



Innovation, entrepreneurship, and restaurant performance: A higher-order structural model



Craig Lee ^{a, *}, Rob Hallak ^b, Shruti R. Sardeshmukh ^c

^a UniSA Business School, University of South Australia, RR4-09, City West Campus, Adelaide, SA 5000, Australia

^b UniSA Business School, University of South Australia, EM3-28, City West Campus, Adelaide, SA 5000, Australia

^c UniSA Business School, University of South Australia, EM5-24, City West Campus, Adelaide, SA 5000, Australia

HIGHLIGHTS

- Examines innovation, ESE and human capital as predictors of restaurant performance.
- Implementing innovation increases restaurant performance.
- ESE of the restaurant owner contributes to enhanced restaurant performance.
- Human capital indirectly affects performance through innovation and ESE.

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ABSTRACT

Drawing on theories from hospitality, innovation, and entrepreneurship, this study examines a higher-order structural model investigating business innovation, the owners' entrepreneurial self-efficacy (ESE), and human capital as drivers of restaurant performance. The theoretically derived model was tested on data from 198 café and restaurant owners in Australia. The PLS-SEM analysis found restaurant innovation activities and the owner's ESE to positively influence restaurant performance. Furthermore, the six ESE dimensions had varying effects on restaurant performance, with 'Developing new product and market opportunities' having the strongest effect. In contrast, the entrepreneur's 'human capital', representing their levels of business ownership experience and entrepreneurship/industry education, did not significantly affect restaurant performance. However, human capital indirectly affected performance through innovation and ESE. The findings of this study advance theories in restaurant entrepreneurship and performance and present important implications for industry authorities to develop a successful and sustainable restaurant sector.

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1. Introduction

Australia's restaurant sector employs the largest share of the workforce in the tourism industry while contributing \$22.1 billion in earnings to the national economy (Restaurant & Catering Australia, 2014; Tourism Research Australia, 2011). The recent 'Restaurant Australia' marketing campaign launched by Tourism Australia, the Government agency responsible for attracting international visitors (Tourism Australia, 2014) is indicative of the critical role played by the restaurant sector for Australian tourism. The

'Restaurant Australia' campaign aims to brand Australia as the world's greatest restaurant, promoting the unique food and wine experiences being offered. However, the restaurant sector faces many challenges, with businesses struggling to succeed in the midst of high competition, low barriers to entry, price conscious consumers, rising food prices, government regulation, and high labour costs (Assaf, Deery, & Jago, 2011; Restaurant & Catering Australia, 2014). The sector is also dominated by small and medium enterprises (SMEs) with over 99% of restaurant businesses classified as SMEs (ABS, 2014). A recent study by Restaurant & Catering Australia (2013), the main industry association group, reported that 63% of restaurant businesses earn an average net profit of just 2% after taxes. As a result, survival rates in the industry are low, with only half of the businesses that were operating in 2009 still trading in 2013 (ABS, 2014). Thus, understanding restaurant

* Corresponding author.

E-mail addresses: Craig.Lee@unisa.edu.au (C. Lee), Rob.Hallak@unisa.edu.au (R. Hallak), Shruti.Sardeshmukh@unisa.edu.au (S.R. Sardeshmukh).

performance is the central focus of this study as these businesses are critical for the success of the tourism and hospitality industry, and for the livelihood of the regions dependent on tourism income to survive.

Evidence suggests that restaurants can improve quality and reputation, cut costs, and increase sales and profits through 'innovation' (Ottenbacher & Gnoth, 2005). A continuous innovation process helps restaurants heighten barriers to imitation, keeping their portfolio ahead of the competition which establishes a long-term competitive advantage (Ottenbacher & Harrington, 2007). However, there is a significant gap in our understanding of how innovation affects performance in small and mid-sized restaurants (Ottenbacher & Gnoth, 2005). Studies of restaurant innovation practices are limited to a descriptive overview of the new product development process of fine-dining and quick-service restaurants (Ottenbacher & Harrington, 2007, 2009a, 2009b; Stierand, Dörfler, & Macbryde, 2014). Studies are yet to examine a broader range of innovations in the context of restaurant businesses – these include innovation in services, processes, management structures, and marketing techniques (Hjalager, 2010). Small independent restaurants may not have access to resources such as high quality produce and highly trained professional chefs (Ottenbacher & Harrington, 2009a), or have formal, well-structured innovation processes (Ottenbacher & Harrington, 2009b). Therefore, they may innovate differently by adopting and adapting innovations from outside sources instead of primarily creating new food products in-house. To explore this, a more rigorous examination of innovation as a driver of restaurant performance will be conducted in this study by conceptualising innovation to include product, service, process, management, and marketing innovations.

Innovation is also a key component of entrepreneurship, which is relevant when studying small independent restaurants as the owners of these businesses are also considered entrepreneurs (Jogaratnam, Tse, & Olsen, 1999). The Entrepreneurship Theory of Innovation identifies entrepreneurs as a key driver of economic development through the introduction of innovation (Schumpeter, 1952). Thus, entrepreneurs develop new innovations by introducing new products or production methods, opening up new markets or sources of new materials, and creating new organisational structures in industry. In doing so, they break the status quo, create change in the market, and develop a competitive advantage (Hébert & Link, 2006).

Studies of entrepreneurship in tourism and hospitality have focused on entrepreneurial self-efficacy (ESE) (Hallak, Assaker, & Lee, 2015; Hallak, Assaker, & O'Connor, 2012; Hallak, Brown, & Lindsay, 2012; Hallak, Lindsay, & Brown, 2011). ESE refers to an individual's belief in their ability to successfully achieve the tasks of entrepreneurship (Chen, Greene, & Crick, 1998). These tasks include developing new product and market opportunities, building an innovative environment, initiating investor relationships, defining core purpose, coping with unexpected challenges, and developing critical human resources (De Noble, Jung, & Ehrlich, 1999). Tourism entrepreneurs with high ESE have belief in their entrepreneurial capabilities, minimising their self-doubt which enables them to pursue entrepreneurial opportunities, be more persistent in overcoming failure, and be more confident to face challenges (Chen et al., 1998; Hallak et al., 2011). Thus, following the Entrepreneurship Theory of Innovation (Schumpeter, 1952), the restaurant owners' entrepreneurial capabilities are also critical for the development and implementation of business innovations.

Entrepreneurship theories also demonstrate the role of 'human capital' in influencing innovation, ESE, and performance (Davidsson & Honig, 2003; Maritz & Brown, 2013). Human capital refers to the amount of knowledge, skills, and abilities an individual possesses from their formal education, training, and work related experiences

(Saffu, Apori, Elijah-Mensah, & Ahumatah, 2008). Endogenous Growth Theory (Nelson & Phelps, 1966) posits that an increase in levels of education (e.g. primary, secondary, tertiary) enables individuals to adopt or introduce innovations at a faster rate as they develop abilities to understand, evaluate, and distinguish between promising and unpromising ideas. Therefore, as restaurant owners increase their human capital, it increases their cognitive abilities enabling them to better perceive and exploit profitable innovations which lead to enhanced firm performance (Davidsson & Honig, 2003). In addition, Self-Efficacy Theory (Bandura, 1997) argues that learning from past experience is the most important factor in developing higher beliefs in one's capabilities. Thus, the more an entrepreneur increases their human capital through gaining education and experience, the greater their self-confidence in their entrepreneurship capabilities to successfully manage their business (Maritz & Brown, 2013).

