Hotels' environmental policies and employee personal environmental beliefs: Interactions and outcomes

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Highlights
- The individual- and hotel-level variables interaction with hotel's employees' green behaviour were analysed.
- The term “green organisational climate” was coined and defined.
- An ‘organisational climate’ variable moderates between personal green norms and behaviour.
- Personal environmental norms have a stronger effect on employees' green behaviour than other variables.

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Abstract
Recent trends in green consumerism are leading the hotel industry to assume corporate social responsibility that may place the industry at the forefront of green innovation. Research reveals that adopting green practices is beneficial for the hotel and tourism industry. Nonetheless, a corporation's success in adopting green practices depends not only on corporate attitudes towards environmental issues but also on its employees' personal beliefs and everyday actions. This study fills the gap in existing research by adopting the concept of a “green organisational climate” and using personal belief variables to explore the contextual and individual variation in hotel employees' environmental behaviour. The results from two-level linear hierarchical models (HLM) show that individual- and group-level factors are significantly associated with the employees' environmental beliefs and behaviour. In other words, personal environmental norms explain within-hotel variance, but green organisational climates explain between-hotel variance and moderate the effect of personal environmental norms on employees' environmental behaviour. Greater emphasis on intense corporate engagement in incorporating environmental policies, human resources management and provision of environmental education for employees should be introduced and implemented.

1. Introduction

In the face of a deteriorating ecological environment and global warming, the hotel industry has gradually adopted a "green" imperative in recent years (Ayuso, 2007; Erdogan & Baris, 2007; Kasim, 2009; Rahman, Reynolds, & Svaren, 2012). By assuming corporate social responsibility and embracing green consumerism, the hotel industry has found itself at the centre stage of green innovation in the development of a win–win ‘green and competitive’ position (Porter & van der Linde, 1995). Empirical research demonstrates that adopting green practices benefit the hotel and tourism industry financially (Álvarez, Burgos, & Ceáçpedes, 2001; Blanco, Rey-Maqueira, & Lozano, 2009; Eiad, Kelly, Roche, & Eyadat, 2008; Enz & Siguaw, 1999) through competitive advantages, innovations (Goodman, 2000) and customer satisfaction and loyalty (Kassinis & Soteriou, 2003). In addition, the adoption of green practices reduces carbon dioxide emissions (Bohdanowicz, 2009).

Environmental management and performance in the hotel industry has attracted much research interest (Bohdanowicz, 2005; Chan, 2008; Chan & Hawkins, 2010; Chan, Wong, & Lo, 2008; López-Gamero, Claver-Cortés, & Molina-Azorín, 2011; Persic-Zivadinov, 2009). However, most previous studies explore the managers' perception of implementation barriers or strategies; the environmental practices of hotels and their employees' environmental behaviour remain unexplored. Nonetheless, a hotel's success in adopting green practices depends not only on the corporate stance towards environmental issues but also on its employees'
support of environmental protection (Ramus, 2001; Ramus & Killmar, 2007). Sweetman (2007) states, “No matter how good your policies and practices look on paper, you will change nothing without the active support of employees across the organization.” Hotels that engage in green practices require individual “eco-initiatives” (Ramus & Steger, 2000) or “eco-preneurship”, whereby employees’ participation, suggestions or actions contribute to the successful implementation of environmental practices (Pichel, 2008). Batšić and Gocić (2012) find that the eco-behaviour of hotel staff is the most important influence on tourists’ perceptions of the quality of a hotel’s green practices. Furthermore, the behaviour of hotel staff directly impact tourists’ recycling activities. Well-informed, environmentally conscious attitudes among hotel staff members indirectly influence tourists’ environmental behaviour.

Employees may adopt green initiatives in the workplace out of social concern or because of the legitimacy of environmental issues (Boiral & Paillé, 2012). However, subjective and objective (contextual) constraints may deter employees from acting in an environmentally appropriate manner in their workplace (Tanner, 1999). Carrico and Riemer (2011) find that there are more barriers preventing employees from indulging in energy-conserving behaviour in the workplace than at home because there is no energy bill or equipment to be shared. In addition, hotel employees may often be adverse and uninterested in environmental practices (Leonidas, 2009). Chan and Hawkins (2010) illustrate how the implementation of environmental initiatives affects hotel employees; in particular, the general staff may have additional work in simultaneously maintaining the service quality. Thus, the employee’s environmental behaviour in the workplace can be considered “extraordinary” behaviour (Pichel, 2008; Ramus & Steger, 2000) or as an example of organisational citizenship behaviour (Boiral & Paillé, 2012). That is, the environmental behaviour of employees is not described in the employee’s job requirements but is, to a certain extent, dependent on personal engagement (Boiral & Paillé, 2012; Pichel, 2008; Ramus & Steger, 2000).

Employees’ environmental behaviour is one of four types of environmentally significant behaviour (Stern, 2000), the other three types being environmental activism, non-activist behaviour in the public sphere (such as green purchasing), or private-sphere environmentalism (daily environmental behaviour at home). Basically, employees’ environmental behaviour can range from daily green behaviour to initiating green ideas/actions (Boiral & Paillé, 2012; Pichel, 2008). Corporate environmental policies usually make general, elusive requests for the employee’s involvement and stewardship, but do not usually specify detailed methods for pursuing or assessing this involvement (Boiral & Paillé, 2012). Therefore, for practical and measurement reasons, this study utilizes the daily environmental behaviour in the workplace, such as turning off lights when they are not in use or reducing the use of paper, as the research target of employees’ environmental behaviour. Such behaviour is often requested but not demanded from employees by companies that follow green policies and initiatives. Such daily environmental behaviour may be displayed by every employee and is in addition to the specific environmental actions requested in particular task requirements, such as not wasting food material in the kitchen or minimising water usage when cleaning the bathroom for housekeeping.

