

## **A review of employee innovative behavior in services**

### **Abstract**

**Purpose** – This research aims to conduct a comprehensive review of the literature on employee innovative behavior in services. Based on the review, the conceptualization and operationalization of employee innovative behavior are summarized, and the relationships between job characteristics and employee innovative behavior are revealed.

**Design/methodology/approach** – Altogether 143 papers examining employee innovative behavior in services published in 56 journals, including top management and hospitality journals, during the period of 1995–2014 were reviewed.

**Findings** – Three approaches to examine employee innovative behavior in services have been identified. The concept of employee innovative behavior based on the reviewed papers is summarized. In addition, antecedents and consequences of employee innovative behavior are reviewed. In particular, the role of job characteristics in employee innovative behavior is discussed.

**Practical implications** – This study provides practitioners with a "one-stop" paper to enhance their understanding of the relationship among employee innovative behavior, job characteristics, and other relevant concepts. Implications for hospitality firms on stimulating the innovative behaviors of employees are also provided.

**Originality/value** – Owing to the particularity and importance of employee innovative behavior in services, this review summarizes the current knowledge on this concept as well as its

antecedents and provides directions for future research, especially on the relationship between job characteristics and employee innovative behavior.

**Keywords** – Employee innovative behavior, Services, Job characteristics, Motivation, Work engagement, Work stress

**Paper type** – Research paper

## **1. Introduction**

Since the introduction of the concept of innovation, it has been widely embraced and applied in various organizations (Axtell et al., 2000; Quintane et al., 2011). For service firms, innovation has become a key factor influencing their performance and development because of the fast-changing environment (Campo et al., 2014; Rodgers, 2007). Among different levels of innovation, employee innovative behavior (EIB) is a cornerstone of organizational innovation (Janssen et al., 2004). It is critical for business success in service industries and examined by many researchers (Yuan and Woodman, 2010; Calantone et al., 2002).

Compared with group or firm innovation, EIB receives less attention, and most of the research has been conducted in manufacturing industries (Axtell et al., 2000; Ramamoorthy et al., 2005). However, scholars logically call for more research on EIB in service, which may be different from that in manufacturing firms (Sheehan, 2006). As a result, many researchers have begun to investigate EIB in service context. These studies form the basis for this review, which is significant as it summarizes the results of research on EIB and identifies research gaps for future investigation.

The review of EIB in services involves its antecedents and consequences. Among the antecedents, job characteristics are particularly discussed, as they are the main differences between service firms and manufacturing companies (Dorenbosch et al., 2005). Although the influence of leadership, organizational structure, or personality on EIB have been examined, the relationships between job characteristics and EIB have not been researchers' focus (Shalley and Gilson, 2004). However, they are important as firms increasingly consider innovation when designing jobs (Holman et al., 2012). With this view, the current study provides an overview of the effects of job characteristics on EIB. Therefore, two objectives are set for this study: (1) to review studies on the conceptualization and operationalization of EIB in services and (2) to summarize the antecedents and consequences of EIB, especially the relationships between job characteristics and EIB.

## **2. Definition and clarification of key concepts**

Employee innovative behavior (EIB) is an outward expression of the inner creativity of employees; it is a method used to develop creative products and a process through which employees generate and implement new ideas to improve performance or solve work-related problems (Janssen et al., 2004; Zhou and George, 2001). EIB includes all individual behaviors that lead to the generation, introduction, and application of beneficial novelty at various levels (West, 2002). It closely associates with employee creativity, although unlike the latter, the former must result in final outputs and produce actual benefits (Larson, 2011). Most researchers view EIB as a process with multiple stages and creativity is reflected in its initial stage (Janssen, 2000). An employee first recognizes problems at work and generates new ideas (Larson, 2011); then he/she mobilizes support from others for the new idea(s) (Janssen, 2000); in the later stages,

the employee implements the idea(s) and turns it into reality by producing a new prototype or model (Scott and Bruce, 1994). Each stage of the process consists of various behaviors that may altogether bring about new process, product, market or organizational structure (Orfila-Sintes and Mattsson, 2009). In this study, EIB refers to employees' intentional introduction of new products/services or new ways of doing things through the process of idea generation and implementation (Krizaj et al., 2014; Janssen, 2000).

EIB in services may be influenced by various job characteristics. EIBs are considered as workplace behaviors (Ramamoorthy et al., 2005), thus they unavoidably relate to job characteristics (Holman et al., 2012), which have been found to affect the behaviors of employees directly or indirectly through psychological states (Ohly and Fritz, 2010). Job characteristics, explained by Hackman and Oldham (1975) in Job Characteristics Model (JCM), involve seven factors, among which five are primary dimensions, namely, skill variety, task identity, task significance, job autonomy, feedback from the job itself. These characteristics influence the psychological states of employees, including experienced meaningfulness of the work, work outcome responsibility, and knowledge of the work results, which may affect the work motivation, work performance, job satisfaction, and turnover intention of employees (Hackman and Oldham, 1975). Demerouti et al. (2001) categorized job characteristics into two broad areas in their Job Demands–Resources (JD–R) model: job demands and resources, covering a wide range of work environment aspects (Schaufeli and Bakker, 2004). JCM and JD–R model describe the features of jobs from different perspectives. Job characteristics in this study is defined as the features or attributes of service jobs that employees take (Tsaour et al., 2011), including the factors described in both models.

### 3. Methods

This study attempts to provide a comprehensive review of employee innovative behavior (EIB) in services, following the guidelines provided by Tranfield et al. (2003). According to Tranfield et al. (2003), a systematic review in the management field consists of three stages. The first stage, “planning the review,” identifies the need for the review, and defines and clarifies the topic. It reflects in Sections 1 and 2 in this study. This section explains the second stage: conducting the review. In this stage, the search terms are identified; the studies are searched and selected; and the data are synthesized. Finally, the report and dissemination of the review, the third stage, are detailed in Sections 4 and 5.

The articles to be reviewed were determined through the following steps. First, three databases were chosen, including EBSCOhost, Emerald and ScienceDirect, according to the criteria that the selected databases should cover most peer-reviewed journals focusing on innovation and their search function works well to precisely provide appropriate results (Tranfield et al., 2003). Google Scholar was also searched as a supplement to include some top journals such as *Cornell Hospitality Quarterly*. Of course, articles from Google Scholar were selected more carefully (with a high h5 index of the journals) to safeguard the quality (Tranfield et al., 2003). Second, all articles were searched using a combination of keywords, with “innovative behavio(u)r/ innovation/ creativity” and “service/ hospitality/ hotel/ restaurant” included in the titles, keywords, or abstracts of the papers. The keyword “Innovation/ creativity” were included as some research using this expression actually studied EIB (Zhou and George, 2001). In addition, “hospitality/ hotel/ restaurant” were added as search keywords to reflect research on the world’s largest industry (Martínez-Ros and Orfila-Sintes, 2009). The publication period of the papers included 20 years from 1995 to 2014, as research on EIB following Scott

and Bruce (1994) increased sharply, and studies in service contexts were conducted in this period (Miles, 2008). Third, the appropriateness of the papers was examined. Papers with topics that do not match the concepts clarified in Section 2 were removed.

After the entire process, 143 articles from 56 reputable journals were retained, including 68 articles from management and business journals such as *Academy of Management Journal*, 51 from hospitality journals such as *International Journal of Contemporary Hospitality Management*, and 24 from journals in other areas such as *Research Policy*. The articles were categorized into three groups. The first group consisted of 53 theoretical research articles on EIB in services. With 28 papers, the second group involved studies on the relationships between job characteristics and EIB. Finally, the third group includes 62 papers focusing on the relationships of EIB with other factors. The entire papers were read and summative content analysis was used because researchers use various terms to describe EIB, such as employee creativity (Hon, 2011), employee innovation behavior (Amo, 2006), and innovative work behavior (Madrid et al., 2014). Patterns in the data were identified based on frequency count. The words or expressions with high frequency were summarized to explain the concept.