This study will expand existing knowledge by empirically examining a theoretically derived higher-order model representing the network of relationships among innovation, ESE, human capital, and restaurant performance. Through this approach, we contribute to the tourism and hospitality literature in four ways. First, we expand upon existing knowledge on small and mid-sized restaurants and the factors driving their performance. Second, we contribute to a more complete understanding of the effects of innovation on performance, conceptualising innovation to include product, service, process, management, and marketing innovations. Third, we empirically examine a model conceptualising ESE as a higher-order construct comprised of six first-order factors: 1) developing new product and market opportunities, 2) building an innovative environment, 3) defining core purpose, 4) initiating investor relationships, 5) coping with unexpected challenges, and 6) developing critical human resources; and identify the dimensions of ESE that are important in enhancing performance. Fourth, we advance the application of Partial Least Squares Structural Equation Modelling (PLS-SEM) in the context of tourism and hospitality research. Specifically, the research demonstrates the analysis of higher-order molecular models and examines the structural relationships among reflective and formative constructs using cross-sectional data. From a practical standpoint, the research allows restaurant owners to identify areas of business innovation and entrepreneurial capabilities that lead to restaurant success.

2. Theoretical framework

Drawing on the literature on innovation, entrepreneurship, hospitality, and restaurant management, this study adopts a comprehensive integrated framework (see Li, 2007) to examine the drivers of performance in restaurant firms. Understanding the antecedents of restaurant performance requires a holistic, 'value chain model' approach. The firms' value chain is a 'system of interdependent activities, which are connected by linkages' (Porter & Millar, 1985, p. 150). The 'value chain model' considers a business to have two strategically relevant value creating activities; primary and support activities. Primary activities involve the physical creation of products, the marketing and delivery of these products to buyers, and support and after sales service. Support activities are the inputs that allow primary activities to take place. This involves inputs in the form of purchases, human resources, technologies, and the structure of the firm (Porter & Millar, 1985). In this study, we propose that the firms' innovation activities, as well as the owner's ESE and human capital, are critical elements of a restaurants' value chain. These elements cut across all value creating activities of the firm, for example, new innovations are linked to the restaurants' primary activities of creating new products and new marketing strategies. It can also affect supporting activities by

introducing novel procurement solutions or innovative methods in managing human resources. Likewise, the owner's ESE and human capital influence the manner in which the interdependent activities of the firms' value chain are performed.

Fig. 1 presents the integrated conceptual model of restaurant performance. The model integrates four main theories from entrepreneurship and social psychology – Self-Efficacy Theory (Bandura, 1997), The Entrepreneurship Theory of Innovation (Schumpeter, 1952), Human Capital Theory (Nafukho, Hairston, & Brooks, 2004), and Endogenous Growth Theory (Nelson & Phelps, 1966). Through this approach, the proposed model examines the predictors of restaurant performance and the network of causal relationships. Restaurant Performance and Innovation Activities are hypothesised as reflective latent constructs, determined by six and five observed indicators respectively. Entrepreneurial Self-Efficacy is hypothesised as a higher-order molecular model represented by six dimensions. Human Capital is hypothesised as a formative construct determined by four observed indicators.

2.1. Innovation activities

Innovation plays a central role in entrepreneurship (Hébert & Link, 2006) and is defined as 'the process of bringing any new problem-solving idea into use ... it is the generation, acceptance, and implementation of new ideas, processes, products, or services' (Kanter, 1983, p. 20). Innovations must be 'new', which relates to an idea that is perceived as 'new' to an individual regardless of when it was first used or discovered, and must be successfully implemented to derive an economic benefit (Damanpour, 1987; Rogers, 2003). The Entrepreneurship Theory of Innovation stipulates that, in a capitalist system, entrepreneurs disturb or destroy existing economic structures and create new ones by putting untried methods into practice – a process labelled by Schumpeter (1952) as 'creative destruction'. In tourism and hospitality, entrepreneurs, through their concepts, products, ideas, and innovativeness, set new standards and radically shift the taste and preferences of their consumers, becoming a crucial factor in the evolutionary redirection of tourism and hospitality products and increasing competitiveness

(Hjalager, 2010). Empirical evidence suggests innovation drives the performance of hospitality organisations (Agarwal, Erramilli, & Dev, 2003; Grisseman, Plank, & Brunner-Sperdin, 2013; Lin, 2013). Hospitality products are difficult to protect through patents and copyrights so continuous innovation of products are needed for hospitality firms to stay ahead of competitors (Agarwal et al., 2003). Furthermore, implementing new management structures, technology to improve operational efficiency, and new logistics and delivery systems enables service firms to compete on price by lowering costs (Lin, 2013).

The operationalization of the innovation construct in previous tourism and hospitality research has obfuscated the findings. For example, the innovation measure used by Agarwal et al. (2003) assessed, on a five-point scale (1 = strongly disagree to 5 = strongly agree), a hotel's propensity to 'invest in generating new capabilities and figuring out whether or not it can come up with new ways to serve customers' (p. 73). These measures do not capture whether the new capabilities or new ways to serve customers were ultimately implemented, which is key in defining innovation (Damanpour, 1987). Lin (2013) focused on measuring only one type of innovation (i.e. service innovation) and used a perceptual based measure requiring respondents to compare their current innovation activities against their competitors (on a seven-point scale, 1 = great disadvantage, 7 = great advantage). Grisseman et al. (2013) used measures of innovative behaviour that were specific to hotels such as innovations in 'animation and leisure activities' and 'wellness facilities', which makes it difficult to be applied in other settings (i.e. the restaurant sector).

To address these limitations, this study will adopt a comprehensive measure of innovation based on the Schumpeterian approach and studies conducted under OECD guidelines that have categorised innovations as product, service, process, managerial, and marketing innovations (Hall, 2009; Hjalager, 2010; Sundbo, 1998; Varis & Littunen, 2010). *Product and service innovations* refer to new or significantly improved products and services such as the introduction of new materials, intermediate products, new components, or new product features (Camisón & Monfort-Mir, 2012; Hall, 2009). Examples of these innovations in restaurants

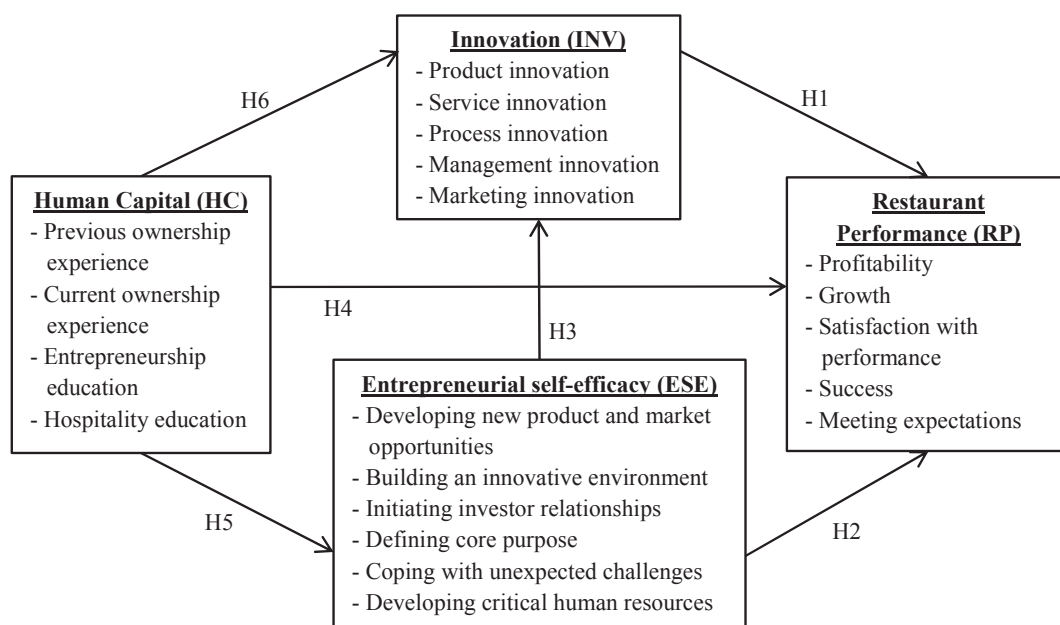


Fig. 1. Integrated conceptual model of restaurant performance.