Stern (2000) argues that employees’ environmental behaviour is influenced by contextual, attitudinal, socio-demographic and habitual factors. Based on Stern, Dietz, Abel, Guagnano, and Kalof’s (1999) value-belief-norm (VBN) theory, environmental beliefs and environmental norms affect environmental behaviour. The literature shows that employees’ ability to successfully conduct corporate environmental initiatives in the workplace is shaped by their individual motivation and enhanced by their work environment (Ferrers & Ferrell, 1997; Pichel, 2008; Ramus, 2001; Ramus & Killmar, 2007; Ramus & Steger, 2000; Starik & Rands, 1995; Tudor, Barr, & Gilg, 2008).

The logic of this study is the belief that the environmental initiatives developed by an organisation influence its employees’ environmental behaviour beyond their individual behavioural motivation. One way to organise these environmental practices in a hotel is around the concept of organisational climate—more specifically, the organisational climate for greening a hotel. The organisational climate is a socially constructed consensus that can be perceived in a particular organisation, and the associated role behaviour is informed by the environment (Bellou & Andronikidis, 2009; Zohar, 1980). According to Smith-Crowe, Burke, and Landis (2003), the organisational climate can play a moderating role between the two individual variables.

Because a hotel’s implementation of environmental practices is voluntary in Taiwan, the extent to which a hotel adopts green policies is a measure of a hotel’s commitment to environmental issues. This research utilises the concept of organisational climate by assessing if hotels have a ‘green organisational climate’ and examines the extent to which hotel employees’ environmental behaviour is influenced by personal and organisational factors. Further, HLMs are used to assess whether green organisational climates moderate the relationship between individual environmental beliefs, environmental norms and employees’ environmental behaviour in hotels (as shown in Fig. 1). HLM, or multi-level analysis, is used to disentangle the causal factors between employees and hotels insofar as hotels and their employees are matched according to organisational grouping. The estimation of group effects is more accurate with the nested-model approach utilised in combination with HLM (Miller & Murdock, 2007).

2. Theoretical background

2.1. Organisational climate

Organisational climate is a shared personal valuation and involves sense-making of the work environment (James et al., 2008), within which individuals are expected to behave according to particular socially constructed influences that are exerted in the work environment (Bellou & Andronikidis, 2009). To a certain extent, organisational climate overlaps with organisational culture or the two terms are used interchangeably (e.g. Denison, 2003), although they have distinct denotations. Organisational climate is the shared perception of an individual’s interpretation of the implications and significance of certain aspects in the work environment, while organisational culture is the normative beliefs and systematic behavioural expectations designed by organisations (James et al., 2008).

Fig. 1. The research conceptual model.
Organisational climate researchers have identified different types of organisational climates (Patterson et al., 2005; Zohar & Luria, 2004) including safety climates (Zohar, 1980), service climates (Schneider, 1990; Wang, 2009), innovation climates (Anderson & West, 1998) and social climates (Tang & Tang, 2012). Relevant organisational policies, procedures and practices elucidate specific organisational climates that influence employees’ perceptions of their expected collective behaviour and roles in the organisation (Schneider, 1990; Wang, 2009; Zohar & Luria, 2004). Several researchers have demonstrated that employees’ behaviour is influenced by specific organisational climates. For example, ethics climates (Stewart, Volpone, Avery, & McKay, 2011) influence turnover and retention, service climates influence customer-oriented behaviour (Mechinda & Patterson, 2011), and justice climates influence job outcomes (Sora, Caballer, Peiró, Silla, & Gracia, 2010).

In this study, a green organisational climate is considered a subtype of the organisational climate, in which the corporation emphasises the implementation of environmental policies and measures and the employees may form a shared value regarding corporate greening.

2.2. Green organisational climate

Shrivastava (1995) argues that the role of corporations in achieving ecological sustainability should revolve around implementing environmentally responsible values, beliefs and behaviour, rather than focusing only on their practical aspects. Green organisational climates should incorporate commitments to green initiatives regarding corporate social responsibility, green organisational culture and corporate environmentalism. According to Menon and Menon (1997), green initiatives in organisations are one of the three pillars of the “triple-bottom line” in the expanded spectrum of social responsibility. Additionally, green initiatives respond to demands for more ethical corporations (Ferrill & Ferrell, 1997). Harris and Crane (2002) argue that “corporate greening” leads to the incorporation of environmental considerations across all organisational operations and enables movement towards a green organisational culture. Further, Banerjee (2002) defines corporate environmentalism as the “recognition and integration of environmental concerns into a firms’ decision-making process.” Banerjee identifies two components of corporate environmentalism: corporate environmental orientation and environmental strategy focus. Corporate environmental orientation strengthens internal values, ethical behaviour standards and commitment to environmental protection. Environmental strategy focus addresses how to respond to the demands of external stakeholders with varying environmental perspectives.

Banerjee (2002) emphasises that managers play a key role in interpreting environmental issues and developing pro-environmental programs that shape corporate behaviour. In addition, the greening of corporations depends largely on a change in the organisational culture that stems from the promotion of green values by management that are shared by organisation members (Harris & Crane, 2002).

Employees hold a shared perception of the organisational policies, practices and procedures that are developed to pursue environmental sustainability and that comprise the green initiatives of the organisation, which is referred to as the “green climate”. Ramus and Steger (2000) provide two ways that employees perceive the organisation–environment relationship or the green climate: (1) employees are knowledgeable regarding the existence of the environmental policy and (2) employees are aware of the company’s commitment to the policy. According to the criteria of several well-known green hotel certification programs, the dimensions that determine the green climate include environmental policy and management orientation (e.g. policy statements, training, information released to employees and supervisor’s behaviour) as well as specific environmental tasks (e.g. recycling, water resource management and chemical control). When the hotel publishes its environmental policies, the employees become aware that the hotel is taking particular actions regarding environmental issues that may affect them. In addition, Pichel (2008) notes that transparency through communication and eco-specific training are the two most important organisational facets for orienting employees’ eco-initiatives. The best way to transfer these environmental policies is by providing education and training to employees, thereby enabling employees to understand what the organisation expects from them and how they can comply with these expectations.

