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Customer retention and the mediating role of perceived value in retail industry

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Abstract
Purpose – The purpose of this paper is twofold: to examine the effect of corporate social responsibility, social media marketing, sales promotion, and store environment on the perceived value and customer retention in the retail industry; and to provide a significant contribution to the existing literature by examining the mediating effect of the perceived value between the stated factors and customer retention.

Design/methodology/approach – A quantitative research approach was utilized, collecting data from customers of department stores in the east coast of Malaysia. In total, 278 valid questionnaires were used in the analysis of data using the structural equation modeling.

Findings – The findings indicate that perceived value has a significant positive effect on customer retention. The outcomes also showed that social media marketing has an insignificant effect on the perceived value, whereas its effect on customer retention is positive and statistically significant. Additionally, the findings confirmed that corporate social responsibility and store environment have significant positive effects on the perceived value and customer retention. Moreover, the findings showed that sales promotion has a significant positive effect on the perceived value, but its effect on customer retention is insignificant. Finally, the results revealed that the perceived value mediates the relationships between all of the independent variables and customer retention.

Originality/value – The results of this study improve our understanding of how these factors affect customer retention in the retail industry.

Keywords Sales promotion, Customer retention, Perceived value, Corporate social responsibility, Store environment, Social media marketing

Paper type Research paper

Introduction
The rapid growth in competition among all types of organizations has posed several challenges for them regarding maintaining their customers and achieving business objectives, because of which organizations have shifted their focus from traditional marketing to relational exchange practices with customers that could yield greater business profits in the long term. For this reason, focusing on customer retention has become very important for improving organizational performance and competitiveness. In order to achieve customer retention, it is important to note that customers tend to evaluate their purchase experiences in terms of the perceived value that results from the amount of money spent to get a product or service and the benefits received in return. Therefore, a positive customer experience has a significant impact on customer retention and purchase behavior (Bapat and Thanigan, 2016). To sustain customer relationships and ensure organizational effectiveness, it has become vital to understand what constitutes customer retention (Afzali and Ahmed, 2016).

In order to respond to the intense competition among businesses, it has become important to search for the drivers of customer retention. Previous studies examined several factors and predictors of customer retention in different industry contexts. However, the nature of these factors tends to be different from industry to industry. This study focuses on the Malaysian retail sector to explore customer retention and its antecedents as the majority of previous studies on this topic were investigated in western cultures and only few were done in Asian countries, particularly in retail sector. According to Tamuliene and Gabryte (2014), although a significant amount of research has been conducted on examining the repurchase intentions of
consumers, there is no consensus agreement on what constitutes customer retention. Moreover, Mandhachitara and Poolthong (2011) stated that corporate social responsibility is an important factor that affects consumer behavior, but most of the previous studies on this concept were investigated in Western countries, and only few were conducted in the Asian context.

Perceived value has been established as an important determinant of consumers’ perception and retention. In the current business environment, which is highly competitive and frequently changing, retailers should clearly develop their understandings and predictions toward the behavior of consumers in buying and selecting different goods and services for satisfying their needs (Roy et al., 2017). Therefore, in order to obtain and secure a competitive advantage in the targeted markets, several retailers have focused on differentiating themselves by establishing a distinct brand image in the minds of their consumers toward their department stores in an attempt to influence and motivate their purchasing behavior. Perceived value was found in the literature as one of the key predictors of consumer behavior. However, despite its importance as a key tool for customers’ evaluations of brand offerings, the marketing literatures showed that only few empirical research works were undertaken to understand the perceived value and examine its effect on customer behavior (Nguyen and LeBlanc, 1998).

By looking at the previous literature, it is also evident that some scholars considered sales promotions and store environment as important factors that influence customer retention in the retail context. Social media has also emerged as a new marketing communication tool for establishing valuable relationships with customers and sharing the latest organizational products/services with key stakeholders to achieve marketing objectives. However, despite the importance of social media marketing as a communication tool, there are limited research works which examined its effect on customer retention. Duffett (2015) also reported that there is a limited research on social media marketing in emerging countries. Therefore, based on the above facts, this study is designed to examine the effects of social media marketing, corporate social responsibility, sales promotion and store environment mediated by the perceived value on customer retention. To the author’s knowledge, these variables have not been previously integrated together into a single framework to explain their direct and indirect effects on customer retention through the perceived value. The next section presents the literature review for this study followed by the methodology and results. Finally, this paper ends with the conclusion and future research directions.

**Literature review**

**Customer retention**

Most of the previous studies on customer retention were guided by the commitment-trust theory which was proposed by Morgan and Hunt (1994). The commitment-trust theory posits that customer relationships can be established and maintained through gaining consumers’ trust and brand commitment which result from positive purchase experiences. According to Van Vuuren et al. (2012), understanding the main constituents of trust and commitment is vital in order to develop long-term relationships. Relationship marketing consists in creating bonds with business customers by fulfilling their needs and honoring the commitment made to them. Morgan and Hunt (1994) added that relationship commitment and trust require firms to provide superior products and services to their customers and communicate brand value. Instead of focusing on short-term benefits, organizations adopting the relationship marketing strategy create long-term bonds with their profitable customers. Consequently, customers tend to develop trust toward these organizations, and the mutual commitment enables both parties to fulfill their needs. Therefore, the higher degree of trust and commitment ultimately leads to greater customer retention (Hilman and Hanaysha, 2015).
Customer retention can be described as the process of building customer loyalty toward a particular brand, thus having customers to repurchase its products or services over time (Cannie, 1994; Danish et al., 2015). Customer retention emphasizes on repetitive patronage which is mainly associated with consumer’s repurchase behavior and brand loyalty (Buttle, 2004). In other words, customer retention entails a long-lasting customer commitment toward a brand and maintaining such relationship as a result of positive perceptions and past experiences (Boohene et al., 2013; Mohamed and Borhan, 2014). Customers who happily make most of their purchases from a certain brand usually have higher degrees of satisfaction toward it than those who show less commitment. Moreover, a successful customer-brand relationship attracts the consumers less to price promotions offered by other competitors. Anderson and Sullivan (1990) also illustrated that customer retention provides financial implications to organizations because gaining new customers is more costly than maintaining existing ones due to the expenses that they spend on advertising and promotion to influence their purchase behavior.

Customer retention has largely been considered to be the main objective for organizations that focus on the relationship marketing strategy (Coviello et al., 2001; Grönroos, 1991). Although the accurate measurement and definition of customer retention can differ among industries and organizations (Aspinall et al., 2001), there is a general agreement that emphasizing on customer retention can enable organizations to gain several benefits and advantages (Ang and Buttle, 2006; Buttle, 2004; Dawkins and Reichheld, 1990). For instance, retained customers are more willing to pay higher prices on purchasing company’s products or services than new customers, and they are less sensitive to the promotional offers which are usually provided to add new ones (Ang and Buttle, 2006). Furthermore, loyal customers who keep their relationships with a particular brand are likely to purchase its products frequently, recommend its products to others, consume less time from the service providers, and have less sensitivity to its price changes (Sim et al., 2006; Reichheld and Sasser, 1990). Previous literature also showed that acquiring new customers costs almost seven times more than that of maintaining existing ones (Sim et al., 2006), and that developing customer retention will result in improved profit margins. All of these benefits prove the importance and value of retained customers for the success of a brand.

Overall, customer retention is the prime objective of sustainable relationship marketing and it has been considered as a significant managerial theme, particularly in the case where organizations experience a low growth rate in the acquisition of new customers over a period of time (Ahmad and Buttle, 2002). Retaining customers has also been established as a key objective for several organizations, especially in the current competitive business environment, as several brands are devoting considerable amount of time and financial capital on creating long-lasting and mutual relationships with their potential customers in order to achieve a greater degree of performance and achieve their marketing objectives (Bataineh et al., 2015). Considering the above facts, the creation and implementation of relationship marketing as a business strategy to maintain and retain customers can enable a brand to obtain resilient and sustainable competitive advantages (Roberts et al., 2003). However, it is not an easy task to establish customer relationships and maintain them over a period of time unless the company understands their customers’ needs and expectations. For this reason, it has become vital for organizations to understand the needs and expectations of their customers for managing their brand relationships, and then obtain the necessary resources and use them efficiently to ensure greater levels of satisfaction and retention.

Perceived value
Jones et al. conceptualized the perceived value as the consumers’ overall evaluation of the benefits of a product or service by comparing what is paid and what is obtained in return (Zeithaml and Bitner, 2003, p. 491). The term value signifies the difference between prices
and utilities which is perceived through both quality and cost (Nguyen and LeBlanc (1998). Perceived value is also defined in the literature as the perceptions of consumers about the distinctive benefits and advantages of purchasing a product or service in comparison with other alternatives (Zeithaml et al., 1996). That is, the perceived value can be evaluated based on consumers’ sacrifice in terms of time and cost (Zeithaml et al., 1996; Nasution and Mavondo, 2008). In general, customer value emphasizes on the perceptions or evaluations of what a customer gets or receives from purchasing a certain product or service (Chang et al., 2009). It represents the benefits that customers receive from purchasing from a particular brand. Certain researchers highlighted that customers’ assessments of the perceived value come from the functional utility or economical costs that are associated with purchasing a product/service (Hauser and Urban, 1986).

As consumers’ needs have recently changed rapidly with the evolving technological advancement, there has been a shift among organizations toward creating customer value. Currently, value can be established by a brand and its customers, and thus, customers develop expectation from organizations to engage them through various shopping experiences. Obtaining the information from customers about their desired value is vital and can be considered as one of the foundations of effective market management. Therefore, it has become necessary for organizations to enrich their products and services in the targeted markets by getting better insights on how to improve customer value. This has also urged many brands to develop more understanding about the drivers of customer value to create sustainable competitive advantages and improve customer retention (Lapiere, 2000). In the retail context, managers have gradually recognized that in order to remain competitive, they should offer added values to their customer in order to explain the reasons for price changes. Consequently, retail managers should understand the requirements and expectations of various customers with regard to the value proposition.

Many researchers confirmed the importance of the perceived value by empirically showing its direct effect on consumer willingness to purchase (Dodds and Monroe, 1985). Dube and Renaghan (2000) reported that one of the key considerations that organizations must take in order to retain and satisfy their customers is the creation of added values for them. In today’s competitive marketing environment, delivering superior customer value has certainly become one of the core marketing strategies for several brands (Hansen, Samuelsen and Silseth, 2008); this is because greater customer values enhance customer satisfaction and brand loyalty, which as a result enables organizations to generate higher profit margins due to high sales volumes that results from customers’ repurchasing behavior and positive word of mouth (Liu et al., 2007). Certain scholars also confirmed that the perceived value has a significant positive effect on the customer retention (Chang and Wang, 2011). Based on the above discussion, the following hypothesis is presented:

\[ H1. \text{ Perceived value has a positive effect on customer retention.} \]

**Social media marketing**

Social media has nowadays become very attractive to many individuals due to its strengths and benefits as a communication tool in helping both companies and their customers to establish long-lasting relationships (Hanaysha, 2016; Sano, 2014). Social media is defined in the literature as a group of communication networks and mediums that are online in nature and created in order to facilitate information sharing among different users in an interactive way (Esu and Anyadighibe, 2014). Edosomwan et al. (2011) also conceptualized social media as a method of online communication in which social networks and blogs are used to increase the efficiency of interaction, communication, and sharing of information and contents among individuals. Social media was also described by Hennig-Thurau et al. (2010) as online networks and digital information and communication channels that organizations
and customers use in order to interact with each other irrespective of their location and spatial time. The emergence of social media networks has given consumers various options and provided them with rich information about different types of services and products (Mann and Sahni, 2011).

Social media sites have emerged as the most favorable online communication channel through which consumers get opportunities to interact with the service providers and learn about their latest products and services and then share the information with others before they consider, evaluate, and buy from them (Hudson et al., 2016; Qualman, 2013). Social media marketing has received lot of attention from several organizations as implementing it can help them in gaining a better understanding about their consumers' needs, their perceptions toward their brands, and anticipate their future behavior (Bolton et al., 2013). The fast growth of social media marketing has eternally changed the way in which several consumers interact and communicate with each other and with the service providers (Duffett, 2015). By using social media tools, marketers can benefit from the two-way communication process with their current and potential customers to obtain useful information and insights about their behavior in a shorter time. Marketers have also realized the value of social media marketing through word of mouth and brand referrals.

To remain competitive in the rapidly changing business environment, firms need to implement the social media marketing strategy. Persuad (2013) revealed that the greater degree of interaction among consumers on social media has a positive impact on purchase intention that influence them to establish positive attitudes toward the brand. Other scholars reported that social media facilitates information sharing among consumers and their peers about the product and service of certain brands (Erdoğmuş and Cicek, 2012; Mangold and Faulds, 2009) which enables organizations to manage the efficiency of marketing costs, improve brand awareness, increase brand recognition and recall, and strengthen brand loyalty. Particularly, the nature of two-way communication through social media enables organizations to quickly respond to customers' issues or complaints at a minimal cost, which in turn results in customer retention. Overall, the effective use of social media marketing activities can assist organizations to create favorable relationships with current and potential customers, and this enhances perceived value and customer retention. Based on the above discussion, the following hypotheses are presented:

$H_2$. Social media marketing has a positive effect on the perceived value.

$H_3$. Social media marketing has a positive effect on the customer retention.

$H_4$. Perceived value mediates the relationship between social media marketing and customer retention.

**Corporate social responsibility**

The evolution of corporate social responsibility concept has recently attracted the attention of many scholars. Maigman et al. (1999) defined corporate social responsibility as the process by which organizations consider economic, ethical, legal, and discretionary accountabilities toward different types stakeholders. In other words, corporate social responsibility emphasizes on the actions and procedures of an organization that takes into consideration the requirements and expectations of various stakeholders in three distinct aspects: environmental, economic, and social (Aguinis and Glavas, 2012; Rodrigues and Borges, 2015; Rupp et al., 2010; Shabib and Ganguli, 2017). Another definition for corporate social responsibility was expressed by Pérez et al. (2013) as the efficiency of a brand in producing and placing its products in a particular target market, taking into considerations the fulfillment of social obligations. The literature on corporate social
responsibility reveals that consumer tend to recognize the added values in buying the products or services of brands that are socially responsible (Ferreira et al., 2010; Strahilevitz, 1999). The utilities signify the outcomes received from an exchange relationship with the brand. Ferreira et al. (2010) also added that corporate social responsibility has a positive influence on customers’ perceived value through the recognition of measurable benefits that would justify price differences.

The perception of customers toward social responsibility activities on the part of organizations is considered as one of the important marketing research topics for various businesses (Rodrigues and Borges, 2015; Hassan et al., 2013). This is because organizational practices of social responsibility programs provide important information to various stakeholders about brand value which as a result increase consumers’ confidence toward the service provider (Pérez et al., 2013). In the past literature, it was observed that numerous studies found corporate social responsibility practices as key predictors of consumers’ reactions and perceptions toward company’s products and services (Brown and Dacin, 1997; Marquina and Morales, 2012). Previous studies also revealed that corporate social responsibility is one of the main intangible assets for obtaining sustainable competitive advantages and brand differentiation (Marquina and Morales, 2012; Bhattacharya and Sen, 2004; Maignan et al., 1999). Similarly, Green and Peloza (2014) confirmed that corporate social responsibility affects the purchasing decisions of consumers if the products or services of a brand have implicit ethical offerings and demonstrate a desirable commitment in the protection of consumers’ interests. This means that if consumers perceive a brand as socially responsible, they will prefer it and maintain their relationships with it (Hassan et al., 2013).

In the marketing literature, it was documented that corporate social responsibility activities has a positive impact on consumers’ attitudes toward the brand and its products or services (Luo and Bhattacharya, 2006; Mandhachitara and Poolthong, 2011; Smith and Langford, 2009). Corporate social responsibility was also considered as a key marketing strategy in retail stores for maintaining customers and communicating brand value. The active participation in social responsibility programs has largely been considered to be important for strengthening brand image and reputation (Anselmsson and Johansson, 2007; Elg and Hultman, 2016). Bhattacharya and Sen (2004) found that corporate social responsibility improves brand value by developing a sense of well-being, and this value is appreciated by consumers in the market. Other researchers reported that the consequences of corporate social responsibility include positive brand perceptions (Brown and Dacin, 1997), greater buying intentions and the perceived value (Mohr and Webb, 2005). Certain scholars also reported that corporate social responsibility has a significant positive effect on customer retention (Chung et al., 2015; Raman et al., 2012). Based on the above literature, the following hypotheses are proposed:

H5. Corporate social responsibility has a positive effect on the perceived value.
H6. Corporate social responsibility has a positive effect on the customer retention.
H7. Perceived value mediates the relationship between corporate social responsibility and customer retention.

Sales promotion
Sales promotion is one of the most significant elements in marketing campaigns, and is usually used to encourage quicker and higher (represented by volume/number) purchases of particular products or services offered by a brand. Sales promotions are normally presented in the form of incentives to attract larger number of consumers (Kotler and Keller, 2012). Agrawal (1996) described sales promotions as an aggressive marketing strategy that organizations employ in order to attract committed customers and prevent them from...
switching to other competitors. Another definition of sales promotion was proposed in the literature as an element of marketing mix which is mainly designed to inform, convince and remind a group of consumers and influence their perceptions and beliefs about a brand (Stanton et al., 2007). Furthermore, Kotler and Armstrong (2010) defined promotions as a marketing activity which is articulated by brands to influence their customers and motivate them to purchase their products or services. Companies execute sales promotions in order to increase brand awareness and enhance customers’ attentions and interests toward the offered products or services (Satit et al., 2012; Witell, 2011).

Pourdehghan (2015) revealed that sales promotions are important for stimulating consumers’ attentions and arousing their interests toward the products or services of a brand. Promotional techniques can take different forms, such as price stimuli, free samples, lower prices, and prize draw, and these types can have strong effects on customer’s attraction and purchasing behavior. Sales promotions are largely implemented by various brands in order to stimulate and gain positive consumer responses (Kotler and Keller, 2012). Tanner and Raymond (2012) stated that the selection of promotional mix depends on several factors, such as product life cycle, financial strengths, product and category of purchase decision, characteristics of target market, the readiness of consumers to buy, means of reaching customers, organizational policies, competitors’ prices and promotions, environmental factors and the accessibility of media. Mullin and Cummins also confirmed that sales promotion is the most commonly used tool for attracting customers and maximizing the sales.

Hasan et al. (2016) found that sales promotion had a significant positive impact on customer’s purchase decision. Hasan et al. (2016) also indicated that promotional campaign plays an important role in influencing consumers’ purchasing decisions and perceptions of brand value. Particularly, these promotional offers grant consumers the feeling of added value from purchasing products which have price reductions in relation to a desired financial deal. Certain studies (Andreti et al., 2013; Sagala et al., 2014) examined sales promotions in retail setting and reported that it has a significant influence on purchasing decision and customer retention. Furthermore, Witell (2011) demonstrated that loyal customers enjoy price promotions and develop positive perceptions toward the brand. Mendez et al. (2015) also suggested that sales promotions enhance customer retention and brand reputation over time. Greater support was reported by Aaker (1991) who illustrated that promotional events provide a platform for strengthening and growing brands. Certain scholars also reported that sales promotion has a significant effect on the retention of customers (Amini et al., 2012; Chen and Green, 2011). Based on the above discussion, the following hypotheses are postulated:

H8. Sales promotion has a positive effect on the perceived value.
H9. Sales promotion has a positive effect on customer retention.
H10. Perceived value mediates the relationship between sales promotion and customer retention.

Store environment

Store environment refers to the atmosphere or environment of a particular store in which customers purchase the products or services, and it comprises both tangible and intangible attributes that facilitate the interaction with the service provider (Zeithaml et al., 2009). An appealing retail environment includes various aspects such as proper lighting, music, attractive decorations and layouts, superb design of architecture, fragrance and freshness, air conditioning, comforting and fashionable color, and number of visitors which can influence consumer behavior (Oh et al., 2008). Similarly, Ullakonoja (2011) categorized store environment into three distinct aspects: ambient conditions, social factors, and design characteristics.
Ambient conditions include the background elements within the environment which are intangible in nature and cannot be seen by customers, such as music, scenery, lighting adequacy, and the degree of temperature. On the other hand, social factors are based on the persons who exist in the retail environment including staff and customers. Lastly, design characteristics contain the physical and visible features of store environment, for example, architecture, color attractiveness, layout and the materials of decoration.

Evaluating the perceptions of customers toward the features of retail environment can create a distinct image in consumer’s minds, improve the perceived value, and uplift brand performance and purchase intention by reducing cost, time, and efforts in maintaining or attracting new customers (Kumar et al., 2010). Mahmood and Khan (2014) suggested that physical environment enables service providers to differentiate their brands from the competitors and stimulate consumer’s choice. Previous studies reported that retail environment has a significant effect on consumer behavior. For instance, Belk (1975) specified that the physical surroundings within a store’s environment stimulate consumer’s purchase behavior. Furthermore, establishing an appealing store environment was emphasized in the literature as a competitive strategy that retailers use in order to influence consumer behavior and boost their sales (Chebat and Michon, 2003). Greater support was seen in the study of Richardson et al. (1996) who pointed out that store esthetics improve the perceptions of customers toward the quality of products or services offered by the department store. Newman and Patel (2004) also acknowledged store environment as a key determinant of consumer choice.

