

**FACTORS AFFECTING ORGANIZATIONAL  
MINDFULNESS IN GREEN PRACTICE IMPLEMENTATION:  
AN EMPIRICAL STUDY**

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**ABSTRACT**

Organizational mindfulness is an organizational attitude that allows firms to be preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and deference to expertise. Firms require mindfulness thinking in green practice implementation. Although a number of studies on green practice implementation can be found in the literature, none of them analyzed organizational mindfulness in green practice implementation. The main purpose of this paper is to explore the factors affecting organizational mindfulness by conducting a questionnaire survey to logistics companies in Taiwan. The determinant factors are grouped into technological, organizational and environmental dimensions. Research findings revealed that technological, organizational and environmental factors have significant influences on organizational mindfulness in green practice implementation. In addition to extending the scope of research on green management in service industries, this paper can equip research on organizational mindfulness with some empirical evidence.

**Keywords** : organizational mindfulness, green practice implementation, determinant factors, logistics service providers

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## 1. INTRODUCTION

Green practice implementation is usually believed to be able to confer strategic and competitive benefits to the adopting firms. Firms are able to achieve considerable environmental performance by successfully implementation green practices into their work systems. However, they may fail to achieve deep usage beyond initial adoption because green practice implementation often constitutes complex technologies and processes and calls for significant investment of organizational resources (Fussel & Georg, 2000). Successful implementation of green practices requires significant involvement in developing operational responses to environmental issues.

Implementation of green practices constitutes a complex information processing and decision making scenario that involves making sense of a new green practice that the firm is unfamiliar with and is typically characterized by uncertainty and ambiguity over the outcomes of the implementation process (Aragon-Correa & Sharma, 2003; Christmann & Taylor, 2006; Winn & Angell, 2000). Thus, managers are faced with the task of analyzing the ramifications of the green practices on their firms. Under such circumstances, deciding on whether a particular green practice is a good thing for the firm, whether the timing of the implementation is appropriate, and how the implementation is best carried out, requires firms to be mindful of green practice implementation with reasoning grounded in their own facts and specifics. Firms require mindfulness thinking in green practice implementation. In organizational decision-making, mindfulness is a state of being alert and aware. It is a characteristic that is believed to aid in making contextually differentiated interpretations of situations and information scenarios (Hoy, 2003; Weick & Sutcliffe, 2006).

Green practice implementation can be regarded as an organizational innovation process (Hellstrom, 2007; Henriques & Sadorsky, 2007; Lin & Ho, 2011). In an attempt to understand how organizations decide on implement new technologies or processes, researchers have started using several psychological constructs and cognitive theories in innovation and strategic decision-making research to explain the cognitive processes involved in innovation implementation decisions in organizations. One such construct is *mindfulness*. In the context of organizational implementation of innovations, mindfulness corresponds

to an engagement with an innovation based on facts and details which are unique to the organization itself (Swanson & Ramiller, 2004; Weick & Sutcliffe, 2001). It is suggested that mindfulness can reduce the possibility of failure when implementing an innovation because mindfulness will result in a decision which is based on richer and more contextually relevant interpretation of a given situation (Fichman, 2004; Swanson & Ramiller, 2004). Organizational mindfulness is a desirable property in the process of implementation of innovations in organizations. However, the concept of organizational mindfulness has not yet been employed in research on green practice implementation. To fill the research gap, this paper aims to study organizational mindfulness in green practice implementation, and takes logistics service providers as research objects. The research purpose of this paper is to verify the determinant factors influencing organizational mindfulness in green practice implementation in logistics service providers.

## 2. LITERATURE REVIEW

### 2-1 Organizational Mindfulness in Green Practice Implementation

Applying environmental criteria into corporate operations requires exploring new resource combinations and deploying existing resources in new ways (Hart, 1995). Green practice implementation involves using new or modified processes and techniques to reduce environmental harms. The implementation of a new green practice does not guarantee that there is a widespread usage of the new practice within the firm to fulfill the full potentials of the green practice (Winn & Angel, 2000). No matter implementing green practices reactively or proactively, a new green practice may be introduced with a great enthusiasm and widespread initial acquisition; nevertheless it may fail to be thoroughly deployed among many firms (Fussel & George, 2000).

