Article:

Zhuo, L., Stamolampros, P. orcid.org/0000-0001-8143-7244 and Zhao, X. (2025) ESG practices through the lens of employees in hospitality: Insights from employee-generated data. International Journal of Hospitality Management, 124. 103992. ISSN 0278-4319

https://doi.org/10.1016/j.ijhm.2024.103992

ESG Practices Through the Lens of Employees in Hospitality: Insights from Employee-generated Data

Abstract:

Environmental, social, and governance (ESG) practices are garnering increased attention from hospitality companies, accompanied by a notable rise in awareness and expectations from key stakeholders. Nevertheless, research exploring how internal stakeholders perceive ESG initiatives and how such perceptions affect them is still scarce. This paper attempts to shed light on this area by analyzing 195,530 employee online reviews from 4,182 U.S. hotel companies over 15 years. We measure employees' perceptions of ESG practices by constructing a novel ESG lexicon using a word-embedding approach. Our results reveal that (a) employees' perceived ESG practices increase gradually over the years, (b) perceived ESG practices are higher among current (vs. former) employees and managers (vs. non-managers), and increase with organizational tenure, (c) perceived ESG practices are related to higher job satisfaction and lower employee turnover, with organizational tenure and position level moderating these relationships.

Keywords: ESG, employee online reviews, word-embedding, position level, organizational tenure

1. Introduction

The hospitality industry accounts for a significant environmental footprint due to high water and energy consumption, substantial waste generation, and carbon dioxide emissions, among others (Pan et al., 2018). Due to its labor-intensive nature, companies within this industry are particularly susceptible to environmental, social, and governance (ESG) practices (Dogru et al., 2022). The industry's negative social and environmental impacts have spurred awareness of the necessity of ESG practices among employees, customers, investors, and other stakeholders, leading more companies to establish internal sustainability goals to achieve a positive ESG impact (Kılıç et al., 2021).

Existing research in the hospitality and tourism fields has primarily focused on exploring the antecedents of ESG practices (Gerged et al., 2022), as well as the impact of ESG practices on firm performance (Bianco et al., 2023; Kumar, 2023; Singal, 2013) and firm resilience (Chen et al., 2022; Dogru et al., 2022; Lin et al., 2023). These studies have mainly centered on the organizational level, with an emphasis on the impact on external stakeholders (Kim et al., 2024). However, less is known about the impact of ESG on internal stakeholders (i.e., employees). Understanding employee perceptions of ESG practices is crucial because employees are both beneficiaries and participants in the design and implementation of these practices (Park and Levy, 2014). Recent research suggests a need for studies on the impact and dynamics of ESG practices at the individual level (Kim et al., 2024).

A major challenge in conducting research at the individual level lies in determining how to measure ESG. Current ESG measures predominantly rely on metrics sourced from company disclosures, news reports, and industry research by rating agencies like MSCI ESG Ratings. These evaluations mainly reflect ratings from external individuals and groups, often focusing more on the communication of plans than on tangible actions. Traditional methods of measuring employees' perceptions, such as questionnaires, face limitations due to small sample sizes and the cost of longitudinal approaches (Guzzo et al., 2020). The emergence of user-generated data such as those from employee review platforms, could address such limitations providing valuable insights on employee perceptions of ESG practices (Stamolampros et al., 2019). Moreover, online reviews can mitigate issues like non-response bias and survey participation problems often associated with traditional survey methods (D'Acunto et al., 2020).

This study uses a text-mining approach to explore employee perceptions of ESG practices. We analyze 195,530 online reviews from Glassdoor provided by employees of 4,182 U.S. hotel companies over a period of 15 years. We construct an ESG lexicon using a word embedding approach to examine the temporal evolution of employee perceptions and explore differences among employee characteristics. Additionally, we analyze how perceived ESG practices affect employee attitudes and behaviors and the boundary conditions of this relationship across their characteristics. Our study aims to address the following research questions

RQ1: *How do hotel employees' perceived ESG practices change over time and vary across their characteristics (i.e., employment status, position level, organizational tenure)?*

RQ2: *How are hotel employees' perceived ESG practices associated with their job satisfaction and turnover, and how do position level and organizational tenure moderate this relationship?*

This study makes several contributions to the existing literature. First, it enriches the emerging hospitality literature on ESG by shifting the focus to the employee perspective, an underexplored area compared to the predominant examination of ESG at the organizational level (Chen et al., 2022; Kumar, 2023). Second, this study extends ESG research and social identity theory by highlighting employees' perceptions of ESG practices as predictors of job satisfaction and employee turnover. It also investigates individual characteristics as potential moderators for this relationship, providing new evidence on the impact of employee perceptions on employee attitudes and behaviors (Guzzo et al., 2020; Zhao et al., 2022). Third, our study introduces methodological innovations by utilizing a novel word embedding approach to define and measure ESG perceptions from large-scale employee-generated data, compared to conventional surveys and scenario experiments (Kim et al., 2024; Oh et al., 2024). This approach also furnishes an effective means to facilitate our investigation of temporal trends and individual deviations within the ESG discourse.

2. Literature Review and Hypotheses Development

2.1. ESG in the hospitality industry

ESG practices are crucial in the hospitality industry, which consumes large amounts of resources and faces significant waste and emissions (Pan et al., 2018). The industry also deals with high labor turnover due to low wages and unsociable hours, raising social inequality concerns (Dogru et al., 2022). The COVID-19 pandemic has greatly influenced hospitality industry's advancement towards achieving sustainable development goals (Jiang and Wen, 2020). To address these challenges, hotel companies have implemented various ESG practices , such as reusing towels, recycling waste, and obtaining sustainability certifications (Melissen et al., 2016).

Despite its growing importance, research on ESG in tourism and hospitality is still emerging, historically concentrating more on corporate social responsibility (CSR) rather than the broader scope of ESG (Kim et al., 2024). Limited studies have explored ESG's impact on firm value and influencing factors. Prior research has shown hotels possessing sustainability certificates can enhance their key performance indicators through first-mover advantage (Bianco et al., 2023), and investing resources in ESG-related initiatives can reduce the risk of non-compliance (Kumar, 2023). However, ESG-related news have not been found to significantly impact the value of tourism firms in the short term (Dogru et al., 2022). On the other hand, ESG practices played an important role in the COVID-19 epidemic with evidence supporting that hotel companies with higher ESG ratings were more resilient to COVID-19 shock (Chen et al., 2022; Lin et al., 2023)..

Few studies in the hospitality industry have investigated employee perceptions of ESG practices. These perceptions have a more direct effect on employees' subsequent reactions compared to the actual ESG practices, which they may or may not know about. Jang et al. (2022) found that ESG practices affect the ethical climate within organizations, impacting employee-generated electronic word-of-mouth (eWOM). Kim et al. (2024) showed that integrated resort employees' positive perceptions of ESG practices can foster their self-esteem and organizational commitment, thereby increasing their willingness to stay. ESG practices exert an influence not only on existing employees but also on prospective ones. Prospective employees show a preference for companies actively contributing to ESG goals, placing value on a firm's social image, environmental conduct, and social responsibility (Guzzo et al., 2023; Rubel et al., 2023).

2.2. Social identity theory

Social identity theory posits that individuals' self-concepts are partially derived from their identification with various social groups they belong to (Tajfel and Turner, 2004). This theoretical framework is widely used to explain the relationship between corporate social practices and employee attitudes and behaviors (De Roeck and Delobbe, 2012; Garrido-Ruso and Aibar-Guzmán, 2022). Social identification is a psychological process where individuals classify themselves into different social reference groups. By contrasting their group's characteristics with those of other groups, individuals enhance their self-esteem and overall self-concept (De Roeck et al., 2014). When individuals join organizations that align with their attributes and values, their need for belongingness and meaningful existence is satisfied (Ashforth and Mael, 1989). The ESG practices of a company positively influence its image and external reputation, fostering employees' sense of pride and strengthening their organizational identification (Kim et al., 2024). Such identification enables employees to build a lasting and strong bond with the organization, resulting in a sense of oneness or belonging. Identified employees typically exhibit more positive workplace attitudes and behaviors, such as high satisfaction and low turnover (De Roeck et al., 2014).

Social identity theory suggests that individuals' identification levels with each social group may vary (Ashforth and Mael, 1989). Given the heterogeneity among employees within organizations, employee characteristics may influence their identification with different work-related targets. Specifically, in the hotel industry, managers and non-managers play pivotal roles in ensuring the operational success of their firms. Due to their differing levels of hierarchy, these two roles come with distinct responsibilities, values, and stances on ESG issues (Li et al., 2024). This position level differentiation may result in social categorization, distinguishing insiders from outsiders, thereby affecting employees' organizational identification.

Furthermore, an individual's identification with the organization may evolve over time (Ashforth and Mael, 1989). As employees' organizational tenure increases, they develop a deeper understanding of the organization's ESG practices, enabling them to integrate these goals and key attributes into their self-concepts, thereby enhancing their identification with the organization (Hameed et al., 2013). Overall, differences in position level and organizational tenure among employees may affect their sensitivity toward ESG initiatives (Garrido-Ruso and Aibar-Guzmán, 2022). Therefore, social identity theory may explain how employees' perceived ESG practices influence their job satisfaction and turnover, with moderating effects from different employee characteristics (i.e., position level and organizational tenure) (see Figure 1).

2.3. Effects of perceived ESG practices on job satisfaction

Previous research has indicated that individuals' perceptions of their jobs are influenced by the social cues present in the work environment (Salancik and Pfeffer, 1978). An ethical work environment is considered a factor that can positively impact employee satisfaction (Valentine et al., 2011). This suggests that ESG initiatives may enhance job satisfaction by improving perceptions associated with the work environment.

Specifically, employees tend to perceive ESG initiatives aimed at external stakeholders (e.g., environmental protection, philanthropy) as special aspects of organizational justice (Kim et al., 2024). These initiatives foster a sense of pride among employees, as they feel part of an organization that prioritizes ethics and values. Organizations that uphold such standards are often viewed positively by others, which provides employees with a positive identity and satisfies their need for belonging (Chatzopoulou et al., 2022). As a result, perceived ESG practices inspire more positive attitudes and higher emotional commitment to the organization and job, leading to greater job satisfaction.