In the past literature, several studies emphasized on the importance of store environment in affecting consumer behavior and perceptions. According to Zeithaml et al. (2009), physical environment influences consumers’ purchase decisions and willingness to maintain their relationships with a service provider. Amofah et al. (2016) also confirmed that physical environment had a significant relationship with purchase decision and brand loyalty. Similarly, Hasan et al. (2016) highlighted the significance of physical facilities in influencing the purchase intention of consumers. In the retail setting, other scholars found that store environment influences the perceived quality and value of products or services offered for customers in the store. Therefore, store environment is an important marketing strategy that retailers use in order to improve customers’ perceptions of brand value and enhancing their retention over time (Hosseini et al., 2014; Ryu and Han, 2011). These opinions are in line with the study of Ullakonoja (2011) who considered retail design as one of the main sources of value that customers can experience at a retail store. Based on the above literature review, the following hypotheses are proposed:

\[ H11. \text{ Store environment has a positive effect on the perceived value.} \]
\[ H12. \text{ Store environment has a positive effect on customer retention.} \]
\[ H13. \text{ Perceived value mediates the relationship between store environment and customer retention.} \]

Based on the above discussion which presented the existing gaps in the literature with regards to the linkages between the selected variables, the framework for this research is proposed as follows (Figure 1).

**Methodology**

As specified above, this paper focuses on examining the direct and indirect effects of social media marketing, corporate social responsibility, sales promotion, and store environment on customer retention mediated by the perceived value. The respondents of this study comprise the customers of department stores in East Coast of Malaysia, particularly in Pahang, Kelantan, and Terengganu. Based on the objectives of this research, the quantitative research design was employed for data collection and obtaining customers’ responses. Due to the large
number of population in this part of Malaysia, a total of 384 questionnaires are considered to be sufficient for surveying the targeted respondents based on the recommendations of Krejcie and Morgan (1970) for determining the sample size. In order to ensure the randomness of survey distribution, the convenience sampling procedure was employed during the data collection process. Additionally, the participants were clearly explained about the objectives of this research and consent was taken to complete the survey. Meanwhile, the respondents were met at different times in each day during the data collection process in order to avoid response bias issues.

Before data collection took place, the questionnaire which comprised the items about respondents’ profile and research constructs was designed. The first section included various questions about the demographic characteristics of respondents such as age, gender, educational qualification, and level of income. Additionally, the second section included the items used for measuring all constructs which were taken from the past literature and adapted to fit the context of this research. Particularly, social media marketing was measured using five items being taken from the study of Schivinski and Dabrowski (2014). To measure corporate social responsibility, four items were adopted and adapted from CaNon and Wong (2014), whereas sales promotion was measured using four items which were originally developed by Villarejo-Ramos and Sánchez-Franco (2005). Similarly, a six-item scale was taken from Hussain and Ali (2015) to measure store environment. A four-item scale of the perceived value was also adapted from the study of Puncheva-Michelotti and Michelotti (2010). Finally, customer retention was measured using a total of four items being adapted from Hennig-Thurau (2004). All of the items were measured using a five-point Likert scale which ranged from strongly disagree to strongly agree.

Analysis of results
In total, 278 valid questionnaires were received as responses from survey participants for the data analysis. To analyze the demographic characteristics, descriptive statistics using SPSS were used. The findings as presented in Table I show that 54.7 percent of the participants are females, whereas males accounted for 45.3 percent of the overall responses. Additionally, the analysis revealed that 16.9 percent of the participants have a postgraduate certificate, 34.5 percent have a bachelor degree qualification, 19.4 percent have a Diploma certificate, and 29.2 percent have a higher secondary school certificate. Participants’ age is presented as follows: between 18 and 25 years old (22.4 percent); between 26 and 30 years old (49.6 percent), between 31 and 40 years old (23.1 percent); 41 years old or above (4.9 percent). The output of descriptive analysis also showed that 17.2 percent of the participants had an average monthly income that is below RM500, whereas 5.4 percent had a monthly income between RM501 and RM1000. But those who receive a monthly income in
the range of RM1,000 to RM4,000 accounted for 52 percent of total responses, while 25.4 percent had an average monthly income that is above RM4,000. In order to confirm the internal consistency among the selected scales, the reliability test using Cronbach’s $\alpha$ was conducted. The reliability of items can be established when they yield invariable outcomes if combined to measure a certain construct. According to Nunnally (1978), the reliability can be considered acceptable when the value of Cronbach’s $\alpha$ reaches 0.60 or more. Generally, the results showed that Cronbach’s $\alpha$ values ranged between 0.739 and 0.942. This means that Cronbach’s $\alpha$ for all constructs (social media marketing, corporate social responsibility, sales promotion, store environment, perceived value, and customer retention) exceeded the minimum required value of 0.60 which supports the assumptions of reliability. Moreover, the content validity was established and validated on the measurement items as they were tested by past research works, and a total of three academic experts provided their feedback to improve the quality of the designed questionnaire.

During the data analysis, the first phase dealt with data screening which was performed on all responses before proceeding to the measurement and structural models. Initially, the confirmatory factor analysis test was conducted using the measurement model in order to check the unidimensionality of the scales and achieve an acceptable model fit. The general role of the confirmatory factor analysis, as stated by Hair et al., exists when the loadings for items under the same constructs reach 0.50 or above. On whole, the results presented in Table II indicate that the factor loadings of the remaining items in each constructs exceeded the minimum required value of 0.50; thus, convergent validity is confirmed. According to Schiuma (2010), the permissible number of remaining items for a construct should not be lower than 2 in order to estimate the structural model. Overall, the findings of the measurement model and factor analysis showed a reasonable fit and qualified to proceed for a structural model.

As the research hypotheses cannot be answered before reaching to an adequate fit on the structural model, a number of fit indices were used to accomplish these objectives. As it can be seen in Figure 2, the analysis of the structural model reveal that a reasonable fit with the data is achieved ($\chi^2 = 351.274$, df = 236, GFI = 0.846, AGFI = 0.804,
Table II.
Factor analysis of the measurement items

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Items</th>
<th>Loadings</th>
<th>Cronbach’s α</th>
<th>Composite reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social media marketing</td>
<td>SMM1</td>
<td>0.818</td>
<td>0.942</td>
<td>0.965</td>
</tr>
<tr>
<td></td>
<td>SMM2</td>
<td>0.926</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>SMM3</td>
<td>0.884</td>
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<td></td>
<td>SMM4</td>
<td>0.901</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SMM5</td>
<td>0.862</td>
<td></td>
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</tr>
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<td>CSR</td>
<td>CSR1</td>
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<td>0.802</td>
<td>0.837</td>
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<td></td>
<td>CSR2</td>
<td>0.782</td>
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<td></td>
<td>CSR4</td>
<td>0.651</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store environment</td>
<td>SE1</td>
<td>0.678</td>
<td>0.747</td>
<td>0.761</td>
</tr>
<tr>
<td></td>
<td>SE2</td>
<td>0.525</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE3</td>
<td>0.682</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE4</td>
<td>0.633</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SE5</td>
<td>0.598</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales promotion</td>
<td>SP1</td>
<td>0.651</td>
<td>0.793</td>
<td>0.798</td>
</tr>
<tr>
<td></td>
<td>SP2</td>
<td>0.511</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SP3</td>
<td>0.870</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SP4</td>
<td>0.761</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived value</td>
<td>PV2</td>
<td>0.715</td>
<td>0.753</td>
<td>0.759</td>
</tr>
<tr>
<td></td>
<td>PV3</td>
<td>0.751</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV4</td>
<td>0.680</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer retention</td>
<td>CR1</td>
<td>0.618</td>
<td>0.739</td>
<td>0.717</td>
</tr>
<tr>
<td></td>
<td>CR2</td>
<td>0.517</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CR3</td>
<td>0.787</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CR4</td>
<td>0.554</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Fit values: \( \chi^2 = 351.274; \text{ratio} = 1.488; p-value = 0.000; \text{df} = 236; \text{GFI} = 0.846; \text{AGFI} = 0.804; \text{TLI} = 0.928; \text{CFI} = 0.939; \text{RMSEA} = 0.055 \)
RMSEA = 0.055, CFI = 0.939, and TLI = 0.928). Based on the adequate fit of the estimated model, the values of standardized path coefficients and critical ratios for the projected hypotheses were obtained from the tables of structural model's output. Additionally, the test of discriminant validity was performed through estimating the variance values among all constructs based on the recommendations of Fornell and Larcker (1981). Particularly, the confirmation of discriminant validity was established by calculating the squared correlations then comparing them with the correlation values among the constructs. Additionally, the results showed that there is no multicollinearity between any two distinct variables as the correlation values between any pair of constructs are less than 0.80. Overall, the outcomes revealed that discriminant validity assumptions between the constructs are established (see Table III).

According to the output of the structural model which was generated using AMOS 18, the hypotheses for this study were verified. As presented in Table IV, the perceived value has a significant positive effect on customer retention ($\beta = 0.320, t$-value = 2.198, $p < 0.05$), and this means that $H1$ is supported. The findings also revealed that social media marketing has an insignificant effect on the perceived value ($\beta = 0.056, t$-value = 0.931, $p > 0.05$), whereas its effect on customer retention is positive and statistically significant ($\beta = 0.188, t$-value = 2.032, $p < 0.05$); hence, $H2$ is rejected, whereas $H3$ is supported. Additionally, the results depicted in Table IV indicate that corporate social responsibility has a significant positive effect on the perceived value ($\beta = 0.305, t$-value = 2.855, $p < 0.05$) and customer retention ($\beta = 0.331, t$-value = 2.818, $p < 0.05$), therefore, $H5$ and $H6$ are confirmed. The findings also showed that sales promotion has a significant positive effect on the perceived value ($\beta = 0.325, t$-value = 3.109, $p < 0.05$), but its effect on customer retention ($\beta = -0.085, t$-value = -0.789, $p > 0.05$) is negative and insignificant, thus, $H8$ is confirmed, while $H9$ is rejected. Furthermore, the results showed that store environment has a significant positive effect on the perceived value ($\beta = 0.337, t$-value = 3.518, $p < 0.05$) and customer retention ($\beta = 0.491, t$-value = 3.518, $p < 0.05$), consequently, $H11$ and $H12$ are accepted.

### Table III.
Results of discriminant validity

<table>
<thead>
<tr>
<th>Sales promotion</th>
<th>Store environment</th>
<th>CSR</th>
<th>SMM</th>
<th>Perceived value</th>
<th>Customer retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales promotion</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store environment</td>
<td>0.500</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSR</td>
<td>0.355</td>
<td>0.430</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social media marketing</td>
<td>0.344</td>
<td>0.386</td>
<td>0.466</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Perceived value</td>
<td>0.575</td>
<td>0.589</td>
<td>0.529</td>
<td>0.309</td>
<td>1</td>
</tr>
<tr>
<td>Customer retention</td>
<td>0.397</td>
<td>0.708</td>
<td>0.593</td>
<td>0.230</td>
<td>0.682</td>
</tr>
</tbody>
</table>

### Table IV.
Research findings

<table>
<thead>
<tr>
<th>Research hypotheses</th>
<th>Std. estimate</th>
<th>SE</th>
<th>$t$-value</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H1$ Perceived value $\rightarrow$ customer retention</td>
<td>0.320</td>
<td>0.100</td>
<td>2.198</td>
<td>0.028</td>
</tr>
<tr>
<td>$H2$ Social media marketing $\rightarrow$ perceived value</td>
<td>0.056</td>
<td>0.060</td>
<td>0.931</td>
<td>0.352</td>
</tr>
<tr>
<td>$H3$ Social media marketing $\rightarrow$ customer retention</td>
<td>0.188</td>
<td>0.039</td>
<td>2.032</td>
<td>0.042</td>
</tr>
<tr>
<td>$H5$ CSR $\rightarrow$ perceived value</td>
<td>0.305</td>
<td>0.103</td>
<td>2.855</td>
<td>0.004</td>
</tr>
<tr>
<td>$H6$ CSR $\rightarrow$ customer retention</td>
<td>0.331</td>
<td>0.078</td>
<td>2.818</td>
<td>0.005</td>
</tr>
<tr>
<td>$H8$ Sales promotion $\rightarrow$ perceived value</td>
<td>0.325</td>
<td>0.101</td>
<td>3.109</td>
<td>0.002</td>
</tr>
<tr>
<td>$H9$ Sales promotion $\rightarrow$ customer retention</td>
<td>-0.085</td>
<td>0.072</td>
<td>-0.789</td>
<td>0.430</td>
</tr>
<tr>
<td>$H11$ Store environment $\rightarrow$ perceived value</td>
<td>0.337</td>
<td>0.122</td>
<td>2.658</td>
<td>0.004</td>
</tr>
<tr>
<td>$H12$ Store environment $\rightarrow$ customer retention</td>
<td>0.491</td>
<td>0.099</td>
<td>3.518</td>
<td>***</td>
</tr>
</tbody>
</table>

**Note:** ***Significant at < 0.001***
Additionally, the mediating effect of the perceived value was estimated using the bootstrapping method to determine whether it mediates the relationships between the selected independent variables (social media marketing, corporate social responsibility, sales promotion, and store environment) and customer retention. The bootstrapping technique was initially suggested by Preacher and Hayes (2008) to examine the indirect effects of different variables. The authors also revealed that this method yields accurate results when calculating the confidence intervals (CIs) of indirect relationships as the commonly used causal method strategy which was introduced by Baron and Kenny (1986) provides less accurate results. Furthermore, the suitability of bootstrapping procedures appears through its significance for testing the indirect path relationships as it has a distribution which is skewed away from zero (Shrout and Bolger, 2002). Overall, the mediation test was conducted by estimating the indirect and direct effects between the variables according to the final structural model after achieving an acceptable fit (Preacher and Hayes, 2008) with a 1,000 sample of bootstrapping. The bias-corrected CIs were also reported at the value of 95 percent.

As stated by Hayes (2009, p. 7), “Simulation research shows that bootstrapping is one of the most valid and powerful methods for testing intervening variable effects (Williams and MacKinnon, 2008) and for this reason alone, it should be the method of choice”. Therefore, based on the recommendations of the authors, the bootstrapping method was used in this study to test the mediating effect of the perceived value between independent and dependent variables through AMOS 18. Overall, the results showed that social media marketing has an insignificant direct effect on customer retention (0.827, 95 percent CI) but a significant indirect effect on customer retention (0.003); hence, the full mediation is supported. Furthermore, the results showed an insignificant direct effect of corporate social responsibility on customer retention through the perceived value (0.073, 95 percent CI) and a significant indirect effect (0.001) (see Table V); consequently, the full mediation effect is confirmed. Moreover, the bootstrapping procedure showed an insignificant direct effect of sales promotion on customer retention (0.727, 95 percent CI) with a significant indirect effect (0.004), therefore, full mediation is supported. Finally, the bootstrapping procedure for examining the mediating effect of the perceived value between store environment and customer retention also showed that the direct effect is significant (0.036, 95 percent CI), and the indirect effect is also significant (0.001, 95 percent CI), and this indicates that the partial mediation is confirmed. On Whole, H4, H7, H10 and H13 are supported.

Discussion and conclusion
This paper aimed to examine the effects of social media marketing, corporate social responsibility, sales promotion, and store environment on the perceived value and customer retention in the retail industry. It also aimed to verify whether the perceived value mediates the relationships between the stated factors and customer retention. The results indicated that the perceived value has a significant positive effect on consumer retention and it was supported by the literature (Dube and Renaghan, 2000; Liu et al., 2007). The findings also

<table>
<thead>
<tr>
<th></th>
<th>Est.</th>
<th>SE</th>
<th>Lower bound</th>
<th>Upper bound</th>
<th>Two-tail sig.</th>
<th>Direct effect</th>
<th>Indirect effect</th>
</tr>
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<tbody>
<tr>
<td>Social media marketing</td>
<td>0.218</td>
<td>0.089</td>
<td>0.79</td>
<td>0.458</td>
<td>0.003</td>
<td>0.827</td>
<td>0.003</td>
</tr>
<tr>
<td>CSR</td>
<td>0.306</td>
<td>0.098</td>
<td>0.169</td>
<td>0.590</td>
<td>0.001</td>
<td>0.073</td>
<td>0.001</td>
</tr>
<tr>
<td>Sales promotion</td>
<td>0.436</td>
<td>0.172</td>
<td>0.217</td>
<td>0.856</td>
<td>0.004</td>
<td>0.727</td>
<td>0.004</td>
</tr>
<tr>
<td>Store environment</td>
<td>0.292</td>
<td>0.093</td>
<td>0.159</td>
<td>0.543</td>
<td>0.001</td>
<td>0.036</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table V.
Mediation effect of perceived value

Note: Dependent variable: customer retention
showed that social media marketing has an insignificant effect on the perceived value whereas its effect on customer retention is positive and statistically significant. These findings contrasts with certain previous studies which found that social media marketing had a significant effect on the perceived value (Duffett, 2015) and customer retention. This might be due to cultural differences and the degree of social media usage among the respondents. For many consumer, perceived value exist when they receive actual benefit from purchase transactions rather than advertising messages. Leung et al. illustrated that the emergence of social media has eternally changed the way in which organizations interact and exchange information with their customers about their products and services. The authors suggested that the implementations of social media marketing should be utilized to influence consumers’ perceptions.

This paper also confirmed that in line with past research works (Pérez et al., 2013; corporate social responsibility has a significant positive impact on the perceived value and customer retentions. Greater support was confirmed by a number of scholars who reported that corporate social responsibility plays an important role in affecting the perceived value (Marquina and Morales, 2012; Mandhachitara and Poolthong, 2011) and enhancing customer retention. Bhattacharya and Sen (2004) also found that corporate social responsibility improves the sense of well-being among customers. Certain scholars added that the social responsibility activities of a brand enhance the reactions of consumers toward its products and services (Bhattacharya and Sen, 2004; Brown and Dacin, 1997). The results suggest that consumers’ perceptions of social responsibility events on the part of a brand are important for enhancing the efficiency of marketing programs and strengthening the customer value. Moreover, through social responsibility activities, firms would have better chances for cultivating lasting customer relationships. Barnett reported that socially responsible firms succeed in attracting and retaining consumers and are competent to charge price premiums on their offerings.

Furthermore, the results of this study showed that sales promotion has a significant positive effect on the perceived value whereas its effect on customer retention is negative. These results were supported by several previous studies which found that sales promotion was one of the key factors that affect the perceived value (Andreti et al. 2013). A possible reason of the positive effect of sales promotions on the perceived value could be attributed to the perceptions of consumers toward the saving costs and added values which can be received from purchasing certain products at lower prices when these values are not available in every retail store. According to Blattberg and Wisniewski (1989), consumers gain benefits more from price reductions when purchasing from a well-known brand. However, the regular usage of sales promotions leads to a negative effect on consumers’ perceptions toward product quality and brand associations as consumers tend to evaluate the price instead of brand name (Yoo et al., 2000). Montaner and Pina demonstrated that sales promotions can negatively affect brand image which later lead to lower customer retention rate as a result of purchase experience.

The findings of this paper also showed that, in line with previous studies (Hosseini et al., 2014; Richardson et al., 1996), store environment has a significant positive effect on the perceived value and customer retention. Ullakonoja (2011) stated that consumers’ perceived value can be maximized through an appealing retail environment which enhances their purchase intentions and brand loyalty. Kumar et al. (2010) demonstrated that the perceptions toward the retail environment can enhance customer value and purchase intention by reducing the costs and time, as well as the efforts for getting the desired product or service. The authors added that store environment plays an important role in retaining and attracting larger number of customers over time. Greater support was presented by Zeithami and Bitner who emphasized on the importance of store environment in affecting consumer’s purchase decision. Furthermore, Oh et al. revealed that store environment can have a significant impact
on consumer behavior and brand preference. Therefore, retail environment is one of the important factors which requires sufficient attention from retail brands, especially after the emergence of intense competition in different markets.

Finally, the outcomes of this paper indicated that the perceived value mediates the relationships between all of the independent variables (social media marketing, corporate social responsibility, sales promotion, and store environment) and customer retention. This means that the perceived value strengthens the effects of the above-stated factors on customer retention. These findings confirm the significance of the perceived value in helping retail brands to reinforce their relationships with their customers and developing positive brand perceptions. Consequently, the decision makers in the retail sector should put greater emphasis on providing added values to their customers, and at the same time manage their business profitability to ensure their long-term survival and success. Based on the results of this study, it can be concluded that designing an appealing store environment and offering sales promotions can enhance customers’ perceptions of brand value and increase their loyalty to maintain their benefits on the long term.