There are several aspects of green practice implementation that limit a firm's ability to effectively manage the mutual adaptation of technology and organization needed to fully leverage green practices. Green practices are often subject to significant hype (Hellstrom, 2007; Pun, 2006). Green practice implementation usually calls for significant investment of organizational resources. Implementation of green practices constitutes a complex information processing and decision making scenario that involves making sense of a

new green practice that the firm is unfamiliar with and is typically characterized by uncertainty and ambiguity over the outcomes of the implementation process (Aragon-Correa & Sharma, 2003; Christmann & Taylor, 2006; Winn & Angell, 2000). Thus, managers are faced with the task of analyzing the ramifications of the green practices on their firms. Under such circumstances, deciding on whether a particular green practice is a good thing for the firm, whether the timing of the implementation is appropriate, and how the implementation is best carried out, requires firms to be mindful of green practice implementation with reasoning grounded in their own facts and specifics. As a result, firms require mindfulness thinking in green practice implementation. In organizational decision-making, mindfulness is a characteristic that is believed to aid in making contextually differentiated interpretations of situations and information scenarios (Hoy, 2003; Weick & Sutcliffe, 2006). However, a review on current research on environmental management reveals that, up to date, there is no literature giving an analysis on organizational mindfulness in green practice implementation. Much remains to be learned about the application organizational mindfulness theory in environmental management.

Mindfulness, at its roots, is a psychological notion that reflects upon an individual's cognitive qualities (Langer, 1989; Langer & Moldoveanu, 2000). It is a state of alertness and lively awareness that characterizes active information processing, creation and refinement of different categories, and awareness of multiple perspectives. At the organization level, mindfulness is defined as an organizational capability that allows firms to operate under conditions that are characterized by high risk of functional complexity and with little scope to learn from trial and error. Firms make mindful decisions based on reasoning grounded in their own organizational facts and specifics (Swanson & Ramiller, 2004).

In a study of high reliability organizations, Weick and his colleagues (Weick & Sutcliffe, 2001; Weick, Sutcliffe & Obstfeld, 1999) identify five dimensions that underlie organizational mindfulness including (1) preoccupation with failure, (2) reluctance to simplify interpretations, (3) sensitivity to operations, (4) commitment to resilience, and (5) deference to expertise. They found that, following the five dimensions, high reliability organizations can successfully operate under risky and complicated conditions and avoid failures and accidents. Preoccupation with failure refers to a perspective that assumes that errors, problems

and unusual events, no matter how small, are potentially important indicators of potential problems with the health of the organization and potentially unexpected aspects of the situation. Reluctance to simplify interpretations involves taking clear steps to avoid making things easier or over simplifying the daily operations. Sensitivity to operations denotes that mindful organizations have a precise understanding of all aspects of the business, both operationally and strategically. Commitment to resilience is to be mindful of errors and correct them before they get worse. Deference to expertise implies finding the most qualified individual to make a decision or complete a job (Weick & Sutcliffe, 2001). Together these five dimensions contribute organizational mindfulness.

Although normal business operations are carried out by firms under significantly less stringent conditions than high reliability organizations, inculcating the above five characteristics in their organizational operations can reduce chances of failure by avoiding errors in the first place (Weick & Sutcliffe 2001). Thus, mindfulness can be thought of as a desirable property or state that all firms, irrespective of their line of operation should strive to achieve, since it will make them more adept in managing unexpected circumstances. Organizational mindfulness approach is also suitable for green practice implementation. Green practices that are implemented in firms are often characterized by new and complex technical knowledge and process changes, resulting in unexpected or uncertain outcomes. Organizational mindfulness in the context of green practice implementation refers to not only being knowledgeable about the green practice and its implications, but also being able to contextualize this understanding regarding the practice based on the specific circumstances prevailing in the firm and their implications on the implementation. Organizational mindfulness is likely to have implication in green practice implementation because the decision of evaluating and adopting green practices underlines a firm's attempt to make sense of something that is uncertain and can result in unexpected outcomes.

## 2-2 Determinants of Organizational Mindfulness

While a variety of determinants of innovation implementation have been proposed in the literature, these factors can be grouped into technological, organizational and environmental context (Jeyaraj, Rottman & Lacity, 2006; Tornatzky & Klein, 1982). The technological,

organizational, and environmental (TOE) framework is widely used in studying innovation implementation (Lin & Ho, 2011). Therefore, based on the TOE framework, this paper attempts to explore the technological, organizational, and environmental factors that can affect organizational mindfulness behavior in implementing green practices in logistics service providers.