In addition, social and governance practices aimed at employees are associated with improved working conditions (Farooq et al., 2014). These practices demonstrate that organizations appreciate employees' efforts and prioritize their well-being, thereby enhancing employees' perceived organizational supports and increasing job satisfaction (Golob and Podnar, 2021).

Overall, an organization's ESG practices reflect intrinsic organizational values can align employees' job experiences with their needs and desires (Wisse et al., 2018). By satisfying the multiple needs of employees, perceived ESG practices can positively influence job satisfaction. Thus, we hypothesize that:

H1: *Perceived ESG practices are positively associated with job satisfaction.*

2.4. Effects of perceived ESG practices on employee turnover

Perceived ESG practices not only affect employees' attitudes toward work but also their current behavior (Kim et al., 2024). Prior studies have demonstrated that positive corporate social activities can effectively reduce employees' turnover intention (Valentine et al., 2011; Zhao et al., 2022). In fact, factors leading to the intention to leave are different from those leading to the actual turnover (Stamolampros et al., 2019). We focus in this study on actual turnover rather than turnover intention because it captures the true outcome of ESG practices on employee behavior.

A key factor in employee retention is the alignment of employees' personal values with those of the company (Coldwell et al., 2008). Employees are more inclined to remain with companies that uphold similar values. Engaging in ESG activities helps companies accumulate reputation capital (De Roeck and Delobbe, 2012). This reputation enables companies to attract more talented people as prospective employees often prioritize factors such as environmental responsibility, community engagement, and diversity when choosing their future employer (Guzzo et al., 2023). Therefore, companies dedicated to ESG practices may be more appealing to employees who perceive an alignment between their values and those of the organization. Conversely, when an employee's values do not align with those of the organization, it can lead to heightened ethical conflict, thereby strengthening their intention to leave (Valentine et al., 2011).

Moreover, companies providing better ESG practices are likely to foster a positive organizational climate and culture, leading to a greater sense of meaningfulness for employees at work (Carnahan et al., 2017). In this case, perceived ESG practices can increase, consequently fostering greater organizational commitment (Kim et al., 2024). Higher organizational commitment correlates with higher retention and lower turnover. Therefore, we propose the following hypotheses:

H2: *Perceived ESG practices are negatively associated with employee turnover.*

2.5. Moderating effects of position level

According to social identity theory, individuals' attitudes and behaviors within an organization are shaped by their degree of organizational identification (Ashforth and Mael, 1989). Studies have indicated that employees may perceive their job hierarchy as an important social category for distinguish distinguishing ingroup from outgroup members, affecting their degree of organizational identification (Horton et al., 2014). Research has also shown that the influence of organizational identification on turnover intentions varies across different hierarchical levels within the organization (Cole and Bruch, 2006). Therefore, it is anticipated that hierarchical levels may influence how employees perceive ESG practices and their resulting work attitudes and behaviors.

Managers, holding higher positions within organizations, are closely aligned with the organization's goals, values, and stance on ESG issues (Kim et al., 2020). This alignment makes them sensitive to the organization's ESG commitments, directly influencing their social identification within the organization. As decision-makers, their actions impact ESG policies and practices. They also face pressures from colleagues, subordinates, and external stakeholders to advance the ESG agenda, preserving both personal and organizational reputation (Garrido-Ruso and Aibar - Guzmán, 2022). Consequently, strong ESG practices enhance managers' trust, identification with the organization, satisfaction, and reduce turnover.

On the other hand, non-managers typically occupy lower positions within organizations. They may have less understanding of the organization's ESG policies and practices and may not perceive their direct impact on their personal lives. While ESG factors could influence their work environment and welfare, their distance from the decision-making process might lead to a lack of direct connection with the organization's ESG practices (Kim et al., 2020). Thus, this may reduce the influence of these factors on their job satisfaction and turnover.

Despite evidence that position hierarchy shapes perspectives, the impact of job position on employees' perceived ESG practices remains unexplored in current literature. Recent research advocates to consider employee identity heterogeneity and its role in corporate social responsibility (Xie and Jain, 2024). To this end, we propose the following hypothesis:

H3a: *The influence of employee perceptions of ESG on job satisfaction will be stronger for managers rather than non-managers.*

H3b: *The influence of employee perceptions of ESG on employee turnover will be stronger for managers rather than non-managers.*

2.6. Moderating effects of organizational tenure

Research indicates that organizational tenure can influence employees' perceptions of the organization (Ng & Feldman, 2011). As employees accumulate tenure within an organization, they develop a deeper understanding of the organization's ESG practices and their own roles. This deeper understanding enables them to better integrate the organization's goals, purposes, and key attributes into their self-concepts, resulting in a stronger sense of organizational identification (Hameed et al., 2013). Stronger organizational identification can mitigate the influence of employees' perceptions of ESG practices on their satisfaction and turnover, as employees evaluate their satisfaction and intention to leave based on overall organizational conditions rather than individual ESG factors (Dobrow et al., 2018).

Conversely, employees with short tenure typically in a stage of identity establishment (Ashforth and Mael, 1989), striving to understand and learn the organization's policies, role expectations, and behavioral norms. During this stage, they focus on developing a self-definition where social identity plays a significant role (Ashforth and Mael, 1989). Moreover, given that short-tenured employees are more likely to compare their newly formed beliefs with similar others, ESG practices may have a more pronounced effect on their satisfaction and turnover.

Furthermore, individuals exhibit varying interests and attitudes across different stages of their careers. Research indicates that in the early stages of one's career, individuals are inclined to learn new skills, developing both internal and external organizational connections, and assuming new responsibilities (El Akremi et al., 2018). However, in the mid-career stage, individuals often prioritize refining their self-concept while building on their early career achievements (Gibson, 2003). In the later stages of their careers, they become more concerned with personal life matters and tend to reduce their involvement in social activities (Ng and Feldman, 2011). Therefore, as organizational tenure increases, the positive impact of organizational identification derived from ESG practices weakens. Consequently, we propose the following hypothesis:

H4a: *The influence of employee perceptions of ESG on job satisfaction will be weaker for those with a long rather than short tenure.*

H4b: *The influence of employee perceptions of ESG on employee turnover will be weaker for those with a long rather than short tenure.*

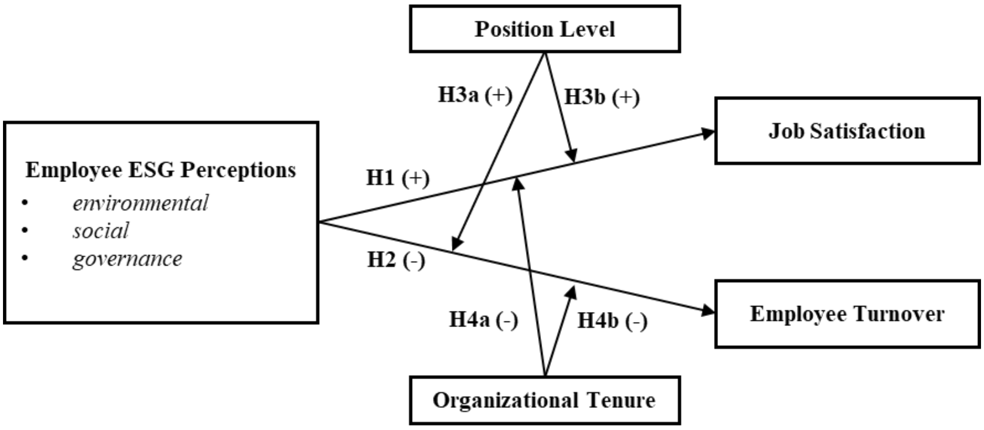

Fig. 1. Research framework.

3. Methodology

3.1. Data collection

This study utilized employee online review data from Glassdoor. Reviews on platforms like Glassdoor span all sectors, covering thousands of companies and reflecting the participation of millions of employees. This broad participation provides an advantage over traditional surveys in terms of sample representativeness. Additionally, the anonymity of these reviews may help address issues related to employees' reluctance to provide honest feedback due to managerial pressures and intolerance (Holland et al., 2016). The Glassdoor platform has been widely used in academic research on employee and company behavior, including recent studies in tourism and hospitality (Li et al., 2024; Stamolampros and Symitsi, 2022).

We chose all employee reviews of U.S. hotels for our study. For our research purpose, we developed a Python crawler program to obtain a total of 4,182 U.S. hotel companies comprising 195,530 reviews covering the period from May 2008 to June 2023. Each review includes the review date, reviewer information (such as position title, working year, and employment status), rating, and review text content. The review text consists of separate sections detailing what employees perceived as positive aspects (pros) and negative aspects (cons) of their work experience.

3.2. ESG measurement

To accurately measure perceived ESG practices, we employ the word2vec method (Mikolov et al., 2013), a novel word embedding model, to automatically build the dictionary. The word2vec method identifies synonyms by tracking how often a particular word appears next to other words and representing these words as vectors using a neural network. Compared with traditional text analysis methods, word2vec methods can recognize uncommon words or phrases and are more objective and efficient. Following Li et al. (2021), this study mainly adopts three steps to compute the ESG index from employee review texts. First, we preprocess the text, then, train the word2vec model and construct the ESG dictionary, and finally, calculate the ESG score.

Step 1: Text Preprocessing

Before employing the word2vec model, we performed several preprocessing steps on the raw review text. Specifically, we first identified and remove entities such as company names and locations through named entity recognition. Then, we converted all uppercase letters into lowercase letters and removed punctuation, digits, and stop words (e.g., a, an, the). Next, we applied lemmatization techniques to reduce words to their standard forms. Finally, we identified two- and three-word phrases (bigrams and trigrams) using the *Phraser* module of the *Gensim* library in Python.