2.3. Employees’ environmental behaviour

Employees’ environmental behaviour is different from that of the green activists (e.g. advocacy, protest), and their environmental behaviour on the job may differ from their daily behaviour at home (Carrico & Riemer; 2011; Stern, 2000). As Carrico and Riemer (2011) note, there are more barriers that prevent employees from displaying energy-conserving behaviour. At work, there is no incentive of a decrease in electricity bill, for example, to remind them to conserve electricity, such as there is in their homes. Multiple employees share equipment in the workplace, which attenuates employees self-efficacy in conserving energy.

Therefore, Ramus and Killmer (2007) argue that there are three dimensions to employees’ environmental behaviour. First, environmental behaviour is pro-social behaviour, which simultaneously supports the welfare of the individual and that of the organisation they belong to. Second, environmental behaviour is discretionary behaviour, in which employees take charge to effect corporate change and produce value-creating components. Third, environmental behaviour is an extra-role behaviour that is “not formally required for employees’ jobs” with rarely any clear goals or reward systems to encourage environmentally beneficial behaviour. Therefore, employees face conflicting time demands between in-role behaviour and extra-role behaviour. Thus, an employee’s motivation to indulge in environmental behaviour is driven not only by personal predisposition and environmental values (Pichel, 2008; Ramus & Killmer, 2007) but also relies to some extent on the organisational context, such as the corporate culture, empowerment and support from management (Boiral & Paillé, 2012).

Hoffman (1993) argues that when employees’ environmental values match the organisation’s values, employees respond positively and have greater job satisfaction. Similarly, Pichel (2008) suggests that employees’ environmental behaviour is a personal commitment that can only be activated through encouragement rather than through demands. Moreover, contextual, individual and cultural factors may be critical in shaping employees’ environmental behaviour.

Ramus (2002) argues that employees who take environmental action may be influenced by organisational and individual factors. In particular, employees may hold intrinsic values that support nature and environmental issues and therefore have more motivation to take environmental action. With regard to organisational influences, organisations’ environmental policies and support from supervisors may induce employees to participate in environmental initiatives. In addition, employees’ expected role in the success of corporate environmental policies may not be publicly stated, but employees are aware if the company demands that they assist in accomplishing corporate environmental objectives (Hutchinson, 1996; Ramus, 2002).
2.4. The effect of environmental beliefs and norms on environmental behaviour

The primary theories used to examine the determinants of people’s environmental behaviour are the theory of reasoned action (TRA) and the theory of planned behaviour (TPB) by Fishbein and Ajzen (1975) and Ajzen (1991), respectively, which establish an expectancy-value motivational model in which attitude and subjective norms are the basic factors that predict the intention of behaviour. The Hines model of responsible environmental behaviour (Hines, Hungerford, & Tomera, 1987) is consistent with the TPB in that knowledge (environmental concern), skill and the internal locus of control determine the intention of environmental behaviour. In Hine’s model, it is assumed that situational factors, such as economic constraints, social pressure and other opportunities, would also influence environmental behaviour. According to Stern (2000), individual environmental behaviour is affected by four types of variables: contextual, attitudinal, socio-demographic and habitual. Correspondingly, from a constraint perspective, Tanner (1999) finds that subjective constraints, such as the personal awareness of environmental problems or a sense of responsibility, and objective constraints, such as socio-demographic and contextual characteristics, have a significant influence on an individual’s environmental behaviour. In terms of personal influences, an employee may be motivated to pursue green actions in the workplace in accordance with their personal values and norms regarding nature and the environment (Ramus, 2001).

The TRA or TPB is primarily employed to examine the “intention” of environmental behaviour, but there exists a gap between intention and actual behaviour (e.g., Hsu & Huang, 2012; Sniehotta, 2009). Stern et al. (1999) and Stern, (2000) proposed the VBN theory to describe and predict practiced environmental behaviour. The VBN model is rooted in the norm-activation theory given by Schwartz (1977), which emphasises personal norms—the feeling of having a personal obligation to fulfil one’s self-expectations—in influencing personal altruistic behaviour. To indulge in environmental behaviour, including personal-sphere behaviour, is considered support for a social movement, and personal norms are important because the environmental behaviour follows normative claims on environmental values and beliefs other than self-interest. “Individuals who accept a movement’s basic values, believe that valued objects are threatened, and believe that their actions can help restore those values experience an obligation (personal norm) for pro-movement action that treats a predisposition to provide support” (Stern et al., 1999, p. 81).

In the full VBN model (Stern, 2000), the norm-activation theory, personal values theory and the New Ecological Paradigm (NEP) (Dunlap & Van Liere, 1978, 1984) are synthesised (Stern et al., 1999) to explain the process of environmental behaviour activation. The model specifies the effect of environmental beliefs and personal norms on environmental behaviour. To be precise, personal environmental beliefs regarding an “ecological worldview” (e.g. NEP) are influenced by personal values, and the individually held NEP view is oriented towards how one considers “adverse consequences” or the “perceived ability to reduce threat” and then triggers personal norms. Finally, personal norms determine how people act in terms of various types of environmental behaviour. Several researchers who apply the VBN theory find it effective for predicting environmental behaviour (Oreg & Katz-Gerro, 2006; Steg, Drejerink, & Abrahamse, 2005). Research also shows that environmental concerns/beliefs influence environmental behaviour (Casey & Scott, 2006; Moncaco, Bissonnette & Contento, 2001; Oll, Grendstad, & Wolfebaek, 2001).