are new menu items and new systems of service. *Process innovations* refer to changes made 'behind the scenes' which aim to increase productivity and efficiency, such as new equipment or increased automation, more efficient methods of production, or the utilisation of new energy sources (Camisón & Monfort-Mir, 2012; Hjalager, 2010). Examples of these are new food service technologies for faster and better preparation methods, energy and labour savings, reuse and recycle programs, and better sanitation (Rodgers, 2007). *Management innovations* involve new methods in a firms' management structure, organisation of work, or external relations such as new ways of organising internal collaborations, directing and empowering staff, career development, and worker's compensation (Hall, 2009; Hjalager, 2010; Ottenbacher & Gnoth, 2005). *Marketing innovations* are new marketing methods involving changes in product design, promotional strategies, pricing, and new relationships with other parties such as state and regulatory systems, societal organisations, or specific customers (Camisón & Monfort-Mir, 2012; Sundbo, 1998). Examples of marketing innovations in restaurants are the use of social networking sites in promoting the business or customer loyalty programs.

The introduction of product, process, and marketing innovations are positively related to firm growth in SMEs (Varis & Littunen, 2010). Marketing innovations generate profit by increasing the consumption of the firms' products (Gunday, Ulusoy, Kilic, & Alpan, 2011). Process innovations increase profits for the organisation through improved efficiencies and reducing costs (Johnes & Davies, 2000). This forms the basis for the first hypothesis:

H1. Restaurant innovation activities, represented by product, service, process, management, and marketing innovations, are positively related to restaurant performance.

2.2. Entrepreneurial self-efficacy (ESE)

Entrepreneurs have a major influence on the directions, strategies, and performance of the small business (Hallak et al., 2011). This influence stems from arguments that 'the small business firm is an extension of the individual who is in charge' and 'the individual entrepreneur is regarded as the firm' (Lumpkin & Dess, 1996, p. 138). Therefore, it is critical to understand the entrepreneur's role in relation to developing firm level innovations (Hadjimanolis, 2000). Studies on small tourism firms have also focused on the construct of entrepreneurial self-efficacy (ESE) (Hallak et al., 2015; Hallak, Brown et al., 2012). ESE refers to an individual's belief in his/her ability to successfully achieve the tasks of entrepreneurship (Chen et al., 1998). These tasks include developing new product and market opportunities, building an innovative environment, initiating investor relationships, defining core purpose, coping with unexpected challenges, and developing critical human resources (De Noble et al., 1999). ESE originated from Self-Efficacy Theory, which was itself based on Social Learning Theory (Bandura, 1997). Self-efficacy is defined as the 'beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments' (Bandura, 1997, p. 3). Self-Efficacy Theory posits that when an individual believes they can produce a desired outcome through their actions, they are more likely to act and achieve the outcome (Bandura, 1997). This is because their level of self-efficacy influences their motivation, exertions of effort, perseverance in the face of difficulty, emotional stability, and stress levels (Bandura & Locke, 2003; Segal, Borgia, & Schoenfeld, 2005). Therefore, high levels of self-efficacy increases an individual's determination, leading them to perform better in their drive for success (Segal et al., 2005).

Hallak et al. (2011) conducted one of the first studies of ESE in the context of tourism and hospitality enterprises. Based on data

collected from 300 SME owners, they found a significant positive relationship between the entrepreneur's ESE and enterprise performance with regards to profitability, sales, growth, and business success. Consistent with Self-Efficacy Theory, Hallak, Lindsay and Brown's (2011) empirical study found that the tourism entrepreneur's ESE regulates the ability of the entrepreneur to pursue opportunities, be persistent in overcoming failure, and be more confident to face challenges (Chen et al., 1998).

ESE was originally conceptualised as a higher-order multi-dimensional construct comprising of six sub-factors: 1) developing new product and market opportunities, 2) building an innovative environment, 3) initiating investor relationships, 4) defining core purpose, 5) coping with unexpected challenges, and 6) developing critical human resources. These latent sub-factors are represented by 23 observed variables (De Noble et al., 1999). However, previous studies, such as the work of Hallak, Brown et al. (2012), examined the relationship between ESE and performance at the latent construct level and used the parcelling method to operationalise the multi-dimensional construct of ESE into a latent construct. This was needed for their SEM analyses purposes; however, such an approach does not explore how the first order-factors of ESE interrelate with higher-order ESE, or, more importantly, how the first order factors correlate with enterprise performance. For example, the ESE dimension of 'Defining core purpose' (first-order factor) involves the ability of the entrepreneur to create the vision and values of the company to attract key management personnel, employees, and investors (De Noble et al., 1999). Meanwhile, the dimension of 'Developing critical human resources' involves the ability of the entrepreneur to attract and retain talented individuals to work for the company (De Noble et al., 1999). These two components were found to be critical self-reported skills of successful entrepreneurs (Eggers et al., 1994; cited in De Noble et al., 1999). In addition, the Entrepreneurship Theory of Innovation (Schumpeter, 1952) suggests entrepreneurial firms grow and survive through the ability of the entrepreneur to continuously innovate to lead or react to shifts in dynamic conditions involving customers and competitors (O'Dwyer, Gilmore, & Carson, 2009). Thus, the capacity of the restaurant entrepreneur to 'Develop new product and market opportunities' could be a key driver of their business performance. However, an investigation into how the higher-order construct of ESE and its six dimensions influence the performance of tourism and hospitality businesses remains unexplored. Drawing on empirical evidence and Self-Efficacy Theory (Bandura, 1997), the following hypotheses are presented:

H2. The ESE of the restaurant owner is positively related to his/her business' performance.

H2a. The six dimensions of ESE - developing new product and market opportunities, building an innovative environment, initiating investor relationships, defining core purpose, coping with unexpected challenges, and developing critical human resources - will exhibit varying effects on business performance.

Innovation is a key entrepreneurial capability and the capacity to be 'innovative' is the discriminating factor that separates 'entrepreneurs' from business 'managers' (Chen et al., 1998). Chen et al. (1998) found the 'innovation' and 'risk-taking' dimensions of ESE to be key entrepreneurial capabilities and the distinguishing factors that separated entrepreneurs from managers. Studies have focused on the relationship between ESE and entrepreneurial intentions (Jung, Ehrlich, Noble, & Baik, 2001; Zhao, Seibert, & Hills, 2005) as well as ESE and firm performance (Hallak et al., 2015). However, empirical evidence that examines the extent to which ESE impacts on the actual innovations implemented by an entrepreneur in his/her firm remains uncertain. Following the

Entrepreneurship Theory of Innovation (Schumpeter, 1952), higher levels of ESE should increase entrepreneurial capabilities and a greater propensity to introduce new innovations. This forms the basis for the following hypothesis:

H3. The ESE of the restaurant owner is positively related to the restaurant's innovation activities.

2.3. Human capital

Small ventures are built around the entrepreneur and the businesses' outcomes cannot be understood without specific attention to the founder's role in the business (Cooper, Gimeno-Gascon, & Woo, 1994). In the field of entrepreneurship, the level of knowledge, experience, and qualifications of an entrepreneur, developed through formal education, business experience, practical learning, and non-formal education, contribute to the formation of an entrepreneur's 'human capital' (Davidsson & Honig, 2003). The entrepreneur's level of 'human capital' determines productivity and efficiency and can affect the firm's entrepreneurial behaviours and outcomes (Davidsson & Honig, 2003). Human Capital Theory posits that humans are a form of capital which can be developed, and that investing in developing humans (i.e. through schooling and training) increases the productivity of the workforce (Nafukho et al., 2004). At the core of Human Capital Theory is the assumption that individuals deliberately invest in education and training in preparation to join the labour force (Nafukho et al., 2004). As a result, they enter the workforce with a higher level of knowledge and skills, leading to economic pay-offs in the form of higher wages (Kenworthy & McMullan, 2010), pp. 1–36.