## **4. Findings**

### **4.1 Three approaches to research on EIB in services**

Through innovation research in the manufacturing sector, researchers have studied employee innovative behavior (EIB) in services using three approaches (see Table 1): assimilation, differentiation, and synthesis (De Vries, 2006). The assimilation approach focuses on the similarities of innovation in the service sector with that in manufacturing (Drejer, 2004). Researchers using this approach investigate EIB in services in light of that in manufacturing;

correspondingly, they place emphasis on technology adoption and intellectual property patent (Chou et al., 2012; Orfila-Sintes et al., 2005). Employees in service industries perform much innovation by adopting technologies from manufacturing industries (González and León, 2001; Rodgers, 2007), which highlight in-house research and development personnel, unlike employee “on-the-job innovation” in service firms (Drejer, 2004; Miles, 2008). The process comprising innovative behaviors in manufacturing and service sectors share commonalities (Gallouj, 2002), such as ideas adoption from others (Axtell et al. 2000; Ottenbacher and Harrington, 2009) and the importance of supportive leadership (Hon and Leung, 2011; Slåtten et al., 2011). The nature of EIB in services is essentially the same as that in manufacturing firms (Hu, 2010).

(Insert Table 1 Here)

The differentiation approach takes a view opposite that of the assimilation approach: it pays more attention to the particularity of services (De Vries, 2006). This approach occurs because of the unique features of employee innovation in services, such as focusing on processes (Orfila-Sintes and Mattsson, 2009), emphasizing the role of frontline employees (Cadwallader et al., 2010), highlighting customer–employee interaction (Paton and McLaughlin, 2008), inspiration or stimulation by customers (Lai et al., 2014) and reliance on the individuals’ experiences/learning (Guisado-González et al., 2014; Stierand and Dörfler, 2012). EIBs in manufacturing are centered on technology, while employees in services have a greater tendency to perform organizational and commercial innovation (Castro et al., 2011). Also, employee innovation in services diffuses through information flow or employee turnover, rather than through patents and transactions of property rights in manufacturing (Amalia and Nugroho, 2011). In other words, EIB is highly

attached to the innovators themselves (Amalia and Nugroho, 2011); thus, retaining employees is important for service firms to retain innovation (Gallouj and Savona, 2009).

A synthesis approach combines the similarities and differences in EIB between the service and manufacturing sectors (Gallouj and Savona, 2009). Correspondingly, EIB can derive from both sectors. For example, the nature-based systems in the tourism industry and business affiliation styles (e.g., management contract and franchise) in the hospitality industry may provide implications for innovation in other industries (Hoarau and Kline, 2014; López-Fernández et al., 2011). Researchers argue that the boundaries between services and goods are becoming blurred and they intertwine in innovation (Gallouj and Savona, 2009; Hipp and Grupp, 2005). From this perspective, EIB in services is multi-dimensional, with technology adoption or service process improvement as one of its many dimensions (Weiermair, 2005). For example, Hertog (2000) proposed a four-dimensional model of EIB that includes new service concept, client interface, technological options, and service delivery system, reflecting the implications from manufacturing industries as well as specialty of services.

## **4.2 Conceptualization of EIB in services**

Early innovation researchers tend to focus on the characteristics of “talent” innovators (Wolfradt and Pretz, 2001). However, an increasing number of ordinary employees contribute innovative ideas to service firms (Weiermair, 2005). Gradually, the innovation potential of ordinary employees is recognized (Cadwallader et al., 2010; Kesting and Ulhøi, 2010). Based on this realization, EIBs in services are identified and encouraged (Stierand and Dörfler, 2012).



Table 2 summarizes the conceptualizations of EIB by researchers. EIBs are innovation at the individual level, usually exhibited by frontline employees (Slåtten and Mehmetoglu, 2011a). Not only is the creativity of individuals essential, but a need also exists to seek support from others for the implementation of new ideas as innovative behaviors are likely to be resisted by others who are accustomed to existing concepts and current institutions (Janssen, 2005; Slåtten and Mehmetoglu, 2011a). Additionally, EIBs occur in the workplace, solve work-related problems and improve service processes (De Jong and Den Hartog, 2010). This “on-the-job innovation” is the common way of realizing innovation in services (Miles, 2008). For example, in restaurants, the innovative behaviors of chefs discover and create new foods during production (Ottenbacher and Harrington, 2007). Also, EIBs involve intentional idea generation and implementation. In other words, they are extra-role behaviors that are not required by the job itself (Baer, 2012; Dorenbosch et al., 2005).

(Insert Table 2 Here)

Innovation can be conceptualized as an outcome (e.g., a new product) or a process with many stages (Quintane et al., 2011). The concept of EIB describes innovation as a process in which employees turn ideas into reality through their efforts and behaviors (Kleysen and Street, 2001). This process consists of a series of steps from new idea generation, risk taking, idea promotion, to plans, schedules and execution for effective idea implementation (Zhou and George, 2001). It is also regarded as a way of work that results in new processes or solutions to problems (Amabile et al., 2005). Therefore, the forms of EIB are diversified (Camisón and Monfort-Mir, 2012; Enz and Siguaw, 2003). For example, Kleysen and Street (2001) discovered over 17 types of innovative behaviors. Essentially, employee innovation involves a set of

behaviors, either original or adoptive, based on resources or environment, at various levels (Frehse, 2006; Kim, 2006).

EIB in services was also comprehended by results or aims. EIB may lead to any product, process, or paradigm (Baer et al., 2003), mostly intangible outcomes partly because services are intangible (Castro et al., 2011). Another characteristic of services—customer participation—also influences employee innovation (Chen et al., 2011b). Customer participation blurs the boundary between customers and employees, making customers “partial employees” and resources of innovative behaviors (Duverger, 2011; Victorino et al., 2005). Consequently, employees’ learning by doing and learning from customers result in innovation (Hallin and Marnburg, 2008). Employees’ information exchange and knowledge sharing with others eventually benefit themselves (Hallin and Marnburg, 2008; Hu, 2009). Actually, compared with firm-level innovation, EIB is more motivated by the intrinsic and extrinsic rewards of employees, which may include performance improvement and long-term development, such as intellectual capital and knowledge acquirement (Amo, 2006; Kim and Lee, 2013). In other words, employees perform innovative behavior mainly for personal development, although it brings benefits to service firms’ performance and competence (Amo, 2006).

#### **4.3 Operationalization of EIB in services**

For the operationalization of EIB, the quantitative approach dominates these studies (Hon, 2012; Wong and Pang, 2003). Most studies have examined the concept in a single service context, such as quick-service restaurants (Ottenbacher and Harrington, 2009), hotels (Nieves et al., 2014) and travel agencies (Tsaur et al., 2011). Questionnaires are the most widely used

method for data collection, and most research surveying managers for their subordinates' innovative behaviors (De Jong and Den Hartog, 2007; Hu et al., 2009; Janssen, 2005).

A number of measurements for EIB have been developed. For example, Zhou and George (2001) developed a 13-item scale covering the whole innovation process (Table 3). Although the scale development process was not mentioned, this scale has been widely adopted in hospitality research (Hon, 2011). In addition, Hu et al. (2009) adopted the six-item scale of Scott and Bruce (1994) in the hotel industry and found it reliable. Both of these studies treated EIB as unidimensional.

(Insert Table 3 Here)

Yet measuring EIB with a one-dimensional scale is argued as not thoroughly reflecting the richness and nature of the concept, and thus multi-dimensional scales were created (Kim, 2006). For example, Janssen (2000) measured EIB with three dimensions as idea generation, promotion, and realization. Krause (2004) and Dorenbosch et al. (2005) proposed classifying innovative behaviors as creativity-oriented and implementation-oriented work behaviors. Additionally, De Jong and Den Hartog (2010) established a 10-item scale with high reliability based on knowledge-intensive services firms. Also, Kleysen and Street (2001) examined opportunity exploration, generativity, formative investigation, championing, and application, more specifically operationalizing EIB.

## **4.4 Antecedents and consequences of EIB**

### **4.4.1 Consequences of EIB in services**

Antecedents and consequences of EIB are important topics of the reviewed papers. As a positive phenomenon (Stierand and Dörfler, 2012), EIB is beneficial to both service firms and employees themselves (Martínez-Ros and Orfila-Sintes, 2012). It not only provides new products for restaurants (Su, 2011) and improves service processes for hotels (Enz and Siguaw, 2003), but also influences customers' purchase decision-making (Victorino et al., 2005), service quality and customer satisfaction (Tajeddini and Trueman, 2012). By transforming creative problem-solving ideas into applications, EIB improves firms' performance and core competencies (Calantone et al., 2002; Campo et al., 2014). It also makes rivals' duplication difficult and helps firms retain competitive advantage (Ottenbacher, 2007). In addition, EIB is found to facilitate the growth of employees, improve their work performance and bring about job satisfaction (Robinson and Beesley, 2010). Generally, EIB leads to positive consequences. Therefore, most researchers treat it as the endpoint of their study and focus on its influencing factors.