Further, Stern et al. (1999) note that personal norms rather than social norms are central to this model as environmental behaviour leads to social change. Such behaviour represents actions that are not considered normal if the social norms regarding environmentalism have not developed yet. The literature supports the relationships between personal norms and personal environmental acts (Fransson & Gärling, 1999; Oskamp et al., 1991). Nevertheless, Scherbaum, Popovich, and Finlinson (2008) find that personal environmental norms can predict employees’ energy-conservation behaviour and behavioural intentions in the workplace. In this study, as distinguished from personal norms, social norms or social pressure is assumed to exist in the hotel’s organisational green climate, where corporate environmental policies and practices may pressurize employees to demonstrate responsible environmental behaviour.

Based on previous studies, we propose the following hypotheses:

Hypothesis 1. Individual environmental beliefs positively influence employees’ environmental behaviour in the workplace.

Hypothesis 2. Personal environmental norms positively influence employees’ environmental behaviour in the workplace.

2.5. Cross-level organisational green climate effects

Researchers show that employees’ green behaviour is affected by both organisational and individual factors (Ramus, 2001; Starik & Rands, 1995; Tudor et al., 2008). In addition, Ramus and Steger (2000) note the effect of environmental policy and supervisory support on employees’ ‘eco-initiatives’. In particular, published environmental policy, creating environmental competence through education, communication, rewards and recognition and innovation affect employees’ green behaviour. Ramus (2002) also finds that when employees are aware of a company’s commitment to a written environmental policy statement, they are more willing to take environmental action. In addition, written environmental policies are more influential than other policies, such as green purchasing and environmental management systems. In the hospital context, Tudor et al. (2008) demonstrate that employees’ environmental behaviour within a large organisation may not be influenced by isolated factors, but by a holistic, interrelated framework that includes individual attitudes, organisational culture, organisational focus, managerial support and training.

According to Smith-Crowe et al. (2003), organisational climate can activate a third class of variables that interact with the relationship between two individual difference variables. The role of organisational climate as a moderator variable between individual difference variables has been examined in several studies (Ehrhart, 2004; Liao & Chuang, 2004; Smith-Crowe et al., 2003; Walumbwa, Hartnell, & Oke, 2010). Engaging in environmental behaviour would be emphasised to a certain extent in a hotel that takes environmental initiatives, but the organisational climates would vary among different hotels. Behaviour emphasised in the work environment is similar to the notion of an organisational climate; within a positive organisational climate, personal performance is more strongly valued, while in a weaker organisational climate, there is weaker emphasis on specific expectations and this reduces personal performance (Hofmann, Morgesen, & Gerra, 2003). With regard to the interaction of individual variables, Liao and Chuang (2004), using the theory of situational strength proposed by Mischel (1977), explain the moderating effect of organisational climate on the relationship between personality and employee service performance. Liao and Chuang (2004) note that employees’ behaviour is more consistent and uniform in a high service climate because strong expectations limit the behavioural range of an employee. However, weak expectations would leave more discretion to the employee, and individual differences in personality are likely to have greater influence on the employee’s behaviour in
such a situation. Thus, it is reasonable to assume that organisational climate determines the employee’s environmental behaviour by demonstrating the company’s values, expectations and emphasised actions with regard to environmental issues; moreover, personal environmental beliefs and norms would be influenced by the strength of the green organisational climate.

Based on the aforementioned literature, we propose the following hypotheses:

**Hypothesis 3.** Green organisational climates moderate the relationship between individual environmental beliefs and employees’ environmental behaviour.

**Hypothesis 4.** Green organisational climates moderate the relationship between personal environmental norms and employees’ environmental behaviour.

3. Methodology

3.1. Respondents and procedure

The research was conducted among 65 hotels in Taiwan that were either certified as environmental hotels, awarded for their environmental performance or are currently participating in an environmentally friendly hotel program supported by the Environmental Protection Authority (EPA). Further, 32 hotel employees were selected to participate in pilot surveys that tested the wording and meaning of questionnaire items. Thereafter, questionnaires were administered to a fixed number of employees in the surveyed hotels. The number of solicited respondents was proportional to the size of the hotel. For example, 15 respondents were solicited from large tourist hotels (more than 150 rooms), 10 respondents were solicited from medium-sized tourist hotels (more than 50 rooms) and 5 respondents were solicited from small hotels (less than 50 rooms). A total of 500 questionnaires were distributed between May and July 2011, thereby resulting in 254 valid surveys from 33 hotels. The respondents voluntarily participated in the survey following a public notice from human resources units in the respective hotels. The response rates were highest for women (74.8%). The mean age of respondents is 33.8 years and 68.5% of the respondents were in non-management jobs. In addition, 66.5% of the respondents had taken courses related to environmental issues. In terms of the job positions of the respondents, 18.2% were from the front office; 22.9% from administration and accounting; 15.7% from restaurant and beverage; 12.5% from IT, engineering and security units; 10.7% from marketing and sales units; 9.8% from housekeeping; and 9.3% from human resource units.

3.2. Measures

3.2.1. Questionnaire design

Data were collected for five different measures: individual environmental beliefs, personal environmental norms, green organisational climate, employees’ environmental behaviour and personal backgrounds. The following account is a discussion of how the five constructs were measured (see the Appendix for the questionnaire).

3.2.1.1. Individual environmental beliefs. Eleven items from the revised NEP (Dunlap, Van Liere, Mertig, & Jones, 2000) were used to examine individual environmental beliefs. The items include five pro-NEP and six anti-NEP variables. For example, respondents were asked if they agreed that “The earth is like a spaceship with limited room and resources”, or on the contrary, “The so-called ‘ecological crisis’ facing humankind has been greatly exaggerated”. Each item was rated on a five-point Likert scale ranging from “strongly disagree (1)” to “strongly agree (5)”

3.2.1.2. Personal environmental norms. Five items were used to indicate pro-environmental norms (Steg et al., 2005; Stern et al., 1999). For example, “I feel a personal obligation to do whatever I can to prevent environmental degradation,” or “I feel obliged to bear the environment and nature in mind in my daily behaviour.” A 5-point Likert scale was used to rate each item from “strongly disagree (1)” to “strongly agree (5)”.