### *2-2-1 Technological Factors*

Technological characteristics can be considered as cognitive beliefs reflected in an attitude towards the innovation, and may affect innovation implementation (Jeyaraj et al., 2006; Rogers, 2003; Tornatzky & Klein, 1982). Therefore, technological characteristics should be taken into account when analyzing organizational mindfulness behavior in implementing green practices. Several technological characteristics of an innovation can affect its implementation, including implementation cost, complexity, and compatibility (Frambach & Schillewaert, 2002; Jeyaraj et al., 2006; Tornatzky & Klein, 1982).

Implementation costs include the required financial and human resources in implementing and using green practices. Costs have been long posited as a barrier for the adoption of innovations (Rogers, 2003; Torantzky & Klein, 1982). However, some researchers argue that high implementation costs may motivate innovation adopters to treat the innovation more seriously and implement it more actively in order to make the innovation more cost-effective (Rogers, 2003). Higher implementation cost of green practices may cause the firms to be more reluctant to simplify interpretations and more mindful of errors and unusual events, no matter how small, in implementing green practices. Therefore, the following research hypothesis is proposed:

*H1: Implementation cost has a positive effect on organizational mindfulness in green practice implementation.*

Complexity is the degree to which an innovation is perceived to be relatively difficult to understand. It will increase the difficulty in knowledge transfer and innovation implementation (Rogers, 2003), and is usually hypothesized to be negatively related to innovation implementation (Tornatzky & Klein, 1982). Green practices incorporate both tacit and explicit knowledge. The tacit knowledge may be inherent in identifying sources of pollution, reacting quickly to accidental spills, and proposing preventive solutions (Boiral, 2002). It leads to the

ambiguity of the practices. Ambiguity is a major barrier to the transfer of best practice within a firm. A green practice with high complexity contains a lot of tacit knowledge that requires laborious efforts to learn and diffuse. The difficulty in learning and sharing tacit knowledge makes it relatively difficult to implement a green practice, and consequently the firm may be apt to be deference to expertise and reluctant to simplify interpretations. Therefore, the following research hypothesis is proposed:

**H2:** *Complexity of a green practice has a positive effect on organizational mindfulness in green practice implementation.*

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, experiences, and needs of the firms (Rogers, 2003). Compatibility is relevant to green practice implementation. Because several green practices are additions to firms' current technologies and processes, implementing green practices is not a single event but can be described as a process of knowledge accumulation and integration. Green practices that are more compatible to a firm's current technologies and processes will be more easily to be implemented within the firm (Etzion, 2007). However, the greater the difference between the innovation and the current technological setup within the firm, the more likely that firms will be tempted to dismiss their present circumstances as irrelevant or out-dated when considering the implementation of the innovation (Swanson & Ramiller, 2004). Under such circumstances, the general tendency within the firm will be to gloss over the firm's own facts and specifics, rather than scrutinizing them vis-à-vis the requirements of the innovation. Therefore, the following research hypothesis is proposed:

**H3:** *Compatibility of a green practice has a negative effect on organizational mindfulness in green practice implementation.*

### **2-2-2 Organizational Factors**

The organizational context implies the processes and attributes that constrain or facilitate innovation. Several studies have discussed the influences of a variety of organizational characteristics such as quality of human resources, organizational culture, and organizational size on environmental strategy (Etzion, 2007).

The quality of human resources is an essential factor influencing innovation implementation. Qualified human resources are helpful to implement innovations because of

their competent learning capabilities. Implementing green practices is a complex process requiring cross-disciplinary coordination and significant changes in the existing operation process (Russo & Fouts, 1997). It is intensive in human resources and depends on the development and training of tacit skills through the employees' involvement (Hart, 1995; Del Brio & Junquera, 2003). Mindfulness calls for an awareness of sensitivity to operations and reluctance to simplify interpretations (Weick & Sutcliffe, 2001). In the context of green practice implementation, this translates into consideration towards the different ramifications of the green practice on the firm's operational and strategic advantages. Qualified employees with the ability to consider a variety of approaches to a problem simultaneously and elaborate on the details of an idea and carry it out will make a firm aware of the multiple perspectives of green practice implementation. Therefore, the following research hypothesis is proposed:

*H4: Quality of human resources has a positive effect on organizational mindfulness in green practice implementation.*

