, and how the heterogeneity in the level of corporate governance impacts the linkage between CSR and TFP.

The main findings are as follows. Generally, product quality, good CSR communication, and environmental protection are critical to high TFP. In the pre-pandemic situation, the absence of two core conditions (community activities and environmental protection) was associated with low TFP. After the pandemic, hospitality firms should make investment in CSR communication and environmental protection a priority. Most importantly, CSR communication works as a core condition both in firms with high levels of corporate governance and in those with low levels after the pandemic. Specifically, we found that while diversity of managers remains a crucial factor in achieving high TFP configurations after the COVID-19 pandemic, the dimension of employee relations is not deemed necessary. In addition, firms with a high level of governance should invest more resources in product quality and employee relations; otherwise, more resources can be invested in community activities and ensuring a diversity of managers. Furthermore, hospitality firms' managers should give a balanced consideration to internal and external stakeholders, and the tradeoff between primary and secondary stakeholders.

5.1. Theoretical implications

First, it reveals the potential linkage between stakeholder theory and the configurational perspective and contributes to the strategic management literature by exploring hospitality firms' social responsibility investment strategy. The multiple dimensions of CSR practice usually affect or are affected by various stakeholder groups, which reflect firms' general stance towards several social concerns, such as consumers' attention to products and services, community activities, diversity of managers, CSR communication, employees' welfare, and environmental management (Saridakis et al., 2020). From the configurational perspective, the level of CSR practices in different dimensions may vary from low to high, because not all initiatives are deemed to be equally important for the generation of tangible long- or short-term earnings and intangible moral or reputational capital (Jayachandran et al., 2013). This paper identifies the critical role of product quality, CSR communication, and environmental protection for the improvement of hospitality firms' TFP.

Second, this paper expands the application of dynamic capability theory by considering the specific integrating and reconfiguration capabilities under the configurational perspective and contributes to the literature on hospitality firms' performance after the pandemic. CSR initiatives should be appropriate for the institutional, strategic, and organizational contexts, because they usually compete for finite resources with other crucial strategies (Iyer and Jarvis, 2019), especially when the firms facing the external environment, such as the COVID-19 pandemic. Integrating and reconfiguration capabilities can help utilize the finite resources effectively, conducive to firms' sustainable performance and competitiveness. Based on the perspective of dynamic capabilities (Teece, 2007), this paper helps explain how hospitality firms can devise a responsive and flexible social responsibility investment strategy to match the complex and rapidly changing environment. Managers of hospitality firms should decide which stakeholders' expectations to satisfy, in what sequence, and to what extent to prioritize different dimensions of CSR practices.

Third, this paper contributes to the corporate governance literature by identifying the specific elements of hospitality firms' governance and their potential effects on the linkage between CSR investment strategy and firm performance. Corporate governance has the critical role of control, structure, direction, and leadership (Yeh and Trejos, 2015), which may affect hospitality firms' investment strategy in relation to

social responsibility. The bias towards specific groups of stakeholders, such as diversity of managers and employee relations, could be explained by the particular characteristics of hospitality firms and the reality of the external environment. Comparing the configurations of different corporate governance groups, we conclude that an asymmetric driving mechanism exists, which confirms that the exploration of the heterogeneous contextual factors can provide more detailed information for hospitality firms to support their investment decisions in relation to CSR practices. Specifically, good CSR communication can help transmit reliable CSR information to stakeholders and thereby benefit hospitality firms' reputation and profits (Lin-Hi and Blumberg, 2018).

5.2. Practical implications

First, the use of the fsQCA method to examine links between the uncontrollable external environment and the firm's controllable internal environment provides a comprehensive overview of hospitality firms' social responsibility before and after the COVID-19 pandemic (i.e., the macro-level), for firms with both high and low levels of corporate governance (i.e., the micro-level). Generally, product quality, CSR communication, and environmental protection are critical to high TFP in both the pre- and the post-pandemic situations. CSR communication works as the core condition both in firms with a high level of corporate governance and in those with a low level after the pandemic. Therefore, the importance of CSR communication should be highlighted for practitioners in the hospitality industry.

Second, this paper provides constructive advice for hospitality firms on how best to participate in the various dimensions of CSR practice, so as to improve TFP and accelerate their recovery from the COVID-19 pandemic. Managers can invest in specific combinations of the various dimensions of CSR practice, according to the firm's level of corporate governance. For example, firms with a high governance level can invest more resources in product quality and employee relations, and managers can allocate their resources to these two dimensions to meet the needs of internal and external stakeholders. Conversely, firms with a low level of governance can invest more resources in community activities and diversity of managers. If practitioners concentrate on meeting the needs of external stakeholders, more investment can be put into community activities, such as providing international assistance and promoting the local economy.

Third, this paper considers the heterogeneity of corporate governance and provides managers with options for their CSR investment strategies in terms of the division of stakeholders. It is a common concern for the managers of hospitality firms to identify the critical elements of CSR practice and their specific combinations. Managers should deepen their knowledge of their own circumstance and traits through cost-benefit analysis and prioritize investment in the elements common to the high-TFP solutions. For example, good CSR communication and environmental protection are the dimensions regarded as core conditions in all the high TFP solutions after the pandemic. This indicates that those two elements should be invested in, and the related stakeholders should be satisfied as a matter of priority, regardless of whether the firms have a high or low level of corporate governance.

5.3. Limitations and research directions

There are three principal limitations of this study. First, the sample only partially covers the listed hospitality firms due to the need for data on disclosure of CSR; caution is needed in generalizing the findings to non-listed firms or those firms that do not disclose CSR. Second, though the QCA method has several advantages in investigating the linkage between CSR and firm performance, it does not support exploration of the mechanisms mediating and moderating that relationship. Third, only one firm-specific contextual characteristic (i.e., the level of corporate governance) is selected to investigate the heterogeneous effect of the linkage between CSR and TFP, and other variables, such as the

characteristics of managers and different industries, could be studied in the future.

Declaration of Competing Interest

No potential conflict of interest was reported by the authors.

Data Availability

Data will be made available on request.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.ijhm.2023.103530.

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