3.2.1.3. Green organisational climate. The green organisational climate was measured using Taiwan’s environmental hotel certification criteria, which assesses the following seven dimensions: corporate environmental management and policies, energy savings, water savings, green purchasing, reduction in the use of disposable products, waste reduction and the control of harmful materials, as well as some items from the corporate environmental policies given by Ramus (2000); a total of fourteen items were included. For example, policy statements such as “Our hotel has publicly publicized environmental policies” or “Our hotel emphasises use of fewer chemicals” were used to assess green organisational climate. Each item was measured on a five-point scale from “strongly disagree (1)” to “strongly agree (5)”.

3.2.1.4. Employees’ environmental behaviour. Ten types of green behaviour in the workplace, such as turning off lights, taking the stairs instead of the elevator and saving water, were used to investigate if employees take environmental actions in their workplace. These items were compared to the hotel’s policy lists and hotel manager’s daily requests from hotel employees. Each item was measured on a scale that indicated frequency of behaviour including “always,” “often,” “sometimes,” “rare,” and “never.”

3.2.1.5. Personal backgrounds. Respondents’ age, sex, job position, education, etc. were investigated in the last part of the questionnaire.

3.2.2. Scale descriptive statistics, reliability and correlations

Descriptive statistics are reported in Table 1. All the scale variables were significantly correlated with each other. In addition, Cronbach’s alpha coefficients were computed for each scale, all of which were at appropriate levels (>0.7), except for individual environmental belief ($\alpha = .697$). Thus, item 5 was excluded from environmental beliefs to maintain reliability ($\alpha = .726$).

3.2.3. Group consensus and intra-class correlation

A two-level model was specified using a dependent variable to represent the “employees’ environmental behaviour” and an independent variable at the organisational-level to represent the green organisational climate. In this analysis, the direct consensus model was used to assess the green organisational climate (Chan, 1988); that is, to calculate the within-group agreement in the employee’s climate perceptions for each hotel by aggregating the

| Table 1 | Means, standard deviations and correlations of individual level variables. |
|---------|------------------|---|---|---|---|
|         | Variables            | M (SD) | 1 | 2 | 3 | 4 |
| 1. Individual environmental beliefs | 4.04 (0.493) | 0.697 |
| 2. Personal environmental norms | 4.68 (0.417) | 0.466*** | 0.880 |
| 3. Green organizational climates | 4.13 (0.547) | 0.123*** | 0.255*** | 0.938 |
| 4. Employees’ environmental behaviours | 4.40 (0.483) | 0.120*** | 0.264*** | 0.362*** | 0.820 |

Note: $n = 254$, SD = standard deviation. Individual-level scale reliability in bold along diagonal. 
***$p < .001$; **$p < .05$; *$p < .10$. 

respective lower-level scores to represent the scores at the higher level (González-Romá, Peiró, & Tordera, 2002). To confirm the assumption of intercorrelation between individual responses in the same hotel, a measurement of within-group consensus (James, Demaree, & Wolf, 1993) was calculated for each group \((r_{wg})\). The \(r_{wg}\) was 0.975, which is well above the recommended 0.7 necessary to support the assumption that employees within hotels generally agreed on their perception of green organisational climates.

The intra-class correlation (ICC) was also calculated to ensure that the data were suitable for multi-level analysis (Chan, 1988). The ICC (1) coefficient of variables was calculated as the ratio of between-group variance to total variance to capture both within- and between-group variation. The results showed that the ICC(1) value was 0.259 and significant \((\chi^2 = 109.7, p < .001)\), thereby indicating that the between-group variance in the organisational climate variable was sizeable. ICC(2) was calculated to justify data aggregation at the hotel level. The ICC(2) value was 0.700, which provides evidence for the assumption that group means are reliable (Raudenbush & Bryk, 2002).

4. Results

In this study, we hypothesised that individual-level variables would be significantly related to employees’ environmental behaviour and that green organisational climates would moderate the effect individual-level variables on behaviour. The computer program HLM 6, developed by Raudenbush, Bryk & Congdon in 2007, was used to estimate within-group and between-group relations and variance. The cross-level moderating procedure was tested using the method suggested by Baron and Kenny (1986). First, the level-one null model was computed in which individual variables (individual personal beliefs and personal environmental norms) predict employees’ environmental behaviour. The second step was to examine the random coefficient regression model where the level-two variable, green organisational climate, was added. Finally, a slope-as-outcomes model was estimated to test moderating effects with interaction terms between group-level variables (green organisational climate) and level-one variables to predict employees’ environmental behaviour. To prevent potential multicollinearity (Hofmann & Gavin, 1998), group-mean centring was used for level-one independent variables and grand-mean centring was applied to level-two variables. Table 2 presents the results from the hierarchical linear models and cross-level analyses.

4.1. Null model

To investigate the significance of the between-group variance using HLM, a null model was computed wherein no predictors were specified for the dependent variable. The significant chi-square value \((109.7, \chi^2 = 0.063, p = .000)\) indicated that employees’ environmental behaviour could be potentially explained by the percentage of the total between-group variance (Raudenbush & Bryk, 2002). The ICC(1) value was 0.259, thereby implying that 25.9% of the total variance in employees’ environmental behaviour was explained by hotels and that 74.1% of the variance was within groups (i.e. at the individual level). The results from the null model demonstrated that there were significant differences among hotels in terms of employees’ environmental behaviour, thereby justifying the inclusion of predictors at the group-level analysis.

4.2. Random coefficient model (individual-level predictors only)

To examine the effect of individual-level predictors, personal environmental beliefs and personal environmental norms were added to the level-one model without specifying any predictors for the level-two model. The \(R^2\) for the relationship between personal environmental beliefs and norms and employees’ environmental behaviour accounted for 10.4% of the within-group variance. Specifically, personal norms \((\gamma = 0.288, p < .05)\) had a significant, positive relationship with employees’ environmental behaviour, but personal environmental beliefs were insignificant. Therefore, hypothesis 2 is supported, but hypothesis 1 is not. The remaining between-group variance \((\chi^2 = 113.2, p < .001)\) was still significant after taking individual-level predictors into account, which indicates that other, higher-level variables (e.g. green organisational climate) might help explain the remaining variance.