Similarly, the mediating effect of the perceived value reveals that involving in corporate social responsibility activities that are directed toward enhancing the welfare of business stakeholders and the lifestyle of the society where the company operates could cultivate customer value and, thus, enhance customer retention. The mediating effect of the perceived value between social media marketing and customer retention also shows that focusing on marketing activities using social media can improve the customer value and influence their loyalty toward the retail brand. Consequently, the decision makers in the retail industry should focus customer value while designing their marketing and sales strategies in order to retain their customers on the long term and build successful relationships with them, and this will enable them to gain favorable customer responses and positive brand image. This means that social media marketing and corporate social responsibility exerts a strong effect on customer’s perceptions of brand value which later may lead to lasting customer-brand relationships over time.

Managerial implications
The findings of this paper showed that social media marketing plays an important role in affecting customer retention, whereas sales promotion influences consumers’ perceptions of brand value in the positive direction. Therefore, marketers should utilize social media tools to build brand awareness and create sustainable customer relationships by taking into consideration various types of promotions and attractive advertisements, which can stimulate consumer’s perception and brand value. Social media is a powerful tool for communicating with customers and building close relationships with them to clearly understand their needs and expectation which are necessary for branding strategies. The findings also showed that corporate social responsibility can enhance the perceived value and customer retention which could in return lead to greater financial outcomes. Thus, retailers are advised to focus on social responsibility programs to gain economic benefits as well as favorable brand image. Additionally, the results suggest that retail organizations should develop corporate social responsibility strategies according to the preferences of consumers to ensure their effectiveness and usefulness to business stakeholders.

Store environment was also found as a significant factor for improving the perceived value and building customer retention in the retail industry. These findings provide important guidelines for business practitioners with regard to the importance of store environment which can be reflected through design features, ambient conditions, and social factors in explaining customer retention. A favorable store environment enhances the shopping experience and satisfaction of customers and ultimately influences their purchasing behavior. The results of this study provide empirical evidence with regard to the importance of social media marketing, corporate social responsibility, and store environment in explaining the perceived value and
consumer retention in the retail industry. This is vital for the decision makers as this information is easier to gather and to be applied in a real marketing scenario. The findings of this research would provide the management in the retail industry with greater understanding of the drivers of customer retention. Through this knowledge, retailers would have a better understanding about the perceptions and expectations of their customer which can guide them to develop the right strategies for improving their business performance.

Limitations and future research
Although this paper provided significant contributions to the theory and practice on customer retention and its antecedents in the retail context, there are some limitations which can be addressed in future research works. First, this paper has mainly focused on the retail industry with empirical data from consumers in Malaysia. Therefore, future research works are recommended to test the variables in other industry or country contexts and employ larger sample sizes to confirm the results and reach at better conclusions. Another limitation appears in testing only four antecedents of the perceived value and customer retention in the retail context. Thus, future research may incorporate other factors, such as distribution intensity and price. Future studies may also examine various dimensions of corporate social responsibility such as the stakeholder’s approach which could yield interesting insights. Finally, a survey method was utilized for data collection in this study; hence, future research works may adopt qualitative techniques with unstructured questions to gain further insights on what drives customer retention and how retail brands can add values to their customers in the presence of competition.

References


Schiuma, G. (2010), Managing Knowledge Assets and Business Value Creation in Organizations: Measures and Dynamics, IGI Global, Hershey, PA.


Further reading


(The Appendix follows overleaf.)
Appendix

<table>
<thead>
<tr>
<th>Code</th>
<th>Construct/items</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Social media marketing</strong></td>
<td></td>
</tr>
<tr>
<td>SMM1</td>
<td>The social media marketing for this store’s brand are frequently seen</td>
<td>0.818</td>
</tr>
<tr>
<td>SMM2</td>
<td>The social media advertisements for this store’s brand are very attractive</td>
<td>0.926</td>
</tr>
<tr>
<td>SMM3</td>
<td>The social media advertisements for this store brand perform well in comparison to those of other stores</td>
<td>0.984</td>
</tr>
<tr>
<td>SMM4</td>
<td>This store’s brand offer extensive advertisements on social media</td>
<td>0.901</td>
</tr>
<tr>
<td>SMM5</td>
<td>The social media advertisements for the brand of this store can be easily remembered</td>
<td>0.862</td>
</tr>
<tr>
<td></td>
<td><strong>Corporate social responsibility</strong></td>
<td></td>
</tr>
<tr>
<td>CSR1</td>
<td>This store is committed to improving the welfare of the communities in which it operates</td>
<td>0.854</td>
</tr>
<tr>
<td>CSR2</td>
<td>This store’s brand is very concerned with environmental protection</td>
<td>0.782</td>
</tr>
<tr>
<td>CSR4</td>
<td>This store’s brand is very concerned with customers’ benefits</td>
<td>0.651</td>
</tr>
<tr>
<td></td>
<td><strong>Sales promotion</strong></td>
<td></td>
</tr>
<tr>
<td>SP1</td>
<td>Price deals for this store are frequently offered</td>
<td>0.651</td>
</tr>
<tr>
<td>SP2</td>
<td>Seasonal promotions in this store are available</td>
<td>0.513</td>
</tr>
<tr>
<td>SP3</td>
<td>Price deals for this store are attractive</td>
<td>0.862</td>
</tr>
<tr>
<td>SP4</td>
<td>The price deals in this store are offered on many items</td>
<td>0.768</td>
</tr>
<tr>
<td></td>
<td><strong>Store environment</strong></td>
<td></td>
</tr>
<tr>
<td>SE1</td>
<td>This store is always clean</td>
<td>0.678</td>
</tr>
<tr>
<td>SE2</td>
<td>This store has a pleasant environment created by music</td>
<td>0.525</td>
</tr>
<tr>
<td>SE3</td>
<td>The atmosphere and decorations in the store encourages me to revisit it again</td>
<td>0.682</td>
</tr>
<tr>
<td>SE4</td>
<td>The quality of the air conditioning in the store makes my presence in it comfortable</td>
<td>0.633</td>
</tr>
<tr>
<td>SE5</td>
<td>The lighting in this store is pleasing to the eyes and makes things more visible to me</td>
<td>0.598</td>
</tr>
<tr>
<td></td>
<td><strong>Perceived value</strong></td>
<td></td>
</tr>
<tr>
<td>PV2</td>
<td>This store provides excellent value to its customers</td>
<td>0.715</td>
</tr>
<tr>
<td>PV3</td>
<td>The products and services of this store are very reliable</td>
<td>0.751</td>
</tr>
<tr>
<td>PV4</td>
<td>The staffs in this store provide technical support to customers</td>
<td>0.680</td>
</tr>
<tr>
<td></td>
<td><strong>Customer retention</strong></td>
<td></td>
</tr>
<tr>
<td>CR1</td>
<td>I am a loyal to this store’s brand</td>
<td>0.618</td>
</tr>
<tr>
<td>CR2</td>
<td>In future I will continue buying products from this store</td>
<td>0.517</td>
</tr>
<tr>
<td>CR3</td>
<td>I enjoy shopping at this store</td>
<td>0.787</td>
</tr>
<tr>
<td>CR4</td>
<td>This store’s brand is my first choice when I intend to go for shopping</td>
<td>0.554</td>
</tr>
</tbody>
</table>

Table AI. Measurement of finalized items

About the author

Jalal Rajeh Hanaysha is currently a Senior Lecturer at DRB-HICOM University of Automotive Malaysia. He obtained his PhD majoring in Management from Universiti Utara Malaysia, Malaysia, in 2015, as well as an MSc (Management) from Universiti Utara Malaysia in 2011. He also received a Bachelor’s degree in Marketing from Arab American University – Jenin, Palestine in 2008. To date, he has published more than 40 research articles in international journals and conferences. He has also received several awards for best research papers being presented at local and international conferences. His research interests include business management and marketing, in particular branding, consumer behaviour, social media marketing, CSR, business and product innovation, human resource practices, and business strategy. Jalal Rajeh Hanaysha can be contacted at: jalalhanayshi@yahoo.com

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Economic diversification and intra-GCC merchandise trade
An empirical analysis during 1995-2015
Subhadra Ganguli
Department of Accounting and Economics, Ahlia University, Manama, Bahrain

Abstract
Purpose – The purpose of this paper is to analyze merchandise trade patterns among the GCC states with the backdrop of economic diversification within these economies.
Design/methodology/approach – This empirical research quantitatively analyses patterns of merchandise trade among the GCC states during 1995-2015 with specific focus on concentration, diversification and similarity of (export and import) trade indices as well as diversification within GCC economies.
Findings – The paper concludes that while Bahrain merchandise export structure shows dissimilarity when compared with other GCC states during 1995 and 2015, its imports appear to be very similar with those of the rest. The other five GCC states show more similarity among themselves in both merchandise exports and imports than that of Bahrain. Only UAE has shown an increase in both concentration and diversification indices though the increased numbers are still lower than those of the other GCC states and low in absolute terms.
Originality/value – The GCC has embarked on economic diversification; however, there is relatively less trade within the GCC as compared with other regional trading blocks. The paper considers trade within the GCC to explore the degree of similarity, diversification and concentration of traded products of each country. Further study should analyze the impact of diversification on intra-GCC trade. The results of this paper will be of value to GCC policymakers for providing a clear rationale for boosting trade and diversification with the long-term goal of a single currency economic union.

Keywords Concentration index, GCC, Bahrain, Diversification, International trade, Similarity index

Sustainable intra-GCC trade – too little to analyze or are we missing something?
Gulf Cooperation Council (GCC) was set up in 1981 among Bahrain, Oman, Qatar, Saudi Arabia, United Arab Emirates and Kuwait for strengthening cooperation and economic development in the region. The GCC has made strides toward economic consolidation by forming a customs union and a common market. The long-term vision is to create an Economic and Monetary Union (EMU) with a single currency. Progress toward the EMU has been slow and the recent oil price plunge has led to concerns regarding sustainable growth of member countries due to their significant dependence on oil and lack of diversification (Ganguli, 2016). The GCC economies, though similar, do not meet all the convergence criteria which were met by the EU accession countries during the 1990s prior to joining the EMU. Hence the GCC economies are not considered to be ready for a sustainable single currency zone without further diversification and integration (Ganguli, 2016).

Since 2001, GCC economies have formed a common market and forged a customs union. Dr Khalid Shams Abdulqader (2015) mentioned that “Perhaps the GCC’s greatest achievement to date has been its success in invigorating trade among its member states, via the customs union and the joint market. Merely getting this far was sure to have a positive impact on mutual trade. [...] almost $100 billion in trade took place between member states in 2013. This is seven times greater than it was in 2000, before the launch of the customs union. Despite this dramatic growth, however, mutual trade still represents a mere 7.1 percent of the aggregate foreign trade conducted by the six member states.” By contrast, in 2013 just over 62 percent of the total value of goods (intra-EU and extra-EU trade combined) exported from EU Member States were directed to other Member States.
One of the reasons for slow trade is the lack of good transportation network among the GCC states. Some of the GCC states like Bahrain, UAE and Qatar have become important aviation hubs which have helped in integrating the region through air transport. The role of the private sector has remained weak and government sector has loomed large with heavy expenditure and high employment levels.

Diversification in the GCC: each GCC country has launched its unique diversification strategy to overcome the hurdles imposed by fluctuations in oil prices under heavy dependence on oil. Bahrain 2030 economic vision aims to provide a robust and vibrant private sector with employment of Bahrainis who will be able to access proper healthcare, education and a sound and secure environment. Its national development strategy aims at developing a sound business environment aimed at doubling the income of Bahrainis through a competitive economy boosted by a growing private sector. Bahrain aims to build a knowledge-based economy.

Kuwait would like to diversify into trade and finance led by a competitive private sector. It aims at a strong legal system. Moreover, the government targets a sound fiscal system for a strong private sector growth. The six pillars of reforms include private sector reforms, labor market reforms, institutional and fiscal reforms among others. Attracting foreign investment is another goal for the government along with improving business climate, diversification and PPPs.

Oman identified sectors such as logistics, manufacturing, fisheries and mining for further development as part of an aggressive strategy for diversification. The ninth development plan of Oman aims to reduce the oil dependence through SME sector growth, providing training and education for absorbing more Omanis in private sector by reducing expatriate employment and creating PPPs.

Qatar’s diversification strategy is built on improvement in education, culture, responsible use of natural gas, sports, finance and transportation among others. Fiscal restructuring is also on the way along with efforts for improving the health and education system, improved participation of Qataris in the labor force, environmental development among others.

Saudi Arabia follows similar diversification strategies including higher participation of Saudi nationals in the labor force, diversification of the national economy and increased privatization as the main goals. The National Transformation Program (NTP) aims to increase the share of the private sector from 40 to 65 percent by 2020 as well as increase the contribution of the SME sector from 20 to 35 percent. PPP schemes are envisaged for increased private sector participation, and fiscal restructuring has been implemented for combating higher budget deficits due to low oil prices.

UAE has been the most diversified among all the GCC states and aims to become a knowledge-based economy with sustainable development goals for environmental protection and management.

**Literature review**

Ravi (2013) pointed out that the intra-GCC trade is at a very modest level and integrated GCC has not achieved a significant GCC trade level. Moreover the trade is heavily influenced by oil prices. Boughanmi (2008) suggested that though intra-GCC trade is small, yet it is not insignificant compared to the predictions of the gravity trade model that was used in his paper. Askari et al. (2003) pointed that the lack of diversification and complementarity lead to low intra-GCC trade. Gani (2011) discussed that the lack of business environment has led to low trade within GCC. He used various business environment indicators which showed significant impact on trade in GCC and calls for major reforms in such areas for boosting trade within the region. Hossain and Naser (2008) discussed the improvement in trade in GCC since the implementation of the customs union which was also followed by higher levels of FDI, joint ventures and technology diffusion in the region.
Abdmoulah (2011) suggests that intra-GCC trade can be enhanced using diversification of exports strategy away from oil and opening markets for GCC exports through ratification of more regional trade agreements. Facilitation of further trade through opening of more transport and communication networks within the region and free movement of labor, capital and resources within the same should be enhanced. Bhattacharya and Holde (2010) conclude that delay in customs clearance and the lack of infrastructure like transport facilities explain why trade in the MENA is low compared to the predictions of the gravity trade model. Dennis (2006) shows that GCC trade with the EU will lead to higher benefits than the integration of the GCC itself. Mundell (1961), in his OCA analysis, concludes that countries benefit using single currency in a region due to microeconomic gains arising from easier transactions owing to price transparency, reduced exchange rate risks, higher trade and investment due to loss of risks, higher capital and labor mobility for ease of doing business.

This paper addresses diversification efforts in the GCC and studies the nature of intra-GCC trade within the backdrop of the economic diversification strategy of the GCC states.

Achievements of diversification efforts in the GCC
Callen et al. (2014) mentioned “Growth in GCC non-oil output averaged 6.8 percent during 2000-2013, and the share of the non-oil sector in total real GDP rose by 12 to 70 percent, driven mainly by Saudi Arabia and the United Arab Emirates.” Most of the growth in non-oil output has been linked to the growth in oil prices after 2000. Seven million jobs have been created in the GCC during 2000-2010 and 88 percent of the private sector jobs were offered to expatriates, while nationals filled 70 percent of the public sector jobs. Though there has been non-oil exports growth in goods, the growth has not been uniform across the GCC states. Most of the growth in non-oil manufacturing exports growth has originated from Saudi Arabia, Dubai and Oman. In its true sense of diversification Dubai has fared well among the GCC states through strengthening of sectors such as aluminum (DUBAL, now part of Emirates Global Aluminum), transportation (Emirates Airlines and two large airports), trade (Jebel Ali Port), finance (Dubai International Financial Center), and tourism (more than 500 hotels) (Callen et al., 2014).

Outside the Middle East GCC has entered into discussions with India, EU and others to sign free trade agreements. Three of the GCC states have signed Free Trade Agreement with the USA and a GCC-Singapore Free Trade Agreement has been ratified in 2013. Export promotion and diversification strategies are being focused on via establishment of the Export Development Authority in Saudi Arabia and an Export Development Center in Bahrain.

As part of its diversification initiatives in the GCC, Bahrain has attracted offshore financial institutions to create a financial hub. Bahrain’s financial sector contributes 17.2 percent toward its GDP (www.cbb.gov.bh/page-p-financial_sector_fact_sheet.htm). Training and development and possibilities of career progression have positive impact on Bahrainization rates in the financial sector of Bahrain (Ganguli and Matar, 2016). Medical tourism represents a particularly rich opportunity for Bahrain to further diversify its tourism strategy; allow its travel and hotel sectors to prosper; intensify competition for higher quality medical services; and allow hotels and hospitals to optimize their performance (Ebrahim and Ganguli, 2016). UAE and Qatar have developed airlines and logistics; Saudi Arabia is developing industrial clusters around oil and its technology; and Kuwait is focusing on the oil industry and Qatar on natural gas and energy-related sectors.

Data collection
Data for the empirical analysis have been collected from secondary data sources such as the United Nations Conference on Trade and Development Statistics (UNCTADstat) database.
for years between 1995 and 2015 for the concentration index and diversification index for merchandise exports and imports for the GCC countries. Similarity index of trade between each of the GCC states and the rest of GCC has been collected from secondary data sources, namely, UNCTADstat database during 1995-2013. The indices have been prepared by UNCTAD and are publicly available databases for researches worldwide.

Variables

Three variables used for analysis in this paper are diversification index for export and import during 1995-2015, concentration index for import and export for GCC countries during 1995-2015 and similarity index for GCC countries’ exports and imports during 1995-2013 – all sourced from the UNCTADstat database. A brief explanation of the variables as they are calculated is provided for the interpretation of the data analyzed for analysis of intra-GCC trade during 1995-2015. No new variable or index has been prepared for the purpose of this research:

1. Concentration index or Hirschman (H) index is calculated using the shares of all three-digit products in a country’s exports:

\[ H_j = \sqrt{\frac{\sum x_i}{X_j}} \]

where \( x_i \) is country j’s exports of product i (at the three-digit classification) and \( X_j \) is country j’s total exports. The index has been normalized to account for the number of actual three-digit products that could be exported (Source: http://wits.worldbank.org/wits/wits/witshelp/Content/Utilities/e1.trade_indicators.htm).

The value of the concentration index varies between 0 and 1. Higher value indicates less diversified and more concentrated export or import items. Lower value of the concentration index implies less concentrated or more diversified export or import items. This also provides less risks for the countries in terms of price fluctuations of import and export items (UNCTADstat).

2. The export diversification index (DX) for a country is defined as:

\[ DX_j = \frac{\sum |h_i - \bar{h}|}{2} \]

where \( h_i \) is the share of commodity i in the total exports of country j and \( \bar{h} \) is the share of the commodity in world exports. DX takes values between 0 and 1. Values closer to 1 indicates greater divergence from world pattern of trade. (UNCTADstat) (Source: http://wits.worldbank.org/wits/wits/witshelp/Content/Utilities/e1.trade_indicators.htm).

3. “The index of similarity signals whether the structure of exports or imports by product of a given country or group of countries differs from that of its counterpart country or group of countries. The index is calculated at the three-digit level of the Standard Industrial Trade Classification Revision 3 and ranges from 0 to 1. Value closer to 1 reveals the greater similarity of the trade structure between two countries or two groups of countries” (UNCTADstat). The indicator is computed as:

\[ S_{jk} = 1 - \frac{1}{2} \sum |h_{ij} - h_{ik}| \]

where \( S_{jk} \) is the indicator of similarity in merchandise trade structures j and k, \( h_{ij} \) is the share in total merchandise exports or imports of product i of country or country group j, and \( h_{ik} \) is the share in total merchandise exports or imports of product i in country or country group k (Source: http://unctadstat.unctad.org/wds/TableViewer/summary.aspx).
The paper explores the nature of movement of the variables namely concentration index, diversification index during 1995-2015 and similarity index during 1995-2013 to conclude about the dynamics of the intra-GCC trade composition for each of the GCC countries against each other and against the rest of the GCC.

**Methodology**

The paper considers the trends in the movements of the variables namely concentration and diversification indices of exports and imports of the GCC states during 1995-2015 and the similarity indices of trade between each of the GCC states with the rest of the GCC during 1995-2013 to throw light on the trends of intra-GCC merchandise trade. The paper uses graphs and tables for analyzing the trends in the movement of the variables. The paper does not explain the cause and effect relationship between economic diversification of the GCC economies and the concentration, diversification, similarity indices of trade in the GCC states. The objective of the paper has been to explore the possibility of diversification of trade within the GCC given that the economies have taken steps toward economic diversification. The possibility of the cause and effect relationship between economic diversification and diversification of trade can be explored through future research, should it be established that there exists such an intra-GCC diversification of trade during 1995-2015. If there does not exist such diversification of trade within the GCC then it will not be beneficial to explore the impact of diversification of GCC economies on intra-GCC trade.

**International trade and the GCC states**

The literature has mentioned that GCC states have little or no trade between themselves and there has been little improvement in the volume of trade during the aftermath of the integration in the GCC with efforts such as free trade agreements, common market and customs union. This paper studies the nature of intra-GCC merchandise trade to identify trends, if any, in changes in the composition of the trade items during 1995-2015. Table I shows the concentration and diversification indices of the merchandise export items of the GCC states for the years 1995 and 2015, respectively. Concentration index shows that the country’s export and import goods are concentrated on a few products or are well diversified across the basket of tradable goods against its trading partner or group of partners.