Step 2: Word2vec model training and ESG dictionary building

We processed the text from the pros and cons sections of the reviews and then used them as input for the word2vec model. In this process, we set the parameter for the word vector dimension in the model to 300. This allows us to represent each term t using a vector, denoted as $V^t = [x_1^t, x_2^t, \ldots, x_{300}^t]$. To construct the required ESG dictionary, we first compiled the seed words related to the ESG topic. Specifically, we collected lists of E(Environmental), S(Social), and G (Governance) terms from various sources including industry reports and academic research (Baier et al., 2020; Mansouri and Momtaz, 2022). The seed words were manually checked to ensure their presence in the glossary of the corpus and the final list of seed words was determined by two experts (see Table A in the Appendix).

Then, each word t from the seed words for the ESG dimension d is represented as a vector $V_{d\in\{E,S,G\}}^t = [x_1^t, x_2^t, \ldots, x_{300}^t]$. We then computed the average of the vectors of the seed words, denoted as $\bar{V}^{d\in\{E,S,G\}} = \frac{1}{N}\sum_1^N [x_1^t, x_2^t, \ldots, x_{300}^t]$, where N is the number of seed words for each dimension d. This process resulted in three vectors: $\bar{V}^E$, $\bar{V}^S$, and $\bar{V}^G$. We then calculated the cosine similarity between the vectors of the remaining terms in the reviews and $\bar{V}^d$, selecting the top 200 words with the highest similarity to form the extended lexicon for each dimension d. If a word appeared in multiple dimensions, it was assigned to the category with the highest cosine similarity to the average seed vector of that category. In total, we obtained 527 ESG-related words, consisting of 122, 188 and 217 words in the respective ESG dimensions. Table 1 displays the top 15 words according to the frequency of their appearance in the documents. Fig. A. in the Appendix displays the word clouds associated with the E, S and G word lists. Table B in the Appendix presents all ESG dictionaries.

Table 1. Each dimension in the ESG dictionary

Dimension	Top 15 Words
Environmental	water, energy, wall, green, art, natural, carpet, sustainability, environmental, paint, leak, glass, air conditioning, pour
Social	employee, community, diversity, health, safety, human, engagement, social, labor, human resource, workforce, relation, discrimination, welfare
Governance	culture, leadership, business, value, organization, leader, decision, ceo, executive, ownership, senior management, practice, ethic, vision

Step 3: ESG score calculation

After constructing the lexicon of ESG, we used the dictionary matching method to measure the ESG perception. Given that Glassdoor displays positive and negative sections of reviews separately, we can easily derive the sentiment tendencies of ESG dimensions by comparing the differences between the two sections. Specifically, employee perceptions to dimension d in review i can be expressed as:

$$Perception_d(i) = \left(\frac{\sum_{w \in d} count(w, pros_i)}{N_{pros_i}} - \frac{\sum_{word \in d} count(w, cons_i)}{N_{cons_i}}\right) * 100 \qquad (1)$$

where $count(w, pros_i)$ and $count(w, cons_i)$ represent the frequency of a word from the dictionary of dimension d in the pros and cons section of review i, respectively. N_{pros_i} and N_{cons_i} represent the size of the word lists in the pros and cons sections of review i, respectively. The overall perceptions of ESG practices is equal to the summation of the dimensions.

It should be noted that there are two situations where reviews may not include ESG-related keywords. The first scenario occurs when reviewer may not prepare well or realize that they have to express any sentiment related to that dimension. In other words, they may have no experience with that dimension that is too good or too bad to be worth mentioning. Referring to previous studies (Chatterjee, 2019; Li et al., 2023), we set the perception of this dimension to 0. The second scenario arises when the reviewer is extremely dissatisfied and may refrain from mentioning anything in the pros section (e.g., "Not one good thing about this company"), or when highly satisfied, they may not leave any meaningless comment in the cons section (e.g., "All good, nothing to comment"). In fact, in our random sample of 100 reviews, only three exhibited such patterns. This seems reasonable, as extreme emotions may make it difficult for individuals to identify specific pros or cons. Even if meaningful comments are absent from either the pros or cons sections, this does not affect the calculation of Equation 1, as the formula compares the difference between the two sections.

Step 4: Validation test

To ensure the reliability of our method for identifying ESG attributes in employee reviews, we conducted a validation test focusing on content validity. Following the methodology recommended by Short et al. (2010), expert assessment and contextual analysis were used to evaluate content validity. Two experts familiar with the fields of ESG and sustainability independently reviewed the final word list to determine its appropriateness for inclusion in our lexicon. The inter-rater reliability was assessed via the Kappa statistic, which returned a value of 0.72, indicating a high agreement.

For the analysis of contextual meaning, we examined the use of each word within the actual sentences of employee reviews. We documented examples where selected words appeared in both positive and negative reviews across the three ESG dimensions (refer to Table C in the Appendix). These examples provide further evidence of content validity by illustrating that the words of interest frequently occur in discussions related to employee reviews and are relevant to specific ESG dimensions.

Finally, we correlated the ESG practices perceived by employees at the seven companies with MSCI ESG ratings in our study data. We found a high correlation between the two (r = 0.44), indicating that our measure of employees' perceived ESG practices can reflect external validity to a certain extent.

3.3. Variables measurement

After constructing employee perceptions of ESG practices, we defined and measured employee-related variables, to compare the differences in perceived ESG practices across employee characteristics.

Employment status (*Status*): Employment status includes former and current employees. Current employees indicate that they are still employed when they post their reviews, whereas former employees show they have left the company. *Status* equals to 1 if the employee is former, 0 otherwise.

Organizational tenure (*Tenure*): Employee information from Glassdoor allowed us to classify tenures into six ranges: less than one year, one to three years, three to five years, five to eight years, eight to ten years, and more than ten years. Each range corresponds to a value from 1 to 6.

Position level (*Position*): To classify employees' position levels, we employed a criterion distinguishing between managers and non-managers by analyzing their job titles. Following the methodology outlined by Huang et al. (2020), we identified an employee as occupying a managerial position if their job title included any of the specified keywords: "director," "management," "manager," "leader," "chief," "executive," "president," or "officer." *Position* equals to 1 if the employee is manager, 0 otherwise.

3.4. Model specifications

To understand how perceived ESG practices affect job satisfaction, we used overall ratings as the dependent variable. To account for the heterogeneous effects of firms, we controlled for the number of company reviews (*RevNum*) as a proxy for firm size and the average company rating (*AvgRating*) as a proxy for the overall firm performance. Considering the textual factors of the reviews, we controlled the length of the pros (*ProsRevLength*) and cons (*ConsRevLength*) sections, respectively. In addition, we controlled for employee-related factors, such as employment status (*Status*). Furthermore, year-fixed effects (*Year*) and month-fixed effects (*Month*) were controlled to account for temporal heterogeneity effects. Following previous studies (Sharkey et al., 2022), we adopted ordinary least squares regression to estimate the model as follows.

$$Rating_{ij} = \beta_0 + \beta_1 Perception_{ij} + \beta_2 Position_{ij} + \beta_3 Tenure_{ij} + \delta Controls + Year_y + Month_m + \varepsilon_{ij} \quad (2)$$

Where $Rating_{ij}$ denotes the overall rating of employee i on company j; $Perception_{ij}$ is independent variable; $controls$ are control variables and ε_{ij} is the error term. $Year_y$ and $Month_m$ are dummy variables. We sought to estimate the significance levels of β_1, which examine hypothesis H1. To further test hypothesis H3a and H4a, we introduced the interaction terms and the new equation was listed as follows:

$$Rating_{ij} = \beta_0 + \beta_1 Perception_{ij} + \beta_2 Position_{ij} + \beta_3 Tenure_{ij} + \beta_4 Perception_{ij} \times$$

$$Position_{ij} + \beta_5 Perception_{ij} \times Tenure_{ij} + \delta Controls + Year_y + Month_m + \varepsilon_{ij} \quad (3)$$

For hypothesis H2, H3b, and H4b, employee turnover is the dependent variable, using the status of whether the employee stayed or left the company as a proxy, reflected in the reviews as whether an employee was a current or former employee. The variable is assigned a value of 1 for former employee and 0 for current employees. We used the same control variables as before. Furthermore, given the impact of different types of job attributes on employee turnover, we further controlled for five sub-ratings, namely career opportunities (*CarrRating*), compensation and benefits (*CompRating*), senior management (*ManagRating*), work/life balance (*WorkRating*), culture & values (*CultRating*). Since the dependent variable is binary, we used a logistic regression model. Specifically, the model was estimated using the following equation:

$$P(status = 1|X_{ij}) = f(\beta_0 + \beta_1 Perception_{ij} + \beta_2 Position_{ij} + \beta_3 Tenure_{ij} + \delta Controls + Year_y + Month_m + \varepsilon_{ij}) \quad (4)$$

$$P(status = 1|X_{ij}) = f(\beta_0 + \beta_1 Perception_{ij} + \beta_2 Position_{ij} + \beta_3 Tenure_{ij} + \beta_4 Perception_{ij} \times Position_{ij} + \beta_5 Perception_{ij} \times Tenure_{ij} + \delta Controls + Year_y + Month_m + \varepsilon_{ij}) \quad (5)$$

where P denotes the likelihood that employee i in company j is a former employee. Figure 2 presents the data analytics procedure.