Organizational culture is a broad term that essentially refers to a shared understanding of the reality by the members of the organization. Organizational culture governs the ways in which an organization deals with failure and mishaps, and how rewards systems are defined within the organization. Differences in organizational culture give rise to variations in the styles of innovation implementation (Damanpour, 1991). Organizational culture is also associated with mindfulness behavior. Based on an analysis of high reliability organizations, Weick and Sutcliffe (2001) argue that informed organizational culture can foster mindfulness among organizations. When implementing green practices, firms are faced with a situation that can lead to unexpected outcomes. They are faced with information pertaining to a technology which is new to the organizational context and can bring about radical changes in the functioning of the firm, but at the same time, the cost of failure in the environmental initiative may be high. Under such circumstances, organizational culture that does not shy away from reporting about and analyzing unfavorable information will make employees more open towards considering both the favorable and unfavorable aspects of the green practice in the justification process involved in green practice implementation. Therefore, the following research hypothesis is proposed:



*H5: Informed organizational culture has a positive effect on organizational mindfulness in green practice implementation.*

Firm size has been repeatedly taken as a relevant organizational characteristic influencing firms' innovation implementation (Frambach & Schillewaert, 2002; Rogers, 2003) as well as environmental activities (Del Brio & Junquera, 2003; Etzion, 2007). In general, large firms tend to implement innovations and green practices more easily than small ones because they have sufficient resources and strong infrastructures. Small firms, in contrast, may suffer from the lack of financial resources and professionals, which results in difficulties in implementing green practices. Due to less flexible structure, lower ability to adapt and more difficulty in assimilating change, larger firms may be more difficult than smaller firms in keeping mindfulness in the implementation of green practices. Therefore, the following research hypothesis is proposed:

*H6: Organizational mindfulness in green practice implementation is negatively associated with the firm size.*

### **2-2-3 Environmental Factors**

The environmental factors refer to the standard conceptualization of external environment in the organizational behavior literature. The external environment in which a firm conducts its business is an important factor affecting environmental strategy. Certain environmental variables such as environmental uncertainty, and stakeholder pressure are often discussed in the literature of environmental management (Etzion, 2007).

Environmental uncertainty refers to frequent and unpredictable changes in customer preferences, technological development, and competitive behavior perceived by the managers. It has been viewed as a relevant environmental characteristic that affects a firm's decision making (Li & Atuahene-Gima, 2002). Managers facing uncertain business environments tend to be more proactive and use more innovative strategies than managers in less turbulent environments. Under high environmental uncertainty, firms attempt to gather and process information frequently to address environmental changes (Gupta & Govindrajana, 1991), and also tend to pay more efforts on innovation and increase the rate of innovation to maintain a competitive advantage (Damanpour, 1991). When implementing green practices under high environmental uncertainty, firms are faced with a situation that can lead to significantly unexpected outcomes. Under such circumstances, firms are likely to be preoccupation

with failure and sensitive to operations. Therefore, the following research hypothesis is proposed:

*H7: Environmental uncertainty has a positive effect on organizational mindfulness in green practice implementation.*

Stakeholders are individuals or groups who affect a firm's activities and are also affected by the firm's activities. Stakeholder pressure is regarded as the most prominent factor influencing a firm's environmental strategy (Buysse & Verbeke, 2003; Sharma & Henriques, 2005). Among various groups of stakeholders, customers and regulators are arguably viewed as a firm's most important stakeholders (Christmann, 2004; Etzion, 2007). According to the stakeholder theory, firms carry out activities to satisfy their main stakeholders. Under the circumstance of high stakeholder pressure, firms are apt to be reluctance to simplify interpretations of stakeholders' varied environmental requirements, and to keep commitment to resilience. Therefore, the following research hypothesis is proposed:

*H8: Stakeholder pressure has a positive effect on organizational mindfulness in green practice implementation.*

### 3. METHODOLOGY

The questionnaire was developed in a two-stage process. First, an initial questionnaire was designed based on a review of related literature and a discussion with some experts in environmental management. Second, the initial questionnaire was modified by accommodating some logistics managers' suggestions to ensure that each item adapts to the logistics industry and is interpreted as expected. Afterward the final version of the questionnaire was administered to sampled logistics companies with business models conforming to the logistics services.