Empirical evidence supports a positive relationship between the entrepreneur's human capital and enterprise performance (Ganotakis, 2012; Goedhuys & Sleuwaegen, 2000). Higher education provides entrepreneurs with skills to successfully manage a firm, identify appropriate markets, and to better prepare applications for external funding which are important for effective business growth (Ganotakis, 2012; Goedhuys & Sleuwaegen, 2000). Entrepreneurs with experience in a similar sector to which their firms operate have greater knowledge of the technological and market opportunities that can be exploited. Thus, they can formulate appropriate strategies to pursue these opportunities which increase firm performance (Ganotakis, 2012). A qualitative study by Parsa, Self, Njite, and King (2005) reported on the failed attempts of nightclub owners who invested in a fine-dining restaurant. The restaurant closed in less than 12 months, reportedly due to the entrepreneur's lack of prior experience in the restaurant sector.

Prior experience in the restaurant sector, either through previous business ownership or previous working experience, is crucial for business survival. Indeed, studies in other industries have shown that previous experience improves an entrepreneur's understanding of successful business management strategies, allowing them to organise their firm for greater effectiveness in the marketplace (West & Noel, 2009). Parsa et al.'s (2005) study also suggests that education is important for restaurant performance. Studies have found that previous education in a field similar to a firm's product offerings provides entrepreneurs with a substantial understanding of how to identify appropriate markets and to successfully manage a firm (Ganotakis, 2012). Therefore, a restaurant owner with education relevant to business ownership or hospitality should have more knowledge of restaurant operations and the industry, enabling them to run their business more efficiently. This forms the basis for the following hypothesis:

H4. The human capital of restaurant owners, measured by entrepreneurial experience and education, is positively related to business performance.

As well as its relationship to business performance, the entrepreneur's human capital can influence entrepreneurial capabilities and future behaviour (Davidsson & Honig, 2003). As an individual attains higher formal educational qualifications, this enhances his/her confidence and capabilities, including leadership and managerial skills, which leads to the choice of being a self-employed entrepreneur (Le, 1999). Alternatively, individuals with higher levels of education choose to become entrepreneurs because they feel the risks are lower as they can easily re-join the labour force should their venture fail (Davidsson & Honig, 2003).

In the case of entrepreneurship, Human Capital Theory is also linked to Self-Efficacy Theory. Bandura (1997) argues that learning from past experience is the most important factor in developing higher beliefs in one's capabilities. Thus, the more an entrepreneur increases their human capital through gaining education and experience, the greater their self-confidence in their entrepreneurship capabilities to successfully manage their business (Maritz & Brown, 2013). Experience from being a previous business owner gives entrepreneurs some advantage in knowing what to anticipate, what mistakes to avoid, and which proven strategies to apply. These develop the business owner's confidence in his/her entrepreneurial abilities (Farmer, Yao, & Kung-Mcintyre, 2011). Educational programs focusing on entrepreneurship that provide activities to 'learn by doing' such as engaging individuals in business scenarios, can increase an individual's entrepreneurial capabilities (Maritz & Brown, 2013). This forms the basis for the following hypothesis:

H5. The human capital of the restaurant owner is positively related to his/her ESE.

Empirical evidence also supports a positive relationship between human capital and innovation (De Winne & Sels, 2010; Hadjimanolis, 2000). Endogenous Growth Theory (Nelson & Phelps, 1966) posits that an increase in levels of education (e.g. primary, secondary, tertiary) would speed up the process of innovation creation and diffusion. This is because, in a technologically advanced and dynamic economy, managers with higher educational qualifications will have greater abilities to understand and evaluate new information and will be better able to distinguish between promising and unpromising ideas. This will enable them to adopt or introduce new methods of production at a faster rate than those who have less educational qualifications.

Human capital developed through previous work experiences of the entrepreneur can encourage the promotion of innovation in the current business (Hadjimanolis, 2000). Higher levels of education create a larger stock of knowledge; when combined with new knowledge from current experience, incites a learning process that creates fresh insights and the discovery of new opportunities (De Winne & Sels, 2010). Despite this evidence, there remain at least two areas which warrant further investigation. First, De Winne and Sels (2010) only focused on the effects of the employee's level of education on small business innovative output. They did not examine the effects of an owner's human capital on innovation. This seems a curious omission as small business owners are considered the main actors in initiating innovation. Second, the study by Hadjimanolis (2000) used a sample of 25 small businesses in the manufacturing sector and only focused on product innovation alone. There is a need to test the relationship between an owner's human capital and innovation on a larger sample from other industries while measuring innovation in other areas such as service, process, management, and marketing. This forms the basis

for the following hypothesis:

H6. The human capital of the restaurant owners is positively related to the restaurant's innovation activities.

2.4. Restaurant performance

The restaurant sector is a significant contributor to the tourism industry; however, its success is dependent on the performance of the small, independently owned businesses that dominate the sector. Research into restaurant performance has focused on public companies and chain/franchise restaurants from the United States (US), measuring firm performance through stock market valuations (see Choi, Kang, Lee, & Lee, 2011; Ham & Lee, 2011; Koh, Lee, & Boo, 2009). Stock market valuations are not available for small, independent restaurants that represent 99% of all business in the sector (ABS, 2014). Unlike the financial records of large corporations which are often made public, the records of small independent businesses remain private and inaccessible to researchers. Thus, the use of subjective rather than objective measures of performance is widely used and accepted as valid measurement methods in small business research (Hallak et al., 2011). This is largely due to the difficulties faced by researchers in obtaining actual financial records of small and medium sized businesses. Studies of small, independently owned and operated restaurants using an entrepreneurship framework have measured firm performance using the entrepreneur's subjective assessments of firm performance relating to, among others, sales growth, profitability, return on investment, cash flow, net profit, market share, and overall performance (see Jogaratnam, 2002; Jogaratnam et al., 1999; Lee & Lim, 2009). For this study, we operationalised firm performance based on a scale developed by Kropp, Lindsay, and Shoham (2006) which captured the restaurant owner's subjective assessment of their firm's profitability, volume of sales, growth, overall performance, and achieving expectations.

3. Research method

3.1. Data collection

To obtain a representative sample, this study followed steps used by Kim (2006), who used an estimation of the study's potential response rate and the minimum sample size requirements for the planned statistical analysis to calculate the number of businesses required for the sampling frame. First, the expected response rate of the online survey for this study was estimated based on previous research. A recent study of restaurants using an online survey by Stockton and Baker (2013) achieved a 4% response rate. This is not unexpected as collecting data from owners of small and medium hospitality businesses is notoriously difficult due to the time pressures and demands placed on these individuals (Hallak, Brown et al., 2012). Knowing that the response rate is likely to be below 10%, a significantly large sample frame was developed in order to achieve a sufficient number of responses for analysis purposes. Chin (2010) recommends 100–200 cases are needed to improve accuracy of PLS-SEM results.

A database of 4219 restaurants was developed using publicly available information through an exhaustive search of online business directories (see Hallak, Brown et al., 2012). Information about relevant restaurants for the sample was collated mainly from Yellowpages.com.au and Truelocal.com.au. These two online directories are the most extensive and popular online business listings in Australia, increasing the likelihood that the sample frame was representative of the population of cafes and restaurants in Australia.