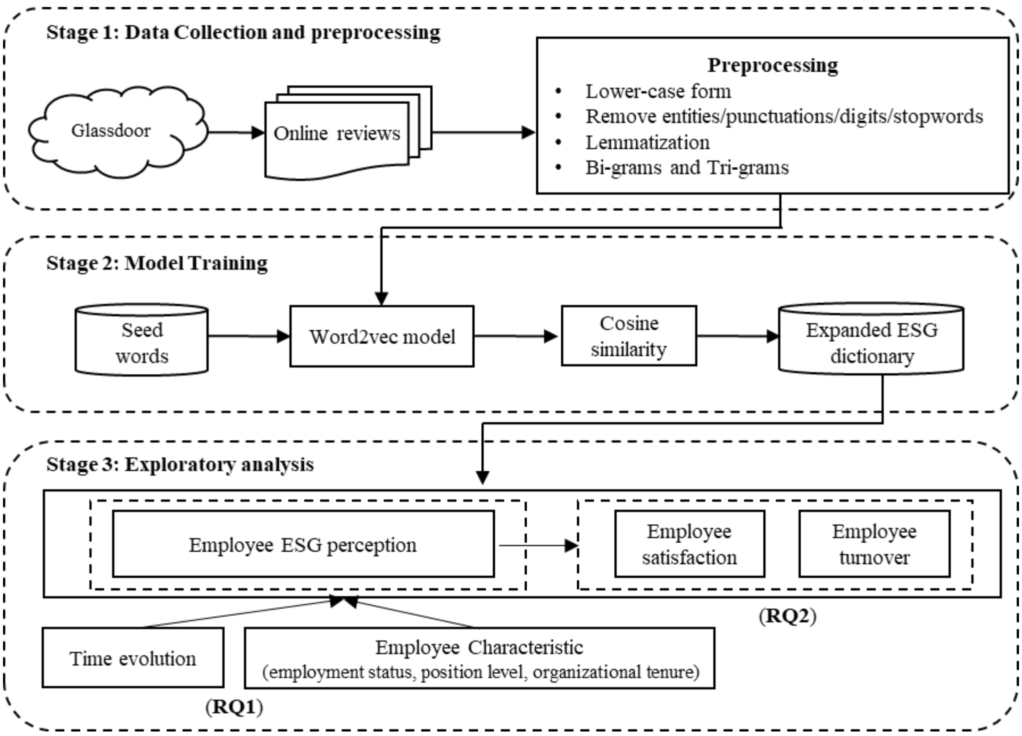

Fig. 2. Data analytics procedure.

4. Results

4.1. Perceived ESG practices in employee online reviews

Table 2 shows the descriptive and correlative results. In our dataset, 73,543 reviews contain ESG-related keywords, while the remaining 120,757 reviews do not contain ESG keywords. This indicates that more than one-third of the reviews mention ESG-related topics. Figure 3 displays the distribution of all ESG-related reviews across ratings. Employees mention social and governance practices more frequently in their reviews, while environmental practices are mentioned relatively less. In addition, employees tend to mention ESG more frequently when they are dissatisfied.

Table 2 Descriptive and correlative results.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Rating	1.000											
(2) Perception_ESG	0.197	1.000										
(3) Perceptio_E	-0.003	0.145	1.000									
(4) Perceptio_S	0.113	0.664	-0.009	1.000								
(5) Perceptio_G	0.169	0.748	-0.006	0.025	1.000							
(6) Position	0.060	0.037	0.001	0.021	0.032	1.000						
(7) Tenure	0.118	0.033	0.005	0.024	0.023	0.183	1.000					
(8) Status	-0.229	-0.064	0.001	-0.030	-0.061	-0.057	-0.076	1.000				
(9) ProsRevLength	0.113	0.032	-0.002	0.021	0.025	0.025	0.021	-0.095	1.000			
(10) ConsRevLength	-0.302	-0.040	-0.006	-0.026	-0.031	-0.022	-0.031	0.063	0.258	1.000		
(11) RevNum	0.097	0.043	-0.003	0.035	0.028	0.055	0.092	-0.034	-0.061	-0.055	1.000	
(12) Avgrating	0.306	0.088	-0.000	0.057	0.070	0.019	0.090	-0.075	0.009	-0.109	0.317	1.000
Mean	3.526	0.443	0.004	0.199	0.239	0.238	2.394	0.542	16.860	24.816	2042.970	3.558
S.D.	1.385	11.893	1.846	7.696	8.711	0.426	1.342	0.498	23.825	49.509	3504.857	0.417
Min	1	-100	-100	-100	-100	0	1	0	1	1	1	1
Max	5	100	100	100	100	1	6	1	1483	5556	13358	5

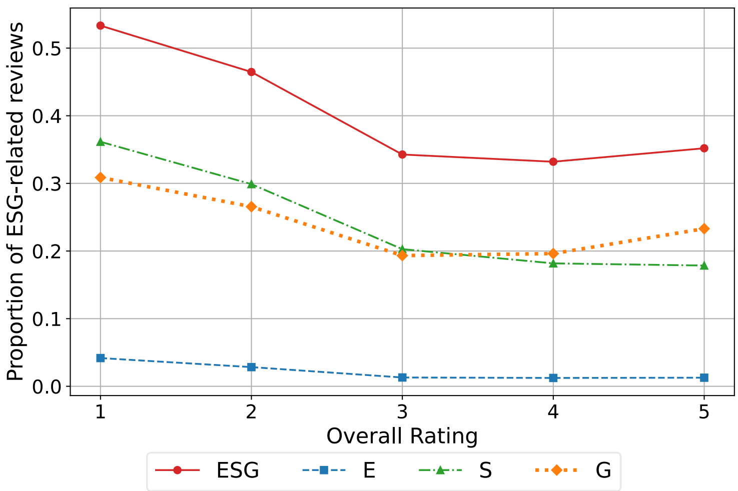

Fig. 3. Proportion of ESG-related reviews in each rating dimension.

Figure 4 illustrates the temporal evolution of ESG practices as perceived in employee online reviews. The figure shows that perceived ESG practices increase linearly over time, peaking during the COVID-19 outbreak in 2020, followed by a gradual decline in subsequent years. This trend may be attributed to companies' efforts to improve resilience during the COVID-19 pandemic through ESG practices (Chen et al., 2022; Dogru et al., 2022).

Specifically, employees' perceived environmental practices have fluctuated considerably as a whole, experiencing year-on-year ups and downs between 2013 and 2015. Some effects related to the landmark Paris Climate Agreement of 2015 could potentially explain this trend (Scott and Gössling, 2022). Regarding the social dimension, the overall situation remained relatively stable after 2014. There was a sharp upswing in employee perceptions in 2020, followed by a gradual decline in subsequent years. Employees' perceived governance practices has exhibited an increasing trend year after year, with relatively stable fluctuations. This pattern suggests that the governance measures undertaken by the hospitality industry have been gradually improving, thereby contributing to increased satisfaction among employees regarding the governance dimension (Guetat et al., 2015).

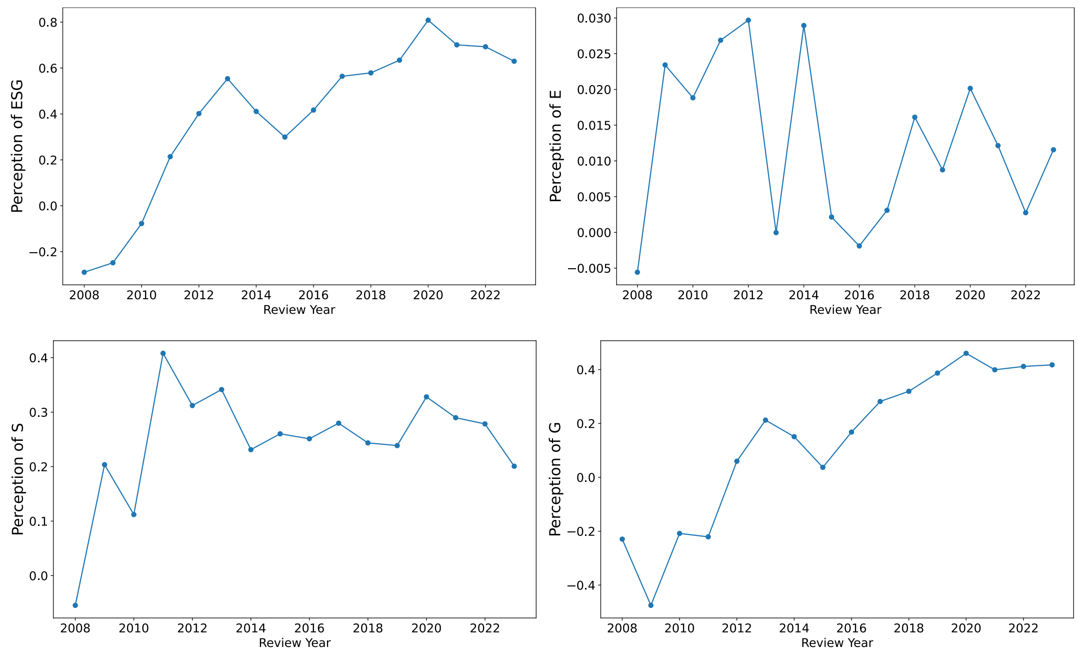

Fig. 4. The temporal evolution of ESG practices as perceived in employee online reviews.

Table 3 illustrates variations in perceived ESG practices across different categories of employees. In terms of employment status, current employees demonstrate significantly positive perceptions towards ESG practices compared to former employees ($\text{Mean}_{\text{current}} = 1.020$, $\text{Mean}_{\text{former}} = 0.250$; $F = 594.16$; $p < 0.001$). This may give us a first support of an associaton of deficiencies in ESG practices at the organizational level with employee turnover. Regarding employee position, managers' ESG perception is significantly more positive than those of non-managers ($\text{Mean}_{\text{manager}} = 1.199$, $\text{Mean}_{\text{non-manager}} = 0.456$; $F = 363.79$; $p < 0.001$). In addition, employees' perceived ESG practices increases with their stay in the organization ($F = 41.22$; $p < 0.001$).

Table 3 ESG perception of different employee characteristics

Variable		Observations	Mean	SD	ANOVA
Employment Status	Current Employee	90,655	1.020	6.953	F = 594.16
	Former Employee	103,645	0.250	6.932	P < 0.001
Position Level	Manager	40,021	1.199	8.356	F = 363.79
	Non-manager	154,279	0.456	6.528	P < 0.001
Organizational Tenure	<1	34,746	0.323	6.059	F = 41.22
	[1–3)	40,415	0.466	6.844	P < 0.001
	[3–5)	22,478	0.772	7.264	
	[5–8)	11,555	1.001	7.391	
	[8–10)	4,944	1.116	7.704	
	>=10	5,364	1.274	7.823	

Figure 5 shows the differences in perceived ESG practices across various tenures within organizations. The findings reveal that employees' perceived ESG practices tend to rise incrementally as their organizational tenure lengthens. Furthermore, managers consistently exhibit higher levels of ESG perception over time compared to non-managers.