The green practices commonly used in the logistics industry include consolidating shipments, disposing waste responsibly, purchasing ecological products, reducing energy consumption, reducing solid/water waste and emissions, using cleaner transportation methods, and using recyclable packaging (Lin & Ho, 2011; Murphy & Poist, 2003). Organizational mindfulness is conceptualized as a cognitive green ability that is reflected by preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and deference to expertise (Weick & Sutcliffe, 2001). A review of the literature showed that

most of organizational mindfulness instruments were developed based on Weick and Sutcliffe's (2001) instrument. Therefore, our measures of organizational mindfulness were adapted from Weick and Sutcliffe's (2001) questionnaire intended for managers to assess the capacity for mindfulness in their firms.

The independent variables are grouped into technological, organizational, and environmental dimensions. Based on previous studies (Lin & Ho, 2011), complexity can be measured by whether the green practices would be learned and used easily. Compatibility can be measured based on the degrees of perceived fitness between the green practice and the company's existing technologies and processes. The quality of human resources can be measured according to employees' learning capabilities. Informed organizational culture can be measured according organizational support for defect report. The company size can be measured by the number of employees. The environmental uncertainty can be measured according to the degrees of changes in competitors' innovative abilities, customers' requirement, and the development of new technologies. Stakeholder pressure can be measured by asking the respondents to score the environmental pressure exerted by customers and regulators, respectively. The instrument will be illustrated in the conference.

To examine organizational mindfulness in green practice implementation in the logistics industry, this paper collected data by means of mailing questionnaires to logistics service providers in Taiwan. Logistics service providers carry out logistics activities for their customers, including warehousing, transportation, inventory management, order processing, and packaging (Murphy & Poist, 2003). Six hundred samples were randomly drawn from a list of logistics companies in Taiwan. Questionnaires were mailed to these sampled companies' managers who are familiar with the company's environmental activities. Two weeks after the questionnaires were mailed, a follow-up to the sampled companies was conducted to remind them of the importance of their responses and thank them for their assistance. In total, 194 completed questionnaires were returned. Of these respondents, 15 unusable questionnaires were excluded. The overall response rate is 29.8 percent.

To evaluate the non-response bias, the wave analysis was used which assumes that late respondents tend to be more similar to non-respondents than early respondents in mail surveys (Armstrong & Overton, 1977). The non-response bias was tested by comparing respondents who

responded readily to the survey with those who responded after the follow-up step is taken. Because comparisons of survey results reveal no significant differences between the two groups in the level of variables, the non-response bias is significant in the study.

#### 4. RESEARCH FINDINGS

The regression analysis was used to determine whether proposed determinant factors affect logistics companies' organizational mindfulness in green practice implementation. Table 1 shows the standardized results of regression analysis. In the present regression model, the regression assumptions of homoscedasticity, linearity, normality, independence of residuals, and the absence of multicollinearity are all satisfied. Table 1 shows that complexity and compatibility of green practices, quality of human resources, organizational culture, and stakeholder pressure exhibit significantly influences on organizational mindfulness in green practice implementation for the logistics companies. The influences of implementation cost, company size and environmental uncertainty on logistics companies' organizational mindfulness are not significant.

Table 1 Standardized Regression Results for Organizational Mindfulness

Dependent variables: Organizational Mindfulness		
Predictors	Standardized Coefficient $\beta$	<i>t</i>
<b>Technological factors</b>		
Implementation cost	0.097	1.214
Complexity	0.193	3.986**
Compatibility	0.138	2.017*
<b>Organizational factors</b>		
Quality of human resources	0.156	2.781**
Informed organizational culture	0.198	4.021**
Company size	0.076	1.003
<b>Environmental factors</b>		
Environmental uncertainty	0.081	1.082
Stakeholder pressure	0.205	4.894**
$R^2$	0.603	
<i>adj R</i> <sup>2</sup>	0.589	
<i>F</i>	23.67**	