An e-questionnaire was developed (using Qualtrics) and pilot tested on a convenience sample of 10 restaurant owners. The e-questionnaire included validated measures for the four main constructs examined in the model, as well as questions concerning business characteristics and owner demographics. After final adjustments, the e-questionnaire was e-mailed to the 4219 business owners. To increase the response rate, participants were offered a copy of a research report detailing the findings of the study as well as a donation to charity on their behalf in return for completed questionnaires.

The total number of usable responses obtained was 198. To examine whether the reflective constructs' sample means were similar to the population means, we used the standard error of the mean (S.E.M) to calculate the lower and upper bounds of the 95% confidence intervals in which the population mean is likely to fall:

$$\text{S.E.M} = \frac{\text{SD}}{\sqrt{n}}$$

$$95\% \text{ confidence intervals} = (\text{S.E.M} \times 1.96) \pm \text{mean}$$

The mean scores for each reflective construct of Innovation Activities, ESE, and Restaurant Performance fell within the 95% confidence intervals, indicating that the construct sample means were similar to the population means (Table 1).

Non-response bias was assessed by comparing respondents and non-respondents to the survey based on their demographic information (business location). The results of a Chi-square test showed no significant differences between the two groups (χ^2 (7, $n = 198$) = 11.691, $p > 0.05$) based on their business location, indicating that non-response bias was not an issue (Barclay, Todd, Finlay, Grande, & Wyatt, 2002). An analysis of the missing data pattern using Little's Missing Completely at Random test in SPSS produced a non-significant result (Chi-Square = 401.97, $df = 404$, Sig = 0.52), indicating that missing data was missing completely at random. Therefore, the Expectation Maximisation algorithm was used to impute missing values (Peters & Enders, 2002). The presence of Common Method Variance (CMV) was examined using Harman's (1967) one factor test. The eigenvalue unrotated EFA solution for this study detected seven factors (F_1 : 11.13; F_2 : 3.49; F_3 : 2.09; F_4 : 1.63; F_5 : 1.138; F_6 : 0.87; F_7 : 0.79), and the highest portion of variance explained by one single factor was 33.7%. These results suggest that CMV is not a concern in this study as the majority of the variance is not due to a single factor (Fraj, Matute, & Melero, 2015).

Data from 198 responses came from all states in Australia (see Appendix A). Restaurants in the sample predominantly employed 50 people or less (97.8%) and had a seating capacity of 150 seats or less (88.4%). The majority of businesses had an average price of a main dish between AUD\$16 and AUD\$35 (81.4%). Owners were mostly between 36 and 55 years of age (69.2%). Males represented 68.9% of the sample and most entrepreneurs owned their business for 10 years or less (77.7%), with 54.8% having started their business from scratch. The majority of owners did not have any entrepreneurship related education (72.7%), however, most had hospitality related education (60.1%). In terms of ownership experience, over half of the entrepreneurs had previously owned other businesses (57.1%).

3.2. Measurement of variables

Innovation activities. This measure was adapted from the Australian Bureau of Statistics' Business Characteristics Survey 2008–09 (ABS, 2009) and the Oslo Manual: Guidelines for Collecting and Interpreting Innovative Data developed by the

Table 1
95% confidence intervals for population means.

Construct	Mean	S.D.	S.E. Mean	95% confidence intervals	
				Lower bound	Upper bound
Innovation activities	0.61	0.39	0.03	0.55	0.67
ESE	5.31	0.89	0.06	5.19	5.43
Restaurant performance	4.04	1.57	0.11	3.82	4.26

Organisation for Economic Co-operation and Development (OECD) (OECD & Eurostat, 2005). Innovation was captured in two ways - 1) the type of innovation activities implemented, and 2) the level of novelty (newness) of the innovations. The measurement scale captured the types of innovations implemented by the organisation over the past three years in five areas: 1) product innovations, 2) service innovations, 3) process innovations, 4) management innovations, and 5) marketing innovations. To capture the novelty level, respondents were required to indicate whether the majority of innovations were: 'new only for the business' (value = 1, lowest level of novelty), 'new for the local market' (i.e. compared to competitors) (value = 2), 'new for the Australian restaurant industry' (value = 3), or 'new for the world' (value = 4, highest level of novelty). To obtain an index score for innovation, a composite score following procedures outlined by Omri and Ayadi-Frikha (2014) was developed. First, for each category of innovation a mean score was calculated for every yes/no item (no - not implemented = 0, yes - implemented = 1). The mean Innovation score was then multiplied with its related Novelty score to obtain a Total Innovation Index for each particular category. An example calculation of the innovation index for New Products is illustrated below:

$$\text{New Products Index} = \frac{(\text{item } a + \text{item } b + \text{item } c + \text{item } d)}{4} \times \text{new products novelty}$$

This calculation was repeated for each of the five categories of innovation (i.e. products, service, process, management, and marketing). Finally, the index scores for each innovation category were subsequently used as the observed indicators for the Innovation Construct (Appendix B).

Entrepreneurial self-efficacy. ESE was measured using a 23-item scale developed by De Noble et al. (1999). This is conceptualised as a multi-dimensional latent construct with six dimensions: 1) developing new product and market opportunities, 2) building an innovative environment, 3) initiating investor relationships, 4) defining core purpose, 5) coping with unexpected challenges, and 6) developing critical human resources. All items were measured on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree) (Appendix C).

Human capital. Human capital was operationalized as a formative construct, represented by the combination of a restaurant owner's entrepreneurial and industry specific experience and education. A formative construct is *formed* through a combination of the respective measures where changes in the indicators cause changes in the latent factor (Jarvis, MacKenzie, & Podsakoff, 2003). Jarvis et al. (2003) stipulate five criteria for determining the formative scheme for a latent variable (LV): 1) the indicators are viewed as defining characteristics of the LV; 2) changes in the indicators are expected to cause changes in the LV; 3) changes in the LV are not expected to cause changes in the indicators; 4) a change in the value of one of the indicators is not necessarily expected to be associated with a change in all the other indicators (i.e. measurement items are not necessary correlated to each other); and 5) eliminating an indicator may alter the conceptual domain of the LV.

This is the case for the Human Capital construct as experience and education *form* the entrepreneur's level of human capital. Based on previous studies (Hallak et al., 2011) entrepreneurial experience was measured by asking respondents (yes/no) whether they had owned businesses in the past prior to owning their current business, and whether they currently owned other businesses other than their current café/restaurant. Entrepreneurial and industry specific education was measured by asking respondents (yes/no) whether they had completed any qualifications/formal training in entrepreneurship and hospitality.

Restaurant performance. This measured the restaurant owner's self-assessment of how his/her business has performed using a scale developed by Kropp et al. (2006), and later adapted by Hallak, Brown et al. (2012). Owners rated how well their business had performed in terms of profitability, volume of sales, growth, overall performance, and achieving expectations. All items were measured on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree) (Appendix D). Collecting actual financial data about small business performance is a difficult task and often leads to item non-response and potentially survey non-response due to the owner's reluctance to provide this information (Runyan, Droge, & Swinney, 2008). Furthermore, these financial records often cannot be cross-checked for their accuracy (Haber & Reichel, 2005). Evidence supports the use of subjective performance measures as these are strongly correlated to objective performance measures (Dess & Robinson, 1984; Wall et al., 2004).

3.3. Data analysis

Exploratory factor analysis (EFA) and PLS-SEM (using XLSTAT-PLSPM) were used to assess the measurement and structural models. PLS-SEM enables the simultaneous modelling of relationships among multiple independent and dependent constructs (Haenlein & Kaplan, 2004). It differs from co-variance based structural equation modelling (CBSEM) as it functions to 'maximize the variance of the dependent variables explained by the independent ones instead of reproducing the empirical covariance matrix' (Haenlein & Kaplan, 2004, p. 290). PLS-SEM is advantageous when examining complex models with relatively small sample sizes (Bagozzi & Yi, 2012; Haenlein & Kaplan, 2004), as was the case for this study. It is also more powerful in calculating models with formative and reflective constructs (Haenlein & Kaplan, 2004). The analysis involved a two-step approach: 1) validate the outer (measurement) models, and 2) examine the inner model (structural relationships among the latent factors) (Chin, 2010).