Table I shows merchandise export concentration and diversification indices of the GCC countries during 1995 and 2015.

Figure 1 shows merchandise export concentration index and diversification index for each of the GCC countries namely Bahrain, Kuwait, Qatar, Oman, UAE and Saudi Arabia during the years 1995 and 2015 to show the movement of the indices over time.

<table>
<thead>
<tr>
<th>Economy</th>
<th>Items</th>
<th>Concentration index</th>
<th>Diversification index</th>
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<th>Items</th>
<th>Concentration index</th>
<th>Diversification index</th>
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<td>217</td>
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<td>Kuwait</td>
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<td>218</td>
<td>0.60</td>
<td>0.79</td>
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<tr>
<td>Oman</td>
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<td>219</td>
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<td>0.72</td>
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<tr>
<td>Qatar</td>
<td>112</td>
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<tr>
<td>Saudi Arabia</td>
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<td>0.76</td>
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<tr>
<td>UAE</td>
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<td>0.35</td>
<td>258</td>
<td>0.24</td>
<td>0.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: UNCTADSTATS

**Table I.** Merchandise export concentration and diversification indices of the GCC states at the three digit SITC level
Qatar shows the largest percentage increase in the number of commodities exported to the rest of the GCC during 1995-2015. There is an almost 90 percent increase compared to Saudi Arabia which shows an increase of only 2.5 percent and UAE which shows an increase of 3 percent. However, Qatar’s original export items were much less than both Saudi Arabia and UAE in 1995 to begin with in this analysis (Figure 2).

All GCC states have shown a decrease in their concentration index of exports index for intra-GCC trade during 1995-2015 which indicates a wider diversity of their export structures except UAE which shows a 300 percent increase in the index though the increased number is lower than most of the other GCC indices (and a mere 0.24) (Figure 3).

Diversification index of exports has increased for UAE too though it is less than 0.5 after a 37 percent increase indicating that its pattern of trade is similar to the rest of the world. For the rest of the GCC states, there has been a decline in the diversification index showing that their divergence from the world pattern of trade has declined too (Figure 4).

**Figure 1.**
GCC states’ number of commodities exported to the rest of the GCC

**Figure 2.**
GCC states’ concentration index in merchandise exports during 1995-2015 to the rest of the GCC during 1995-2015

**Figure 3.**
GCC states’ diversification index in merchandise exports during 1995-2015 to the rest of the GCC
The number of commodities imported from other GCC states has increased the most for Kuwait (19 percent) followed by Qatar (16 percent). Saudi Arabia is the only country whose imports from the rest of the GCC have declined (by 2.40 percent). Thus overall there has been an increase in imports of commodities between the GCC states from one another during 1995-2015 which indicates higher intra-GCC merchandise trade in 2015 compared to 1995 (Figure 5).

Concentration index of merchandise imports has decreased the most for Bahrain (by 60 percent) but has increased the most for UAE. The index is still at a low of 0.10 after the 67 percent increase during 1995-2015. Kuwait and Oman have shown no change in their concentration index of merchandise imports while Saudi Arabia has a 50 percent increase. Further research may analyze the nature of the decline in Bahrain’s concentration index (Figure 6).

Diversification index for merchandise imports has shown a decline for all GCC states during 1995-2013 indicating lesser divergence from the rest of the world in terms of import structures which is a redeeming feature for the GCC states.

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Intra-GCC merchandise trade

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Figure 4. GCC states’ number of commodities imported from the rest of the GCC during 1995-2015

Figure 5. GCC states’ concentration index in merchandise imports during 1995-2015 to the rest of the GCC

Figure 6. GCC states’ diversification index in merchandise imports during 1995-2015 from the rest of the GCC
There has been marginal improvement in the export concentration indices for merchandise products between 1995 and 2015 with all countries having reduced these values. This indicates that the exports of the GCC economies are less concentrated on item/s, though by a small margin. The diversification index which shows values closer to 1 for all the GCC states in 1995 (which should be due to high concentration of hydrocarbon-related exports in their share of total exports to the rest of the world) indicates a decrease in 2015 values from 1995 values which implies lesser divergence from the world patterns of exports though marginal. The question remains if the narrowing of the diversification index with the rest of the world is due to lower oil prices and slow global growth. Both the indices point to similar patterns of more diversity or lesser concentration of item/s. The only exception in the above trend of the values is the reversal of the export concentration and diversification indices for UAE from a lower to marginally higher levels yet remaining significantly less than the other GCC counterparts or lower in absolute terms. The relatively less diversified nature of UAE trade with the rest of the world is evident from the values despite their marginal increase from 1995 to 2013. Cherif and Hasanov (2014) mention that compared to the rest of the GCC, UAE has increased its non-oil exports substantially. Future research may consider exploring the nature of the diversity of UAE’s merchandise export composition during 1995-2015 to evaluate the impact of the factors after identifying them. Further, the impact of economic diversification on trade diversification of UAE within GCC can be explored.

The GCC economies exhibit very low concentration and similarly low diversification indices for merchandise imports indicating that the imports are widely diversified and also similar to world patterns in 1995 and 2015, respectively. This is natural since most of the GCC countries have to import all essential commodities. The number of import items has increased for the GCC economies over the years but the import concentration index has declined or remained steady for all the GCC states – which is clearly a redeeming feature. This index has increased only for UAE and Saudi Arabia. The diversification index has declined for all and may very well be related to diversification efforts of the GCC economies. The only exception is again UAE where though the concentration and diversification indices have both increased, yet these are still lower than those of most of the other GCC states.

In Figure 7, there has been a decline in Bahrain’s similarity index during 1995-2015 between Bahrain’s merchandise exports and each of the GCC states. Bahrain’s similarity index in merchandise exports has declined the most with Saudi Arabia (70 percent) followed by Qatar (67 percent) and Kuwait (60 percent). The similarity index covers all the items of exports. The source of this dissimilarity between Bahrain’s exports and the rest of the GCC is unique to Bahrain among other GCC trade partners. This indicates diversification of exports from Bahrain, however further analysis of this finding is limited by the scope of the data used in this research.

**Figure 7.** Bahrain’s similarity index in merchandise exports during 1995-2013 with each of the other GCC states.
On the other hand, Figure 8 shows that Bahrain’s similarity index of merchandise imports with the rest of the GCC has increased against all GCC states except with Qatar (which shows a very minor reduction of 3 percent). The highest similarity indices are observed between Bahrain and Kuwait; Bahrain and Saudi Arabia.

Figure 9 shows Kuwait has the least similarity index in export composition with Bahrain among the rest of the GCC in 2013 compared with 1995. Except between Kuwait and Saudi Arabia, similarity index has declined between Kuwait and all GCC states. So the export composition is less similar between Kuwait and each of the GCC states in 2015 than in 1995 though the percentage decline in the indices for Kuwait against others is less than Bahrain’s case as seen in Figure 10.

Kuwait’s imports have continued to remain similar with the rest of the GCC between 1995 and 2013 with very minor changes. The index has declined marginally with Oman (5.88 percent) and UAE (10.45 percent) and increased with the rest of the GCC marginally.

Oman shows the same trend as Bahrain in its decline of similarity index of exports and exhibits the most decline in the index with respect to Bahrain (56 percent) in Figure 11; however, it shows no pattern in terms of similarity of imports index with the rest of the GCC.
during the period 1995-2013 in Figure 12. The indices are above 0.5 which indicates high similarity of merchandise imports in both 1995 and 2013.

In Figure 13, Qatar’s similarity index in merchandise exports has declined drastically with Bahrain (67 percent) though it has decreased with all the GCC states during 1995-2013 though by lesser percentages.

In Figure 14, Qatar shows high similarity indices in its merchandise import composition with the rest of the GCC states during 1995-2013 with some indices increasing by 22 and 17 percent (with Kuwait and Saudi Arabia, respectively) and remaining high (0.5 and 0.46, respectively) in 2013.

From Figure 15, it can be observed that except with Kuwait (where it increased by 15 percent), Saudi Arabia’s similarity index in exports has declined during 1995 and 2013 with the rest of the GCC (it decreased the most with Bahrain which is by 70 percent).

In Figure 16, Saudi Arabia’s similarity index in merchandise imports from 1995 to 2013 has either increased (the most increase is with Bahrain by about 44 percent) or has remained the same except with UAE which shows a small percentage decrease (3 percent).
From Figure 17, UAE’s similarity index with all GCC countries has decreased (largest percent decrease is with Bahrain by 47 percent) in merchandise exports during 1995 and 2013 except with Kuwait where it has increased (marginally by 5 percent) during this period.

Intra-GCC merchandise trade

Figure 14. Qatar’s similarity index in merchandise imports during 1995-2013 with each of the other GCC states

Figure 15. Saudi Arabia’s similarity index in merchandise exports during 1995-2013 with each of the other GCC states

Figure 16. Saudi Arabia’s similarity index in merchandise imports during 1995-2013 with each of the other GCC states

Figure 17. UAE’s similarity index in merchandise exports during 1995-2013 with each of the other GCC states
On the other hand, in Figure 18, UAE’s similarity index in merchandise exports has increased for some of the GCC countries and have decreased for some of the GCC countries showing no particular pattern between 1995 and 2013.

Similarity of Trade between the GCC states: similarity index as initially provided by Grubel-Lloyd (1975) shows the degree to which two economies trade similar products. Higher values of the index ( > 0.5) show high similarities of trade between countries and low values indicate lower similarity. Table II and Figures 7 and 8 show the similarity index between Bahrain and each of the GCC states in 1995 and 2013. Table II and Figure 7 show that exports between Bahrain and each of the GCC states were very similar in nature in 1995. However, the same is not true between Bahrain and the rest of the GCC in 2013. Bahrain’s exports show marked dissimilarity from those of the other GCC states. This could be a reflection of Bahrain’s diversification efforts launched earlier than most GCC states which is beyond the scope of this research. However, it indicates diversity of export structure and lower concentration in one or few export items between 1995 and 2013. Table II also shows Bahrain’s similarity index in terms of imports with the rest of the GCC. It reveals that Bahrain’s diversification efforts have not been observed in self-sufficiency in merchandise imports as these are very similar in nature to the imports of the rest of the GCC states. These similarity indices have either remained the same or have increased marginally in 2013 from 1995 values. Hence this leads to higher risk for the economy arising from price fluctuations of imports.

Kuwait’s exports and imports with rest of the GCC are very similar both in 1995 and 2013. This indicates dependence on oil for exports and less diversification due to import requirements remaining similar to all GCC countries. The same trend is noticed among all GCC states except Bahrain as mentioned in Table II and Figure 7.

Conclusion
Economic diversification trends have been observed in the GCC for some years already, however its impact has not been considered on intra-GCC trade in the literature.

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**Table II.**
Bahrain’s similarity index with GCC countries

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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>1.00</td>
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<td>1.00</td>
</tr>
<tr>
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<td>0.53</td>
<td>0.28</td>
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</table>

**Source:** UNCTADSTATS
The present paper has studied diversification efforts in the GCC in recent times and has examined GCC economies from trade concentration and trade diversification for the years 1995 and 2015 and has used similarity index for the intra-GCC trade during 1995-2013. Literature mentions that the GCC economies exhibit low intra-GCC trade and have identified various reasons like poor infrastructure, lack of transportation, inadequate business environment, lack of diversification and trade complementarity for low levels of intra-GCC trade (Tables III-VIII).

The paper examines concentration, diversification and similarity indices of trade for the GCC countries and concludes that GCC states have exhibited minor improvement in the export concentration indices for merchandise products between 1995 and 2015 for intra-GCC trade. The only exception to the above trend is the reversal of the export concentration and diversification indices for UAE from a lower to marginally higher levels during 1995-2013 though remaining significantly less than the other GCC counterparts and also at low levels in absolute terms. The low values of all indices despite the marginal

<table>
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<th>Economy</th>
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*Source:* UNCTADSTATS

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*Source:* UNCTADSTATS

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</table>

*Source:* UNCTADSTATS
increase in the indices during 1995-2013 could be due to diversification of the UAE economy and is beyond the scope of this research. This is an important result and given the economic diversification of the UAE away from oil and oil related sectors, a future direction of study should consider the impact of economic diversification on trade patterns between UAE and the rest of the GCC. Past literature has not considered the movement of the concentration, diversification and similarity indices for the analysis of intra-GCC trade. This is the first study which has used variables such as the concentration index and diversification index as well as similarity index from the UNCTADstat database to conclude about the trends in the intra-GCC trade during 1995-2015 given the economic diversification efforts within the GCC.

Bahrain’s export structure shows marked dissimilarity from those of the other GCC countries after examination of the similarity index of merchandise exports. This is possibly a reflection of Bahrain’s diversification efforts launched earlier than most GCC states.

### Table VI. Qatar’s similarity index with GCC countries

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**Source:** UNCTADSTATS

### Table VII. Saudi Arabia’s similarity index with GCC countries

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**Source:** UNCTADSTATS

### Table VIII. UAE’s similarity index with GCC countries

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**Source:** UNCTADSTATS
This may be explored further through future research. The rest of the GCC countries show high similarity indices in 1995 and 2013 both in imports and exports with minor exceptions. Bahrain is the only country to exhibit lower similarity index with the rest of the GCC states during 1995-2013 though it exhibited very similar import structure with the same. This calls for further research to explore the composition of trade basket of Bahrain against the GCC countries to establish a relation, if any, between the impacts of economic diversification of Bahrain on its merchandise trade flows.

One of the caveats of the research is that the diversification of the GCC economies has been aimed at a number of service sectors. However, the trade data available from UNCTADstat cover merchandise exports and imports, and the various indices studied in this paper namely diversification, concentration and similarity indices are for merchandise exports and imports. For further analysis of the impact of diversification efforts of GCC on its intra-trade composition, data on trade in services need to be gathered and analyzed using appropriate quantitative methods.

References

Further reading

About the author
Dr Subhadra Ganguli has been working in Ahlia University as an Associate Professor in Economics since September 2014. She holds a PhD Degree in Economics from the University of California in Riverside. Dr Ganguli has experience in Academic Teaching, Consulting and Quality Assurance for the last 23 years in the USA, Europe, India and Bahrain. Dr Subhadra Ganguli can be contacted at: sganguli@ahlia.edu.bh

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Augmenting talent management for sustainable development in Africa

Natasha Katuta Mwila and Mabel Ironn Sky Turay
Monash South Africa, Roodepoort, South Africa

Abstract

Purpose – With the steady overall development of the continent, the African business landscape over the last decade has witnessed increased growth through numerous avenues. Growth has been through the emergence of formalised small and medium enterprises, the growth of business and transition from one scale to another as well as inward foreign direct investment. The purpose of this paper is to investigate how this business growth can be sustained, particularly in the area of talent management, within the framework of the United Nations Sustainable Development Goals.

Design/methodology/approach – This paper presents the findings of a narrative inquiry conducted in 2016 on an expert panel of talent managers in businesses based in South Africa.

Findings – The focus of the inquiry was the challenges in talent currently faced by South African businesses and what possible solutions, that address the question of sustainable development, may lie in talent management practices. The study finds that there may be scope for the augmentation of current practice in psychometric testing which may address a plethora of problems currently defining the talent context in African business.

Originality/value – The growth of African businesses has presented interesting challenges in managing the African business particularly in the area of human resources and talent management. A persistent notion is the question of sustaining this growth on the continent. As enterprise grows, the need for talent is ever more pressing. This paper seeks to present pathways to sustainability in this regards.

Keywords South Africa, Talent management, Narrative inquiry, Sustainable development goals, Psychometric testing

Paper type Research paper

Introduction

A paper by McKinsey & Company (2010) examined the direction of growth of the African continent and found that the tide was changing with less emphasis on the labour intensive extractive industries to more prospects in the relatively more sophisticated sectors of banking, fast moving consumer goods, infrastructure and telecommunications. The talent needs of the continent have therefore evolved, resulting in noticeable voids with businesses being unable to fill their employment vacancies with appropriate talent. A perpetuation of this status quo is not sustainable and would see the development thus far severely compromised.

This paper conceptualises sustainable development on the basis of the 2030 Agenda for Sustainable Development spearheaded by the United Nations (2015). According to this perspective, sustainable development is a process towards meeting the present goals of human development whilst supporting the ability of natural resources and ecosystems to satisfy future needs (United Nations, 2015). The discipline and practice of talent management has the potential to contribute to at least 3 of the 17 sustainable development goals, namely:

1. Goal 1 – no poverty;
2. Goal 8 – decent work and economic growth; and
3. Goal 17 – partnership for the goals.

It is therefore imperative to conceptualise talent and talent management for this discussion. In general language use talent is one’s natural aptitude or skill. This definition perceives talent as an innate skill as the word natural suggests. It implies therefore that any individual, regardless of social class, academic achievements or gender can be talented. In contemporary talent management literature, the definition of talent is viewed from both
human resources: management and psychology. The human resource management perspective implies that only employees whose skills and competencies are, or have a high potential to be valuable or worthy towards attaining the goals of the organisation are considered to be talented (Gelens et al., 2013). Generally, the psychological perspective on talent management advocates that humans should not be regarded only as resources in the same logic as non-human resources. This views talent from the perspective of an individual’s professional knowledge, individuality and mental ability (Dries, 2013). Consequently, it follows a psychometric paradigm as the central objective. This paper adopts a unified definition of talent, drawn from both perspectives.

Hartmann et al. (2010) stated that talent management is a series of human resources activities including recruiting, selection, development and succession; activities that are strategic, future oriented and focussed on overall organisational goals. How talent management activities may be augmented to contribute to the attainment of the named sustainable development goals is explained further in the findings of this paper.

The problem that society is faced with presently is that talent management practices tend to exclude some members of the society in diversion from the sustainable development goals. Talent management philosophies are primarily aligned towards individuals with employment potentials; that is individuals with some form of a qualification, especially academic qualifications. Consequently, uneducated workforces, who are otherwise capable of being competent and productive in the workplace receive little or no consideration for employment by recruiters or moreover consideration in the talent management process. This implies that those individuals who are not fortunate to get a college degree or a diploma or any form of a higher academic qualification, but otherwise have innate skills which when managed and nurtured effectively can be very beneficial to the organisation’s success, are entirely ignored. They are perceived as “untalented”.

One of the tools of the talent management trade, psychometric testing, may provide solutions in enabling talent management practices to be more inclusive and in so doing contribute to the vision for sustainable development. Generally, psychometric testing measures the mental processes and the characteristics of an individual; indicates one’s capability to ascertain new tasks and comprehend information provided to them; and assesses one’s abilities to perform certain tasks as well their capability to appraise situations in the work environment and react accordingly (Barrett, 2003; Van Der Merwe, 2002).

A critique of the literature in the context of the sustainable development goals
This section of the paper gives an overview of the sustainable development goals to which talent management practices may contribute. It further reviews how current trends and issues in talent management impact on the attainment of the goals.

The sustainable development goals
As stated in the introduction, this paper focusses on 3 of the 17 sustainable development goals.

Goal 1 – no poverty. This goal speaks to ending poverty comprehensively by conceptualising poverty as lack of income, lack of resources, lack of basic services, hunger, social discrimination, exclusion and lack or participation in decision making (United Nations, 2015). That there are sectors of society being excluded from employment suggests that working towards their inclusion would, in turn, address this goal as their employment would result in income, access to resources and basic services and a greater likelihood in participating in decision making.

Goal 8 – decent work and economic growth. This goal aims to promote inclusive and sustainable economic growth as well as full and productive employment through decent work for all (United Nations, 2015). Inclusive sustainable economic growth can be linked to
maximising the full potential of our business enterprises (Basnett and Sen, 2013; Melamed et al., 2011). This full potential cannot be achieved when the current status quo of many businesses is the presence of unfilled positions. By filling these positions through augmented talent management practices, economic growth may be achieved.

Goal 17 – partnership for the goals. This goal is concerned with strengthening the means of implementation of the sustainable development goals (United Nations, 2015). A general notion persists that sustainable development is an area for primarily governmental concern and secondarily for internationally non-governmental concern. The business sector often appears disengaged and its contribution notably absent. By addressing talent management practices across all sectors; public, private and not-for-profit business can set itself as a viable partner towards the achievement of the goals.

The South African context of business and talent management
South Africa is a developing emerging market and this context presents unique challenges for talent management. A study by Schutte et al. (2015) found that talent management is among the competencies that have the poorest application in South African workplaces. The hiring practices of South Africa have been criticised as too rigid (World Economic Forum, 2014). This rigidity is manifesting in the recruitment practices that are leaving talent behind and perpetuating the cycle of poverty, stunted economic growth and minimal contribution of business in attaining the sustainable development goals of the United Nations.

There is growing evidence that talent management practices ought to be different in emerging markets (Bluen, 2013; Latukha, 2016). With the call for sustainability having a particularly high impetus for these contexts, it is apparent that our thought processes and practical implementation of talent management be reconsidered.