\*  $p < 0.05$

\*\*  $p < 0.01$

Successful green practice implementation is often the result of not a single large paper or decision, but the outgrowth of a fortuitous combination of many small ones (Aragon-Correa & Sharma, 2003; Henriques & Sadosky, 1999). Small disruptions, errors, and opportunities are

most likely to be noticed first on the front lines of the firm where individuals involved with a firm's day-to-day operations reside. If these unexpected situations are dealt with swiftly, there is an opportunity to avoid their escalation into larger problems or to leverage them to facilitate change. Mindful firms encourage people to report all errors, near misses, and improvement opportunities and to treat them as systemic issues rather than individual events. With regard to green practice implementation, mindful firms who are preoccupied with failure, sensitivity to operations, and deference to expertise will pay more attention to the potential pitfalls associated with implementing new green practices as they appear. They are more likely to empower knowledgeable team members allowing them to deal with an incipient problem and act on emerging opportunities. Also, they will be more likely to recognize problems not as isolated events that must be dealt with simply to maintain current operations, but rather as indicative of system issues that provide opportunities for greater implementation of green practices (Schultze & Orlikowski, 2004). Taken together these aspects of organizational mindfulness prepare a firm to be better able to manage both the initial introduction and subsequent implementation of green practices.

For firms seeking to maximize their ability to implement green practices, reluctance to simplify interpretations is important because the green practice implementation process is prone to surprises, complexity, and the unexpected. Identification and evaluation of green practices requires firms to engage in a hype-saturated, noisy information environment. Potential green practices must be evaluated based on second-hand information about their impact on other firms or in other contexts. In this situation, there is the temptation to apply bandwagon logic and assume that other firms' success with a green practice is a strong indicator of what a firm can expect when they implement the new green practice. Reluctance to simplify interpretations and commitment to resilience help to protect firms against this, keeping them focused on the need to understand specifically how a green practice is likely to fit with the unique characteristics and particular needs of their organizations. Likewise, mindful firms with both reluctance to simplify interpretations and commitment to resilience are more likely to identify latent opportunities for green practice implementation because they are less likely to assume that the current processes and structures are necessarily the most appropriate. Mindful firms are likely to be better able to navigate the challenges of green practice implementation because they are less likely to become fixated on initial claims, plans, and even first round deployment objectives.

Sustained organizational mindfulness requires both the attentiveness to one's context as well as the capacity to respond to unanticipated cues or signals from one's context. This duality of organizational mindfulness encompasses both cognitive and behavioral dimensions, and provides a helpful perspective for studying mindfulness in organizations. The cognitive aspect of mindfulness refers to gathering relevant information on the internal and external environment and being able to understand what this information means. It connotes an enhanced awareness of multiple perspectives of the current experience and present reality. The behavioral dimension implies the enactment on the processed information, like motivation that causes the arousal to act, and routines that provide repertoires of action. Therefore, mindfulness is a state of being alert and aware. It is a desirable organizational property that is primarily in the context of managing day-to-day operations of organizations. It considers not only how an organization creates value by integrating its competencies but also how it acts to attain business performance, i.e., monitors its internal and external needs. Accordingly, firms also require organizational mindfulness in implementing green practice. Organizational mindfulness approach, characterized by an ability to detect changes in the environment and to contextually interpret their importance for the firm, is argued to be important for green practices implementation.

## 5. CONCLUSIONS

This paper investigated the factors influencing organizational mindfulness in green practice implementation in logistics service providers. Due to the lack of research on organizational mindfulness in green practice implementation, this paper can broaden the scope of research on environmental management by clarifying the meanings of organizational mindfulness in green practice implementation, and providing some explanations as to the factors affecting organizational mindfulness when deciding on implementing green practices. Furthermore, although the organizational mindfulness concept has been discussed in the literature, there is still lack of empirical study of the idea. This paper can also equip research on organizational mindfulness with some empirical evidence.

The organizational mindfulness approach recognizes the value of managerial flexibility in structuring and timing investment decisions on the face of uncertain conditions, varying levels of risks at different stages of an investment paper and irreversible investments. Accordingly, organizational mindfulness theory is deemed

suitable for application to the investigation of green practice implementation, more specifically when a green practice is relatively new and uncertain in terms of its likely outcomes; and managers have the flexibility of timing the implementation decision depending on factors such as prevailing market conditions and availability of information. Firms also require mindfulness thinking in green practice implementation. It is necessary to understand the issues about organizational mindfulness of green practice implementation within organizations.

Because this paper focuses on organizational mindfulness in green practice implementation for Chinese logistics companies, the research findings may be limited in their generalizability. Different countries and industrial sectors may lead to conclusions different from the present study. Future studies can use the proposed model to other countries and industrial sectors. In addition, the present study only considers the determinant factors that have been widely used in the literature of technical innovation and environmental management. The influences of other possible environmental, organizational and technological factors on logistics companies' organizational mindfulness in green practice implementation can also be taken into consideration in future studies.

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