4. Results

4.1. Analysis of reflective measurement models

EFA using Principal Axis Factoring with an Oblique rotation (Direct Oblimin) was conducted on the reflective Innovation Activities and Restaurant Performance latent factors. Both constructs were unidimensional, with a one factor solution having an

eigenvalue greater than 1. All item loadings were above the minimum threshold (≥ 0.4) inside each block (Fields, 2005) (See Appendix B & D). Both constructs had Cronbach's α values above the recommended lower limit of 0.6, supporting construct reliability (Nunnally & Bernstein, 1994) (Table 2). Convergent validity was assessed by examining the average variance extracted (AVE) of each construct. Both constructs had AVE values above the lower limit of 0.5 (Fornell & Larcker, 1981), indicating that on average the constructs explained more than 50% of the variance of their indicators. Finally, discriminant validity was assessed by comparing the AVE values with the squared correlations between latent constructs (Fraj et al., 2015). All reflective constructs had AVE values higher than the squared correlations, confirming discriminant validity (see Appendix E).

4.2. Analysis of the human capital formative measurement model

Formative indicators are assessed by establishing their indicator validity, the absence of multicollinearity, and nomological validity. The outer loadings of the four indicators of Human Capital met or exceeded the recommended cut-off point of 0.5, supporting indicator validity (Hair, Hult, Ringle, & Sarstedt, 2014). Multicollinearity issues were assessed through the variance inflation factor (VIF). The absence of multicollinearity among the indicators was confirmed as the VIF's of all formative indicators were less than the maximum value of 5 (Hair et al., 2014) (see Appendix F). Nomological validity of the formative Human Capital construct was supported as the hypothesised relationships between Human Capital and the other constructs in the model were significant and in the intended direction (see Fig. 2) - indicating that the construct behaves as it should within a nomological network (Henseler, Ringle, & Sinkovics, 2009).

4.3. Analysis of the ESE higher-order model

To confirm ESE as a higher-order construct, with a second-order factor represented reflectively by six first order-factors, an EFA was first extracted using Principal Axis Factoring with an Oblique rotation (Direct Oblimin). ESE was found to be a higher-order latent factor represented by six dimensions, similar to De Noble et al. (1999) study. 21 out of 23 items had loadings above the minimum threshold (≥ 0.4) inside each dimension (Fields, 2005) (see Appendix C). The second-order ESE construct, as well as each of its first-order factors, had Cronbach's α values above the recommended lower limit of 0.6 (Nunnally & Bernstein, 1994) (Table 2). The item '*I can form partner or alliance relationships with others*' was removed as deleting the item increased the internal consistency (Cronbach's α) of its dimension, and the item did not load highly on any dimension in the EFA. Each dimension demonstrated convergent validity as their AVE values were above the lower limit of 0.5 (Fornell & Larcker, 1981) (Table 2).

Repeated Measures Approach. For PLS-SEM, the validity of higher-order latent constructs (known as hierarchical component models (HCMs)) can be assessed using the repeated measures approach. First, all items are assigned to their respective dimensions reflectively. Then, all items are assigned to the second order factor reflectively. Finally, the relationship between the second order factor and its dimensions are specified to be reflective. To demonstrate the validity of the HCM, the relationships between the second order factor and its dimensions should be strong and significant ($p < 0.05$) and the R^2 of each dimension should be higher than 0.5, indicating that the second order factor explains more than 50% of the variance in its dimensions (Hair et al., 2014). The relationships between the second order ESE factor and its dimensions were all strong and significant; with R^2 above 0.5 except for the dimension 'Initiating investor relationship' (Fig. 2). Despite this, the dimension was retained and the HCM was considered valid as previous literature (De Noble et al., 1999), the results of the EFA, and the significance of the path coefficients support ESE as a higher-order latent factor represented reflectively by six dimensions.

4.4. Analysis of the structural model

The hypothesised inner-model relationships among Innovation Activities, ESE, Human Capital, and Restaurant Performance were examined through PLS-SEM to determine: 1) the estimates of the path coefficients and effect sizes (f^2), and 2) the coefficient of determination (R^2) of the endogenous latent variables (Henseler et al., 2009).

The results illustrate that Innovation Activities and ESE were positively and significantly related to Restaurant Performance, supporting H1 and H2 (Table 3). ESE was also positively and significantly related to Innovation Activities, supporting H3. Human Capital was not significantly related to Restaurant Performance, rejecting H4. However, Human Capital was positively and significantly related to ESE and Innovation Activities, supporting H5 and H6. In addition, the Cohen's f^2 for the significant paths in the inner model were all above 0.02, suggesting satisfactory effects for the endogenous latent constructs (Henseler et al., 2009).

4.5. Post-hoc analysis of the indirect effects

The results of the structural model also suggest the possible existence of mediating relationships between several constructs. To test for mediating effects, Chin's (2010) two-step bootstrapping procedure was followed. This involves calculating the product of the direct paths that form the indirect path, and examining the significance of the indirect effect using the confidence intervals (CI) provided by the bootstrap resampling (5000 resamplings) (Table 4). The results indicated that ESE indirectly influences Restaurant Performance through Innovation Activities (CI: 0.004–0.117). Since the direct effect was significant, the findings reveal that Innovation

Table 2
Reliability and convergent validity of reflective measurement models.

Construct	Cronbach's α	AVE
Restaurant performance	0.93	0.74
Innovation activities	0.79	0.55
ESE	0.94	
Dimension 1 – Developing new product and market opportunities	0.88	0.59
Dimension 2 – Building an innovative environment	0.80	0.78
Dimension 3 – Initiating investor relationships	0.87	0.79
Dimension 4 – Defining core purpose	0.89	0.82
Dimension 5 – Coping with unexpected challenges	0.89	0.82
Dimension 6 – Developing critical human resources	0.90	0.83