4.3. Slope-as-outcomes model (cross-level moderating model)

To determine whether the variances in the slopes at level-one were related to group-level predictors (green organisational climate), we examined an intercept-as-outcomes model (Hofmann, 1997). The results from the intercept-as-outcomes model showed that employees’ environmental behaviour was not significantly influenced by green organisational climates \((\gamma = 0.004, p = .696)\). Then, a slopes-as-outcomes model was estimated, as presented in Table 2 and Fig. 2, and green organisational climate variables were multiplied with personal environmental beliefs and personal environmental norms. The results showed that green organisational climate had a significant moderating effect on the

<table>
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<th>Slopes-as-outcome model (moderation)</th>
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<td>Level 1</td>
<td></td>
<td></td>
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<tr>
<td>Intercept</td>
<td>4.39**</td>
<td>(0.06**)</td>
<td>4.39**</td>
</tr>
<tr>
<td>Individual env’s beliefs</td>
<td>-0.02(0.12)**</td>
<td>-0.04</td>
<td>0.02**</td>
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<tr>
<td>Personal env’s norms</td>
<td>0.25(0.03)</td>
<td>0.15</td>
<td>0.16</td>
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<tr>
<td>Cross level</td>
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<tr>
<td>Green organisational climates</td>
<td>-0.12</td>
<td>Green organisational climates</td>
<td>-0.26***</td>
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<tr>
<td>Individual env’s beliefs</td>
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<tr>
<td>Personal env’s norms</td>
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<tr>
<td>Level-1 residual variance</td>
<td>0.17</td>
<td>0.15</td>
<td>0.16</td>
</tr>
<tr>
<td>(R^2) within groupb</td>
<td>0.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(R^2) between groupc</td>
<td></td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td>Model deviance</td>
<td>326.46</td>
<td>298.54</td>
<td>305.79</td>
</tr>
</tbody>
</table>

***p < .01; **p < .05; *p < .10.

Employee \(n = 254\), Hotels \(n = 33\). Entries are estimates of the fixed effects (\(\gamma\)) with robust standard errors. Estimations of the random variance components (\(\tau\)) are in parentheses. The \(\tau\) for the intercepts also represented the between-hotels variance in employees’ environmental behaviours.

b The \(R^2\) was computed based on Snijers & Bosker (1999). Proportion of within-hotel variance explained by level 1 predictors.

c The \(R^2\) was computed based on Snijers & Bosker (1999). Proportion of between-hotel variance explained by level 2 predictor (after level 1 variables are controlled for).

Fig. 2. The estimated multilevel model.
relationship between personal environmental norms and employees' environmental behaviour ($\gamma = -0.266, p = .095 < 0.10$) but the moderating effect on the relationship between individual environmental beliefs and employees' environmental behaviour was not significant ($\gamma = -0.120, p = .440$). Approximately 1% of the variance in the level-one slopes was attributed to the addition of the interaction terms. Therefore, these results do not support hypothesis 3, but support hypothesis 4.

Compared to hotels with stronger green organisational climates, Fig. 3 shows that in hotels with weak green organisational climates, there is a stronger relationship between personal environmental norms and employees' environmental behaviour. When green organisational climate increases by 1 unit, the effect of personal environmental norms on employees' environmental behaviour increases by 0.26. In other words, if the green organisational climate decreases by 1 unit, the influence of personal environmental norms on employees' environmental behaviour increases by 0.26. In brief, the weaker a hotel's green organisational climate, the stronger the effects of personal environmental norms are on employees' green behaviour. In addition, Fig. 3 shows that there is a stronger relationship between personal environmental norms and employees' environmental behaviour in hotels with weak green organisational climates as compared to those with strong green organisational climates.

5. Discussion and conclusions

In this study, we investigated employees' environmental behaviour in hotels in Taiwan by combining the concept of organisational climates with the behavioural norm-activation theory. Here, the term "green organisational climate" was assumed to represent the influence of a hotel's environmental policies and implemented practices; this assumption contributes to the research field as a new concept. The existence of the green climate of each hotel was supported by the within-group consensus ($\bar{r}_{wg} = 0.975$), which demonstrates that the employees of the surveyed hotels agreed on their perception of the implemented environmental policies and practices. Previous literature (Ramus, 2001; Starik & Rands, 1995; Tudor et al., 2008) has mentioned the effect of environmental management and policies on employees' pro-environmental behaviour, but the mechanism has not been specified. This study provides a greater understanding of the effect that organisational climate and personal disposition have on the employees' environmental behaviour in the workplace.

The results of this study indicate that the organisational climates in Taiwan's environmentally oriented hotels do have a slight moderating effect through personal environmental norms on personal environmental behaviour; thus, hypotheses 2 and 4 were supported in this study. The results from a multi-level analysis also showed that individual- and hotel-level variables were significantly associated with the employees' green behaviour in the workplace. That is, the personal environmental norms explained the within-hotel variance (individual), although the green organisational climate explained the between-hotel variance with a moderating effect on the relationship between the personal environmental norms and the employees' environmental behaviour.

The primary focus of this study was to explore the moderating effect of organisational climate; thus, in this study, "high" and "low" levels of organisational climate refer to the extent of "the average score" of the green organisational climate perceived by employees. However, the strength of the organisational climate refers to the dispersion of within-group consensus on shared values; it is calculated by analysing the standard deviation of employee perceptions of organisational climate (Schneider, Salvaggio, & Subratts, 2002). Moreover, Dickson, Resick, and Hanges (2006) argue that an unambiguous climate yields more aggregated ratings with a small standard deviation, thereby representing a strong green organisational climate. In this study, a higher level of organisational climate (with the upper 25% of the mean) corresponded to a stronger climate with a smaller standard deviation ($SD = 0.39$, average $SD$ on a 5-point scale) while a lower level of organisational climate corresponded to a weaker climate with a larger standard deviation ($SD = 0.47$).