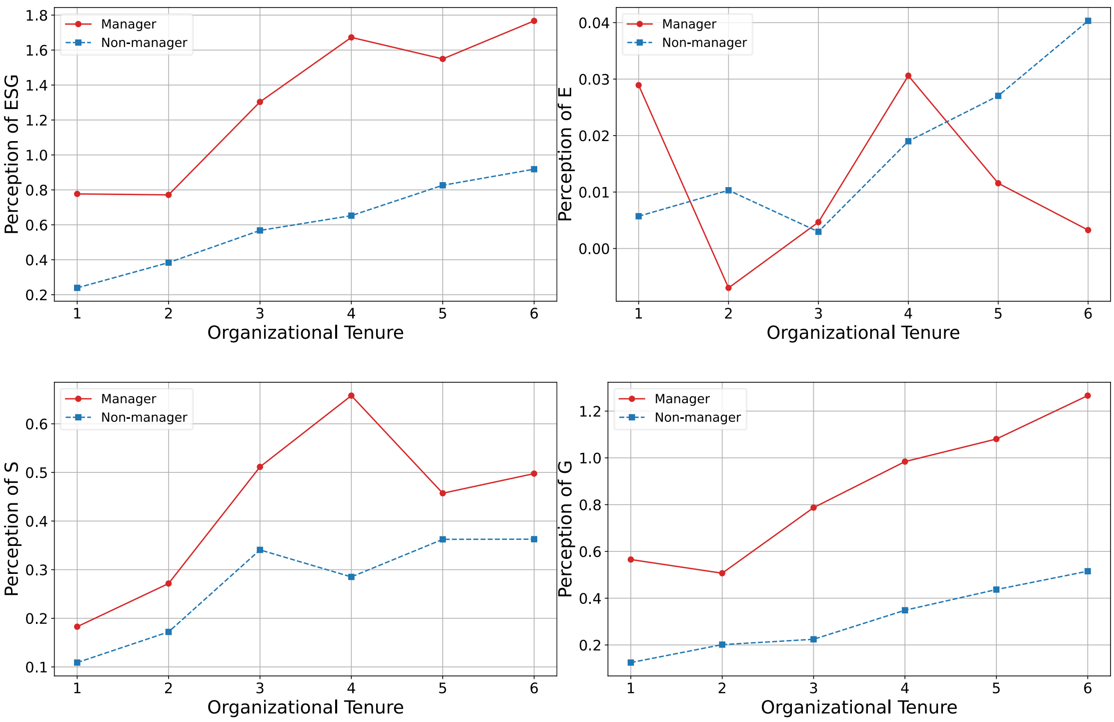

Fig. 5. Differences in perceived ESG practices across organizational tenure and position levels

4.2. Hypothesis testing

Before testing the hypotheses, we checked the variance inflation factors (VIFs) of the variables. The maximum VIF of the variables does not exceed 3, indicating that there is no concern for multicollinearity (Stamolampros et al., 2019). Table 4 presents the main effect of perceived ESG practices on job satisfaction and the moderating effect of employee position and organizational tenure, respectively. Table 5 reveals such effects on employee turnover and the corresponding moderating effect. Model 1 shows that perceived ESG practices is significantly and positively correlated with overall ratings ($\beta = 0.025$, $p < 0.01$), indicating that higher perceived ESG practices generate more satisfaction. Likewise, Model 5 demonstrates that perceived ESG are negatively associated with employee turnover ($\beta = -0.004$, $p < 0.01$), indicating that higher perceived ESG practices reduce the likelihood that an employee leaves the company. The results support Kim et al.'s (2024) finding that perceived ESG practices are positively related to employees' willingness to stay. Thus, H1 and H2 are supported.

Concerning the moderating effects, Model 4 and Model 8 report that the combination of employee position and perceived ESG practices has no significant effect on overall ratings, while it has a significant and negative effect on employee turnover ($\beta = -0.004$, $p < 0.01$), which is illustrated in Figure 6. This indicates that there is no significant difference in the effect of managers' and non-managers' perceived ESG practices on job satisfaction, but managers' perceived ESG practices have a stronger effect on their turnover than non-managers, supporting H3b but not H3a. Similarly, the combination of organizational tenure and perceived ESG practices has a significant and negative effect on overall ratings ($\beta = -0.001$, $p < 0.01$) while it has a significant and positive effect on employee turnover ($\beta = 0.001$, $p < 0.01$). This suggests that longer-tenured employees' perceived ESG practices have a weaker impact on their satisfaction and turnover than shorter-tenured employees, supporting H4a and H4b. Figures 7 and 8 visually illustrate interaction effects.

4.3. Additional analyses

We conducted additional analyses to investigate the impact of specific ESG dimensions on job satisfaction and employee turnover and presented the results in Tables 6 and 7. Column 4 in Table 6 shows that the estimated coefficient of perceived social practices is significant and positive ($\beta = 0.014$, $p < 0.01$), indicating that higher perceived social practices lead to higher ratings. Similarly, perceived governance practices are significantly and positively correlated with overall ratings ($\beta = 0.020$, $p < 0.01$). However, perceived environmental practices have no significant effect on satisfaction. This finding is consistent with Appiah's (2019) study that the company's practices regarding environmental protection do not affect hotel employee satisfaction.

Column 4 in Table 7 shows the estimated coefficients of perceived social ($\beta = -0.006,\ p < 0.01$) and governance ($\beta = -0.002,\ p < 0.01$) practices are significant and negative, indicating that a company's lack of practice in these two dimensions leads to employee turnover. However, the relationship between employees' perceived environmental practices and employee turnover is not significant, indicating that perceived environmental practices do not affect their turnover. Similar results were obtained by grouping the sample for analysis by position level and organizational tenure, as shown in columns 5–8 of Tables 6 and 7.

Table 4 Contribution of perceived ESG practices to job satisfaction.

	Dependent variable: Overall rating			
	Model 1	Model 2	Model 3	Model 4
Perception_ESG	0.017***	0.017***	0.019***	0.019***
	(0.000)	(0.000)	(0.001)	(0.001)
Position	0.049***	0.048***	0.049***	0.048***
	(0.008)	(0.008)	(0.008)	(0.008)
Tenure	0.068***	0.068***	0.068***	0.068***
	(0.003)	(0.003)	(0.003)	(0.003)
Position × Perception_ESG		0.000		0.001
		(0.001)		(0.001)
Tenure × Perception_ESG			–0.001***	–0.001***
			(0.000)	(0.000)
ProsRevLength	0.010***	0.010***	0.010***	0.010***
	(0.001)	(0.001)	(0.001)	(0.001)
ConsRevLength	–0.008***	–0.008***	–0.008***	–0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
AvgRating	0.799***	0.799***	0.799***	0.799***
	(0.013)	(0.013)	(0.013)	(0.013)
RevNum	–0.000	–0.000	–0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Status	–0.457***	–0.457***	–0.457***	–0.457***
	(0.010)	(0.010)	(0.010)	(0.010)
Year	YES	YES	YES	YES
Month	YES	YES	YES	YES
_cons	0.647***	0.647***	0.646***	0.646***
	(0.068)	(0.068)	(0.068)	(0.068)
N	119,502	119,502	119,502	119,502
R^2	0.261	0.261	0.261	0.261
AIC	380,826	380,828	380,814	380,814
Log Likelihood	–190,382	–190,382	–190,375	–190,374

Notes: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 Contribution of perceived ESG practices to employee turnover.

	Dependent variable: Status is former			
	Model 5	Model 6	Model 7	Model 8
Perception_ESG	–0.004***	–0.003***	–0.006***	–0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
Position	–0.159***	–0.155***	–0.159***	–0.155***
	(0.014)	(0.014)	(0.014)	(0.014)
Tenure	–0.076***	–0.076***	–0.077***	–0.077***
	(0.005)	(0.005)	(0.005)	(0.005)
Position × Perception_ESG		–0.004***		–0.004***
		(0.001)		(0.001)
Tenure × Perception_ESG			0.001	0.001**
			(0.000)	(0.000)
ProsRevLength	–0.007***	–0.007***	–0.007***	–0.007***
	(0.000)	(0.000)	(0.000)	(0.000)
ConsRevLength	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
AvgRating	–0.113***	–0.113***	–0.113***	–0.113***
	(0.016)	(0.016)	(0.016)	(0.016)
RevNum	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
WorkRating	–0.051***	–0.051***	–0.051***	–0.051***
	(0.006)	(0.006)	(0.006)	(0.006)
CultRating	–0.006	–0.006	–0.006	–0.006
	(0.007)	(0.007)	(0.007)	(0.007)
CarrRating	–0.095***	–0.095***	–0.095***	–0.095***
	(0.007)	(0.007)	(0.007)	(0.007)
CompRating	0.062***	0.062***	0.063***	0.062***
	(0.006)	(0.006)	(0.006)	(0.006)
ManagRating	–0.133***	–0.133***	–0.133***	–0.133***
	(0.007)	(0.007)	(0.007)	(0.007)
Year	YES	YES	YES	YES
Month	YES	YES	YES	YES
_cons	1.200***	1.199***	1.201***	1.200***
	(0.079)	(0.079)	(0.079)	(0.079)
N	119,502	119,502	119,502	119,502
pseudo R^2	0.053	0.053	0.053	0.053
AIC	156,123	156,111	156,123	156,109
Log Likelihood	–78,026	–78,020	–78,026	–78,018