### **4.4.2 Influence of individual-level and organizational factors**

EIB in services is found to be influenced by personal characteristics directly. According to the reviewed papers, employees with proactive personality (Chen, 2011), creative cognitive style (e.g., imaginative) (Shalley et al., 2004), positive mentality (e.g., self-confidence) (Oldham and Cummings, 1996), profound knowledge (Chang et al., 2011) are more likely to perform innovative behaviors. Of course, these personal characteristics can be affected by firms, such as

well-designed training, via which hotel employees perform more innovative behaviors (Chang et al., 2011; Marti'nez-Ros and Orfila-Sintes, 2012).

Organizational factors may also affect EIB in services. First, firms' resources and support for innovation are important. For example, employees in larger hotels tend to exhibit more innovative behaviors (Orfila-Sintes et al., 2005; Sundbo et al., 2007). Financial support and reward in hospitality firms are also found as innovation facilitators (López-Fernández et al., 2011; Orfila-Sintes and Mattsson, 2009). In addition, firms' structure and management system play an important role influencing EIB. For example, hospitality firms as part of a chain and having good cooperation with external parties provide a supportive environment for employee innovation (Orfila-Sintes et al., 2005; Zach, 2013). Furthermore, leadership may foster or hinder EIB. In hospitality firms, transformational leadership and empowering leadership generally enhance employees' creative self-efficacy and motivation to innovate (Wang et al., 2014; Zach, 2013; Zhang and Bartol, 2010).

#### 4.4.3 Influence of job characteristics

The importance of job characteristics to EIB has been recognized. EIBs are workplace behaviors sensitive to work environment and relevant to jobs with different characteristics (Amabile et al., 1996; Tu and Lu, 2013). Some jobs even involve creativity requirements to stimulate innovation (Hon, 2013). In practice, managers tend to design simple and standardized jobs to improve efficiency (Ohly and Fritz, 2010). However, simply designed jobs may not be favorable for employees' development and innovation because they experience no challenge and low motivation in these jobs (Axtell et al., 2000; Wastell and Cooper, 1996). As more jobs are designed considering innovation, managers are compelled to strike a balance between improving

efficiency and stimulating EIB, although these two do not necessarily oppose each other (Whittington et al., 2004). Accordingly, revealing the relationship between job characteristics and EIB becomes necessary. The relevant research indicates that job characteristics affect EIB directly or through other factors (Luoh et al., 2014; Wang et al., 2014), the mechanism of which is summarized in Figure 1.

(Insert Figure 1 Here)

Basically, the factors in the JCM directly influence EIB by giving employees more autonomy, stimulating their skill development, and providing feedback (Battistelli et al., 2013; Chen et al., 2011a; Coelho and Augusto, 2010). The factors in JCM also have an indirect influence on EIB mediated by work motivation and engagement (Axtell et al., 2000; Bhatnagar, 2012). JD–R indirectly affect EIB through other factors, such as work engagement and job stress (Dorenbosch et al., 2005; Martín et al., 2007).

#### 4.4.3.1 Direct influence of job characteristics on EIB

Job characteristics are usually simplified by researchers as “job complexity”, which has been found related to EIB (Matthew and Chigozie, 2014). Complex jobs require employees to maximize their knowledge and abilities in constant acquisition of new technologies and procedures (Oldham and Cummings, 1996). Employees in these jobs, compared with simple jobs involving monotonous tasks, tend to demonstrate more enthusiasm for work, which further stimulates innovative behaviors (Bhatnagar, 2012; Ohly and Fritz, 2010). Thus, research indicates that job complexity is favorable for employees’ synthesis of knowledge from various

sources so as to innovate (Shalley et al., 2000). Therefore, a proposition (P1) is derived as follows (Table 4): job complexity has positive effects on EIB (De Jong and Kemp, 2003; Shalley et al., 2009).

(Insert Table 4 Here)

Job autonomy is identified as one of the determinants of EIB (e.g., Wang and Cheng, 2010). The characteristics of services (e.g., inseparability) require employees to be more flexible and innovative (Slåtten and Mehmetoglu, 2011b). Employees given more autonomy have more power and control in the decision-making process. This autonomous decision-making leads to more innovative behaviors, as employees' intrinsically motivated behaviors are based on their own desires, and those with more determination are more likely to innovate (De Jong and Kemp, 2003; Yang and Choi, 2009; Zhang and Bartol, 2010). As a related but opposite concept, job standardization has been found to weaken employees' motivation and enthusiasm, and negatively affect EIB (Luoh et al., 2014). Job autonomy not only drives motivation, but also influences creative self-efficacy (Tierney and Farmer, 2002). Employees given more discretion may feel a sense of trust from firms, and develop more confidence in finding creative approaches to problems and producing innovative outcomes (Dorenbosch et al., 2005). Therefore, more job autonomy may increase employees' creative self-efficacy, leading to more innovative- behaviors and higher probability of successful innovation (Michael et al., 2011). Accordingly, another proposition (P2) is stated as follows: job autonomy is positively related to EIB.

Skill variety is another important job characteristic affecting EIB (Robinson and Beesley, 2010; Zhou and Shalley, 2003). Customer-contact employees in hospitality firms with multiple skills have been found to demonstrate more innovative behaviors than those without (Chang et

al., 2011). Jobs requiring skill variety drive employees to develop and possess various skills; and multiple skills further foster new idea creation and application (Chen et al., 2011a). Employees' learning driven by skill variety also leads to creative self-efficacy (Gong et al., 2009). Therefore, the following proposition (P3) is supported: skill variety positively affects EIB in services (Chen et al., 2011a; Coelho and Augusto, 2010).

Propositions (P4 – P6) can be deduced based on the relationships between other factors in JCM (task identity, task significance, and job feedback) and EIB. Task identity was found positively associated with EIB because it makes job meaningful and increases intrinsic motivation of employees (Coelho and Augusto, 2010). However, Deegahawature (2014) reached an opposite conclusion and suggested that jobs as an entire piece may limit innovation. Thus, P4 can be stated that task identity influences EIB, but the direction of the relationship is inconclusive. Task significance of a job determines the concern and intrinsic motivation employees show (Coelho and Augusto, 2010), which further result in innovative behaviors (Zhang and Bartol, 2010). Thus, P5 can be stated as: task significance positively influences EIB. Finally, job feedback is found to enhance employees' knowledge acquirement, personal growth and enjoyment of job tasks (Coelho and Augusto, 2010), supporting the P6: a positive relationship exists between job feedback and EIB.

Job demands have also been studied as a factor affecting EIB. In a positive work climate (e.g., effort-reward fairness), higher job demands have been found to lead to more EIBs because employees have to and are willing to behave innovatively to meet high job demands (Janssen, 2000). Specially, some jobs expect employees to innovate, and higher creativity requirement leads to more innovative behaviors (Robinson and Beesley, 2010; Shalley et al., 2000). Job demands must be accompanied by resources as indicated in the JD–R model (Schaufeli and



Bakker, 2004). Correspondingly, job resources, such as supervisory coaching, are critical factors inspiring innovation (Martín et al., 2007; Schaufeli and Bakker, 2004). With high job resources, job demands positively affect EIB (P7), whereas an opposite relationship exists with low job resources (Martín et al., 2007).

#### 4.4.3.2 Mediating role of other factors

The mediating effect of other factors between job characteristics and EIB in services has also been studied. A direct consequence of job characteristics is work motivation (Hackman and Oldham, 1975), which further derives motivation for innovation (Wong and Ladkin, 2008). Wong and Ladkin (2008) investigated 10 job-related motivators in the hotel industry and found that several motivators, such as interesting work and feelings of being involved, largely relate to EIB (Wong and Ladkin, 2008). When employees' self-motivation is high, they may perform effectively and seek to work innovatively. Therefore, conclusion could be drawn that job characteristics positively relates to work motivation and work motivation leads to EIB (Lin and Liu, 2012). As such, P8 is proposed to be tested: work motivation plays a mediating role in the relationship between job characteristics (e.g., job feedback) and EIB.

Some job characteristics (e.g., feedback and autonomy) are positively related to work engagement, which shows an employee's dedication and absorption to work (Bhatnagar, 2012; Schaufeli and Bakker, 2004). Employees with high work engagement not only take advantage of the resources provided by the job but also create resources to remain engaged (Bhatnagar, 2012). As a result, job characteristics may positively influence EIB through work engagement (Bhatnagar, 2012; Slåtten and Mehmetoglu, 2011b). However, job characteristics involve many

factors, thus P9 derived from the literature needs to be individually tested factor by factor: work engagement mediates the relationship between job characteristics and EIB.