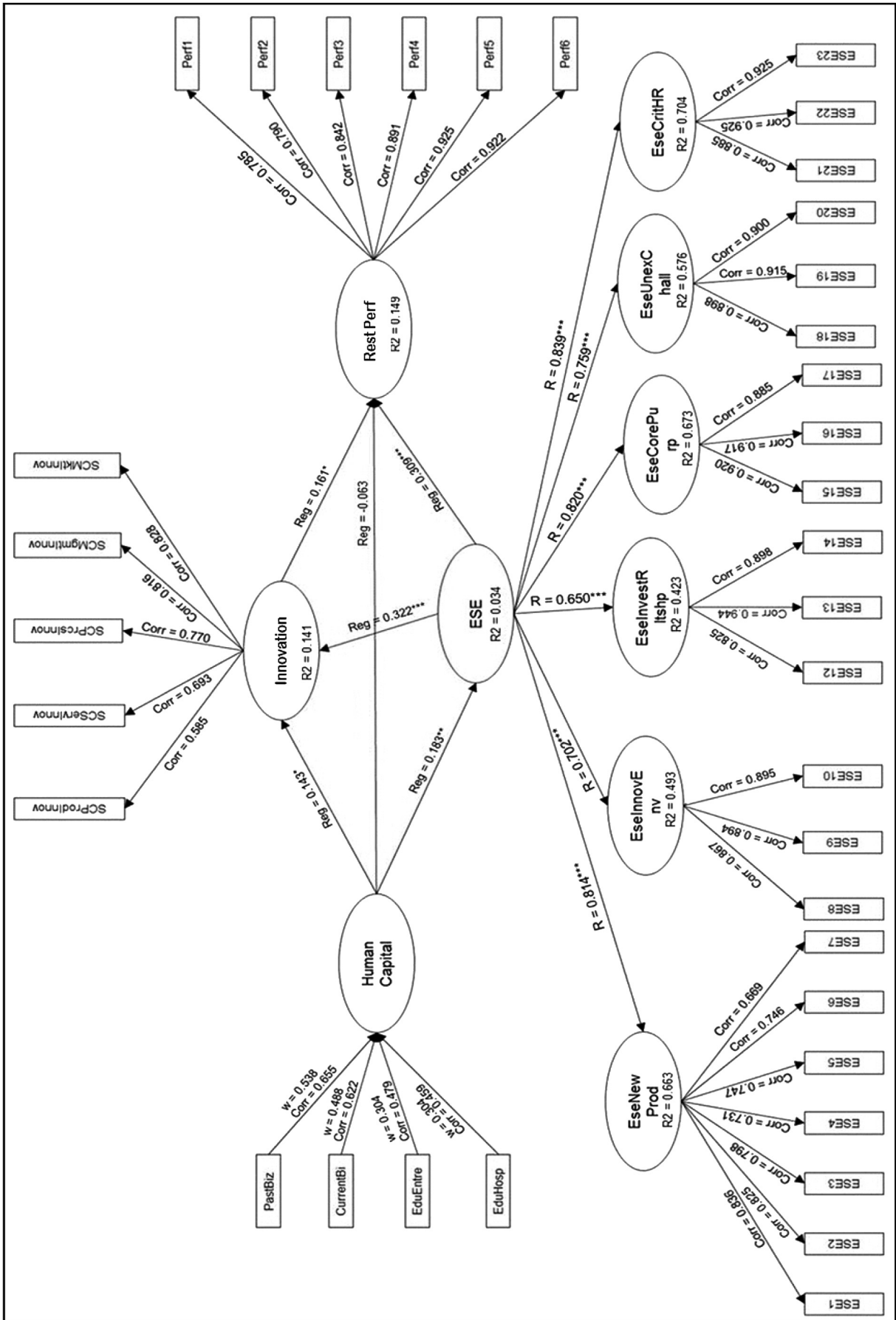


Fig. 2. Full structural model.

Table 3
Estimates of direct paths.

Path	Path coefficient	Effect size (f^2)	Sig.
ESE → Restaurant Performance	0.309	0.097	***
Innovation Activities → Restaurant Performance	0.161	0.026	*
ESE → Innovation Activities	0.322	0.116	***
Human Capital → Restaurant Performance	-0.063	0.004	
Human Capital → ESE	0.183	0.035	**
Human Capital → Innovation Activities	0.143	0.023	*

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

Table 4
Estimates of indirect paths.

Indirect paths	Indirect effect	95% confidence intervals ^a	
		Lower bound	Upper bound
ESE → Innovation Activities → Restaurant Performance	0.054	0.004	0.117
Human Capital → Innovation Activities → Restaurant Performance	0.023	0.002	0.165
Human Capital → ESE → Restaurant Performance	0.057	0.002	0.165

^a 95% confidence intervals obtained via Bootstrapping (5000 resamplings).

Activities partially mediate the influence of ESE on Restaurant Performance. In addition, Human Capital indirectly influences Restaurant Performance through Innovation Activities (CI: 0.002–0.165) and ESE (CI: 0.002–0.165). Since the direct effect was not significant, the findings reveal that Innovation activities and ESE fully mediate the influence of Human Capital on Restaurant Performance.

4.6. Correlations between ESE dimensions and restaurant performance

To address Hypothesis 2a, the correlations between each dimension of ESE and Restaurant Performance were examined (Table 5). The results showed that the different dimensions of ESE had varying positive and significant relationships with Restaurant Performance, supporting H2a. The dimension 'Developing new product and marketing opportunities' had the highest correlation with Restaurant Performance (Bootstrapped correlation = 0.380; CI: 0.245–0.502). This was followed by 'Defining core purpose' (Bootstrapped correlation = 0.285; CI: 0.153–0.413). In contrast, 'Coping with unexpected challenges' had the lowest correlation with Restaurant Performance (Bootstrapped correlation = 0.186;

CI: 0.053–0.318).

5. Discussion

This study examined an integrated structural model of firms' innovation activities, ESE, human capital, and restaurant performance. The first hypothesis (H1) predicted that the restaurant's innovation activities have a positive impact on restaurant performance. This was supported (path estimate = 0.161, $p < 0.05$). The introduction of innovation in products, services, and marketing allows restaurants to increase their sales by attracting new customers while retaining their current customer base (Gunday et al., 2011). In addition, the introduction of process and management innovations increases the efficiency of the restaurant's operations, which in turn increases profits by reducing costs (Johns & Davies, 2000). In this study, innovation is operationalised through five types of innovation (i.e. product, service, etc.) as well as novelty (i.e. new to the firm, etc.). This approach ensures that the various innovation activities implemented in an organisation are captured; addressing the limitations of previous studies that adopted a too narrow scope focusing on one or two types of innovations (see Lin, 2013). Through this approach, the observed indicators of innovation play an important role in explaining the effects of total innovation on restaurant performance. Specifically, the loadings of each observed variable on the construct shows which types of innovation have the highest weighting on overall innovation, and subsequently, how these affect business performance. Findings from this study indicate restaurants need to focus on innovations in the areas of marketing and management, such as developing social networking sites or smartphone apps to promote the business, conducting training programs to empower staff, designing career plans and succession policies, and developing new worker compensation schemes (Hjalager, 2010; Ottenbacher & Gnoth, 2005).

These results advance previous studies which argue that, to remain competitive, restaurants need to focus on their marketing and branding by implementing non-traditional marketing measures to differentiate their business and attract consumers' attention (Lin & Chen, 2007). Implementing management innovations leads to administrative restructuring within the restaurant to improve internal coordination and cooperation mechanisms (Gunday et al., 2011). This in turn creates an environment that facilitates innovative thinking, creativity, and the building of relationships between staff members which fosters the sense of teamwork needed to develop and implement innovations (Lin & Chen, 2007; Ottenbacher & Harrington, 2007).

Hypothesis 2 proposed a direct positive relationship between a restaurant owner's ESE and his/her restaurant performance. This was supported (path estimate = 0.309, $p < 0.001$). Restaurant owners with high levels of ESE have the confidence in their ability to attain high levels of performance and set higher and more challenging goals. This motivates them to work hard to achieve

Table 5
Correlations between ESE dimensions and restaurant performance.

Dimensions	Correlations (Bootstrapped ^a)	95% confidence intervals	
		Lower bound	Upper bound
Developing new product and market opportunities ↔ Restaurant Performance	0.380	0.245	0.502
Building an innovative environment ↔ Restaurant Performance	0.249	0.113	0.379
Initiating investor relationships ↔ Restaurant Performance	0.255	0.103	0.400
Defining core purpose ↔ Restaurant Performance	0.285	0.153	0.413
Coping with unexpected challenges ↔ Restaurant Performance	0.186	0.053	0.318
Developing critical human resources ↔ Restaurant Performance	0.238	0.105	0.370

^a 5000 resamplings.

these goals leading to higher restaurant performance (Bandura & Locke, 2003). This study expands existing theories by showing that ESE as a higher-order construct, represented by six dimensions, has a positive effect on performance in the context of café and restaurant owners in Australia.