Notes: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

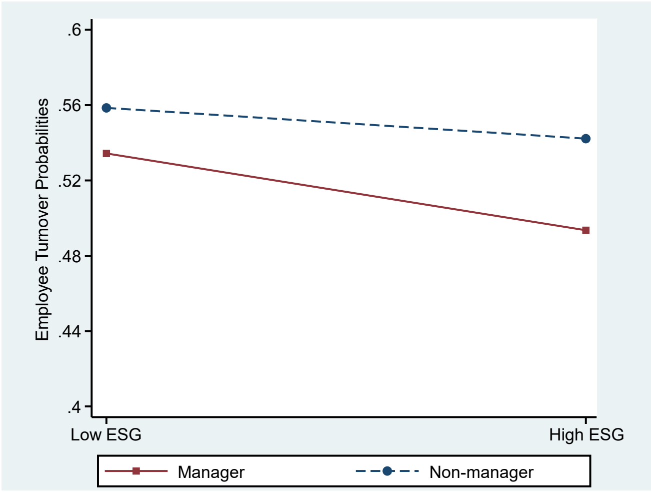

Fig. 6. Marginal effects of perceived ESG practices on employee tenure with different position level

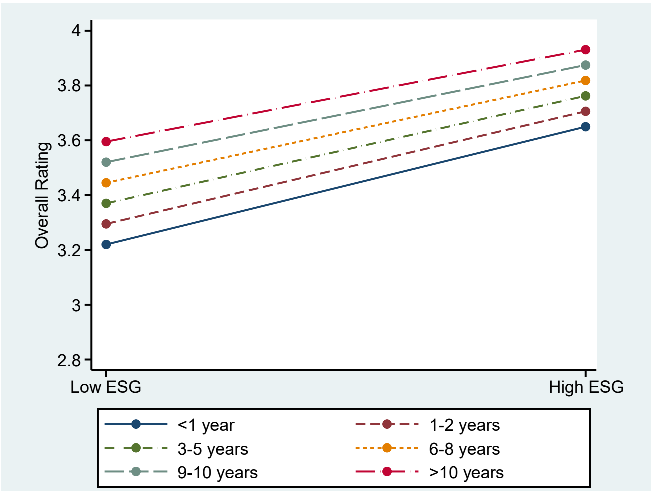

Fig. 7. Marginal effects of perceived ESG practices on job satisfaction with varing organizational tenure

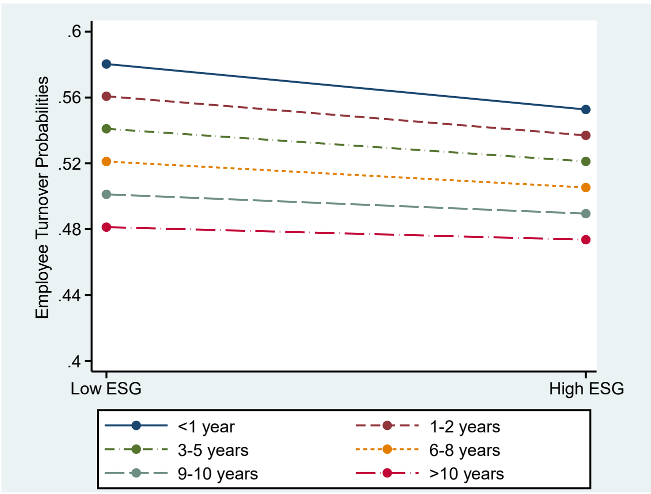

Fig. 8. Marginal effects of perceived ESG practices on employee tenure with varing organizational tenure

Table 6. Additional analyses of job satisfaction

	All sample				Position level		Organizational tenure	
					Managers	Non-managers	<= 3 years	> 3 years
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Perception_E	–0.003			–0.002	0.001	–0.003	-0.004*	0.002
	(0.002)			(0.002)	(0.004)	(0.002)	(0.003)	(0.003)
Perception_S		0.015***		0.014***	0.013***	0.014***	0.015***	0.013***
		(0.001)		(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Perception_G			0.020***	0.020***	0.018***	0.020***	0.021***	0.018***
			(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES	YES	YES
Month	YES	YES	YES	YES	YES	YES	YES	YES
_cons	0.519***	0.563***	0.610***	0.652***	0.772***	0.669***	0.762***	0.976***
	(0.070)	(0.069)	(0.069)	(0.068)	(0.095)	(0.076)	(0.082)	(0.071)
N	119,502	119,502	119,502	119,502	28,420	91,082	75,161	44,341
R^2	0.240	0.247	0.256	0.262	0.326	0.241	0.251	0.270
AIC	384,101	383,080	381,622	380,637	88,182	292,012	243,296	136,610
Log Likelihood	–192,019	–191,509	–190,780	–190,286	–44,059	–145,974	–121,616	–68,273

Notes: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7. Additional analyses of employee turnover

	All sample				Position Level		Organizational tenure	
					Managers	Non-managers	<= 3 years	> 3 years
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Perception_E	–0.000			–0.001	0.005	–0.001	–0.002	0.003
	(0.003)			(0.003)	(0.008)	(0.004)	(0.004)	(0.006)
Perception_S		–0.002***		–0.002***	–0.002	–0.002**	–0.001	–0.004***
		(0.001)		(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Perception_G			–0.006***	–0.006***	–0.007***	–0.005***	–0.007***	–0.005***
			(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES	YES	YES
Month	YES	YES	YES	YES	YES	YES	YES	YES
_cons	1.233***	1.226***	1.204***	1.198***	1.612***	1.014***	1.187***	0.712***
	(0.079)	(0.079)	(0.079)	(0.079)	(0.167)	(0.090)	(0.100)	(0.128)
N	119,502	119,502	119,502	119,502	28,420	91,082	75,161	44,341
pseudo R^2	0.053	0.053	0.053	0.053	0.080	0.044	0.057	0.041
AIC	156,190	1561,831	156,114	156,111	36,314	119,575	96,981	59,044
Log Likelihood	–78,060	–78,057	–78,022	–78,019	–18,121	–59,752	–48,455	–29,486

Notes: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5. Discussion and Conclusions

Stakeholders such as employees, customers, and investors, are becoming increasingly aware of social and environmental sustainability (Gerged et al., 2022; Guzzo et al., 2023; Kılıç et al., 2021). This awareness forces hospitality industry companies to embrace ESG practices that facilitate sustainable development (Bianco et al., 2023). In this context, it is essential to comprehend perceptions of different stakeholders, especially internal company employees, as they are the implementers of ESG practices. This study responds to the call for research on the role of employees in promoting sustainable development by exploring hotel employee perceptions of ESG practices (Rhou and Singal, 2020).

5.1. Theoretical contributions

This study makes several contributions to the existing literature. First, while previous research (Chen et al., 2022; Dogru et al., 2022; Lin et al., 2023) primarily focused on investigating the relationship between ESG implementation and company performance in hospitality from the institutional and organizational viewpoint, this paper explores ESG practices from an internal perspective. Our longitudinal approach shows that hotel employees' perceived ESG practices increase over time and are influenced by external events such as the COVID-19 epidemic. This highlights the ongoing improvements in ESG practices within the tourism and hospitality sectors and provides indirect evidence of the pandemic's impact on employees' perceptions of sustainable practices (Su & Chen, 2020). Additionally, this study addresses the often-overlooked heterogeneity in the impact of sustainable practices on employees (Xie and Jain, 2024), particularly the differences in attitudes across various job roles and stages of tenure. Our findings reveal that managers exhibit higher perceptions of ESG practices than non-managers and employee perceptions of ESG practices increase with longer tenure. These insights underscore the complexity and dynamism of ESG components and the differing focus of employees in diverse roles and tenure stages.

Second, this study empirically supports social identity theory by revealing that employees exhibit more positive attitudes and behaviors when they perceive that the organization implements activities, such as ESG practices, that enhance their identity (Ashforth and Mael, 1989; De Roeck and Delobbe, 2012). While research suggesting that company social activities influence employee attitudes and behaviors, there is limited empirical evidence on how company ESG practices affect employee satisfaction and turnover (Kim et al., 2024). Using employee-generated data, we examined this relationship exploring differences in the effects of perceived company social responsibility practices on attitudes and behaviors across individuals (Garrido-Ruso and Aibar-Guzmán, 2022; Xie and Jain, 2024). Our findings reveal that managers, whose organizational goals and values align more closely with ESG practices, have a higher social identity, leading to greater job satisfaction and lower turnover compared to non-managers. Additionally, employees with shorter tenures, who are often focused on building their social identity, show higher susceptibility to the impact of ESG practices on job satisfaction and turnover than those with longer tenures.

Regarding the hotel industry, ESG practices not only meet customer expectations but also enhance the hotel's reputation and trustworthiness, thereby increasing customer satisfaction and loyalty and improving the overall customer experience (Kim and Stepchenkova, 2020; Legendre et al., 2024; Mariani and Borghi, 2020). Additionally, our study shows that ESG practices increase internal organizational benefits by improving employee satisfaction and reducing turnover. These internal benefits, in turn, lead to improved service quality and customer satisfaction, demonstrating a holistic impact of ESG initiatives across both internal and external stakeholders. This holistic impact underscores the value of ESG initiatives in fostering a favorable environment for both employees and customers, thereby reinforcing the strategic importance of such practices for sustainable business success (Su and Chen, 2020).

Third, this study adds to the critical discussion on the varying importance of distinct ESG elements (Guzzo et al., 2020). We found that employees' perceived social and governance practices significantly affect satisfaction and turnover, while environmental factors did not, supporting previous findings (Appiah, 2019). This may be because employees see environmental practices as less directly related to their daily work or well-being, whereas social and governance initiatives have a more direct impact on their work environment and job satisfaction. While environmental and social issues have been thoroughly discussed in corporate social responsibility literature within tourism and hospitality sector (D'Acunto et al., 2020; Rhou and Singal, 2020), governance issues, despite their importance and influence, are often studied separately. Our study discovered that governance practices are mentioned more frequently in employee reviews and had a greater impact on employee satisfaction and turnover.

Finally, the study responds to the call for new methodologies to study organizational behaviors

(Bi et al., 2024). We introduce an innovative approach to measuring employee perceptions of ESG practices. Unlike previous studies that relied on surveys or scenario experiments (Kim et al., 2024; Oh et al., 2024), our approach captures employee' perceived ESG practices in a large sample, enhancing external validity. In addition, our study bridges the gap of previous studies on employee perceptions that are mainly based on cross-sectional analyses by survey (Guzzo et al., 2020). By conducting a longitudinal analysis of a substantial sample of employee reviews from over 4,000 hotel companies, we provide a detailed depiction of ESG practices in the hotel industry, offering a novel perspective for research in this field.