Another factor that has been investigated as a mediator between job characteristics and EIB is work-related stress. Job stress may be influenced by role conflict and role ambiguity resulting from job characteristics (Leung et al., 2011). For example, employees' job stress may increase if job demands are high while resources limited (Demerouti et al., 2001). In this case, job demands may turn into a heavy workload and produce subjective anxiety (Wastell and Cooper, 1996). Thus high job demands with little job control are found thwarting EIBs via job stress (Holman et al., 2012). However, two types of stress caused by job characteristics—challenge-related stress and hindrance-related stress—influence EIB differently, with the former acting as innovation facilitator while the latter obstructer (Geng et al., 2014; Hon et al., 2013). Also, De Bloom et al. (2014) found that job stress relief may facilitate innovative behaviors by increasing cognitive elements for employees but not enhancing the originality of ideas. Therefore, the following proposition (P10) needs to be empirically tested: job characteristics affect EIB through job stress, but the effect may vary with the job and employees' perceived stress.

Job characteristics also influence employees' emotion in the workplace (Karatepe, 2011). Positive emotions (e.g., delighted and comfortable) are found to facilitate EIB, whereas negative emotions do not (Choi et al., 2011; Madrid et al., 2014). In addition, the effect of emotional ambivalence (simultaneous existence of positive and negative emotions) on EIB was examined (Fong, 2006). However, no research has yet investigated the relationship among job characteristics, emotions, and employee innovation. Therefore, P11 is put forward as follows: emotion mediates the relationship between job characteristics and EIB.

## **5. Conclusions and implications**

### **5.1 Conclusions**

Employee innovative behavior (EIB) has received interest from researchers since its proposition. With the innovation research based on manufacturing industries, researchers studied EIB in services adopting three approaches. Assimilation approach has its foundation in commonalities of the manufacturing and service sectors, while differentiation approach is service-oriented, focusing on processes and customer-employee interaction. The synthesis approach occurred in response to the fact that goods and services intertwine in both sectors and innovative behaviors transcend employees' places of engagement. EIB in services is conceptualized as a process with various individual workplace behaviors from opportunity exploration to idea realization, for the purpose of employees' personal development and performance improvement. It was also empirically studied and applied in the hospitality industry.

EIB in services is beneficial for both service firms and employees, and influenced by both individual-level and organizational factors. Specifically, job characteristics are important factors influencing EIB in services. Job factors directly influence EIB by providing more autonomy, encouraging skill development, and affording feedback. They may also indirectly influence EIB mediated via other factors such as work motivation and job stress.

### **5.2 Theoretical implications**

Reviewing the concept of EIB in services could build the foundation for related research. This study summarized the different approaches to examine EIB in services based on theories in manufacturing context and clarified the concept with the analysis of its nature and connotation as

well as measurement scales. The findings help make the current knowledge more organized. Using the results in general innovation research to explain EIB may be inappropriate, as individual employees have their own needs and motivation (Amo, 2006). Meanwhile, EIBs in services have uniqueness and need to be examined specifically. For example, compared with innovation in manufacturing, EIB in services usually involves the application of technology from other industries and considers customers' personalized demand (Sundbo et al., 2007). However, based on general innovation research, using different approaches to investigate EIB in services would bring value to organization behavior research.

EIB in services is affected by various factors. Summarizing the relationship between these factors and EIB can indicate research gaps and potential topics. Employees with different personality and in firms with different organizational factors may exhibit innovative behaviors differently. This study incorporated JCM, JD-R model, and EIB, along with other relevant concepts, and expanded the conceptual development of these models and concepts. Propositions to be validated based on these were derived and given in the review.

### **5.3 Practical implications**

Clarifying the concept of EIB in services through a comprehensive review of the literature would be helpful for practitioners to understand EIB, its influencing factors, and how to interpret information derived from innovation research based on the manufacturing industry. This paper could serve as a one-stop information source for hospitality managers to get a quick understanding of EIB and related concepts. Practitioners could also adopt popular scales from previous research, as summarized in Table 3, according to different situation to measure their

employees' innovative behaviors. In addition, managers can encourage employees to more actively innovate by influencing the contextual factors such as organizational culture, and even personal factors via well-designed training. Based on the literature on the relationships between job characteristics and EIB, managers could more effectively design jobs, considering the various factors reviewed in this paper to affect their subordinates' motivation to innovate. Considering both the direct and indirect influences of job characteristics on EIB through psychological factors such as work motivation and work engagement, job designers need to consider the meaningfulness, responsibility, and knowledge aspects of jobs and their influence on employees' motivation to innovate. This consideration is especially important for the hospitality industry, which is viewed as a labor-intensive industry and involves various types of jobs (Martínez-Ros and Orfila-Sintes, 2009).

#### **5.4 Future research**

Three approaches to research on EIB in service are commonly adopted. Yet the research based on synthesis approach is relatively lacking. It would be of value for future research to examine employee innovation transcending product (goods and services) differences. Meanwhile, from the differentiation (approach) point of view, a particular characteristic of services that may influence innovation is customers' participation, together with their exchanges with employees (Grisseemann et al., 2013). Although many studies have examined the effect of leader-member exchanges and team member exchanges on EIB (Liao et al., 2010; Volmer et al., 2012), little research has addressed the effect of customer-employee exchanges on employee innovation. This topic can be a direction for future research.

According to the literature, jobs with a certain level of complexity may pose some challenges to employees, which may drive employees to innovate (Shalley et al., 2009). Meanwhile, jobs with lower complexity are more favorable for employees' efficiency (Morgeson and Humphrey, 2006). Thus, complex and challenging jobs actually facilitate EIB at the cost of efficiency. As performance and competitiveness are usually the final goals of firms, whether EIB mediates the relationship between job complexity and performance needs to be clarified. This issue can be a topic for future research.

Different job characteristics may not influence EIB in the same way. For example, skill variety significantly influence EIB, whereas higher job autonomy may not lead to more innovative behaviors if the task identity is low (Coelho and Augusto, 2010). These factors may interact with each other when EIB is examined. Therefore, future research could focus on the interactive effect of job characteristics on EIB in the context of services. Furthermore, the direction of the relationship between task identity and EIB, as the fourth proposition indicated, needs to be verified.

Although studies tend to support the positive relationship between job characteristics and EIB, the relationship is more complicated when mediating factors are considered (Coelho and Augusto, 2010; Geng et al., 2014). The mechanism of the influence requires a more specific investigation in consideration of other factors, such as emotion in the workplace. These factors are reflected in the aforementioned propositions P8-P11. Based on the research gaps identified in the review, future research can investigate the following topics: the potential mediating role of work motivation in the relationship between job characteristics (e.g., challenging work) and EIB; the mechanism of job characteristics affecting employee innovation through job stress; emotion as a mediator in the effect of job characteristics on EIB.

Most researchers regard job characteristics as antecedents to EIB and assume that job characteristics are determined by service firms (Coelho and Augusto, 2010; Ohly et al., 2006). In the long term, however, employee innovation may also affect job characteristics during the process in which employees solve work-related problems (Yuan and Woodman, 2010). Furthermore, most studies have examined EIB in a specific point in time or over a short period. However, innovation is not a routine work of employees occurring at high frequency. Therefore, future researchers need to investigate the relationship between job characteristics and EIB over a long period through longitudinal studies.