The findings also imply that employees' environmental behaviour in Taiwan's hotels were explained more by individual norms than by the organisational climate, although organisational green action may slightly moderate the strength of the relationship between personal environmental norms and employees' green behaviour. In addition, we found that under weaker organisational climates, personal norms have a greater effect on the employees' environmental behaviour than under stronger climates. These results imply that organisational pressures applied through environmental policies, supervisors' attitudes, training, information and practical tasks may have a stronger effect on employees' environmental behaviour if the employees have weak personal environmental norms. If the employees have stronger pro-environmental attitudes, green organisational climates exert a weaker influence on their behaviour.

Further, we also found that a weak green organisational climate did not necessarily reduce employees' green behaviour, particularly when personal norms were higher. This result is in contrast with that of Hofmann et al. (2003), who used perceived safety climate, and Walumbwa et al. (2010), who adopted perceived service climate. Both these prior studies found that stronger organisational climates led to a higher level of personal environmental behaviour. With regard to organisational justice, the multi-level analysis of Loi, Yang, and Diependorff (2009) shows that at low levels of perceived distributive justice, the relationship between interpersonal justice and job satisfaction was stronger than it was at high levels of perceived distributive justice, thereby demonstrating that personal cognition might have a stronger influence on personal behaviour when the organisational climate is weaker. The results of this study correspond to the theory of situational strength (Liao & Chuang, 2004; Meyer, Dalal, & Bonaccio, 2009; Mischel, 1977), in which personal cognition/attitude has a stronger correlation with personal performance when the organisational climate is weaker. A weaker organisational climate leaves more discretionary room for employees to take action; thus, the employee's personal disposition tends to control the employee's behaviour. Because this present research was an exploratory attempt to examine the relationship between organisational environmental policies, personal beliefs/
norms and employees’ green behaviour, a continued inquiry into the nature of green organisational climate and its impact on employees’ environmental behaviour is necessary.

In this study, the influence of environmental beliefs and personal norms of the VBN theory were examined in terms of the employees’ green behaviour. The results showed that personal environmental norms are a more influential predictor of employees’ green behaviour than individual environmental beliefs. Moreover, the NEP scale used in this study to measure environmental beliefs was a poor predictor of environmental behaviour in certain situations (Dunlap, 2008). As examined by Ford, Kathryn, Williamsa, and Webb (2009), individual environmental beliefs are related to values that lead to the acceptance of environmental behaviour. Similarly, Nooney, Woodrum, Hoban, and Clifford (2003) used an NEP-based scale as a worldview to examine the relationship between environmental beliefs and actual behaviour, but the relationship is not significant. According to Pichel (2008), the milder influence of individual valence in terms of nature and the environment on people’s environmental actions in the workplace may be interpreted in the following manner: When an organisation pursues green action, it depends more on those who understand why and how to act environmentally instead of depending on the green believers. Thus, it is argued that a gap exists between environmental belief and actual behaviour (Kollmund & Agymen, 2002).

This study makes an additional theoretical contribution by applying the VBN model and conducting a multilevel analysis, which clarifies the influence of contextual and individual factors on employees’ green behaviour in the workplace. Unlike the expectation model applied by Ajzen (2002), Pichel (2008) or Ramus and Killmer (2007), in this study, we divided the subjective norms into social and personal norms. The organisational green climate was considered to be a social norm; that is, contextual pressures were exerted through environmental policies, supervisory support, training, information and practical tasks, as suggested by Pichel (2008) and Ramus and Killmer (2007). Organisational pressures were found to have a slightly moderating effect on personal norms and employees’ environmental behaviour. However, this study employed a norm-activation factor—personal norms—which had a significantly positive influence on employee’s green behaviour. The results also support the argument of Stern et al. (1999) that personal norms take precedence over social norms as the critical force for new action in social change. This distinction between contextual and individual factors will be helpful for future research.

Although the direct influence of the green organisational climate on the employees’ green behaviour was not the primary issue in this study, it did have a significant effect on employees’ green behaviour. The slight moderating influence appeared to show that the green organisational climate in the hotels of Taiwan was not strong. Banerjee (2002) observes that high-impact industries (e.g. chemicals or pharmaceuticals) are more environmentally oriented than low-impact industries (e.g. services or consumer products). The green organisational climates in Taiwan’s hotels were not strongly formed, and where they did exist, environmental management was more concerned with engineering practices, such as wastewater treatment and energy-saving facilities. The surveyed hotels had a more environmentally friendly orientation (although most of them are not certified green hotels), but it appears that the intensity of the environmental policies and practices have not yet created strong “green” climates. The corporate environmental policies proposed by Ramus and Steger (2000) demonstrate a “direction” towards corporate greening, while the certification requirements of Taiwan’s green hotels, which adopt the ISO14001 principle, emphasise the “process” of pursuing green performance. Unless the hotels devote themselves to implementing a set of environmental management systems and pursue certification, the nature of corporate environmental policies and practices may be “vague” or “elusive”, as stated by Boiral and Paillé (2012). This vagueness may offer more discretionary room for the employees to take green initiatives.

The first practical implication of these results is that personal norms are the crucial factor driving personal green behaviour; in other words, intrinsic motivation plays a greater role in employees’ environmental behaviour. Based on the data collected in this study, taking environmental courses (which may be taken before employment or outside the workplace) related to environmental issues leads to a larger difference in employees’ environmental beliefs ($p = .083$) than in their personal environmental norms ($p = .367$). Although the statistical examination in our study did not show a significant effect of taking environmental courses, the results did imply that environmental education might have some influence on employees’ environmental beliefs; however, environmental norms were not easily changed through environmental education. Personal environmental norms represent internalised personal values related to environmental behaviour, as expressed in the VBN model, in which personal environmental norms are the products of adverse consequences to valued objects and perceived ability to reduce threats (Stern, 2000; Stern et al., 1999). Thus, formal education and training sessions strengthen knowledge of consequences that flow from a lack of green behaviour and enable behavioural adjustment that is helpful in establishing personal environmental norms and internalising green behaviour in general situations or with regard to specific tasks. Informing employees of the consequences of their actions, such as high electricity bills as a consequence of high electricity usage, and training them in green behaviour is beneficial for both the company and the environment.