Issues in talent management
In their review of the literature, Tarique and Schuler (2010) highlighted the demand-supply gap among the exogenous factors that are trending in the talent management literature. The demand-supply gap implies that businesses have unfilled positions that their recruitment efforts have been unable to fill, presumably due to the scarcity of talent. This hinders the attainment of the goal towards “no poverty” as those deemed to be lacking talent are overlooked in the recruitment drive and remain perpetually unemployed. It further hinders the attainment of the goals towards economic growth and innovation as businesses operate below efficiency with their unfilled positions. This paper acknowledges that the demand-supply gap is not the only issue in talent management. The world of work is currently challenged with managing complex inter-generational dynamics and the role of technology in work (Deloitte, 2014) among others. The demand-supply gap is focussed on as a possibly direct outcome of the current practices and omissions in talent management practice.

For 2018, Haak (2017) has predicted that talent management will move from a standard to an individualised approach and there will be broader acceptance that talent is everywhere. This implies then that the direction of this paper in proposing more tailored approaches that allow for greater inclusivity of the masses of talent is appropriate.

Talent management in emerging markets has largely been considered from the perspective of the multinational corporation (Ambrosius, 2016). This approach has been limiting as it focusses on how expatriates can gain relevant emerging market competencies rather than exploring how the talent of emerging market nationals can be tapped into for the success of the multinational corporation. With a sustainable approach to talent management being called for, it is apparent that the latter is more desirable.
Psychometric testing has become a recognised tool employed to validate recruitment and selection processes. It enables the identification of “true talent” as follows: a passion for learning, responsiveness to inspirational role models and influences, hunger for excitement of achievement, ambition and the drive for supremacy, nonconformism and contrariness, self-sufficiency and a preference for solitude, physical vulnerability and personal branding (Joubert, 2007). If we are to accept Joubert’s (2007) definition of true talent, it becomes clear that focussing on academic achievements alone or above all other considerations is ineffective. What is further problematic about most implementations of psychometric tests is their narrow application as merely a support tool and also the lack of variation in which types of tests are implemented.

Many scholars and practitioners in talent management have argued that one of the most relevant trends in the field is a new emphasis on potential rather than performance (Tansley, 2011). This potential is best uncovered through measures of intelligence and personality which are both encompassed in several forms of psychometric tests.

**Methodology and methods**

What the literature demonstrates is that the group of concern currently excluded from the talent management practices of the day are those deemed “untalented”, often by virtue of lacking formal education qualifications. Three key questions are posed to address this issue as follows:

1. How can psychometric testing be designed to accommodate the “untalented” workforce in the recruitment process?
2. What are the justifications for including or excluding “untalented” workforces according to human resource manager’s perspective?
3. How can managers help to boost and augment the skills and talents of the “untalented” workforce so that they can be effective in the workplace?

**Scope**

This study focusses on the recruitment, selection and development stages of the talent management process. The study was conducted in Gauteng, South Africa. Thus, all participants were based in South Africa and affiliated with either South African companies or the South African subsidiaries of multinational organisations.

**Philosophical approach**

An interpretivist paradigm of analysing and interpreting people’s social and political behaviours by identifying and narrating their beliefs, actions and experiences in their societal context (Hay, 2011) is adopted. Assuming an ontological position of relativism, the study regards that the reality or truth lying within the concepts of talent management, psychometric testing and employment possibilities for the “untalented” will be gleaned from the opinions and beliefs shared by the participants as they are the observers of such reality (Plooy-Cilliers et al., 2014). From an epistemological perspective, this study acknowledges that the representations of the findings are subjective and refute the notion of an objective truth.

**Narrative inquiry**

In the terms of research design, a narrative inquiry is engendered. Narrative inquiry is best suited for the understanding of a social or a psychological phenomenon (Andrews et al., 2008). The design is capable of unwinding and unravelling human knowledge through stories told
from lived experiences. A narrative inquiry is most suitable for this study not only because one is able to gain an in-depth understanding of the lived experiences of the participants regarding the strategic ways in which psychometric tests have been and are currently being used in their different organisations, but it also provides the possibilities of forming and assessing grounded themes from these shared experiences.

**Data collection**

Participants were purposively sampled with the sampling criteria being participants with in-depth knowledge and experience in talent management and the use of psychometric testing. Participants were identified from a publicly accessible database of talent management practitioners in South Africa and also through snowballing from recruited participants. Four talent managers participated with whom in-depth semi-structured interviews were conducted. The sample size is justifiable based on Creswell’s (2014) recommendations and assertions that the minimum sample size for qualitative narrative research be one individual. Initial interviews lasted approximately 30 minutes each. Further later interviews were conducted to garner depth from the participant stories. Interviews were recorded and replayed for transcription (Table I).

**Data analysis**

The study undertakes a thematic analysis using a combination of pre-set codes based on the research questions and emergent codes during the coding process. A line-by-line coding strategy was used to highlight recurring words, phrases or ideas and thus arrange the patterns and themes that emerge from the data.

**Findings**

*Using psychometric testing to assess potential*

As mentioned earlier, psychometric tests are often used to support other techniques in recruitment and selection:

 […] at the moment […] we don't heavily use psychometric assessment. We only use them just to aid decision making when we are hiring […] not necessarily for selection purposes. So our philosophy is that […] in my current organisation, though my thinking and my opinions, I beg to differ with their beliefs, that psychometric assessment(s) don't really add that much value when it comes to recruitment and selection (Participant 1).

We lose out on a lot of talented people because we are so focused on education then we forget the potential that they have. If you focus more on the potential of people and you provide them with the opportunities that the others have, they will also do great (Participant 3).

Participant 1, however, recognises a further application of psychometric testing in assessing potential towards the achievement of the sustainable development goals as follows:

So that tool [Learning Potential Computerized Adaptive Test (LPCAT)] is actually used to assess people’s learning potential. So we mostly use it for people who have got matric and what not.

<table>
<thead>
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</tr>
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<td>Participant 4</td>
<td>Talent management human resource manager</td>
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</tr>
</tbody>
</table>

Table I. Profile of participants
So it assesses and gives you a report in terms of if this person wants to be developed, how far you can go? It is actually such a good tool because from the report [...] it can actually tell you this person will have a potential to actually get [to] a point of earning a bachelor’s degree.

Participant 3 concurs with this use of psychometric tests in the following quote:

Organisations are able to see their (employment candidates’) cognitive ability [through Saville]; what potential they have.

LPCAT is categorised as a dynamic test that allows for fairer multicultural cognitive assessment (De Beer, 2006). This characteristic is directly relevant to Goal 1 earlier explained. The Saville aptitude assessments are said to be a comprehensive portfolio that allows recruiters to sift through large numbers of candidates (Saville and Hopton, 2016). They are widely viewed as ethical and fair and in so being their use may also contribute to the achievement of Goal 1.

Using psychometric testing for synchronising staffing and organisational design

Another area for psychometric use is in establishing where employment candidates may fit into the organisational design. Participant 3 makes reference to tests such as Evalex for this purpose:

It looks at personality and measures the ability, the upward mobility, how far they can go up into the organisation [...] and then ranks you [...] it classifies you into different categories.

Again it will depend on the role because it’s not only about learning potential (Participant 4).

Tests such as Evalex are concerned with the organisational positions candidates would fill to drive performance. When successfully implemented, they bring about more efficient business operations and contribute to the desired economic growth of Goal 8.

Using psychometric testing to bridge skills gaps

Participant 1 further comments on the use of psychometric testing in identifying skills gaps that can be filled through training and development. Specific reference is made to personality tests such as that developed by Saville & Holdsworth Limited (SHL):

[...] the data would be extracted from the report of that which is being assessed to see where they are lacking in terms of skills and behaviour and personality and then we look at how we use that data to help develop the certain skills they are lacking.

You have to [...] understand the gap in their knowledge (Participant 4).

Such tests determine one’s behavioural style at work (Institute of Psychometric Coaching, n.d.). Rather than outrightly dismissing those candidates lacking desirable traits, mentoring candidates into those desirable areas may be more effective. This use of psychometric tests calls for specific action from enterprises to not only identify gaps in talent but also address the identified gaps. This is well aligned with Goal 18 which calls on the various sectors of economic activity to be partners towards the attainment of the sustainable development goals.

Implications and conclusion

Summary of current talent management practices and recommendations for augmentation towards sustainable development

Table II summarises the key issues drawn from the narrative inquiry with regards to the scope for augmenting talent management practice towards sustainable development.
Demystifying the notion of talent

It is clear that the current problems in talent management practice are strongly rooted in how talent is defined. How talent manifests in individuals is varied and so the recruitment process needs to have an element of variation to minimise missing out on some of the talent and capturing the “untalented”. Different psychometric tests could be employed to achieve this:

I hold a strong view that psychometric assessment actually helps. You know, tapping into things that you won’t necessarily gather when you just like, interviewing a person […] It can actually tell you this person will have a potential to actually get a point of earning a bachelor’s degree […] It will tell you a person has not got the potential to get into a bachelor’s degree but they can do well in getting a certificate or practical training […] So, that’s why I’m saying there is really an opportunity there in terms of using psychometric assessment to assess the potential of people that don’t have the qualifications (Participant 1).

Although a universal definition of talent is far from being realised, it would seem that contextually relevant definitions are more useful in enabling the improvement of talent management practices. This is to say that for some roles, in some industries, the formal qualification is a fair assessment of talent whereas in others it is not as cited by Participant 4:

It’s less risky to hire a degreed person. So if you are hiring somebody who is less educated a) it is a bigger risk; b) it takes more time, more money, more attention, and more energy, to train that person. That time, the energy, the money takes you away from your work time, which ultimately affects the amount of the time you can spend on clients, the amount of time you’re bringing in funds for the company […] So you’re taking huge risks on people, depending obviously on the role, you need to have that knowledge, you have to have it. If you are going to be an accountant, which is the core part of our business, you need to have that training.

Accounting for the criticisms of psychometric testing

Psychometric testing is not without its critics:

I have come across examples were we have done all kind of formalities and tests […] like everything has been done [yet] we still come across the cases were the candidate was not appropriate for the position then we got to face some behavioural issues (Participant 2).

This is the part that I can’t get. You take a kid from the rural areas who has not been exposed and you take a kid who has gone to a multiracial school, a black kid, and you put them together. I can’t see how they can write the same tests and not expect different results because the exposure also plays a part in terms of how they answer (Participant 3).

Psychometric testing is clearly not an exact science. This does not dismiss its utility in talent management practice rather it urges us to implement, interpret and translate psychometric test with caution. The use of multiple tests may be useful in this regard.

Barriers to overcome

There is continued fear and unwillingness of organisations to take risks of employing the seemingly “untalented” to avoid unnecessary loss and failure. This fear has been stifling as

<table>
<thead>
<tr>
<th>Current talent management practice</th>
<th>Recommendation for augmentation</th>
<th>Relevant goal towards sustainable development</th>
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<tbody>
<tr>
<td>Using psychometric testing to assess potential</td>
<td>Variation in the reading of psychometric tests</td>
<td>Goal 1</td>
</tr>
<tr>
<td>Using academic qualifications to fit staff into organisational design</td>
<td>Using psychometric testing for synchronising staffing and organisational design</td>
<td>Goal 8</td>
</tr>
<tr>
<td>Using academic qualifications to fill skills gaps</td>
<td>Using psychometric testing to bridge skills gaps</td>
<td>Goal 18</td>
</tr>
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</table>

Table II. Augmentation of talent management practices for sustainable development
it has reinforced the rigidity that brings about the demand-supply gap in talent in the first instance. Organisational bureaucracies have a large role to play in this as shown here:

It’s unfortunate because we live in a world that has defined protocols and systems. Even when you go into a company, they will tell you these are our policies and these are people that you should employ; people that should have degrees and if personally you have got a different view you sort of can’t go against that right, cause then you will be in violation of the company policies (Participant 1).

Although psychometric testing may be used as an alternative to traditional recruitment of those considered “untalented”, it cannot replace the need for basic standards in exceptional field as shown here:

There are certain jobs that require that training that education […] so for example being a lawyer, you will need to have that education, and you will need to have that knowledge base (Participant 4).

**Call to action**

Organisations are strongly urged to revisit their recruitment policies, identify available opportunities and take it upon themselves as a corporate social responsibility to create employment opportunities for the “untalented”. To support the organisational effort, human resource management practitioners, particularly those working in the field of talent management, are advised to identify jobs that may be better suited for “untalented” people in the workplace; where on-the-job training is possible.

In the spirit of partnership towards sustainable development, governments are urged to motivate organisations that take on the aforementioned recommendation by providing substantial incentives. The government may contribute by providing funds for the individual to further attain some form of a higher qualification or and tax breaks to complying organisations.

It is recommended that individuals do not forsake the drive to get higher education and skilled competencies as they seek employment opportunities. One must also manifest the determination and the strong drive to succeed regardless of any drawbacks in not attaining a higher form of education.

**Future research**

This study only included talent management managers. It is recommended that a perspective from candidates who have been subjected to psychometric assessment, particularly those that are “untalented”, be included in future research.

It must be noted that a case study was initially desired for the design of this research to get a holistic picture of an organisation that uses psychometric assessment to recruit the “untalented”. However, there was no single representative case found in the South African context at the time of data collection. It is therefore suggested that researchers continue the search for a case that provides a picture of how an organisation uses psychometric testing to recruit the “untalented” and how they further manage their talent.

**References**


Augmenting talent management


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Determinants of SMMEs growth in post-war communities in developing countries

Testing the interaction effect of government support

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Abstract

Purpose – The purpose of this paper is to test the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and small, medium, and micro enterprises (SMMEs) survival in post-war communities in Northern Uganda.

Design/methodology/approach – Cross-sectional research design was used in the study and quantitative data were collected from 304 SMMEs located in Gulu District using a semi-structured questionnaire. Structural equation modeling (SEM) through the use of analysis of moment structures was adopted to establish the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda. Furthermore, Pearson’s correlation analysis was used to show the association between the variables under study.

Findings – The results revealed that there is a significant interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda. Besides, the results indicated that business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and government support have significant and positive impacts on SMMEs survival in post-war communities in Northern Uganda.

Research limitations/implications – The study employed cross-sectional research design, thus, ignoring longitudinal study approach. Besides, the sample was selected from only Gulu District, therefore, leaving out other Districts located in Northern Uganda.

Practical implications – Advocates of recovery programs and interventions in developing countries should consider government support as a vital factor in promoting business skill, capital adequacy, access to finance, access to market, and entrepreneurial education in order to enhance SMMEs growth in post-war communities. In addition, governments in developing countries should offer investment incentives and tax waivers to infant SMMEs in post-war communities like in Northern Uganda.

Originality/value – The study examined the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in developing countries. Thus, to the best of the authors’ knowledge, this is the first attempt to test the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda. The use of government support as a moderator in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival is scarce in entrepreneurship literature and theory. This creates uniqueness in this study.

Keywords Entrepreneurial education, Access to finance, Government support, Northern Uganda, Post-war communities, SMMEs growth

Paper type Research paper
Introduction
The dynamic role of small, medium, and micro enterprises (SMMEs) as an engine for growth and development, especially in developing economies has long been recognized. Scholars like Abor and Quartey (2010) argue that SMMEs greatly contribute to GDP and create jobs in developing countries (see also the World Bank, 2015). This is supported by Ayyagari et al. (2007) who observe that SMMEs foster economic growth, innovation, employment, and poverty alleviation in under-developed communities (see also Garikai, 2011).

Existing evidence by Khan and Jawaid (2004) reveal that SMMEs contribute over 40 percent to GDP and offer more than 90 percent of the jobs in most developing economies world-wide. Contextually, data from Uganda Investment Authority (2016) indicates that in the financial year 2015/2016, SMMEs contributed about 6.3 percent to GDP and created over 80 percent of the jobs in Uganda. Thus, Gordon and Brayden (2014) argue that since SMMEs continue to be the backbone of economic growth and equitable development in both developed and developing economies, there is a need for the government to support their survival, growth, and sustainability.

Scholars like Olsen (1983) observes that business environment is an intricate and dynamic concept, which embraces the independent actions of all institutions, organizations, and individuals that directly or indirectly impact on the operations of business organizations. From the foregoing, government plays a great role in creating and supporting a conducive business environment within which business takes place in an economy (Adaramola, 2012). Thus, to ensure the survival, growth, and development of SMMEs, government support towards their operations is critical.

According to Sana and Abbas (2005), government support in developing countries, especially in post-war countries seldom promote schemes and incentives support systems, which leads to the establishment, growth, and development of SMMEs (see also United States Agency for International Development (USAID), 2010; Dandago and Usman, 2011; Shariff et al., 2010). More so, Chew and Chew (2008); and Spurge and Roberts (2005) also argue that government support that consist of tax reduction and exemption, fiscal fund aid, and access to loans strongly impacts on the establishment, expansion, and performance of SMMEs in developing countries (see also SMEA-Japan, 2010). Similarly, Chen (2006) connotes that provision of regulatory support such as law and order to offer legal assurance regarding ownership and conducive business environment, is helpful for the survival and growth of SMMEs, especially in developing economies.

Drawing from the post-colonial era, SMMEs in Northern Uganda have faced numerous challenges, which have affected their establishment, growth, and development. The situation was further worsened by the 21-years old Lord Resistance Army (LRA) rebel activities. A study by Okello-Obura et al. (2008) established that SMMEs in Northern Uganda operates in a business environment that is characterized by lack of business information, lack of market, lack of entrepreneurial knowledge and skills, poor physical resources and information infrastructure, lack of government amenities (business information archives), limited access to business finance, and double taxation regime, which have limited their survival, growth, and development.

Whereas several studies have examined the impact of factors like business skills, capital adequacy, access to finance, access to market, and entrepreneurial education on SMMEs establishment, growth, and development in developing countries, they fail to test the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival, especially in post-war communities in developing countries. The use of government support as a moderator in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival, especially in post-war communities in developing countries is sparse in the entrepreneurship literature and theory.
The Schumpeter theory views entrepreneurship as innovation and not imitation arguing that the entrepreneur moves the economy out of the static equilibrium. Correspondingly, Schumpeter (1949) observes that the entrepreneur moves the economic system out of the static equilibrium by creating new products or production methods, thereby rendering others obsolete through the process of "creative destruction" (creating uncertainty), which is the driving force behind economic development. In the same vein, Schultz (1975) also asserts that entrepreneurship is the ability to coordinate reallocation of resources efficiently, and it follows that agents have different degrees of entrepreneurial ability. Schultz further argues that in disequilibrium, individuals know that opportunities to increase satisfaction exist but the reallocating process requires time. Consequently, a better allocation of resources can be achieved either by experimenting (trial and error) or by investing in human capital. Besides, Kirzner (1997) states that markets are not always clear with no perfectly informed representative agent. Thus, for change to occur, the entrepreneurs need incentives, which comes from the difference among agents in terms of information and knowledge. Indeed, entrepreneurship consist of the creation of a previously unperceived opportunity for profit, the alertness to that previously untapped opportunity, and taking of action to achieve the opportunity.

Therefore, in order for entrepreneurs to realize equilibrium in the market to level competition by achieving the different conditions based on Schumpeter (1949), Schultz (1975), and Kirzner (1997), the role of government is very important in promoting the activities of entrepreneurs. The government helps by creating conducive environment for fair competition in the market and opens up more opportunities for the growth of SMMEs within the economy, especially in under-developed markets like in Uganda.

Thus, the main purpose of this study is to test the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in developing countries with a specific focus on Gulu District, Northern Uganda. This is premised on the argument that government support through the creation of a conducive business environment and provision of incentives support systems and schemes strongly impacts on SMMEs growth and sustainability in developing countries.

**Literature review and proposition development**

**Business skills and SMMEs survival**

Previous studies such as Agyei-Mensah (2011), Ekanem (2010), Deakins et al. (2002), and Kazooba (2006) indicate that lack of knowledge and skills among employees and managers of SMMEs to direct finances in a hardy, transparent, and professional way are significant obstacles to their survival and growth in developing countries.

According to Botha (2006), the absence of skills in financial management, human resource management, marketing, and lack of technical operational skills among SMMEs employees and managers are the main cause of their zero performance. Therefore, increases in the stock of business skills that can promote entrepreneurial performance are important for the survival, growth, and development of sustainable SMMEs, especially in developing countries.

Hussain (2000) argues that possession of skills in business management, marketing, finance, record keeping, human relations, and industrial relations by SMMEs employees and managers positively impacts on their survival and growth. Furthermore, Solomon (2004) also states that generic business skills such as preparing financial statements, business plans, and financial literacy attained through training are important for the survival, growth, and sustainability of SMMEs in developing countries.