Hypothesis 2a proposed that the different dimensions of ESE will have varying effects on restaurant performance. This too was supported and presents new insights into the nature of the relationship between ESE and performance in the restaurant sector. 'Developing new product and market opportunities' had the highest relationship with performance, supporting the Entrepreneurship Theory of Innovation (Schumpeter, 1952) suggesting that an entrepreneur's primary task is to develop new innovations to differentiate their business and achieve an economic advantage (Hébert & Link, 2006). Thus, it is important that restaurant owners consistently develop new product and market opportunities through the implementation of innovation as it contributes the most to enhancing restaurant performance compared to the other dimensions. 'Defining core purpose' had the second highest relationship with performance. Thus, restaurant owners should ensure that they can clearly articulate the vision and values of their business to inspire others to embrace the business concept; attracting key management personnel, employees, and investors (De Noble et al., 1999).

In contrast, 'Coping with unexpected challenges' had the lowest relationship with performance. As all businesses in this industry face the same external challenges, these factors may not affect performance compared to other factors. Studies have shown that external environmental factors, such as the local and national economy and competition from competitors, are less critical for restaurant success compared to internal factors, such as product quality and effective management and business strategies, which create a business resistant to changes in the external conditions (Mandabach, Siddiqui, Blanch, & Vanleeuwen, 2011). The relatively weaker relationship between 'Developing critical human resources' and performance is an indication of the restaurant sector's labour market conditions. This sector predominantly consists of businesses with few permanent employees, a large casual workforce, high employee turnover, and jobs with low skill requirements (Australian Workforce and Productivity Agency, 2013). Therefore, due to the constant flow of labour in this sector, staff retention and training is not a priority for restaurant owners.

Hypothesis 3 proposed a direct positive relationship between a restaurant owners's ESE and the restaurant's innovation activities. This was supported (path estimate = 0.322, $p < 0.001$), empirically demonstrating how entrepreneurial capabilities of the entrepreneur influences the level of innovation within the firm (Chen et al., 1998). In addition, this study found that ESE has an indirect effect on restaurant performance that is partially mediated by innovation activity. Taken together, these findings provide new knowledge advancing our understanding of the mechanism by which ESE affects performance in restaurants. Restaurant owners high in ESE have more belief in their ability to 'Develop new product and market opportunities' which promotes the constant identification of new ideas. This, coupled with their ability to 'Initiate investor relationships', provides the capital to fund innovation development. These innovations, when implemented in the business, increase sales and efficiency leading to enhanced restaurant performance.

Hypothesis 4 predicted the restaurant owner's human capital to have a direct positive relationship with restaurant performance. This was not supported (path estimate = -0.063 , $p = 0.353$). Previous studies looking at the effects of human capital on

performance in tourism firms also found similar results that failed to support a significant positive relationship (Hallak et al., 2011). Hallak et al. (2011) explained that it is not entrepreneurial experience per se that affects performance, but more importantly, it is how the entrepreneurs learn from this experience. However, the current study did find that human capital has a positive direct relationship with ESE (path estimate = 0.183, $p < 0.01$) and innovation activity (path estimate = 0.143, $p < 0.05$), supporting both H5 and H6. In addition, Human Capital had an indirect effect on restaurant performance that is fully mediated by ESE and innovation activity. Restaurant owners with higher levels of education and experience will have more knowledge and skills thereby raising their entrepreneurial ability (represented by ESE), leading to increased business efficiency translating to better restaurant performance. Also, restaurant owners with higher levels of education and experience will have more knowledge that enables them to recognise, develop, and implement new innovations that drive performance. These results provide new insights that explain the non-significant relationship between human capital and firm performance in previous tourism studies (see Hallak et al., 2011). This study suggests human capital has an indirect, rather than direct, relationship with human capital that is mediated by ESE and business innovation.

6. Conclusion and implications

This research makes a number of important contributions. It presents a rigorous approach to examining the complex relationships between multiple drivers of performance in the restaurant sector. In doing so, we present a holistic integrated model of restaurant performance. We establish that innovation in restaurants occurs in the five areas of products, services, processes, management, and marketing, and that these collectively drive positive restaurant performance. This also responds to calls made by previous innovation studies in tourism and hospitality (see Fraj et al., 2015) for more objective innovation scales measuring the number of successful administrative, process and service innovations implemented instead of perceptual based scales (e.g. innovativeness). In this study, we operationalise innovation by measuring whether innovations were implemented in the five areas of product, service, process, management, and marketing innovation as well as their novelty, providing an objective and comprehensive scale of innovation.

We also confirm that ESE, as a higher-order model, has a significant effect on both innovative activities in the restaurant and business performance. Furthermore, the higher-order molecular model of ESE demonstrated how the first order factors had different effects on performance. This expands on previous studies that examined ESE as a first-order construct using parcelled variables (see Hallak, Brown et al., 2012). The level of human capital of restaurant owners, developed through entrepreneurial experience and education, has an indirect relationship with performance that is fully mediated through innovation activities and ESE.

The study also provides a number of practical contributions which can ensure the success of Government initiatives such as the \$10 million 'Restaurant Australia' campaign promoting Australia as the world's greatest restaurant (Tourism Australia, 2014). Industry bodies, such as Restaurant and Catering Australia, could design training programs that emphasise activities to improve a restaurant owner's human capital and their entrepreneurial capabilities. These training programs should provide activities to 'learn by doing' such as engaging individuals in business scenarios, which has been shown to increase an individual's entrepreneurial capabilities

(Maritz & Brown, 2013). Programs should also focus on building business skills as well as industry specific knowledge about trends, competition, government regulations, and consumer demand. Increasing the entrepreneurial capabilities of restaurant owners creates entrepreneurial restaurants that focus on creativity, innovation, and adding value. These are critical for restaurant success and for Government led campaigns such as 'Restaurant Australia' to achieve their objectives. If the Australian government wishes to 'invite the world for dinner' and become the world's greatest restaurant, it must develop a thriving, innovative restaurant sector.

7. Limitations and directions for future research

The sample for this study came from small, independently owned café and restaurant businesses in Australia. There could be certain economic and environmental factors unique to this restaurant sector which influences these businesses in way that may differ from businesses in other sectors of tourism, other industries, and/or other countries, requiring the theoretical model to be cross-validated in different contexts. In addition, the use of subjective measures of performance could be affected by certain biases such as social desirability. The analysis of the structural model is based on a soft-modelling approach through PLS-SEM. Several measures such as R^2 and Stone Geisser's Q^2 were used to examine and support the nomological validity of the model (Vinzi, Trinchera, & Amato, 2010). However, PLS-SEM still lacks an overall Goodness-of-Fit index similar to Chi-square and RMSEA available in traditional Covariance Based SEM. As such, future studies could look to test the integrated model using Covariance Based SEM to further validate the linkages between the theories presented. Future studies should also examine the model with other predictor of restaurant performance such as the restaurant owner's social capital, creative self-efficacy, and the effects of parental role models. Social networks provided by extended family, community, or organisational relationships can provide entrepreneurs with knowledge related to new opportunities and directions on how to collect and allocate scarce resources (Davidsson & Honig, 2003). Despite the limitations, the study present new insights on the predictors of performance in the restaurant sector and examines the network of structural relationships among human capital, self-efficacy, innovation, and performance.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.tourman.2015.09.017>.

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Dr Craig Lee is a sessional lecturer at the University of South Australia. His research interests are in the areas of innovation and entrepreneurship in hospitality and tourism.



Rob Hallak (PhD) is a Senior Lecturer in Management at the University of South Australia Business School. His research interests include tourism firm performance, entrepreneurship, consumer behaviour and market segmentation.



Dr Shruti R. Sardeshmukh came to academia after working in IT start-ups. Influenced by her work experience, her research interests lie at the intersection of HR and Entrepreneurship. Focused on start-ups and family owned businesses, she is passionate about the “people” dynamics driving the innovation and entrepreneurship processes in individuals and SMEs. She completed her doctoral work at Rensselaer Polytechnic Institute (RPI) in the US and is working as a senior lecturer at the University of South Australia.