## References

- Amabile, T.M., Barsade, S.G., Mueller, J.S. and Staw, B.M. (2005), "Affect and creativity at work", *Administrative Science Quarterly*, Vol.50 No.3, pp.367-403.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J. and Herron, M. (1996), "Assessing the work environment for creativity", *Academy of Management Journal*, Vol.39 No.5, pp.1154-1184.
- Amalia, M. and Nugroho, Y. (2011), "An innovation perspective of knowledge management in a multinational subsidiary", *Journal of Knowledge Management*, Vol.15 No.1, pp.71-87.
- Amo, B.W. (2006), "What motivates knowledge workers to involve themselves in employee innovation behaviour?", *International Journal of Knowledge Management Studies*, Vol.1 No.1, pp.160-177.
- Axtell, C.M., Holman, D.J., Unsworth, K.L., Wall, T.D., Waterson, P.E. and Harrington, E. (2000), "Shopfloor innovation: Facilitating the suggestion and implementation of ideas", *Journal of Occupational and Organizational Psychology*, Vol.73 No.3, pp.265-285.
- Baer, M. (2012), "Putting creativity to work: The implementation of creative ideas in organizations", *Academy of Management Journal*, Vol.55 No.5, pp.1102–1119.
- Baer, M., Oldham, G.R. and Cummings, A. (2003), "Rewarding creativity: When does it really matter?" *The Leadership Quarterly*, Vol.14 No.4, pp.569-586.
- Battistelli, A., Montani, F. and Odoardi, C. (2013), "The impact of feedback from job and task autonomy in the relationship between dispositional resistance to change and innovative



- work behavior”, *European Journal of Work and Organizational Psychology*, Vol.22 No.1, pp.26-41.
- Bhatnagar, J. (2012), “Management of innovation: role of psychological empowerment, work engagement and turnover intention in the Indian context”, *The International Journal of Human Resource Management*, Vol.23 No.5, pp.928-951.
- Cadwallader, S., Jarvis, C.B., Bitner, M.J. and Ostrom, A.L. (2010), “Frontline employee motivation to participate in service innovation implementation”, *Journal of the Academy of Marketing Science*, Vol.38 No.2, pp.219-239.
- Calantone, R.J., Cavusgil, S.T. and Zhao, Y. (2002), “Learning orientation, firm innovation capability, and firm performance”, *Industrial Marketing Management*, Vol.31 No.6, pp.515-524.
- Camisón, C. and Monfort-Mir, V.M. (2012), “Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives”, *Tourism Management*, Vol.33 No.4, pp.776-789.
- Campo, S., Díaz, A.M. and Yagüe, M.J., (2014), "Hotel innovation and performance in times of crisis", *International Journal of Contemporary Hospitality Management*, Vol.26 No.8, pp.1292 – 1311.
- Carmeli, A., Meitar, R. and Weisberg, J. (2006), “Self-leadership skills and innovative behavior at work”, *International Journal of Manpower*, Vol.27 No.1, pp.75-90.
- Castro, L.M., Montoro-Sanchez, A. and Ortiz-De-Urbina-Criado, M. (2011), “Innovation in services industries: current and future trends”, *The Service Industries Journal*, Vol.31

No.1, pp.7-20.

Chang, S., Gong, Y. and Shum, C. (2011), “Promoting innovation in hospitality companies through human resource management practices”, *International Journal of Hospitality Management*, Vol.30 No.4, pp.812-818.

Chen, W. (2011), “Innovation in hotel services: Culture and personality”, *International Journal of Hospitality Management*, Vol.30 No.1, pp.64-72.

Chen, C., Shih, H. and Yeh, Y. (2011a), “Individual initiative, skill variety, and creativity: The moderating role of knowledge specificity and creative resources”, *The International Journal of Human Resource Management*, Vol.22 No.17, pp.3447-3461.

Chen, J., Tsou, H. and Ching, R.K. (2011b), “Co-production and its effects on service innovation”, *Industrial Marketing Management*, Vol.40 No.8, pp.1331-1346.

Choi, J.N., Sung, S.Y., Lee, K. and Cho, D. (2011), “Balancing cognition and emotion: Innovation implementation as a function of cognitive appraisal and emotional reactions toward innovation”, *Journal of Organizational Behavior*, Vol.32 No.1, pp.107-124.

Chou, C., Chen, K., and Wang, Y. (2012), “Green practices in the restaurant industry from an innovation adoption perspective: Evidence from Taiwan”, *International Journal of Hospitality Management*, Vol.31 No.3, pp.703-711.

Coelho, F. and Augusto, M. (2010), “Job characteristics and the creativity of frontline service employees”, *Journal of Service Research*, Vol.13, pp.426-438.

De Bloom, J., Ritter, S., Kühnel, J., Reinders, J. and Geurts, S. (2014), “Vacation from work: A ‘ticket to creativity’?: The effects of recreational travel on cognitive flexibility and

- originality”. *Tourism Management*, Vol.44, pp.164-171.
- De Jong, J. and Den Hartog, D. (2007), “How leaders influence employees' innovative behavior”, *European Journal of Innovation Management*, Vol.10 No.1, pp.41-64.
- De Jong, J. and Den Hartog, D. (2010), “Measuring innovative work behavior”, *Creativity and Innovation Management*, Vol.19 No.1, pp.23-36.
- De Jong, J. and Kemp, R. (2003), “Determinants of co-workers' innovative behaviour: An investigation into knowledge intensive services”, *International Journal of Innovation Management*, Vol.7 No.2, pp.189-212.
- De Vries, E.J. (2006), “Innovation in services in networks of organizations and in the distribution of services”, *Research Policy*, Vol.35 No.7, pp.1037-1051.
- Deegahawature, M. (2014), “Managers’ Inclination towards Open Innovation: Effect of Job Characteristics”, *European Journal of Business and Management*, Vol.6 No.1, pp.8-16.
- Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W.B. (2001), “The job demands-resources model of burnout”, *Journal of Applied psychology*, Vol.86 No.3, pp.499-512.
- Dorenbosch, L., Van Engen, M.L. and Verhagen, M. (2005), “On-the-job innovation: The impact of job design and human resource management through production ownership”, *Creativity and Innovation Management*, Vol.14 No.2, pp.129-141.
- Drejer, I. (2004), “Identifying innovation in surveys of services: A Schumpeterian perspective”, *Research Policy*, Vol.33 No.3, pp.551-562.
- Duverger, P. (2011), “Using dissatisfied customers as a source for innovative service ideas”, *Journal of Hospitality & Tourism Research*, Vol.36 No.4, pp.537-563.

- Enz, C.A. and Siguaw, J.A. (2003), "Revisiting the Best of the Best: Innovations in the Hotel Practice", *Cornell Hotels and Restaurant Administration Quarterly*, Vol.44 No.5-6, pp.115–123.
- Fong, C.T. (2006), "The effects of emotional ambivalence on creativity", *Academy of Management Journal*, Vol.49 No.5, pp.1016-1030.
- Frehse, J. (2006), "Innovative product development in hotel operations", *Journal of Quality Assurance in Hospitality & Tourism*, Vol.6 No.3-4, pp.129-146.
- Gallouj, F. (2002), "Innovation in services and the attendant old and new myths", *The Journal of Socio-Economics*, Vol.31 No.2, pp.137-154.
- Gallouj, F. and Savona, M. (2009), "Innovation in services: A review of the debate and a research agenda", *Journal of Evolutionary Economics*, Vol.19 No.2, pp.149-172.
- Geng, Z., Liu, C., Liu, X. and Feng, J. (2014), "The effects of emotional labor on frontline employee creativity", *International Journal of Contemporary Hospitality Management*, Vol.26 No.7, pp.1046-1064.
- Gong, Y., Huang, J., and Farh, J. (2009), "Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy", *Academy of Management Journal*, Vol.52 No.4, pp.765-778.
- González, M. and León, C.J. (2001), "The adoption of environmental innovations in the hotel industry of Gran Canaria", *Tourism Economics*, Vol.7 No.2, pp.177-190.
- Grissemann, U., Plank, A. and Brunner-Sperdin, A. (2013), "Enhancing business performance of hotels: The role of innovation and customer orientation", *International Journal of Hospitality Management*, Vol.33, pp.347-356.

- Guisado-González, M., Guisado-Tato, M. and Rodríguez-Domínguez, M. (2014) Testing the relationship between product innovation and process innovation: A comparative analysis of tourism and manufacturing sectors. *European Journal of Tourism Research*, Vol.8, pp. 66-82.
- Hackman, J.R., and Oldham, G.R. (1975), “Development of the job diagnostic survey. *Journal of Applied psychology*”, Vol.60 No.2, pp.159-170.
- Hallin, C.A. and Marnburg, E. (2008), “Knowledge management in the hospitality industry: A review of empirical research”, *Tourism Management*, Vol.29 No.2, pp.366-381.
- Hertog, P.D. (2000), “Knowledge-intensive business services as co-producers of innovation”, *International Journal of Innovation Management*, Vol.4 No.4, pp.491-528.
- Hipp, C. and Grupp, H. (2005), “Innovation in the service sector: The demand for service-specific innovation measurement concepts and typologies”, *Research Policy*, Vol.34 No.4, pp.517-535.
- Hoarau, H., and Kline, C. (2014), “Science and industry: Sharing knowledge for innovation”, *Annals of Tourism Research*, Vol.46, pp.44-61.
- Holman, D., Totterdell, P., Axtell, C., Stride, C., Port, R., Svensson, R. and Zibarras, L. (2012), “Job design and the employee innovation process: The mediating role of learning strategies”, *Journal of Business and Psychology*, Vol.27 No.2, pp.177-191.
- Hon, A.H. (2011), “Enhancing employee creativity in the Chinese context: The mediating role of employee self-concordance”, *International Journal of Hospitality Management*, Vol.30 No.2, pp.375-384.