Second, hotels should place greater emphasis on their corporate environmental policies and practices because higher green organisational climates would encourage more employees with higher personal environmental norms to become involved in green actions in the workplace, as discussed above. The daily environmental behaviour in the workplace, as examined in this study, are all basic green initiatives that are part of the employees’ environmental practices, which still depend on a supportive organisational culture (Boiral & Paillé, 2012). A strong environmental commitment in the top levels of management is crucial in shaping stronger shared values and an organisational climate that is focused on green action. Formal or informal events that showcase the willingness of top management to support and undertake environmental sustainability, instead of just a cost-down approach, indicate a genuine commitment to environmental issues and also enable employees to perceive a positive and strong environmental commitment on the part of the company. Based on the opinions of the interviewed hotel employees, the hotels must be genuinely devoted to corporate greening instead of simply paying lip service or creating an image, otherwise those employees who possess strong personal environmental norms will find the hotel unworthy of their voluntary green behaviour. For example, hotels can emphasise green innovation, encourage employees to provide innovative green ideas and provide both budget and personnel to implement practical ideas. Further, hotels with a tradition of involvement in neighbouring community services could encourage employees to participate in them as well. Some good examples are found in Taiwan: employees are encouraged to eat vegetarian cuisine once a week in certain hotels, the recycled materials from certain hotels are freely given to charities that can receive a refund for them and some hotels are very willing to organise environmental events for charities, governments and local groups.

Third, the fundamental beliefs and values underlying the business philosophy should be changed and incorporated into
organisational culture and climate (Fernández, Junquera, & Ordiz, 2003; Harris & Crane, 2002), particularly through human resources departments (Bohdanowicz, Zientara, & Novotna, 2011). Usually, environmental issues are included as technical aspects of these elements, but environmental sustainability is strengthened just as much through changing personal values and beliefs (Harris & Crane, 2002). In attempting to create new managerial objectives and greening strategies in the hotel business, human resources departments are expected to integrate environmental issues and actions into employee motivation and behaviour through education, training, teamwork, practices, performance evaluations and feedback to establish employees’ green behaviour as routine practice. When top management deems environmental sustainability to be imperative, beyond merely an economic concern, and employee involvement in green behaviour is valued and encouraged, a strong green organisational climate is established that facilitates positive contributions to both the business itself and society at large.

In sum, the study found that employees’ green behaviour in hotels could be the outcome of employees’ perceptions of environmental practices and personal environmental beliefs/norms; in addition, there is an interaction between green organisational climate and personal environmental values. Currently, environmental behaviour in the workplace is considered organisational citizenship behaviour, which implies that it is a discretionary and voluntary character trait in the organisation (Boiral & Paillé, 2012; Ramus & Killmer, 2007). Although employees’ environmental behaviour is not referenced in job descriptions, such behaviour does contribute to corporate performance (Boiral & Paillé, 2012). The results of this study also showed that personal environmental norms had a strong influence on green employee behaviour in the case of a weak organisational climate, thereby implying that those who have higher environmental norms tend to behave in a “green” fashion when they feel obliged to do so, without a mandatory request. When corporate environmental policies were laid down with the hope that employees would comply, the employee response was mixed. Interviews with hotel staff revealed that some employees found that green behaviour led to more difficulties in the workplace; however, those employees who believed environmental protection to be imperative would happily abide by the policies and enjoy the environmentally aware organisational climate. Further, the hotel’s environmental policies might conflict with employees’ green beliefs or norms; however, as a case in Taiwan shows, even if employees’ norms are not aligned with environmental policies, they will not leave a hotel for that reason alone. With increased emphasis on environmental sustainability and corporate social responsibility in the hotel industry, hotels are deeming environmental sustainability a corporate strategy as well as the core focus of business models (Bohdanowicz et al., 2011). Hotel environmental policies are expected to encourage employees to engage in green behaviour and be individually evaluated on their compliance with the policy; that is, human resources training and management might require green environmental actions to be taken by employees.

Although this study elucidates the influence of personal environmental values and green organisational climates on employees’ green behaviour in hotels, it has some limitations as an exploratory research. First, the sample was selected from environmentally friendly hotels in Taiwan, excluding potentially different responses from employees working in other types of hotels and leading to only partially generalisable results. Moreover, the samples were drawn only from Taiwan. Second, the personal environmental behaviour considered in this research did not include voluntary suggestions or innovative ideas made by employees. Recently, Boiral and Paillé (2012) defined three types of employee organisational citizenship behaviour for the environment. Other than eco-initiatives, eco-civic engagement and eco-helping behaviour can also be included in future research. Third, the samples from each hotel were not exactly proportionate to the size of the hotels, thereby implying that the samples may not be perfectly representative of the hotel employees. Fourth, this study only used cross-sectional data that might neglect the extended influence of organisational ‘climate diffusion’. Because hotels in Taiwan are just beginning to implement environmental practices, the effect of environmental policies or programs might not yet be well-developed; thus, longitudinal analysis must be conducted in future research. Fifth, the distinction between a weak or strong organisational climate can provide a more thorough exploration of the relationship of a green organisational climate to employee beliefs and norms; future research should focus on the climate strength of multiple periods or groups. Furthermore, supervisor’s attitudes could be antecedents of employees’ environmental behaviour. Finally, organisational structure, work environment and environmental strategy could be used to investigate the predictors of employees’ environmental behaviour.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.tourman.2013.08.001.

References


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