Additionally, Siekei et al. (2013) also note that credit management and budgeting skills among SMMEs employees and managers that promote credit financing and management of loan portfolio enhances performance among SMMEs. The skills help to ensure that loan
liability and interest expenses are minimized by SMMEs that results into growing sales, profits, and smooth business operations. Conclusively, Smith and Perks (2006) note that business knowledge and skills are important for profitability and sustainability of SMMEs in keeping their business afloat. This leads to competitiveness and hence, growth among SMMEs. Indeed, Kuene (2008) contends that existence of skillful employees and managers is a significant determinant of SMMEs success. Accordingly, we propose that:

\[ H1. \text{ Business skills significantly and positively affect SMMEs survival in post-war communities.} \]

**Capital adequacy and SMMEs survival**

According to Cooper et al. (1994), availability of adequate capital enhances the pursuit for resource-intensive growth strategies by SMMEs. This is because slack resources can be tailored to new strategies and practices, which allows SMMEs to pursue new growth opportunities for survival (Penrose, 1959). Indeed, Storey (1994) stipulates that availability of financial capital influences firm growth and performance, especially in developing economies.

Similarly, Siropolis (1997) argues that capital adequacy is critical in supporting functional strategies and making required infrastructural investments by SMMEs through expansion and providing products necessary to meet customer satisfaction. Availability of adequate capital can underpin the effective implementation of entrepreneurial and financial management plans by SMMEs that can lead to their survival and growth.

Findings by Memba (2011) showed that availability of adequate capital for expansion and diversification among 100 SMMEs in Kenya resulted into improved value of their assets, increased sales, and employment of 24,802 workers. Thus, availability of adequate capital is important for achieving performance and growth of SMMEs, especially in developing countries. Therefore, we propose that:

\[ H2. \text{ Capital adequacy significantly and positively affect SMMEs survival in post-war communities.} \]

**Access to finance and SMMEs survival**

Shariff et al. (2010) state that poorly functioning financial systems can seriously undermine microeconomic fundamentals of a country because it results into lower growth in income and employment. Accordingly, the World Bank (2010) observes that in most part of the world, especially in developing countries, financial services have helped to increase income, build viable SMMEs, and reduce vulnerability to external shocks. Besides, Beck et al. (2013) argue that access to finance is a powerful instrument for self-empowerment, especially among the women who are seen as economic agents of change.

Indeed, finance has been identified in many business surveys as the most important factor determining survival and growth of SMMEs in both developed and developing countries (Beck et al., 2004). Access to finance allows SMMEs to undertake productive investments to expand their businesses and to acquire latest technologies in order to be competitive in the market.

Conversely, Beck and Demirguc-Kunt (2006) elucidate that access to finance for SMMEs is an important factor in experiencing continuous survival and growth. It allows entrepreneurs to innovate, improve efficiency, expand to new markets, and provide millions of jobs. Thus, access to finance and availability of external finance is vital for the growth and development of SMMEs, especially in developing countries.
Similarly, Vos et al. (2007) add that access to funding is the lifeblood of any enterprise, which enables it to grow and generate more output and employment (see also Beck et al., 2008; Berger and Udell, 1998).

Furthermore, Organization for Economic Cooperation and Development (OECD, 2006) also suggests that access to finance by an enterprise facilitates access to resources, output growth, employment generation, profitability, efficiency, exports, productivity, and return on assets (see also IFC, 2010). Empirical study by Cooper (2012) found that capital financing and mobilization of savings by microfinance had a positive impact on the growth of SMMEs in Kenya.

Thus, from the foregoing, it can be argued that performance and growth of SMMEs are strongly influenced by access to finance (World Bank, 2010). Here, we propose that:

**H3.** Access to finance significantly and positively affect SMMEs survival in post-war communities.

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**Access to market and SMMEs survival**

Dhliwayo (2014) postulates that since SMMEs provide not only employment for the community, but also tailor-made products in appropriate sizes and quantities suitable for customers, their proximity to the market helps them to sell their wares and products at competitive prices.

According to Organization for Economic Cooperation and Development (2008a), SMMEs involved in local and cross-border markets experience open access and integration into the lucrative supply chains of international players. Relatedly, Hussain (2000) recommends that strengthening horizontal and vertical linkages between SMMEs and larger firms can improve their market access. In addition, Dzisi and Ofor (2014) also posit that access to market by SMMEs helps them to gain an in-depth understanding of the market, particularly in regard to their competitors and customers.

Conversely, Chyau (2005) argues that empowering SMMEs to participate in global business through market connectivity, helping them to create and deliver products and services on a global scale, and providing them with access to new markets lead to their survival and growth. Indeed, empirical study by Barnes et al. (2006) indicated that access to cross-border trade by SMMEs resulted into increase in their profit and market share, which helped them to survive and grow. Here, we hypothesize that:

**H4.** Access to market significantly and positively affect SMMEs survival in post-war communities.

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**Entrepreneurial education and SMMEs survival**

According to Jackson (2004), access to micro-credit is not the primary constraint to small enterprise development and growth but instead the lack of information, entrepreneurial knowledge, and skills. Therefore, delivery of entrepreneurial education and business training is the suitable means through which the lack of information, entrepreneurial knowledge and skills can be addressed. This is supported by Becker (2002) who asserts that economic growth depends on the synergy between new knowledge and human capital, which is the main reason for success among large-scale enterprises, mostly in developed countries.

Correspondingly, King and McGrath (2002) state that entrepreneurs with large stocks of capital that includes education and/or vocational training are better placed to adapt to the constantly changing business environment. Additionally, Noe (2002) also observes that enterprises that provide entrepreneurial education to its staff and owner managers, which are innovative in nature, are more likely to produce better performance than those
who ignore entrepreneurial education. This spurs their survival and growth into sustainable SMMEs.

Thus, Guzman and Santos (2001) stipulate that education increases the intrinsic motivation and energizes behavior that lay the foundation for survival and success of SMMEs, especially in developing countries. Indeed, the more the SMMEs owners and managers receive entrepreneurial education, the greater the possibility of their entrepreneurial success and growth of their businesses.

Furthermore, Njoroge and Gathungu (2013) also note that entrepreneurial education influences the choice of risks to be undertaken and heightens the entrepreneur’s sense of responsibility and concern for results. Therefore, entrepreneurs with adequate information and knowledge can easily assess risk better than others, which make them to take risk in achieving innovative products for high survival and growth (Keizer et al., 2005).

Previous empirical studies have found a strong link between entrepreneurial education and SMMEs business survival and success. For example, Thapa (2007) found a positive association between entrepreneurial education and small business survival and success. Furthermore, McCormick and Ongile (1996) also discovered a change in productivity, and particularly in the small and medium enterprises sector with a high correlation between entrepreneurial education and the ability of entrepreneurs to carry out their businesses. Here, we propose that:

\[ H5. \text{Entrepreneurial education significantly and positively affect SMMEs survival in post-war communities.} \]

**Government support: moderator between determinants of SMMEs survival**

Entrepreneurship theorist such as Schumpeter (1949) viewed entrepreneurship as innovation and not imitation, and argued that the entrepreneur moves the economy out of the static equilibrium. Besides, Schumpeter suggested that the entrepreneur moves the economic system out of the static equilibrium by creating new products or production methods, thereby rendering others obsolete. This is the process of “creative destruction” (creating uncertainty), which Schumpeter saw as the driving force behind economic development. Additionally, Schultz (1975) also asserted that entrepreneurship is the ability to coordinate reallocation of resources efficiently, and it follows that agents have different degrees of entrepreneurial ability. Schultz further argued that in disequilibrium, individuals know that opportunities to increase satisfaction exist but the reallocating process requires time. Hence, a better allocation of resources can be achieved either by experimenting (trial and error) or by investing in human capital. Similarly, Kirzner (1997) posited that markets are not always clear and no perfectly informed representative agent exist. Therefore, for change to occur, the entrepreneurs need incentives that comes from the difference among agents in terms of information and knowledge. Thus, entrepreneurship consist of the creation of a previously unperceived opportunity for profit, the alertness to that previously untapped opportunity, and taking of action to achieve the opportunity.

According to OECD (2006), most if not all SMMEs in developing countries face many challenges such as small size of local markets, lack of labor, unsuitability of business premises, poor transport and communication infrastructure, lack of access to reliable market information, unavailability of business advisory services, lack of access to finance, and unfavorable institutional environment among others.

Consequently, Burgess (2002) states that governments around the world have placed increasing importance upon the success of SMMEs by providing increased resources for their survival. This is supported by Kraja et al. (2014) who concur that governments in developing countries have directed their efforts in supporting new...
businesses, creating incubators for such businesses, doing market research, improving existing infrastructure, fostering private and public partnership, building supportive policies on financing businesses, providing access to markets locally and internationally, fighting against corruption, and creating favorable business climate for SMMEs survival, growth, and development.

Existing empirical studies like Okpara (2010); and Shariff and Peou (2008) indicate that government support influences the survival and growth of SMMEs. Consistent with Nguyen et al. (2009), government support to SMMEs is a critical factor for their growth in both developed and developing countries. Indeed, the nature and scope of government support has a direct impact on the performance, survival, and growth of SMMEs (Borges et al., 2009).

Chacuamba (2011) contends that government support through business networks development, development of latent clusters of business activity in rural areas, promotion of social enterprise option to rural communities, ensuring access to high-quality business advice, and provision of marketing support for new and small rural firms enhance SMMEs survival and growth in developing economies. Similarly, the World Bank (2013) indicates that government support aimed at reducing transaction costs can stimulate the survival rate and growth of SMMEs.

More so, direct monetary intervention through provision of subsidized credit and refinancing programs by government that provides lending at below market rates to targeted SMEs, can also allow micro, small and medium enterprises to lower the cost of doing business thereby, spurring entrepreneurship, reducing poverty, lowering income inequality, and stimulating economic growth (Alliance for Financial Inclusion, 2016).

Indeed, government support geared towards creating positive externalities in form of levelled credit markets, security, competition, investment and tax incentives, improving education, training and development, and offering low-cost equitable legal system can create a conducive environment for SMMEs survival and growth (World Bank, 2013). Thus, here we hypothesize that:

\[ H_6: \text{Government support significantly and positively moderate the relationship between determinants of SMMEs survival in post-war communities (Figure 1).} \]

Methodology and research procedures
The population for the study was drawn from SMMEs located in Gulu District, Northern Uganda. This is because they represent two-thirds of the total population of
businesses in Gulu District. In addition, they are the back bone for livelihood among the post-war communities. Besides, Gulu District was selected for the study because it was highly affected by LRA rebel activities.

Research study design
The study adopted a cross-sectional research design to allow the researcher to collect large amount of data within a short period of time. Quantitative data were collected from SMMEs located in Gulu District to test the moderating effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities.

Population, samples size selection, and procedures
Small businesses do not have a consensually accepted global definition. Their definitions vary across countries and across industries. However, the most common measures used include the following: number of employees, annual turnover, industry, ownership, and value of fixed assets (Agyei-Mensah, 2011). Therefore, the SMMEs used in this study were identified based on sales volume, capital base, and number of employees as recommended by Agyei-Mensah (2011) and contextual definition by Ministry of Finance, Planning, and Economic Development, Uganda (Ernst and Young, 2011; UBOS, 2007). Therefore, the population for the study consisted of SMMEs located in Gulu District. Hence, a total population of 1,272 SMMEs was considered for the study (Gulu District Local Government Report, 2016). Simple random sampling method was used to choose SMMEs that participated in the study. This was intended to give all the SMMEs equal chances of being included in the study. Thus, a total sample of 304 SMMEs arrived at using formulae derived by Yamane (1973) was selected for the study. The sample was arrived at using the formula: 

\[ n = \frac{N}{1+N(e)^2} \]

where; 
- \( n \) is the sample size; 
- \( N \) the total population; 
- \( e \) the tolerable error (0.05 or 95 percent). Therefore, 

\[ n = \frac{N}{1+N(e)^2}; \quad n = \frac{1,272}{1+1,272(0.05)^2}; \quad n = 304. \]

SMMEs were the unit of analysis, while SMMEs owner managers were the unit of inquiry.

Data collection tool and process
Data were collected from the selected SMMEs using a semi-structured questionnaire. A semi-structured questionnaire is a questionnaire with both clearly defined questions and undefined questions used to elicit both defined answers (anchored on measurement scales) and undefined answers (not anchored on measurement scales) from respondents in social science research. The items in the semi-structured questionnaire were anchored onto a five-point Likert scale. The five-point Likert scale was chosen because of its versatility, clarity, simplicity, and its wide use by scholars in social science research (Likert, 1932; Johns, 2010; DeVellis, 2003). The questionnaire developed was uploaded on electronic data collection platform using open data kit software installed on smartphones/tablets that were used to collect data. The data collection exercise was carried out by ten research assistants/enumerators. The questionnaires were directly administered to SMMEs owner managers by research assistants who spoke the local language. Prior to data collection, the research assistants were trained on how to collect data using the electronic data collection platform and a pre-test was done before the main data collection exercise. Besides, the SMMEs selected for the main study were pre-identified and visited prior to the main data collection. The data collection exercise lasted for a period of 35 days, beginning from September 5, 2016 to October 10, 2016.

Data management, processing, and analysis
Data collected from the field using electronic data collection platform were exported into Excel and Statistical Package for Social Sciences (SPSS) data analysis tool. The data were
verified for careless scoring and incomplete responses. Thereafter, data screening was performed to check for errors arising from incorrect data entry, out of range values, missing values, outliers, and normality (Field, 2005). The results showed that there were no major errors and the data were good enough for further statistical analysis. The study used SPSS and ordinary least-square hierarchical regression analysis using $R^2$ (coefficient of determination) was adopted to explain the predictive power of business skills, capital adequacy, access to finance, access to market and entrepreneurial education on SMMEs survival. In addition, Pearson’s correlation analysis was also performed to establish the interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival.

Reliability and validity
Reliability is the assessment of the degree of consistency between multiple measurement items of a variable. The internal consistency of the instruments is measured using Cronbach’s $\alpha$ coefficient (Cronbach, 1951). It measures the degree to which there is inter-item reliability and consistency between the levels at which different items measuring the same variable attain consistent outcome or results. Thus, the objective of testing for reliability under this study is to ensure that responses are not too varied across time periods so that a measurement taken at any point in time is reliable. Validity is concerned with the instrument giving actual results of what it claims to measure (Cronbach, 1951; Babbie and Monton, 2002). Indeed, validity is the extent to which the results from the study correspond with reality (Merriam, 1998). It depends on measurements of the constructs developed from the study concept and theories. Before the main study, the questionnaire was pretested to establish the reliability and validity of the questions. The pre-test results revealed that all the items used in the instruments were reliable and valid with $\alpha$ coefficient results above 0.7 and factor loadings of 0.50 and above (Cronbach, 1951). The $\alpha$ coefficients for business skills, capital adequacy, access to finance, access to market, entrepreneurial education, growth, and government support were 0.773, 0.874, 0.751, 0.701, 0.825, 0.866, and 0.782, respectively.

Common method bias
Test for common method bias was carried out based on recommendation by Podsakoff et al. (2003). The measurement scales were improved upon during the pilot stage before the main study in order to reduce the biases in the instruments to be used in the final study. Procedural remedy was adopted to test for common method bias in the study. Careful construction of items was carried out. This was done by keeping questions simple, specific and concise, and avoiding double barreled questions (Tourangeau et al., 2000). Thus, common method bias, which causes type 1 and 2 errors, was not a problem in this study.

Testing for moderation/interaction effect
A moderator is the changer of a relationship in a system. This is the changing of a relationship as a function of some moderating influence. Structural equation modeling (SEM) represents an important advance in the study of multiplicative or nonlinear effects because of its ability to properly address the presence of measurement error within a statistical model (Little et al., 2007).

Byrne (2010) states that SEM is a powerful collection of multivariate analysis techniques, which specifies the relationships between variables through the use of two main sets of equations namely: measurement equation and structural equations. Measurement equation test the accuracy of proposed measurements by assessing relationships between latent
variables and their respective indicators. The structural equation drive the assessment of the hypothesized relationships between the latent variables, which allow testing for the statistical hypotheses for the study. Additionally, SEM considers the modeling of interactions, nonlinearity, correlated independents, measurement error, correlated error terms, and multiple latent independents each measured by multiple indicators.

Indeed, test for interaction effect using SEM surpasses traditional regression models by including multiple independent and dependent variables to test for associated hypotheses about relationships among observed and latent variables. Hair et al. (2010) advocate for excellent model fit indices between the competing models when testing for the interaction effects between independent, moderator, and dependent variables.

Thus, Baron and Kenny (1986) set four cases for testing existence of interaction/moderation effect of a moderator variable. These include the following: the moderator and independent variables are categorical variables; the moderator variable is a categorical variable and the independent variable is continuous variable; the moderator variable is a continuous variable and the independent variable is categorical; and both moderator and independent variables are continuous variables. Thus, the existence of relationships between the variables should be established through correlation and regression analyses (Cohen and Cohen, 1983; Aiken and West, 1991). Therefore, in order to proceed with the test for moderation, correlation and regression analyses were performed to establish the relationships and effects of moderator and independent variables on dependent variable.

The use of AMOS (Arbuckle, 2003) was adopted and bootstrapped bias-corrected confidence intervals were requested. Thus, a three-variable path diagram, including error terms for the endogenous moderator and dependent variable and bootstrap estimates of indirect, direct, and total effects through the AMOS output submenu, was requested during the analysis. The results for test of moderation of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda were generated and discussed in the following section.

Findings/results

Demographic profile of business owners

The results in Table I indicated that most (63 percent) SMMEs were own by male compared to 37 percent female ownership. This means that most SMMEs used in the study were owned by men. This could be explained by cultural beliefs and norms in Northern Uganda where women are particularly engaged in home-based domestic and family responsibilities.

Furthermore, the results also showed that 25 percent of the SMMEs owners were in the 18-25 age bracket, while 34 percent were in the 26-33 age bracket. The results further indicated that 24 percent of the SMMEs owners were in the 34-41 age bracket and 11 percent were in the 42-49 age bracket with only 7 percent above the age of 50+. This means that majority of SMMEs owners who participated in the study were in the 26-33 age bracket. This could be explained by the fact that it is the most active age bracket for business venture since it requires a lot of mobility.

Besides, the results revealed that 5 percent of the SMMEs owners had no schooling, while 40 percent had completed primary level of education and 29 percent had attained ordinary level of education. Further analysis of the results also showed that 5 percent of the SMMEs owners had completed both advanced level and vocational/technical/primary teacher college/school/certificate, while 7 percent had attained diploma level of education. In addition, 6 percent had attained bachelor’s degree and only 3 percent had other certification such as ACCA, CPA, and ATC. This means that most (40 percent) of the SMMEs owners who participated in the study had completed primary level of education and could read and write. This could be explained by the assumption that most SMMEs,
especially in rural areas, are started by school drop-outs since they may not be absorbed in
formal employment.

Similarly, the results indicated that most (43 percent) of the SMMEs that were
selected for the study were engaged in general merchandise/trade and 31 percent were
involved in agriculture. The results further revealed that 9 percent were engaged in restaurant business, while those engaged in agro-processing, carpentry, art and crafts, and saloon businesses comprised of 8, 5, 3, and 1 percent of the SMMEs surveyed. Thus, this implies that most SMMEs were engaged in agricultural activities.

In addition, the results also showed that 48 percent of the SMMEs were located in peri-urban areas, while 30 percent were located in rural areas and 22 percent in urban areas. This means that most SMMEs used in the study were located in peri-urban areas. This could be justified by the existence of dense population created by establishment of internally displaced persons’ camps during the LRA rebel activities.

More so, the results from study also revealed that 33 percent of the SMMEs were in operation for less than 1 year, while 32 percent for 2-3 years and 24 percent for 4-8 years. The results further indicated that 12 percent of the SMMEs were in operation for more than 9 years. This means that most SMMEs used in the study had not celebrated their first birthday. This implies that most businesses seem to die before their fifth years in operations. Besides, this could be as a result of more business incubation as opposed to their sustainability.

Finally, the results indicated that 67 percent of the SMMEs were micro in size, while 20 percent were small in size and 13 percent were medium size enterprises. This means that majority of the SMMEs used in the study were micro enterprises. This could be due to the small amount of capital required to start-up such businesses compared to small and medium size enterprises.

**Pearson’s correlation analysis**

According to Field (2005), correlation is a measure of the linear relationship between two or more variables. Pearson’s correlation analysis was used to establish the relationships between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, government support, and SMMEs survival in post-war communities in Northern Uganda. The results are presented in Table II.

**Business skills and SMMEs survival**

The correlation results in Table II revealed that there is a significant and positive association between business skills and SMMEs survival (r = 0.603, p ≤ 0.01). This implies that business skills influence SMMEs survival in post-war communities. Indeed, Kuene (2008) contends that entrepreneur’s initiative and skill are significant determinants of SMMEs survival and success.

