Modeling predictors of restaurant employees' green behavior: Comparison of six attitude-behavior models

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ABSTRACT

In this study, a new model of how commitment affects green behaviors was developed, tested, and compared with 5 models of the theory of planned behaviors (TPB) to verify the key influential factors of restaurant employees' green behaviors. Final questionnaires were distributed to 551 restaurant employees through cluster sampling, and 425 valid samples were received. AMOS 18.0 was used to conduct a 2-stage structural equation modeling analysis to achieve the research purposes. According to data analysis, the commitment model was the strongest model beyond TPB and extended TPB to explain restaurant employees' green behaviors for the development of food environment sustainability.

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1. Introduction

The food and beverage industry has flourished because of lifestyle changes and the increased percentage of the population eating out of their homes. However, restaurant consumes large amounts of water, energy, food materials, cleaning supplies, and other resources, and these operations also produce large amounts of waste. These factors all have an impact on the ecological environment; therefore, environmental management has become a major concern in the food and beverage industry (Kattara and Zeid, 2002). Moreover, global warming concerns affect the society, the economy, public policy, technology, and everyday life. To mitigate climate change effectively, people must adopt environmentally friendly behaviors. Adoption of these behaviors is especially vital for the hospitality sector, which has a responsibility to contribute to environmental conservation (Chou et al., 2012; Kasim, 2009). Diamantis and Ladkin (1999) indicated that promoting green practices would advance environmentally sustainable development in the hospitality industry.

Hu et al. (2010) reported that the food and beverage industry is increasingly recognising its ability to make an environmental contribution, and its social considerations are evidenced by the growth and development of green restaurants. Wang (2015a) also addressed the fact that many restaurants in different countries have begun to practise green food and beverage (GFB) management. Hotels and restaurants with a green management system can influence customers and employees positively, leading employees to exhibit a high level of environmental awareness, satisfaction, morale, and loyalty to the restaurant because of the sustainability initiatives (Alcorn, 2014; Chan et al., 2014).Thus, employees working at these and other restaurants must have the ability to conduct GFB to promote sustainable development in the restaurant industry. Many organizations have taken steps to reduce the harm to the environment, and investigating customers' attitudes and behaviors toward green practices has received increasing attention in the field of restaurant management (e.g., Dutta et al., 2008; Hu et al., 2010; Namkung and Jang, 2013; Jeong et al., 2014). However, less attention has been paid to the role of employee behavior in improving the environment (Greaves et al., 2013). Alcorn (2014) indicated that there is a gap in research on the impact of environmentalism on restaurant employees' attitudes and behaviors, as well as little empirical evidence on what influences employees to implement green practices in restaurants. A clearer understanding of the influential factors of GFB behaviors facilitates the more effective identification of the optimal methods for encouraging employees to help protect the food environment. Therefore, the research motivation for this study was to investigate the key influential variables that affect employee GFB behavior in the restaurant industry.

Nisbet and Gick (2008) and Chao (2012) claimed that the theory of planned behaviors (TPB) is the most effective one in the prediction of intentions and behaviors. However, using meta-analysis, Armitage and Conner (2001) determined that TPB research predicted 39% of the variance in behavioral intention, 21% of

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the variance in self-reported behavior, and 30% of the variance in observed behavior. Rise et al. (2010) specified several meta-analyses that can demonstrate that using the traditional TPB to predict behavioral intention is imperfect because the variance explained in behavioral intention ranges from merely 28% to 40% on average. Gao et al. (2016) conducted a quantitative metaanalysis on 26 articles published in hospitality journals in order to determine the effect sizes of the relationship between consumers' perceptions and their green behaviors. They suggested that it might not be beneficial to continue applying identical frameworks (e.g., the theory of planned behavior or the theory of reasoned action) in future research. Therefore, hospitality and tourism researchers in the area of environmentally friendly initiatives must either significantly improve the existing models or search for new and more diverse frameworks in order to make meaningful theoretical contributions.

Many researchers have argued that the inclusion of additional variables within the TPB framework is necessary to improve the explanatory power of TPB (Whitmarsh and O'Neill, 2010). For example, researchers have claimed that self-identity (or self-concept; e.g., Sparks and Shepherd, 1992; Sparks and Guthrie, 1998; Cook et al., 2002; Mancha and Yoder, 2015) or ethical obligation (or personal norm; e.g., Eagly and Chaiken, 1993; Shaw et al., 2000; Poškus, 2015) within the structure of TPB contribute to predictions of behavioral intentions. However, few studies have combined these two variables in the TPB to predict environmental behaviors. In addition, commitment to the environment is considered a critical factor for predicting environmentally responsible behavior (Kerstetter and Bricker, 2009). Rahman and Reynolds (2016) stated that biospheric value orientation can predict consumers' general willingness to make sacrifices for the environment (as an affective commitment), which in turn can predict consumers' green hotel visit intention, willingness to make sacrifices for a green hotel, and willingness to pay more for a green hotel. However, up to date no study has added commitment to the TPB to predict environmental behavior or combined commitment, self-identity, and moral obligation to explain green behaviors.