5.2. Managerial implications

This study provides practical implications for practitioners and investors in the tourism and hospitality industry. Firms can use big data analytics to monitor employee opinions regarding ESG practices through employee online review platforms like Glassdoor and Indeed (Stamolampros et al., 2019). These reviews can help measure the consistency between employee perceptions and reality. If disparities exist, companies can adjust and improve their ESG practices through forums, internal reports, training, and targeted communication (El Akremi et al., 2018). Dynamic monitoring can show changes in employee perceptions before and after ESG initiatives and compare how internal employees treat different stakeholders, helping to rebalance ESG policies and ensure fairness.

Furthermore, managers should acknowledge the differences in employees' perceptions of ESG pratices. Managers and employees with longer tenures tend to have higher levels of ESG perception and exhibit more positive emotions, attitudes, and behavioral responses. Managers should prioritize ESG-related reviews on platforms like Glassdoor, as they carry significant weight among job seekers. Companies need to actively promote their ESG practices during recruitment to attract diverse talent (Rubel et al., 2023). Managing the company's online presence is crucial, including being responsive to reviews and integrating ESG-related content on the website. This approach enhance the organization's social responsibility image and appeal to potential employees. Investors can refine their investment strategies using these insights, gaining a nuanced understanding of employee perspectives on ESG practices from within companies. By integrating employee-driven disclosures with traditional institutional rating methods, investors can more accurately gauge a company's ESG practices.

5.3. Limitations and extensions

This study presents several limitations. First, due to its exploratory nature, we analyzed data solely from the Glassdoor platform and restricted our focus to U.S. companies. Future research could expand to different review platforms, comparing employees' viewpoints across platforms. Moreover, previous studies (e.g., Jia, 2020; Mariani et al., 2020; Stamolampros et al., 2020) have documented the impact of diverse cultural backgrounds on online reviews. To enhance the universality of our research findings, future studies could incorporate employee review data from multiple countries, allowing for a deeper exploration of how different cultural backgrounds influence employees' perceptions of ESG. Second, our study's primary objective was to describe employees' perceived ESG practices and their effects on job satisfaction and employee turnover. Subsequent research could further explore the mechanisms of the relationship between employees' perceived ESG practices and their attitudes and behaviors toward work. Additionally, due to the availability of platform data, we only considered the moderating effects of position level and organizational tenure. In the future, other employee characteristics can be further considered as moderating variables. Finally, our study primarily employed lexicon-based methods to explore ESG perceptions. In the future, more advanced methods than the Word2Vec approach could be used to generate ESG dictionary, thus improving the lexicon results. Future research could expand this approach to examine other challenging-to-measure indicators, such as employee discrimination. Additionally, linking internal employee viewpoints with key corporate performance indicators could unearth hidden value within employee reviews.

Appiah, J.K., 2019. Community-based corporate social responsibility activities and employee job satisfaction in the U.S. hotel industry: An explanatory study. J. Hosp. Tour. Manag. 38, 140–148. https://doi.org/10.1016/j.jhtm.2019.01.002

Ashforth, B.E., Mael, F., 1989. Social Identity Theory and the Organization. Acad. Manage. Rev. 14, 20–39. https://doi.org/10.5465/amr.1989.4278999

Baier, P., Berninger, M., Kiesel, F., 2020. Environmental, social and governance reporting in annual reports: A textual analysis. Financ. Mark. Inst. Instrum. 29, 93–118. https://doi.org/10.1111/fmii.12132

Bi, J.-W., Zhu, X.-E., Han, T.-Y., 2024. Text Analysis in Tourism and Hospitality: A Comprehensive Review. J. Travel Res. 00472875241247318. https://doi.org/10.1177/00472875241247318

Bianco, S., Bernard, S., Singal, M., 2023. The impact of sustainability certifications on performance and competitive action in hotels. Int. J. Hosp. Manag. 108. https://doi.org/10.1016/j.ijhm.2022.103379

Carnahan, S., Kryscynski, D., Olson, D., 2017. When Does Corporate Social Responsibility Reduce Employee Turnover? Evidence from Attorneys Before and After 9/11. Acad. Manage. J. 60, 1932–1962. https://doi.org/10.5465/amj.2015.0032

Chatterjee, S., 2019. Explaining customer ratings and recommendations by combining qualitative and quantitative user generated contents. Decis. Support Syst. 119, 14–22. https://doi.org/10.1016/j.dss.2019.02.008

Chatzopoulou, E.-C., Manolopoulos, D., Agapitou, V., 2022. Corporate Social Responsibility and Employee Outcomes: Interrelations of External and Internal Orientations with Job Satisfaction and Organizational Commitment. J. Bus. Ethics 179, 795–817. https://doi.org/10.1007/s10551-021-04872-7

Chen, C.D., Su, C.J., Chen, M.H., 2022. Are ESG-committed hotels financially resilient to the COVID-19 pandemic? An autoregressive jump intensity trend model. Tour. Manag. 93, 104581. https://doi.org/10.1016/j.tourman.2022.104581

Coldwell, D.A., Billsberry, J., van Meurs, N., Marsh, P.J.G., 2008. The Effects of Person–Organization Ethical Fit on Employee Attraction and Retention: Towards a Testable Explanatory Model. J. Bus. Ethics 78, 611–622. https://doi.org/10.1007/s10551-007-9371-y

Cole, M.S., Bruch, H., 2006. Organizational identity strength, identification, and commitment and their relationships to turnover intention: does organizational hierarchy matter? J. Organ. Behav. 27, 585–605. https://doi.org/10.1002/job.378

D'Acunto, D., Tuan, A., Dalli, D., Viglia, G., Okumus, F., 2020. Do consumers care about CSR in their online reviews? An empirical analysis. Int. J. Hosp. Manag. 85. https://doi.org/10.1016/j.ijhm.2019.102342

De Roeck, K., Delobbe, N., 2012. Do Environmental CSR Initiatives Serve Organizations' Legitimacy in the Oil Industry? Exploring Employees' Reactions Through Organizational Identification Theory. J. Bus. Ethics 110, 397–412. https://doi.org/10.1007/s10551-012-1489-x

De Roeck, K., Marique, G., Stinglhamber, F., Swaen, V., 2014. Understanding employees' responses to corporate social responsibility: mediating roles of overall justice and organisational identification. Int. J. Hum. Resour. Manag. 25, 91–112. https://doi.org/10.1080/09585192.2013.781528

Dobrow, S.R., Ganzach, Y., Liu, Y., 2018. Time and Job Satisfaction: A Longitudinal Study of the Differential Roles of Age and Tenure. J. Manag. 44, 2558–2579. https://doi.org/10.1177/0149206315624962

Dogru, T., Akyildirim, E., Cepni, O., Ozdemir, O., Sharma, A., Yilmaz, M.H., 2022. The effect of environmental, social and governance risks. Ann. Tour. Res. 95. https://doi.org/10.1016/j.annals.2022.103432

El Akremi, A., Gond, J.-P., Swaen, V., De Roeck, K., Igalens, J., 2018. How Do Employees Perceive Corporate Responsibility? Development and Validation of a Multidimensional Corporate Stakeholder Responsibility Scale. J. Manag. 44, 619–657. https://doi.org/10.1177/0149206315569311

Farooq, O., Payaud, M., Merunka, D., Valette-Florence, P., 2014. The Impact of Corporate Social Responsibility on Organizational Commitment: Exploring Multiple Mediation Mechanisms. J. Bus. Ethics 125, 563–580. https://doi.org/10.1007/s10551-013-1928-3

Garrido-Ruso, M., Aibar-Guzmán, B., 2022. The moderating effect of contextual factors and employees' demographic features on the relationship between CSR and work-related attitudes: A meta-analysis. Corp. Soc. Responsib. Environ. Manag. 29, 1839–1854. https://doi.org/10.1002/csr.2331

Gerged, A.M., Tran, M., Beddewela, E.S., 2022. Engendering Pro-Sustainable Performance Through a Multi-Layered Gender Diversity Criterion: Evidence From the Hospitality and Tourism Sector. J. Travel Res. 62, 1047–1076. https://doi.org/10.1177/00472875221111754

Gibson, D.E., 2003. Developing the Professional Self-Concept: Role Model Construals in Early, Middle, and Late Career Stages. Organ. Sci. 14, 591–610. https://doi.org/10.1287/orsc.14.5.591.16767

Golob, U., Podnar, K., 2021. Corporate marketing and the role of internal CSR in employees' life satisfaction: Exploring the relationship between work and non-work domains. J. Bus. Res. 131, 664–672. https://doi.org/10.1016/j.jbusres.2021.01.048

Guetat, H., Jarboui, S., Boujelbene, Y., 2015. Evaluation of hotel industry performance and corporate governance: A stochastic frontier analysis. Tour. Manag. Perspect. 15, 128–136. https://doi.org/10.1016/j.tmp.2015.05.004

Guzzo, R.F., Abbott, J., Madera, J.M., 2020. A Micro-Level View of CSR: A Hospitality Management Systematic Literature Review. Cornell Hosp. Q. 61, 332–352. https://doi.org/10.1177/1938965519892907

Guzzo, R.F., Cobos, L., Vargas, D., 2023. Taking a stand: Understanding the use of socially controversial CSR in hospitality recruitment. Int. J. Hosp. Manag. 111. https://doi.org/10.1016/j.ijhm.2023.103488

Hameed, I., Roques, O., Ali Arain, G., 2013. Nonlinear Moderating Effect of Tenure on Organizational Identification (OID) and the Subsequent Role of OID in Fostering Readiness for Change. Group Organ. Manag. 38, 101–127.

https://doi.org/10.1177/1059601112472727

Holland, P., Cooper, B.K., Hecker, R., 2016. Use of social media at work: a new form of employee voice? Int. J. Hum. Resour. Manag. 27, 2621–2634. https://doi.org/10.1080/09585192.2016.1227867