**Capital adequacy and SMMEs survival**

Besides, the results showed that there is a significant and positive association between capital adequacy and SMMEs survival (r = 0.416, p ≤ 0.01). This implies that capital adequacy influences SMMEs survival in post-war communities. The availability of adequate capital can underpin the effective implementation of entrepreneurial and financial management plans by SMMEs that can lead to their survival and growth.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business skills (1)</td>
<td>304</td>
<td>3.54</td>
<td>0.538</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital adequacy (2)</td>
<td>304</td>
<td>3.55</td>
<td>0.556</td>
<td>0.457**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to finance (3)</td>
<td>304</td>
<td>3.61</td>
<td>0.489</td>
<td>0.436*</td>
<td>0.430**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to market (4)</td>
<td>304</td>
<td>3.61</td>
<td>0.498</td>
<td>0.418**</td>
<td>0.375**</td>
<td>0.381**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government support (5)</td>
<td>304</td>
<td>3.79</td>
<td>0.554</td>
<td>0.194**</td>
<td>0.175*</td>
<td>0.253*</td>
<td>0.643**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ent. education (6)</td>
<td>304</td>
<td>3.66</td>
<td>0.496</td>
<td>0.375**</td>
<td>0.439*</td>
<td>0.297*</td>
<td>0.524**</td>
<td>0.461**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>SMMEs survival (7)</td>
<td>304</td>
<td>3.43</td>
<td>0.530</td>
<td>0.603**</td>
<td>0.416**</td>
<td>0.616**</td>
<td>0.666**</td>
<td>0.706**</td>
<td>0.441**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Notes:** n = 304. **Correlation is significant at the 0.05 and 0.01 levels (2-tailed)
Access to finance and SMMEs survival
Furthermore, the results also indicated that there is a significant and positive association between access to finance and SMMEs survival ($r = 0.616, p \leq 0.01$). This means that a change in access to finance is associated with a change in SMMEs survival in post-war communities. According to Beck and Demirguc-Kunt (2006), access to finance by SMMEs is an important factor in experiencing continuous growth. It allows entrepreneurs to innovate, improve efficiency, expand to new markets, and provide millions of jobs.

Access to market and SMMEs survival
More so, the results also showed that access to market and SMMEs survival are significantly and positively related ($r = 0.566, p \leq 0.01$). This implies that a change in access to market is associated with SMMEs survival in post-war communities. This finding is supported by Dzisi and Ofosu (2014) who argue that access to market by SMMEs helps them to gain an in-depth understanding of the market, particularly with regard to their competitors and customers thereby, capturing market share that is favorable for their survival.

Entrepreneurial education and SMMEs survival
The results further revealed that entrepreneurial education and SMMEs survival are significantly and positively associated ($r = 0.441, p \leq 0.01$). This implies that a change in the level of entrepreneurial education is associated with SMMEs survival in post-war communities. Indeed, Keizer et al. (2005) observe that entrepreneurs with adequate information and knowledge can easily assess risk better than others, which enables them to achieve innovative products for survival and high growth.

Government support and SMMEs survival
The correlation results indicated that there is a significant and positive association between government support and SMMEs survival ($r = 0.706, p \leq 0.01$). This means that a change in government support is related to SMMEs survival and growth in post-war communities. Nguyen et al. (2009) suggest that government support to SMMEs is critical for their survival and growth in both developed and developing countries. Thus, the nature and scope of government support has a direct impact on SMMEs survival.

Test for moderation using SEM Bootstrap approach
The study focused on establishing the moderating role of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda. SEM Bootstrap approach through AMOS was adopted to test for the moderating effect of government support. Therefore, while constructing the SEM moderated model, two models were generated to show the direct effects of business skills, capital adequacy, access to finance, access to market, entrepreneurial education on SMMEs survival in post-war communities in Northern Uganda; and the moderated effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda. The first model had the direct effects of business skills, capital adequacy, access to finance, access to market, and entrepreneurial education on SMMEs survival in post-war communities in Northern Uganda. The second model had direct effects of business skills, capital adequacy, access to finance, access to market, and entrepreneurial education on SMMEs survival in post-war communities in Northern Uganda moderated by government support.
Therefore, as a rule of thumb, Hair et al. (2006) recommend that the moderated model should be better than the non-moderated model with better model fit indices. The results of the test for the moderating role of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival in post-war communities in Northern Uganda are indicated in Table III. The results revealed that the moderated model is better than the non-moderated model with better model fit indices as indicated in Table III (Figure 2).

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path coefficients</th>
<th>SE</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMMEs surv → business skills</td>
<td>0.504***</td>
<td>0.096</td>
<td>1.355</td>
<td>***</td>
</tr>
<tr>
<td>SMMEs surv → capital adequacy</td>
<td>0.616**</td>
<td>0.187</td>
<td>1.947</td>
<td>0.005</td>
</tr>
<tr>
<td>SMMEs surv → access to finance</td>
<td>0.478**</td>
<td>0.130</td>
<td>2.477</td>
<td>0.003</td>
</tr>
<tr>
<td>SMMEs surv → access to market</td>
<td>0.314**</td>
<td>0.580</td>
<td>2.783</td>
<td>0.005</td>
</tr>
<tr>
<td>SMMEs surv → entrepreneurial education</td>
<td>0.586***</td>
<td>0.378</td>
<td>3.384</td>
<td>***</td>
</tr>
<tr>
<td>SMMEs surv → Determin. of SMMEs survival ×</td>
<td>0.597**</td>
<td>0.581</td>
<td>3.165</td>
<td>***</td>
</tr>
</tbody>
</table>

SMMEs growth in post-war communities

**Table III.** SEM moderated model

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**Notes:** *p < 0.005; **p < 0.001; ***p < 0.0001

**Figure 2.** Path model results
Drawing from the SEM moderated results in Table III, there is a significant and positive interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival ($\beta = 0.597, t = 3.165, p < 0.0001$). This supports $H6$ of the study, which states that government support significantly and positively moderates the relationship between the determinants of SMMEs survival in post-war communities. Government support geared towards creating positive externalities for SMMEs in form of levelled credit markets, security, competition, investment and tax incentives, improving education, training and development, and offering low-cost equitable legal system can create a conducive environment for SMMEs survival and growth (World Bank, 2013).

The SEM results also showed that there is a significant and positive relationship between business skills and SMMEs survival ($\beta = 0.504, t = 1.355, p < 0.0001$). This result supports $H1$ of the study, which states that business skills significantly and positively affect SMMEs survival in post-war communities. Business knowledge and skills are important for profitability and sustainability of SMMEs in keeping their business afloat. This leads to competitiveness and hence, growth among SMMEs. Kuene (2008) states that existence of skillful employees and managers is a significant determinant of SMMEs success.

Besides, the results revealed that capital adequacy and SMMEs survival are significantly and positively related ($\beta = 0.616, t = 1.947, p < 0.005$), therefore, lending support to $H2$ of the study. The availability of adequate capital can underpin the effective implementation of entrepreneurial and financial management plans by SMMEs that can lead to their survival and growth.

Similarly, the results also showed that there is a significant and positive relationship between access to finance and SMMEs survival ($\beta = 0.478, t = 2.477, p < 0.001$). This is in contention with $H3$ of the study. Beck and Demirguc-Kunt (2006) observe that access to finance for SMMEs is an important factor in experiencing continuous survival and growth. Access to finance allows SMMEs to undertake productive investments to expand their businesses and to acquire latest technologies in order to be competitive in the market.

Furthermore, the results also indicated that access to market and SMMEs survival are significantly and positively related ($\beta = 0.314, t = 2.783, p < 0.005$). This is in agreement with $H4$ of the study. Empirical study by Barnes et al. (2006) revealed that access to cross-border trade by SMMEs resulted into increase in their profit and market share.

Conclusively, the results showed that there is a significant and positive relationship between entrepreneurial education and SMMEs survival ($\beta = 0.586, t = 3.384, p < 0.0001$). This confirms $H5$ under this study. Entrepreneurial education is thought to increase the intrinsic motivation and energizes behavior that lay the foundation for survival and success of SMMEs, especially in developing countries. Indeed, the more the SMMEs owners and managers receive entrepreneurial education, the greater the possibility of their entrepreneurial success and growth of their businesses.

**Discussion of findings/results**

The SEM model results indicated that there is a significant and positive relationship between business skills and SMMEs survival. This finding is in line with Solomon (2004) who argues that generic business skills such as preparing financial statements, business plans, and financial literacy attained through training, are important for the survival, growth, and sustainability of SMMEs in developing countries. Besides, Hussain (2000) suggests that possession of skills in business management, marketing, finance, record keeping, human relations, and industrial relations by SMMEs employees and managers positively impacts on their survival. Thus, business skills like customer relations, communication, marketing, negotiation, market analysis and research, financial literacy and numeracy, budgeting and planning, value addition, business ethics, record keeping, and networking skills acquired by
owners of SMMEs in post-war communities after the war in Northern Uganda are critical and contributes greatly to their survival. This finding supports $H1$ of the study, which states that business skills significantly and positively affect SMMEs survival in post-war communities.

In addition, the results also revealed that capital adequacy and SMMEs survival are significantly and positively related. This lends support to $H2$ of the study. According to Cooper et al. (1994), availability of adequate capital enhances the pursuit for resource-intensive growth strategies by SMMEs. This is because slack resources can be tailored to new strategies and practices, which allow SMMEs to pursue new growth opportunities for survival (Penrose, 1959). Indeed, Storey (1994) argues that availability of financial capital influences firm performance, survival, and growth, especially in developing economies. Hence, access to adequate capital from financial institutions and private sector development agencies to allow for recapitalization among SMMEs in post-war communities, may help them to grow their businesses in order to attain self-sufficiency.

Furthermore, the results also showed that there is a significant and positive relationship between access to finance and SMMEs survival. Scholars like Berger and Udell (1998); and Vos et al. (2007) observe that access to funding is the lifeblood of any enterprise because it enables it to grow and generate more output and employment. Similarly, OECD (2006) concurs that access to finance by an enterprise facilitates access to resources, output growth, employment generation, profitability, efficiency, exports, productivity and return on assets. Indeed, access to finance by SMMEs in post-war communities is the lifeblood for their survival because it enables them to generate more assets, returns from investments, and acts as shocks against risk. This finding is in contention with $H3$ of the study.

Besides, the results indicated that access to market and SMMEs survival are significantly and positively related. Dzisi and Ofosu (2014) contend that access to market by SMMEs helps them to gain an in-depth understanding of the market, particularly in regard to their competitors and customers. Indeed, Chyau (2005) asserts that empowering SMMEs to participate in global business through market connectivity, helping them to create and deliver products and services on a global scale, and providing them with access to new markets lead to their survival and growth. Therefore, access to markets, especially cross-border markets like in South Sudan and Democratic Republic of Congo can boost market availability for SMMEs in post-war communities in Northern Uganda. This will greatly improve their survival because of additional revenue earned from the cross-border markets as compared to the local markets. Thus, this is in agreement with $H4$ of the study.

More so, the results showed that there is a significant and positive relationship between entrepreneurial education and SMMEs survival. This is supported by Becker (2002) who points out that economic growth depends on the synergy between new knowledge and human capital, which is the main reason for success among large-scale enterprises, mostly in developed countries. In addition, King and McGrath (2002) also state that entrepreneurs with large stocks of capital that includes education and/or vocational training are better placed to adapt to the constantly changing business environment. Noe (2002) also observes that enterprises that provide entrepreneurial education to its staff and owner managers, which are innovative in nature, are more likely to produce better performance than those who ignore entrepreneurial education. Thus, entrepreneurial education involving acquisition of new business innovations, technologies, knowledge, and skills spillovers from professional and business networks, may be the backbone for survival of SMMEs in post-war communities in Northern Uganda. This confirms $H5$ under this study.

Overall, the results indicated that there is a significant and positive interaction effect of government support in the relationship between business skills, capital adequacy,
access to finance, access to market, entrepreneurial education, and SMMEs survival. Okpara (2010); and Shariff and Peou (2008) indicate that government support influences the survival and growth of SMMEs. Consistent with Nguyen et al., (2009), government support to SMMEs is a critical factor for their growth in both developed and developing countries. Thus, the nature and scope of government support has a direct impact on the performance and growth of SMMEs (Borges et al., 2009). Besides, Chacuamba (2011) stipulates that government support through business networks development, development of latent clusters of business activity in rural areas, promotion of social enterprise option to rural communities, ensuring access to high-quality business advice, and provision of marketing support for new and small rural firms can enhance SMMEs survival in developing economies. Similarly, the World Bank (2013) argues that government support aimed at reducing transaction costs can stimulate survival of SMMEs. Additionally, Kraja et al. (2014) also state that government support through promoting new businesses, creating incubators for such businesses, doing market research, improving existing infrastructure, fostering private and public partnership, building supportive policies on financing businesses, providing access to markets locally and internationally, fighting against corruption, and creating favorable business climate can result in SMMEs survival and development.

Indeed, creation of a conducive environment by government, which promotes business skills, capital adequacy, access to finance, access to market, and entrepreneurial education can greatly result into survival of SMMEs in post-war communities in developing countries Northern Uganda inclusive. This result is in line with H6 of the study, which states that government support significantly and positively moderate the relationship between determinants of SMMEs survival in post-war communities.

Conclusion and outlook

The findings revealed that there is a significant and positive interaction effect of government support in the relationship between business skills, capital adequacy, access to finance, access to market, entrepreneurial education, and SMMEs survival. Indeed, the nature and scope of government support has a direct impact on SMMEs performance and survival, especially in developing countries. This is in contention with H6 of the study.

In addition, the results from the study also indicated that there is a significant and positive relationship between business skills and SMMEs survival. This result supports H1 of the study, which states that business skills significantly and positively affect SMMEs survival in post-war communities.

Besides, the results revealed that capital adequacy and SMMEs survival are significantly and positively related, hence, lending support to H2 of the study. Indeed, availability of adequate capital enhances the pursuit for resource-intensive growth strategies by SMMEs. This is because slack resources can be tailored to new strategies and practices, which allow SMMEs to pursue new survival and growth opportunities.

Furthermore, the results also showed that there is a significant and positive relationship between access to finance and SMMEs survival. This is in contention with H3 of the study. Access to finance is the lifeblood of any enterprise, which enables it to grow and generate more output and employment. Indeed, it facilitates access to other resources, profitability, efficiency, exports, productivity and return on assets for sustainability.

Additionally, the results also indicated that access to market and SMMEs survival are significantly and positively related. This is in agreement with H4 of the study. SMMEs involved in local and cross-border markets experience open access and integration into the lucrative supply chains of international players, thus, leading to their survival, growth and development.
Finally, the results showed that there is a significant and positive relationship between entrepreneurial education and SMMEs survival. This confirms H5 under this study. The more the SMMEs owners receive entrepreneurial education, the greater the possibility of their entrepreneurial survival and success of their businesses.

Therefore, governments in developing countries, especially in post-war communities, should provide capacity building through offering specialized business trainings to inculcate business ideas, knowledge, and skills among SMMEs owners on how to select and manage their businesses by linking their businesses to the right skills.

Besides, governments in developing countries, especially in post-war communities, should embark on financial literacy drives to educate business owners the concept of money and how to manage it wisely. This will make them to become more informed financial decision-makers. In addition, it will also offer them opportunities to learn basic business skills like record keeping, basic numeracy skills, investment decisions, business planning, earning, spending, budgeting, savings, and loan management.

More so, governments in developing countries, especially in post-war communities, should advocate and lobby for full financial inclusion of businesses in order to ease access to basic financial services, such as trade credit/loans to provide start-up capital and recapitalization funds to SMMEs.

Furthermore, governments in developing countries, especially in post-war communities, should provide local trade protection in order to protect SMMEs from unnecessary competition so as to spur their survival, growth, and development. Besides, they should support access to regional and international markets by SMMEs through promoting cross-border trade. Similarly, the government should offer investment incentives and tax waiver to local SMMEs. More so, they should ensure revising the double taxation regime levied on local SMMEs.

In addition, governments in developing countries, especially in post-war communities, should provide business advisory services on business incubation, management, and growth strategies through business clinics in order to reduce the high rate of mortality among SMMEs in order to achieve post-war recovery programs.

Conclusively, governments in developing countries, especially in post-war communities, should revive the specialized cooperative societies among the business communities in order to enable them to have collective bargaining power and access to scarce information on markets, raw material, new technology and innovations, skills, and credit/loans.

Shortcoming and future research
The study was cross-sectional and data were collected at a specific point in time, thus, longitudinal study design was ignored. Besides, the sample for the study was selected from only Gulu District, therefore, leaving out other Districts located in the post-war region of Northern Uganda. Similar future study may be carried out in other Districts located in the same region. Furthermore, the study used a semi-structured questionnaire to collect quantitative data. Future studies could focus on qualitative data by use of interview guides and focused-group discussion.

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Further reading


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A study on the role of science and technology parks in development of knowledge-based economy

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Abstract
Purpose – Science parks play an important role in development of technology and are able to stimulate economic growth of the countries. The purpose of this paper is to study the role that science and technology parks (STPs) play in growth of knowledge-based economy.

Design/methodology/approach – Key factors affecting the competitive advantages and the World Bank indicators resulting in knowledge-based economy were displayed in the form of a questionnaire which was examined by experts. The questionnaire was designed to evaluate main factors and sub-factors of competitive advantages of the institutions, including aspects of human resources, research and development and technology transfer, facilities, market development and to assess the main criteria of knowledge-based economy known as pillars of the overall economic performance, the institutional regime and economic incentives, innovation system, education and information technology and communications.

Findings – The obtained results from the study on competitive advantages were evaluated and analyzed by using SPSS software and the results of the review on development of knowledge-based economy were modeled by SmartPLS software with partial least squares method. Eventually, the obtained model was tested and analyzed.

Originality/value – This study is an original contribution to the theory of STPs and knowledge-based economy. It was initiated to examine the role of STPs in development of knowledge-based economy and presentation schematic model.

Keywords Science and technology parks, Knowledge-based economy, PLS method

1. Introduction
Of the 1970s, science and technology parks (STPs) were identified as part of national development strategies. Technology parks are considered as a panacea to overcome the national and regional problems, to reduce unemployment and improve the competitiveness of enterprises and quality of life as well as the factor to encourage the restructuring of the region in which they operate (Nummela et al., 2005; O’Shea et al., 2006). The parks have been a central part of the solution to the difficult and complex problems of regional economic development, employment and the creation of new businesses (Hansson, 2007). The first research based on the technology companies has been conducted by Little (1979). Porter et al. stated that the technological companies, companies that have been established, rely on innovation and scientific inventions and aimed at innovations commercial exploitation of the technology.

Felsenstein (1994) examined the role of technology parks as the development of technology-based firms. Ferguson (1999) researched on the company’s growth that shows technology companies located in the park have greater profitability compared to companies outside the park.

Lofsten and Lindelof’s (2006) study show that STPs have a positive effect on the growth and profitability of companies in the field of sales and number of employees. Other researchers (Ferguson and Olofsson, 2004) tested growth rate of companies with sales variables, employment and survival of companies inside and outside them.
Knowledge-based economy is a product of economic globalization, market competition and the information explosion. In the knowledge-based economy, major capital of organizations are not only equipment, material and physical assets, but also knowledge (Jafari et al., 2012). Furthermore, KM includes organizational knowledge, and may be distinguished from that by a greater focus on the management of knowledge as a strategic asset and a focus on encouraging the sharing of knowledge.

Entrepreneurship involves recognizing and seizing opportunities, transforming those opportunities into marketable goods or services, assuming risk and realizing rewards, and may occur in a variety of settings, including new and old ventures, non-profit institutions and the public sector (Hafezieh et al., 2011). Technology parks have been formed with the aim of strengthening the spirit of entrepreneurship in universities and scientific societies and considered in order to achieve as institutional comprehensive development (Segal, 1986).

According to reports of Bank of Boston (1997), activities of technology parks led to the development of national- and regional-level economy and in all cases have been widely led to job creation directly or indirectly.

In addition to mentioned cases, there have been important studies in the fields of knowledge-based economy, incubators and technology parks, but so far, no study has been conducted on the role or effectiveness of these institutions to achieve the knowledge-based economy. Hence, the main issue in this research that we have concentrated on is the role of STPs to achieve knowledge-based economy.

2. Literature review

2.1 STPs

Basic STPs were established in America in 1950s. The first STPs were formed in Europe in the late 1960s. STPs are very different in terms of physical dimensions and populations. Available data indicate that parks have approximately 3,200 hectares vastness and between 100 and 32,000 populations (Technology Deputy Minister of Science, Research and Technology and Vice President of the Center for Research and Documentation, 2009).

There are several definitions of STPs. The official definition adopted by the International Association of Science Parks (IASP) in February 2002 goes as follows. A science park is an organization managed by specialized professionals, whose main aim is to increase the wealth of their community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a science park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high-quality space and facilities (www.unesco.org).

Similarly, other authors define STPs as institutions that play an incubator role, nurturing the development and growth of new, small, high-technology firms, facilitating the transfer of university, encouraging the development of faculty-based spin-offs and stimulating the development of innovative products and processes. STPs are sources of entrepreneurship, talent and economic competitiveness for nation and are key elements of the infrastructure supporting the growth of global knowledge economy. They enhance the development, transfer and commercialization of technology. As STPs harness the combined power of education, research and private investment, the results are new jobs, new industries and solutions to age-old problems of mankind. They connect the innovative thinkers of old ages and harness the most powerful resource of the twenty-first century: mind power (Chen et al., 2000).

Sources of STP’s funding are usually supplied from universities, local authority, governmental development agencies, private sector institutions and companies’ beneficiaries (Monck, 1988).
In this research, we have used the literature of industrial clusters and other studies in the field of STPs, to identify factors affecting the capacity to create competitive advantage of science parks for the knowledge-based enterprise foundation.