The aim of the present study was to investigate the influential factors of GFB behavior of restaurant industry employees and compare the explanatory powers of the TPB model, the extended TPB model (incorporated self-identity, moral obligation and commitment in the TPB structure) and the commitment model to confirm a concise and effective causal model of GFB behavior. This study attempts to make meaningful contributions to understand GFB behaviors by several means. First, this study was aimed to understand restaurant employees' attitude and behaviors of GFB. Second, both the TPB and commitment models were employed to explore the GFB behaviors of restaurant industry employees. Third, self-identity (SI), moral obligation (Mo) and commitment were added as new predictors in the TPB models. Fourth, both individual and civic green behaviors were simultaneously explored. The results of this research can help the restaurant industry to implement green operations and train employees in practicing GFB.

2. Theoretical background and model reviews

2.1. Definition of GFB behaviors

Numerous studies have examined green practise in restaurants (National Restaurant Association, 2014; Namkung and Jang, 2013; Wang, 2012), but few studies have defined GFB behaviors. Wang et al. (2013) argued that the concept of 'green' represents ecofriend-liness, social justice, economic development, and health. Green is a primarily health-related concept that blends into topics such as sustainability, pollution control, eco-friendly and environmental

conservation (Richmond, 2007; Han et al., 2009). Osbaldiston and Schott (2012) reported that individuals adopt behaviors that are comparatively more favourable for the environment. These behaviors are called proenvironmental behaviors (PEB). They are also referred to as environmentally friendly, environmentally sustainable, and responsible environmental behaviors. Therefore, green behavior and environmentally sustainable behavior are identical.

The Green Restaurant Association (2015) outlined the main areas in which restaurants can implement green practices: energy and water efficiency and conservation in food service facilities; zero-waste through reducing, reusing, recycling and composting; green food purchase via sustainable, organic, and local channels; reducing chemical use and pollution; and sustainable durable goods and building materials. Wang et al. (2013) argued that GFB is related to the incorporation of environmental conservation ideas into each management process, and an emphasis on green food, production, and service to provide customers with healthy, safe, and ecofriendly meals. They indicated that the fundamental concepts of GFB are health, sustainability, low-carbon food, and environmental conservation. The implementation of GFB behaviors by everyone can be a powerful method of counteracting global warming. Wang (2015a) developed a green literacy evaluation tool for the restaurant industry and indicated that GFB behaviors were divided into two categories: civic and individual consumer behaviors pertaining to GFBs. Individual consumer behavior pertaining to GFBs refers to individual consumer behaviors related to green diets, including green packaging, the purchase of green food and ingredients, energy-saving and resource-saving cooking, waste-reduction services, environmentally friendly cleaning practices, waste classification, and recycling. Civic behavior pertaining to GFBs refers to environmental protection activities that individuals actively participate in to resolve current and future environment problems related to food production and supply, which include ecological management, actions that attempt to encourage and persuade others to act eco-friendly, and political and legal actions. This study adopted Wang's (2015a) definition of GFB behaviors.

2.2. Theory of planned behaviors

The TPB has been widely applied in studies on health (e.g., Corral, 2003; Nisbet and Gick, 2008; Jun and Arendt, 2016), consumption (e.g., Bissonnette and Contento, 2001; Lee, 2009; Paul et al., 2016; Liobikienė et al., 2016), tourism (e.g., Han, 2015; Hsu and Huang, 2012), hospitality (e.g., Chou et al., 2012; Sirakaya-Turk et al., 2014), environmental behavior (e.g., Ajzen et al., 2009; Chao, 2012; Greaves et al., 2013), and cross-cultural green behaviors (e.g., Dutta et al., 2008; Mancha and Yoder, 2015; Liobikienė et al., 2016). Hospitality researches using the TPB have heavily concentrated on consumer intentions (e.g., Han and Kim, 2010; Han et al., 2010; Namkung and Jang, 2013; Jeong et al., 2014; Jang et al., 2015). However research using the TPB to investigate restaurant industry employees and environmentalism issues is lacking (Alcorn, 2014). Ajzen (1991) posited that personal behavior depends on one's behavioral intention, which is guided and predicted by three determinants: personal attitudes towards the behavior, social subjective norms, and perceived behavioral control (PBC). According to Rotter (1966), PBC is similar to the locus of control, which refers to the extent to which people believe that they have the ability to affect event outcomes through their own actions. The attitudes dimension, which integrates individual beliefs and value systems, describes individual perceptions that provide a basis for certain behavioral tendencies (Kaiser et al., 1999). Yazdanpanah and Forouzani (2015) indicated that the students' attitude was the main predictor of their intention to purchase organic foods. Fisher and Fisher (2002) and Nisbet and Gick (2008) have noted that people engage in and maintain healthy or environmentally friendly