- Hon, A.H. (2012), "Shaping environments conducive to creativity: The role of intrinsic motivation". *Cornell Hospitality Quarterly*, Vol.53 No.1, pp.53-64.
- Hon, A.H. (2013), "Does job creativity requirement improve service performance: A multilevel analysis of work stress and service environment", *International Journal of Hospitality Management*, Vol.35, pp.161-170.
- Hon, A.H., Chan, W.W. and Lu, L. (2013), "Overcoming work-related stress and promoting employee creativity in hotel industry: The role of task feedback from supervisor", *International Journal of Hospitality Management*, Vol.33, pp.416-424.
- Hon, A.H. and Leung, A.S. (2011), "Employee creativity and motivation in the Chinese context: The moderating role of organizational culture", *Cornell Hospitality Quarterly*, Vol.52 No.2, pp.125-134.
- Hu, M.L. (2009), "Knowledge sharing and innovative service behavior relationship: Guanxi as mediator", *Social Behavior and Personality: An International Journal*, Vol.37 No.7, pp.977-992.
- Hu, M.L. (2010), "Developing a core competency model of innovative culinary development", *International Journal of Hospitality Management*, Vol.29 No.4, pp.582-590.
- Hu, M., Horng, J. and Sun, Y. (2009), "Hospitality teams: Knowledge sharing and service innovation performance", *Tourism Management*, Vol.30 No.1, pp.41-50.
- Janssen, O. (2000), "Job demands, perceptions of effort-reward fairness and innovative work behavior", *Journal of Occupational and Organizational Psychology*, Vol.73 No.3,

pp.287-302.

Janssen, O. (2005), "The joint impact of perceived influence and supervisor supportiveness on employee innovative behavior", *Journal of Occupational and Organizational Psychology*, Vol.78 No.4, pp.573-579.

Janssen, O., Van de Vliert, E. and West, M. (2004), "The bright and dark sides of individual and group innovation: A special issue introduction", *Journal of Organizational Behavior*, Vol.25 No.2, pp.129-145.

Karatepe, O.M. (2011), "Do job resources moderate the effect of emotional dissonance on burnout?: A study in the city of Ankara, Turkey", *International Journal of Contemporary Hospitality Management*, Vol.23 No.1, pp.44-65.

Kesting, P. and Ulhøi, J.P. (2010), "Employee-driven innovation: Extending the license to foster innovation", *Management Decision*, Vol.48 No.1, pp.65-84.

Kim, K.H. (2006), "Is creativity unidimensional or multidimensional? Analyses of the Torrance Tests of Creative Thinking", *Creativity Research Journal*, Vol.18 No.3, pp.251-259.

Kim, T.T. and Lee, G. (2013), "Hospitality employee knowledge-sharing behaviors in the relationship between goal orientations and service innovative behavior", *International Journal of Hospitality Management*, Vol.34, pp.324-337.

Kleysen, R.F. and Street, C.T. (2001), "Toward a multi-dimensional measure of individual innovative behavior", *Journal of Intellectual Capital*, Vol.2 No.3, pp.284-296.

Krause, D.E. (2004), "Influence-based leadership as a determinant of the inclination to innovate and of innovation-related behaviors: An empirical investigation", *The Leadership*

*Quarterly*, Vol.15 No.1, pp.79-102.

Krizaj, D., Brodnik, A. and Bukovec, B. (2014), "A tool for measurement of innovation newness and adoption in tourism firms", *International Journal of Tourism Research*, Vol.16, pp.113-125.

Lai, J., Lui, S., and Hon, A.H. (2014), "Does standardized service fit all? Novel service encounter in frontline employee-customer interface", *International Journal of Contemporary Hospitality Management*, Vol.26 No.8, pp.1341-1363.

Larson, M. (2011), "Innovation and creativity in festival organizations", *Journal of Hospitality Marketing & Management*, Vol.20, pp.287-310.

Leung, K., Huang, K., Su, C. and Lu, L. (2011), "Curvilinear relationships between role stress and innovative performance: Moderating effects of perceived support for innovation", *Journal of Occupational and Organizational Psychology*, Vol.84 No.4, pp.741-758.

Liao, H., Liu, D. and Loi, R. (2010), "Looking at both sides of the social exchange coin: A social cognitive perspective on the joint effects of relationship quality and differentiation on creativity", *Academy of Management Journal*, Vol.53 No.5, pp.1090-1109.

Lin, C.Y. and Liu, F. (2012), "A cross-level analysis of organizational creativity climate and perceived innovation: The mediating effect of work motivation", *European Journal of Innovation Management*, Vol.15 No.1, pp.55-76.



- López-Fernández, M.C., Serrano-Bedia, A.M., and Gómez-López, R. (2011), “Factors encouraging innovation in Spanish hospitality firms”, *Cornell Hospitality Quarterly*, Vol.52 No.2, pp.144-152.
- Luoh, H., Tsaor, S. and Tang, Y. (2014), “Empowering employees: Job standardization and innovative behavior”, *International Journal of Contemporary Hospitality Management*, Vol.26 No.7, pp.1100-1117.
- Madrid, H.P., Patterson, M.G., Birdi, K.S., Leiva, P.I. and Kausel, E.E. (2014), “The role of weekly high-activated positive mood, context, and personality in innovative work behavior: A multilevel and interactional model”, *Journal of Organizational Behavior*, Vol.35 No.2, pp.234-256.
- Martín, P., Salanova, M. and Peiró, J.M. (2007), “Job demands, job resources and individual innovation at work: Going beyond Karasek's model?”, *Psicothema*, Vol.19 No.4, pp.621-626.
- Martínez-Ros, E. and Orfila-Sintes, F. (2009), “Innovation activity in the hotel industry”, *Technovation*, Vol.29, pp.632-641.
- Martínez-Ros, E. and Orfila-Sintes, F. (2012), “Training plans, manager's characteristics and innovation in the accommodation industry”, *International Journal of Contemporary Hospitality Management*, Vol.31, pp.686-694.
- Matthew, O.T. and Chigozie, U.B. (2014), “Perception of job characteristics and age as determinants of employee creativity”, *European Journal of Business and Management*, Vol.6 No.12, pp.119-123.
- Michael, L.A.H., Hou, S.T., & Fan, H.L. (2011), “Creative self-efficacy and innovative behavior

- in a service setting: Optimism as a moderator”, *The Journal of Creative Behavior*, Vol.45 No.4, pp.258-272.
- Miles, I. (2008), “Patterns of innovation in service industries”, *IBM Systems Journal*, Vol.47 No.1, pp.115-128.
- Morgeson, F.P. and Humphrey, S.E. (2006), “The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work”, *Journal of Applied Psychology*, Vol.91 No.6, pp.1321-1339.
- Nieves, J., Quintana, A., and Osorio, J. (2014), “Knowledge-based resources and innovation in the hotel industry”, *International Journal of Hospitality Management*, Vol.38, pp.65-73.
- Ohly, S., Sonnentag, S. and Pluntke, F. (2006), “Routinization, work characteristics and their relationships with creative and proactive behaviors”, *Journal of Organizational Behavior*, Vol.27 No.3, pp.257-279.
- Ohly, S. and Fritz, C. (2010), “Work characteristics, challenge appraisal, creativity, and proactive behavior: A multi-level study”, *Journal of Organizational Behavior*, Vol.31 No.4, pp.543-565.
- Oldham, G.R., and Cummings, A. (1996), “Employee creativity: Personal and contextual factors at work”, *Academy of Management Journal*, Vol.39 No.3, pp.607-634.
- Orfila-Sintes, F., Crespí-Cladera, R. and Martínez-Ros, E. (2005), “Innovation activity in the hotel industry: Evidence from Balearic Islands”, *Tourism Management*, Vol.26 No.6, pp.851-865.