Horton, K.E., McClelland, C.R., Griffin, M.A., 2014. Defined by our hierarchy? How hierarchical positions shape our identifications and well-being at work. Hum. Relat. 67, 1167–1188. https://doi.org/10.1177/0018726713516374

Huang, K., Li, M., Markov, S., 2020. What do employees know? Evidence from a social media platform. Account. Rev. 95, 199–226. https://doi.org/10.2308/accr-52519

Jang, S., Kim, B., Lee, S., 2022. Impact of corporate social (ir)responsibility on volume and valence of online employee reviews: Evidence from the tourism and hospitality industry. Tour. Manag. 91. https://doi.org/10.1016/j.tourman.2022.104501

Jia, S., 2020. Motivation and satisfaction of Chinese and U.S. tourists in restaurants: A cross-cultural text mining of online reviews. Tour. Manag. 78. https://doi.org/10.1016/j.tourman.2019.104071

Jiang, Y., Wen, J., 2020. Effects of COVID-19 on hotel marketing and management: a perspective article. Int. J. Contemp. Hosp. Manag. 32, 2563–2573. https://doi.org/10.1108/IJCHM-03-2020-0237

Kim, H., Rhou, Y., Topcuoglu, E., Kim, Y.G., 2020. Why hotel employees care about Corporate Social Responsibility (CSR): Using need satisfaction theory. Int. J. Hosp. Manag. 87, 102505. https://doi.org/10.1016/j.ijhm.2020.102505

Kim, J. (Sunny), Park, Y., Kim, B., Lee, C.-K., 2024. Impact of perceptions of ESG on organization-based self-esteem, commitment, and intention to stay. J. Travel Tour. Mark. 41, 106–127. https://doi.org/10.1080/10548408.2023.2293026

Kim, M., Stepchenkova, S., 2020. Do consumers care about CSR activities of their favorite restaurant brands? Evidence from engagement on social networks. J. Hosp. Mark. Manag. 30, 305–325. https://doi.org/10.1080/19368623.2020.1817223

Kılıç, M., Uyar, A., Kuzey, C., Karaman, A.S., 2021. Drivers and consequences of sustainability committee existence? Evidence from the hospitality and tourism industry. Int. J. Hosp. Manag. 92. https://doi.org/10.1016/j.ijhm.2020.102753

Kumar, D., 2023. Moderation impact of sustainability disclosures in linking external uncertainties and default risk of tourism businesses. Curr. Issues Tour. 1–19. https://doi.org/10.1080/13683500.2023.2235879

Legendre, T.S., Ding, A., Back, K.-J., 2024. A bibliometric analysis of the hospitality and tourism environmental, social, and governance (ESG) literature. J. Hosp. Tour. Manag. 58, 309–321. https://doi.org/10.1016/j.jhtm.2024.01.003

Li, K., Mai, F., Shen, R., Yan, X., Goldstein, I., 2021. Measuring Corporate Culture Using Machine Learning. Rev. Financ. Stud. 34, 3265–3315. https://doi.org/10.1093/rfs/hhaa079

Li, Z., Stamolampros, P., Zhao, X., 2024. Dynamics in the asymmetric effects of job attributes on employee satisfaction: A mixed-method approach using big data.

Tour. Manag. 105, 104967. https://doi.org/10.1016/j.tourman.2024.104967

Li, Z., Zhao, X., Ou, G., 2023. Understanding customer satisfaction in curated subscription services: Moderating roles of subscription time and information disclosure. Inf. Manage. 60. https://doi.org/10.1016/j.im.2023.103834

Lin, Y., Lu, Z., Fan, D., Zheng, Z., 2023. The bright and dark sides of ESG during the COVID-19 pandemic: evidence from China hospitality industry. Int. J. Contemp. Hosp. Manag. https://doi.org/10.1108/ijchm-11-2022-1384

Mansouri, S., Momtaz, P.P., 2022. Financing sustainable entrepreneurship: ESG measurement, valuation, and performance. J. Bus. Ventur. 37. https://doi.org/10.1016/j.jbusvent.2022.106258

Mariani, M., Borghi, M., 2020. Environmental discourse in hotel online reviews: a big data analysis. J. Sustain. Tour. 29, 829–848. https://doi.org/10.1080/09669582.2020.1858303

Mariani, M.M., Borghi, M., Okumus, F., 2020. Unravelling the effects of cultural differences in the online appraisal of hospitality and tourism services. Int. J. Hosp. Manag. 90. https://doi.org/10.1016/j.ijhm.2020.102606

Melissen, F., Van Ginneken, R., Wood, R.C., 2016. Sustainability challenges and opportunities arising from the owner-operator split in hotels. Int. J. Hosp. Manag. 54, 35–42. https://doi.org/10.1016/j.ijhm.2016.01.005

Mikolov, T., Sutskever, I., Chen, K., Corrado, G.S., Dean, J., 2013. Distributed representations of words and phrases and their compositionality. Adv. Neural Inf. Process. Syst. 26.

Ng, T.W.H., Feldman, D.C., 2011. Affective organizational commitment and citizenship behavior: Linear and non-linear moderating effects of organizational tenure. J. Vocat. Behav. 79, 528–537. https://doi.org/10.1016/j.jvb.2011.03.006

Oh, H.J., Lee, B., Ma, H.H., Jang, D., Park, S., 2024. A preliminary study for developing perceived ESG scale to measure public perception toward organizations' ESG performance. Public Relat. Rev. 50, 102398. https://doi.org/10.1016/j.pubrev.2023.102398

Pan, S.-Y., Gao, M., Kim, H., Shah, K.J., Pei, S.-L., Chiang, P.-C., 2018. Advances and challenges in sustainable tourism toward a green economy. Sci. Total Environ. 635, 452–469. https://doi.org/10.1016/j.scitotenv.2018.04.134

Park, S.-Y., E. Levy, S., 2014. Corporate social responsibility: perspectives of hotel frontline employees. Int. J. Contemp. Hosp. Manag. 26, 332–348. https://doi.org/10.1108/IJCHM-01-2013-0034

Rhou, Y., Singal, M., 2020. A review of the business case for CSR in the hospitality industry. Int. J. Hosp. Manag. 84, 102330. https://doi.org/10.1016/j.ijhm.2019.102330

Rubel, M.R.B., Kee, D.M.-H., Yusliza, M.Y., Rimi, N.N., 2023. Socially responsible HRM and hotel employees' environmental performance: the mediating roles of green knowledge sharing and environmental commitment. Int. J. Contemp. Hosp. Manag. 35, 2645–2664. https://doi.org/10.1108/ijchm-01-2022-0098

Salancik, G.R., Pfeffer, J., 1978. A Social Information Processing Approach to Job Attitudes and Task Design. Adm. Sci. Q. 23, 224–253.

https://doi.org/10.2307/2392563

Scott, D., Gössling, S., 2022. A review of research into tourism and climate change - Launching the annals of tourism research curated collection on tourism and climate change. Ann. Tour. Res. 95, 103409. https://doi.org/10.1016/j.annals.2022.103409

Sharkey, A., Pontikes, E., Hsu, G., 2022. The Impact of Mandated Pay Gap Transparency on Firms' Reputations as Employers. Adm. Sci. Q. 67, 1136–1179. https://doi.org/10.1177/00018392221124614

Short, J.C., Broberg, J.C., Cogliser, C.C., Brigham, K.H., 2010. Construct Validation Using Computer-Aided Text Analysis (CATA): An Illustration Using Entrepreneurial Orientation. Organ. Res. Methods 13, 320–347. https://doi.org/10.1177/1094428109335949

Singal, M., 2013. The Link between Firm Financial Performance and Investment in Sustainability Initiatives. Cornell Hosp. Q. 55, 19–30. https://doi.org/10.1177/1938965513505700

Stamolampros, P., Dousios, D., Korfiatis, N., Symitsi, E., 2020. The joint effect of consumer and service providers' culture on online service evaluations: A response surface analysis. Tour. Manag. 78. https://doi.org/10.1016/j.tourman.2019.104057

Stamolampros, P., Korfiatis, N., Chalvatzis, K., Buhalis, D., 2019. Job satisfaction and employee turnover determinants in high contact services: Insights from Employees'Online reviews. Tour. Manag. 75, 130–147. https://doi.org/10.1016/j.tourman.2019.04.030

Stamolampros, P., Symitsi, E., 2022. Employee treatment, financial leverage, and bankruptcy risk: Evidence from high contact services. Int. J. Hosp. Manag. 105. https://doi.org/10.1016/j.ijhm.2022.103268

Su, C.-H., Chen, C.-D., 2020. Does sustainability index matter to the hospitality industry? Tour. Manag. 81. https://doi.org/10.1016/j.tourman.2020.104158

Tajfel, H., Turner, J.C., 2004. The social identity theory of intergroup behavior, in: Political Psychology. Psychology Press, pp. 276–293.

Valentine, S., Godkin, L., Fleischman, G.M., Kidwell, R., 2011. Corporate Ethical Values, Group Creativity, Job Satisfaction and Turnover Intention: The Impact of Work Context on Work Response. J. Bus. Ethics 98, 353–372. https://doi.org/10.1007/s10551-010-0554-6

Wisse, B., van Eijbergen, R., Rietzschel, E.F., Scheibe, S., 2018. Catering to the Needs of an Aging Workforce: The Role of Employee Age in the Relationship Between Corporate Social Responsibility and Employee Satisfaction. J. Bus. Ethics 147, 875–888. https://doi.org/10.1007/s10551-015-2983-8

Xie, J., Jain, T., 2024. Unpacking micro-CSR through a computational literature review: An identity heterogeneity view of internal stakeholders. J. Bus. Res. 172, 114451. https://doi.org/10.1016/j.jbusres.2023.114451

Zhao, X., Wu, C., Chen, C.C., Zhou, Z., 2022. The Influence of Corporate Social Responsibility on Incumbent Employees: A Meta-Analytic Investigation of the Mediating and Moderating Mechanisms. J. Manag. 48, 114–146.

https://doi.org/10.1177/0149206320946108