- Orfila-Sintes, F. and Mattsson, J. (2009), "Innovation behavior in the hotel industry", *Omega*, Vol.37 No.2, pp.380-394.
- Ottensbacher, M.C. (2007), "Innovation management in the hospitality industry: Different strategies for achieving success", *Journal of Hospitality and Tourism Research*, Vol.31 No.4, pp.431-454.
- Ottensbacher, M. and Harrington, R.J. (2007), "The innovation development process of Michelin-starred chefs", *International Journal of Contemporary Hospitality Management*, Vol.19 No.6, pp.444-460.
- Ottensbacher, M.C. and Harrington, R.J. (2009), "The product innovation process of quick-service restaurant chains", *International Journal of Contemporary Hospitality Management*, Vol.21 No.5, pp.523-541.
- Paton, R.A. and McLaughlin, S. (2008), "Services innovation: Knowledge transfer and the supply chain", *European Management Journal*, Vol.26 No.2, pp.77-83.
- Quintane, E., Casselman, R.M., Reiche, B.S. and Nylund, P. (2011), "Innovation as a knowledge-based outcome", *Journal of Knowledge Management*, Vol.15 No.6, pp.928-947.
- Ramamoorthy, N., Flood, P.C., Slattery, T. and Sardesai, R. (2005), "Determinants of innovative work behaviour: Development and test of an integrated model", *Creativity and Innovation Management*, Vol.14 No.2, pp.142-150.
- Robinson, R.N., and Beesley, L.G. (2010), "Linkages between creativity and intention to quit: An occupational study of chefs", *Tourism Management*, Vol.31 No.6, pp.765-776.

- Rodgers, S. (2007), "Innovation in food service technology and its strategic role", *International Journal of Hospitality Management*, Vol.26, pp.889-912.
- Schaufeli, W.B. and Bakker, A.B. (2004), "Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study", *Journal of Organizational Behavior*, Vol.25 No.3, pp.293-315.
- Scott, S.G. and Bruce, R.A. (1994), "Determinants of innovative behavior: A path model of individual innovation in the workplace", *Academy of Management Journal*, Vol.37 No.3, pp.580-607.
- Shalley, C.E. and Gilson, L.L. (2004), "What leaders need to know: A review of social and contextual factors that can foster or hinder creativity", *The Leadership Quarterly*, Vol.15 No.1, pp.33-53.
- Shalley, C.E., Gilson, L.L. and Blum, T.C. (2000), "Matching creativity requirements and the work environment: Effects on satisfaction and intentions to leave", *Academy of Management Journal*, Vol.43 No.2, pp.215-223.
- Shalley, C. E., Gilson, L. L. and Blum, T. C. (2009), "Interactive effects of growth need strength, work context, and job complexity on self-reported creative performance", *Academy of Management Journal*, Vol.52 No.3, pp.489-505.
- Shalley, C.E., Zhou, J., and Oldham, G.R. (2004), "The effects of personal and contextual characteristics on creativity: Where should we go from here?" *Journal of Management*, Vol.30 No.6, pp.933-958.
- Sheehan, J. (2006), "Understanding service sector innovation", *Communications of the*

*ACM*, Vol.49 No.7, pp.42-47.

Slåtten, T. and Mehmetoglu, M. (2011a), “What are the drivers for innovative behavior in frontline jobs? A study of the hospitality industry in Norway”, *Journal of Human Resources in Hospitality and Tourism*, Vol.10 No.3, pp.254-272.

Slåtten, T. and Mehmetoglu, M. (2011b), “Antecedents and effects of engaged frontline employees: A study from the hospitality industry”, *Managing Service Quality: An International Journal*, Vol.21 No.1, pp.88-107.

Slåtten, T., Svensson, G. and Sværi, S. (2011), “Empowering leadership and the influence of a humorous work climate on service employees' creativity and innovative behaviour in frontline service jobs”, *International Journal of Quality and Service Sciences*, Vol.3 No.3, pp.267-284.

Stierand, M.B., and Dörfler, V. (2012), “Reflecting on a phenomenological study of creativity and innovation in haute cuisine”, *International Journal of Contemporary Hospitality Management*, Vol.24 No.6, pp.946-957.

Su, C.S. (2011), “The role of service innovation and customer experience in ethnic restaurants”, *The Service industries journal*, Vol.31 No.3, pp.425-440.

Sundbo, J., Orfila-Sintes, F. and Soerensen, F. (2007), “The innovative behaviour of tourism firms – comparative studies of Denmark and Spain”, *Research Policy*, Vol.36 No.1, pp.88-106.

Tajeddini, K. and Trueman, M. (2012), “Managing Swiss hospitality: How cultural antecedents of innovation and customer-oriented value systems can influence performance in the

- hotel industry”, *International Journal of Hospitality Management*, Vol.31, pp.1119-1129.
- Tierney, P. and Farmer, S.M. (2002), “Creative self-efficacy: Its potential antecedents and relationship to creative performance”, *Academy of Management Journal*, Vol.45 No.6, pp.1137-1148.
- Tranfield, D., Denyer, D. and Smart, P. (2003), “Towards a methodology for developing evidence-informed management knowledge by means of systematic review”, *British Journal of Management*, Vol.14 No.3, pp.207-222.
- Tsaur, S., Yen, C. and Yang, W. (2011), “Do job characteristics lead to employee creativity in travel agencies?”, *International Journal of Tourism Research*, Vol.13 No.2, pp.191-204.
- Tu, Y. and Lu, X. (2013), “How ethical leadership influence employees’ innovative work behavior: A perspective of intrinsic motivation”, *Journal of Business Ethics*, Vol.116 No.2, pp.441-455.
- Victorino, L., Verma, R., Plaschka, F. and Dev, C. (2005), “Service innovation and customer choices in the hospitality industry”, *Managing Service Quality: An International Journal*, Vol.15 No.6, pp.555–576.
- Volmer, J., Spurk, D. and Niessen, C. (2012), “Leader–member exchange (LMX), job autonomy, and creative work involvement”, *The Leadership Quarterly*, Vol.23 No.3, pp.456-465.
- Wang, A. and Cheng, B. (2010), “When does benevolent leadership lead to creativity? The moderating role of creative role identity and job autonomy”, *Journal of Organizational Behavior*, Vol.31 No.1, pp.106-121.
- Wang, C., Tsai, H. and Tsai, M. (2014), “Linking transformational leadership and employee creativity in the hospitality industry: The influences of creative role identity, creative

- self-efficacy, and job complexity”, *Tourism Management*, Vol.40, pp.79-89.
- Wastell, D.G., and Cooper, C.L. (1996), “Stress and technological innovation: A comparative study of design practices and implementation strategies”, *European Journal of Work and Organizational Psychology*, Vol.5 No.3, pp.377-397.
- Weiermair, K. (2005), “Prospects for innovation in tourism. Analyzing the innovation potential throughout the tourism value chain”, *Journal of Quality Assurance in Hospitality and Tourism*, Vol.6 No.3/4, pp.59-72.
- West, M.A. (2002), “Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups”, *Applied Psychology*, Vol.51 No.3, pp.355-387.
- Whittington, J.L., Goodwin, V.L. and Murray, B. (2004), “Transformational leadership, goal difficulty, and job design: Independent and interactive effects on employee outcomes”, *The Leadership Quarterly*, Vol.15 No.5, pp.593-606.
- Wolfradt, U. and Pretz, J.E. (2001), “Individual differences in creativity: Personality, story writing, and hobbies. *European Journal of Personality*”, Vol.15 No.4, pp.297-310.
- Wong, S.C. and Ladkin, A. (2008), “Exploring the relationship between employee creativity and job-related motivators in the Hong Kong hotel industry”, *International Journal of Hospitality Management*, Vol.27 No.3, pp.426-437.
- Wong, S.C. and Pang, W.L. (2003), “Barriers to creativity in the hotel industry—perspectives of managers and supervisors”, *International Journal of Contemporary Hospitality Management*, Vol.15 No.1, pp.29-37.

- Yang, S. and Choi, S.O. (2009), "Employee empowerment and team performance: Autonomy, responsibility, information, and creativity", *Team Performance Management*, Vol.15 No.5/6, pp.289-301.
- Yuan, F. and Woodman, R.W. (2010), "Innovative behavior in the workplace: The role of performance and image outcome expectations", *Academy of Management Journal*, Vol.53 No.2, pp.323-342.
- Zach, F. (2013), "Collaboration for innovation in tourism organizations: Leadership support, innovation, formality, and communication", *Journal of Hospitality & Tourism Research*, Vol.21 No.4, pp.1-20.
- Zhang, X., and Bartol, K.M. (2010), "Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement", *Academy of Management Journal*, Vol.53 No.1, pp.107-128.
- Zhou, J. and George, J.M. (2001), "When job dissatisfaction leads to creativity: Encouraging the expression of voice", *Academy of Management Journal*, Vol.44 No.4, pp.682-696.
- Zhou, J. and Shalley, C.E. (2003), "Research on employee creativity: A critical review and directions for future research", *Research in personnel and human resources management*, Vol.22, pp.165-217.



Table 1. Three approaches to research on employee innovative behavior in services

<b>Approaches</b>	<b>Characteristics</b>	<b>Representative Research</b>
Assimilation	<ul style="list-style-type: none"> <li>• Using research on EIB in manufacturing industries as a guideline</li> <li>• Extending employee innovation from manufacturing sectors to service industries</li> <li>• Highlighting technology adoption from manufacturing industries</li> </ul>	Chou et al., 2012; Gallouj, 2002; Hon and Leung, 2011; Hu, 2010; Orfila-Sintes et al., 2005; Ottenbacher and Harrington, 2009; Rodgers, 2007; Slåtten et al., 2011
Differentiation	<ul style="list-style-type: none"> <li>• Based on the uniqueness of services and differences between goods and services</li> <li>• Mainly focusing on process-related improvements</li> <li>• Examining the influence of customer–employee interaction</li> <li>• Emphasizing individual employees’ perceptions, experience and learning</li> </ul>	Cadwallader et al., 2010; Gallouj and Savona, 2009; Guisado-González et al., 2014; Lai et al., 2014; Paton and McLaughlin, 2008; Stierand and Dörfler, 2012
Synthesis	<ul style="list-style-type: none"> <li>• Combining the similarities and differences in innovation between service and manufacturing sectors</li> <li>• Using a multi-dimensional perspective, with technology adoption or service process improvement as one of the dimensions</li> </ul>	González and León, 2001; Hertog, 2000; Hoarau and Kline, 2014; López-Fernández et al., 2011

Table 2. Conceptualization of employee innovative behavior

<b>Perspectives</b>	<b>Characteristics</b>	<b>Exemplary Studies</b>
Level	<ul style="list-style-type: none"> <li>• Individual level compared with group- and firm-level innovation</li> <li>• Usually frontline employees</li> </ul>	Chen et al., 2011; Geng et al., 2014; Slåtten and Mehmetoglu, 2011a; West, 2002
Context	<ul style="list-style-type: none"> <li>• Workplace behaviors, solving work-related problems or improving service processes</li> <li>• Extra-role behaviors not required by the job</li> <li>• On-the-job innovation: intentional creation and implementation of new ideas</li> </ul>	Baer, 2012; De Jong and Den Hartog, 2010; Dorenbosch et al., 2005
Nature	<ul style="list-style-type: none"> <li>• A process with many stages</li> </ul>	Janssen, 2000; West, 2002
Components	<ul style="list-style-type: none"> <li>• Including opportunity exploration, idea generation, idea development, idea investigation, idea testing, idea promotion, idea implementation, idea realization, and idea application</li> </ul>	Camisón and Monfort-Mir, 2012; Kim and Lee, 2013; Kleysen and Street, 2001; Krause, 2004
Aims	<ul style="list-style-type: none"> <li>• Employees' personal development and performance improvement</li> <li>• Employees' intrinsic and extrinsic rewards</li> <li>• Benefits to service firms' performance and core competence</li> </ul>	Amo, 2006; Carmeli et al., 2006; Hu, 2009; Kim and Lee, 2013

Table 3. Measurement of employee innovative behavior

<b>Research</b>	<b>Dimensions and Items</b>	<b>Validity/Reliability</b>
Janssen, 2000	3 dimensions: idea generation, idea promotion, and idea realization; 3 items for each dimension.	Responses from 170 employees ( $\alpha=.95$ ) and 110 supervisors ( $\alpha=.96$ ); significant correlation between ratings ( $r= .35$ ).
Zhou and George, 2001	1 dimension, 13 items.	Supervisors assessed 149 employees; $\alpha=.96$ .
Kleysen and Street, 2001	5 dimensions: innovative behavior, opportunity exploration, generativity, formative investigation, championing, and application; 14 items.	Responses from 225 employees in 9 firms; $\alpha = .95$ ; hypothesized factor structure was not supported, but the construct was multidimensional.
Krause, 2004	2 dimensions: generation and testing of ideas (5 items) and implementation (3 items).	Responses from 399 middle managers, with $\alpha = .78$ and $.81$ for the two factors.
Dorenbosch et al., 2005	2 dimensions: creativity-oriented behavior (including problem recognition and idea generation: 10 items) and implementation-oriented behavior (including idea promotion and realization: 6 items).	Responses from 132 with $\alpha= .90$ and $.88$ for the two factors.
Hu et al., 2009	1 dimension, 6 items	621 hotel employees; $\alpha= .90$ , AVE=.59.
De Jong and Den Hartog, 2010	4 dimensions: idea exploration (2 items), idea generation (3 items), idea championing (2 items), and idea implementation (3 items).	$\alpha= .88, .90, .95$ , and $.93$ for the four factors; confirmatory factor analysis showed good model fit.

Table 4. Influence of job characteristics on employee innovative behavior

<b>Job Characteristics</b>	<b>Relationship</b>	<b>Representative Studies</b>
Job complexity	Higher job complexity tends to result in more innovative behaviors.	Oldham and Cummings, 1996; Shalley et al., 2009
Job autonomy	Job autonomy positively relates to EIB.	De Jong and Kemp, 2003; Luoh et al., 2014
Skill variety	Skill variety positively affects EIB.	Chen et al., 2011
Task identity	Task identity influences EIB.	Coelho and Augusto, 2010; Deeghawature, 2014
Task significance	Task significance is positively associated with EIB.	Coelho and Augusto, 2010
Job feedback	Job feedback has a positive effect on EIB.	Coelho and Augusto, 2010
Job demands	With job resources and effort–reward fairness, job demands stimulate EIB.	Janssen, 2000

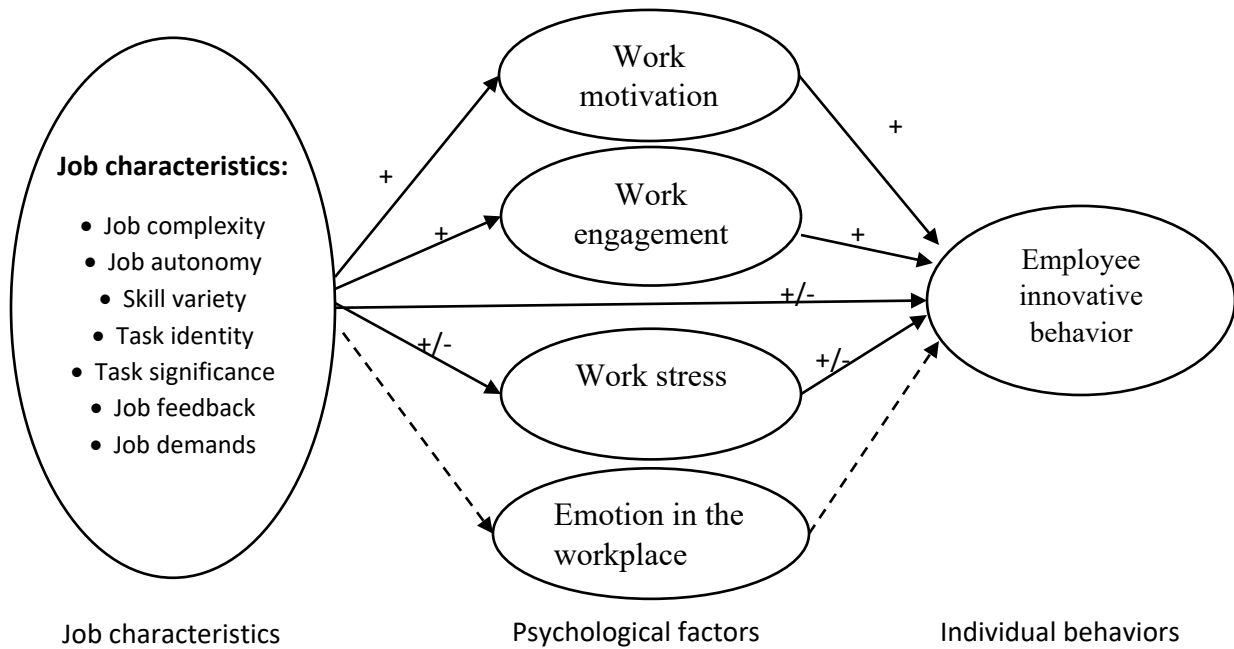


Figure 1. Relationship between job characteristics and employee innovative behavior

Note: 1) Dashed lines indicate that the mediating role of emotion between all job characteristics and EIB has not been empirically tested. 2) +/- indicates the direction of the influence.