Competitive advantage for any organization is to its ability to create more value for customers than other competitors and to achieve a better position than the competitors (Peter, 2000).

So far, models created to determine the factors that affect the competitive advantage offered by STP. Some of the mentioned factors have been proposed for their acquisition and importance in all models. Researchers have studied the main factors influencing the creation of competitive advantage in STPs. After completion of the study, 12 factors were identified as influential factors in creating competitive advantage through STPs (Table I).

2.2 Knowledge-based economy

In recent years, knowledge-based economy has become a very conventional subject in economic development and public policy (Clarke, 2001). According to Landvall (2000), in the new economy the main attention would be paid to creating knowledge, new products and services not to allocate available sources, therefore it would be irrational for individuals and businesses if they apply their intellectual capacity to re-allocate resources because they can use their intellectual capacity to create new ideas (Mortazavi and Bahrami, 2012). The conceptual framework discussed in the international literature implies a distinction between knowledge-based economies and resource-based economies. According to Organization for Economic Co-operation and Development (OECD) (1996), knowledge-based economies are economies which are directly based on production, distribution and use of knowledge and information, with an important role given to information, technology and learning in economic performance (cf. OECD, 1996). In contrast, a resource-based economy is the economy of a country whose gross national product or gross domestic product to a large extent comes from natural resources (e.g. oil and gas). Gorzelak (2001) defined a framework

<table>
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<tr>
<th>Factors</th>
<th>Models</th>
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<tr>
<td>Skilled and educated workforce in technical fields</td>
<td>Porter; Foreman; Shiv Lai; Lin; Sun; Lin and Tseng</td>
</tr>
<tr>
<td>Skilled and educated manpower in the fields of management (management, marketing, finance, marketing, etc.)</td>
<td>Porter; Foreman; Shiv Lai; Lin; Sun; Lin and Tseng</td>
</tr>
<tr>
<td>The use of reference laboratories</td>
<td>Wested and Stow; Leung and Wu; Wested; Wested and Betson; Porter; Shiv Lai; Lin; Sun; Lin and Tseng; Zeng</td>
</tr>
<tr>
<td>Communicating with universities and R&amp;D centers</td>
<td>Wested and Stow; Leung and Wu; Wested; OECD; Wested and Betson; Filimore; Foreman; Loefsten and Lindelof; Hugh; Shiv Lai; Filimore; Lin and Tseng; Zeng; Ratinho and Henrickes</td>
</tr>
<tr>
<td>Cooperation with other similar companies</td>
<td>Porter; Filimore; Porter; Foreman; Shiv Lai; Lin; Sun; Lin and Tseng</td>
</tr>
<tr>
<td>Access to the information required in the field of IT</td>
<td>Porter; Foreman; Shiv Lai; Lin; Sun; Lin and Tseng; Rust; Sun</td>
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<tr>
<td>The use of customs and tax exemptions</td>
<td>Zeng; Sun</td>
</tr>
<tr>
<td>The use of funds (venture capital and funds financing …)</td>
<td>Vodolo; Porter; Foreman; Chan and Lau; Shiv Lai; Lin; Wonglimpiyarat; Sun; Lin and Tseng; Zeng; Sun</td>
</tr>
<tr>
<td>Provision of physical infrastructure</td>
<td>Porter; Lin; Sun; Lin and Tseng; Zeng</td>
</tr>
<tr>
<td>Appropriate share of the market</td>
<td>Chan and Lau; Lin; Sun; Lin and Tseng; Sun</td>
</tr>
<tr>
<td>Export power</td>
<td>Chan and Lau; Sun; Lin and Tseng; Sun</td>
</tr>
<tr>
<td>Access to the information required in the market</td>
<td>Porter; Foreman; Chan and Lau; Shiv Lai; Sun; Lin and Tseng; Zeng; Sun</td>
</tr>
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</table>

Table I. Important factors influencing the creation of competitive advantage in STPs
for knowledge-based economy based on the distinction between the old paradigm (resource-driven economies) and the new paradigm (knowledge-driven economies). Gorzelak (2001) argued that applying the concepts of the knowledge economy to urban management suggests the need for a paradigm shift from resource-driven urban economies to knowledge-driven urban economies.

Moreover, the World Bank uses the Knowledge Index (KI) and the Knowledge Economy Index (KEI) to compare knowledge across the world’s countries. According to the World Bank, the KI measures a country’s ability to generate, adopt and diffuse knowledge. This is an indication of the overall potential of knowledge development in a given country.

One of the possible ways of knowledge economies evaluation is the Knowledge Assessment Methodology which represents the approach created and applied by the World Bank. At present, it consists of 109 structural and qualitative variables for 146 countries to measure their performance on the four knowledge economy (KE) pillars: the economic incentive and institutional regime, education and human resources, the innovation system, and information and communications technologies (Table II).

These days, the focus of the Iran’s economy is on making the economy independent of its petroleum products. Hence, the national economy must be strengthened by concentrating on modern production methods, knowledge-based firms and focusing on entrepreneurship. Entrepreneurship can be considered as a process of increasing wealth through identifying and innovation opportunities (Hanny et al., 2011). Entrepreneurship definitions cover a wide range of activities and processes that include creating a new idea, innovation, establishing an organization, identifying opportunities and risk taking (Ziyae and Mobaraki, 2014). The study of Robert found that social power, social relations and collectivism create a setting for entrepreneurial motivation, which is almost directly counter to western ideologies of entrepreneurial motivation. Therefore, STPs act as the bridge between universities and industry and are the best place for technological and economic development that they will bring an entrepreneurial spirit to the society (Zhou, 2008). Furthermore, STPs are obliged to provide opportunity for small- and medium-sized enterprises. Governments are making a major effort to develop innovative infrastructures such as STPs in order to establish systems that support innovation. The existence of STPs is an important factor in the competitiveness of the economy of a region or country. Thus, appropriate management of these infrastructures can help to develop the innovative potential of a country.

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Variables</th>
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<tbody>
<tr>
<td>Overall economic performance</td>
<td>Annual growth in GDP (%)</td>
</tr>
<tr>
<td></td>
<td>Human Development Index</td>
</tr>
<tr>
<td>The economic incentive and</td>
<td>Tariff and non-tariff barriers</td>
</tr>
<tr>
<td>institutional regime Reign</td>
<td>Quality adjustment</td>
</tr>
<tr>
<td>The innovation system</td>
<td>Total receipts and payments which are related to the copyright</td>
</tr>
<tr>
<td></td>
<td>Patents awarded by UPST</td>
</tr>
<tr>
<td></td>
<td>Scientific and technical articles published in the journals (per one million people)</td>
</tr>
<tr>
<td>Education</td>
<td>Rate of literacy adult (percentage of people over 15 years)</td>
</tr>
<tr>
<td></td>
<td>Gross enrollment in secondary education (% gross)</td>
</tr>
<tr>
<td></td>
<td>Gross enrollment in tertiary education (% gross)</td>
</tr>
<tr>
<td>Information and</td>
<td>Access to computers per thousand</td>
</tr>
<tr>
<td>communications technologies</td>
<td>Access to telephones per thousand</td>
</tr>
<tr>
<td></td>
<td>Access to internet per thousand</td>
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</table>

Table II. The components methodology to estimate the knowledge-based economy by the World Bank
3. Methodology

Based on the literature review and gaps identified, a questionnaire was designed in two parts including the study of effective factors of the competitive advantages as well as the realization of knowledge-based economy. In order to assess the dimensions of competitive advantages for institutions, Likert scale has been used for 12 items ranging from 1 to 5 (1 completely disagree) to (5 strongly agree) for each application. Also, for evaluation of knowledge-based economy, Likert scale has been applied for 20 items within a range of 1-5 (1 very little to 5 a lot). Each number is a representative of 20 percent, for example, number 1 which is very little means (0-20) percent and pretty much means (80-100) percent to facilitate people’s response. The factors examined in the study of competitive advantages were derived from the research questions extracted from Sadeghi (2013), also the second part of questions relating to the evaluation of the implementation of knowledge-based economy in STPs is taken from the World Bank indicator. It should be noted that all of the questions of each part of the questionnaire will be mentioned in the result’s tables. Pillars raised at the World Bank indicators have been designed in national and macro dimension, while the population in this study has organizational size and is relatively smaller, so according to professors and experts, all the pillars have undergone minor changes raised to fit better with the type of sample. Questionnaires have been distributed via mail or in person in all of the STPs. Although there are 32 STPs in the country, based on the calculation done by Cochran formula, only 29 samples were considered to be enough for study to be conducted.

Having said that, in order to achieve a better result, 70 questionnaires have been completed by the STPs’ managers, managers of companies based in STPs and the relevant authorities at the Ministry of Science and Technology Research of Iran. To test the hypotheses generated for knowledge-based economy, the partial least squares (PLS) approach was adopted and data were analyzed by the SmartPLS. On the other hand, to have the hypotheses related to competitive advantages tested, data were analyzed by SPSS software.

We used the bootstrapping method (500 resamples) to determine the significance of levels of loadings, weights and path coefficients, and then we employed the blindfolding method to determine quality measurement tools (Wah Yap et al., 2012).

We asked some experts’ opinion to assess the appearance and content validity of the method used. Additionally, Cronbach’s α was applied to evaluate the reliability of the questionnaire.

4. Review of results

4.1 Testing the reliability of questionnaire

The reliability of the model was examined and approved, and the results are presented in Table III. As can be seen, the reliability of the questionnaire was 0.9 for both parts, which was an acceptable level of reliability.

4.2 Analysis responses of the questionnaires

Results from the first division of the factors affecting the competitive advantages are demonstrated in Table III.

Results from the second division of the factors affecting the knowledge-based economy are displayed in Table IV.

After having the questionnaires collected, they were precisely examined by the SPSS software. The figures related to the standard deviation of two parts of questionnaire turned to be satisfactory. As a result, the high correlation was observed among the responses. Totally, obtained results for data’s mean in each part of questionnaire were approximately 4. We can conclude that the institutions have huge competitive advantages, also suitable features of knowledge-based economy. Therefore, high quantity for the mean resulted
from competitive advantages in all the aspects of STP is very reasonable considering the present circumstances.

Hence, to achieve a graphical model which shows the details of the relationship between STPs and knowledge-based economy, we designed the model with the help of SmartPLS software which is based on PLS method. The model for STPs is shown in Figure 1.

We used the SmartPLS (PLS) software package to estimate the path coefficients, composite reliability, average variance extracted and $R^2$, applying bootstrap re-sampling.

The PLS technique is based on an iterative combination of principal components analysis and regression. The objective is to explain the variance of a model's constructs. One of its advantages is that it simultaneously estimates all the path coefficients and individual item loadings in the context of a specified model, and thus enables researchers to avoid biased and inconsistent parameter estimates. This technique is well known among consumers and service researchers due to the mentioned pros. Recent studies (Chin and et al., 2003) have shown that, by reducing type II errors, PLS is an effective analytical tool for testing interactions. By creating a latent construct which represents the interaction term, a PLS approach significantly reduces the type II error problem by accounting for the measure-related error. In particular, PLS models are based on prediction-oriented measures, not on covariance fitting which is used by covariance structure models (or the LISREL program).

As Roy et al. (2012) suggested, the PLS approach lends itself well to modeling formative constructs. This is primarily because of three reasons. First, using PLS, a researcher can test a formative latent variable in isolation. Second, there are less stringent constraints on sample size, residual distributions or assumptions about the normality of the data; and third, the recent availability of software based on the PLS approach (such as PLS Graph, VisualPLS, SmartPLS, SPAD-PLS) has led to better understanding of the associated requirements and issues. The adequacy of the measurement scale is assessed by evaluating the reliability of the individual items and the discriminant validity of the constructs (Hulland, 1999). In the present case, the factor loadings of each item were above 0.877, indicating that more than 50 percent of the variance in the observed variable is explained by the construct (Carmines and Zeller, 1979).

Figure 1 shows the results of the structural model. The standardized path coefficients are shown alongside the corresponding causal arrows. The bootstrap re-sampling technique, considering 500 sub-samples, was applied to assess the $t$-test values and determine whether or not each causal order was significant. All the path coefficients were found to be significant at the 0.001 level, with signs in the expected direction. The quality of the fit was good as evaluated by the overall goodness-of-fit index proposed by Tenenhaus et al. The model also demonstrated a high level of predictive power since the modeled constructs

<table>
<thead>
<tr>
<th>Factors</th>
<th>Sample size</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled and educated workforce in technical fields</td>
<td>70</td>
<td>3.50</td>
<td>0.847</td>
</tr>
<tr>
<td>Skilled and educated manpower in the fields of management (management, marketing, finance, marketing, etc.)</td>
<td>70</td>
<td>3.77</td>
<td>0.726</td>
</tr>
<tr>
<td>Communicating with universities and R&amp;D centers</td>
<td>70</td>
<td>4.19</td>
<td>0.921</td>
</tr>
<tr>
<td>Cooperation with other similar companies</td>
<td>70</td>
<td>4.14</td>
<td>0.952</td>
</tr>
<tr>
<td>Access to the information required in the field of IT</td>
<td>70</td>
<td>3.43</td>
<td>0.772</td>
</tr>
<tr>
<td>The use of customs and tax exemptions</td>
<td>70</td>
<td>3.59</td>
<td>0.712</td>
</tr>
<tr>
<td>The use of funds (venture capital and funds financing...)</td>
<td>70</td>
<td>4.30</td>
<td>0.874</td>
</tr>
<tr>
<td>Provision of physical infrastructure</td>
<td>70</td>
<td>4.23</td>
<td>0.871</td>
</tr>
<tr>
<td>Appropriate share of the market</td>
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<td>3.27</td>
<td>0.947</td>
</tr>
<tr>
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<td>70</td>
<td>3.59</td>
<td>0.869</td>
</tr>
<tr>
<td>Access to the information required in the market</td>
<td>70</td>
<td>4.34</td>
<td>0.720</td>
</tr>
</tbody>
</table>

Table III. Factors influencing the creation of competitive advantage in science park's analysis

Role of science and technology parks

<table>
<thead>
<tr>
<th>Factors</th>
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<th>SD</th>
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<tbody>
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<td>4.34</td>
<td>0.720</td>
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</table>
explained 97.2 percent of the variance in knowledge-based economy (Miranda and Chamorro, 2012). Considering the above suggested model, it can be concluded that STPs have a significant also positive impact on the development of the knowledge-based economy in Iran. Actually, STPs around the world are based on the rationale of resources concentration. They usually have significant spillover effects on their region economy.
Proposed model for the role of STPs to develop a knowledge-based economy.
Johan have explained that the STP’s success in terms of fostering the creation of new firms, raising the level of technological sophistication thereby fostering growth and access to external financing and stimulating knowledge transfer thereby fostering growth and access to external financing.

5. Discussion

STPs are designed to provide value-added services together with high-quality space and facilities and to promote interaction amongst universities, R&D institutions, companies and markets (Triadó-Ivern et al., 2015). A plot of GDP per capita against KEI suggests that Ireland, the USA and Norway are at the pinnacle of countries currently harnessing the benefits of a knowledge economy. It is safe also to argue that Kenya and India are miles ahead of countries like Nigeria that are yet to be listed. The headquarter of the IASP[1] is a further signal of the weight of the Spanish STPs movement that is located in Spain (Albahari et al., 2016). As well, in the 13th General Assembly Meeting of COMSTECH (April 2008, Islamabad) the preliminary decision for establishing INSTP[2] has been made. This step has been taken for technological development among Muslim countries and strengthens the inter-relationships between STPs, also to promote cooperation among Islamic countries. Fortunately, in the 14th General Assembly Meeting of COMSTECH[3] (January ۱۱۰۲, Islamabad) the proposal of INSTP establishment in Islamic Republic of Iran was approved (www.instp.ir). Therefore, GSTP[4] was selected as headquarter of INSTP. Iran has made considerable advances in science and technology through education and training, despite international sanctions in almost all aspects of research during the past 30 years (https://en.wikipedia.org). Luckily, many countries and foreign companies are willing to participate in STPs situated in Iran, because of theirs potentials and abilities (www.irna.ir). Recently, both Tajikistan and Azerbaijan wanted GSTP to attend and provide services to them (www.iikss.com). The important role of STPs of Iran in the region can confirm the suitable results of this research.

6. Conclusion

The concept of a science park model is a simplification of the complex set of relationships which foster economic development and job growth related to high technology. In truth, several approaches to business development, as well as several approaches to planning, have been used. More often than not, research consortia, incubators and business centers are targeted toward similar regional development objectives. They share the objective of economic development, but they differ in several respects. In this communication, we have proposed a modified approach to the role of STPs to develop knowledge-based economy. A review of the literature showed that no published study has been in this field. The model comprised all dimensions related to development of knowledge-based economy.

The path values resulting from the use of PLS path modeling provided a direct assessment of the importance of each of these dimensions. Our model also provides STP’s top managers with a tool for the measurement of functional quality in their organization. The results show the importance of STPs for the perception of knowledge-based management. Our model can also be used to measure how STP’s top managers believe in their firms and their facilities and services. This allows the potential gap between the provider’s view and the customer’s view to be assessed and monitored. The findings have clear implications to manage primary purposes of STPs. The study showed that the perceived quality of STP depends mainly on dimensions closely linked to competitive advantages.

Finally, it should be borne in mind that the present model is designed to measure the role of STPs to develop knowledge-based economy considering the effective factors of the
competitive advantages. Hence, to understand the real institutional value of practices such as quality management in STPs, technical dimensions also are needed to be taken into account.

7. Suggestions for further research
A study on the role of incubators to develop knowledge-based economy would be a perfect recommendation for future research. The results of the suggested study can be finally compared with the results of the current study. The role of STPs in the development of the relation between industry and academia should be examined.

Notes
1. International Association of Science Parks and Areas of Innovation.
2. Inter-Islamic Network on Science and Technology Parks.
3. Ministerial Standing Committee on Scientific and Technological Cooperation.

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Further reading


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Investigating the information security management role in smart city organisations

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Brunel University, Uxbridge, UK, and

Ammar Aldallal
Department of Computer Engineering, Ahlia University, Manama, Bahrain

Abstract

Purpose – Information security management (ISM) is proving to be an important topic in the modern world; in environments that will rely a great deal on digital technologies, such as smart cities, ISM research is of high importance and needs to be well analysed. The paper aims to discuss these issues.

Design/methodology/approach – This paper indicates the criticality of ISM for smart cities through the literature, then focuses on top organisational factors influencing ISM in smart city organisations, which are embraced and justified from the literature.

Findings – This paper highlights the need for more research around ISM in the context of smart city organisations, also ISM-related organisational factors that are expected to most influence smart city organisational performance.

Research limitations/implications – This paper is proposed to influence more research in the area of ISM for smart cities among the research community. Additional research is also expected to further validate and examine the selected organisational factors.

Originality/value – This paper presents new information on ISM in smart city organisations, the lack of research in this area, and the criticality of the highlighted issues, creates high value for the conclusions and findings of this research. The paper also highlights top organisational factors that are expected to influence ISM in smart city organisations.

Keywords Corporate governance, Organizational performance, Information systems, Smart city, Information security management, Organizational factors

Paper type Research paper

Introduction

Urbanisation is a globally intensifying phenomenon, by the year 2050, 2.5 billion more people will be living in cities, in which around 60 per cent of the infrastructure is yet to be build. Urban regions help better manage larger populations, while offering enhanced living quality, opportunities for growth and resources efficiency (Ramaswami et al., 2016). With the global movement towards urbanisation and the widespread use of internet technologies, the concept of smart cities has drawn a lot of research interest and attention in recent years (Khatoun and Zeadally, 2016; Meijer and Bolivar, 2016; Angelidou, 2015). In particular, new technologies, such as the Internet of Things (IoT), Big Data, Data Analytics and cloud computing, are examples of supporting services and offerings for the future of urban life. Nonetheless, to ensure seamless operations for these smart cities, protecting information and infrastructure by maintaining robust information security...
becomes a necessity. Information security is considered to be of critical significance to the implementation and development of smart cities and one of its most serious challenges (Khatoun and Zeadally, 2016). The related governance processes and mechanisms also appear in the literature to be one of the most important pillars for the success of smart cities (Meijer and Bolívar 2016; Belissent, 2011), noting that such imply several challenges at the national and organisational levels.

The past few years have seen rapid development of the smart city concept. Numerous countries all around the world have already adopted smart city transformation programmes and are competing to achieve better and faster revolutions of their infrastructure. The IESE Cities in Motion Index (Berrone and Ricart, 2017) has also been developed since 2014 to annually update on cities progress and rank in the different smart city dimensions (human capital, economics, environment, social cohesion, urban planning, public management, etc.), current top-ranking cities include New York, London, Paris, etc.

Early studies on the smart city topic started with Komninos (2002) describing the different aspects of an intelligent city, but also discussing its competitive aspects, such as industrial, digital and learning capabilities. When discussing the characteristics of cities improvement, researchers such as Shapiro (2006) and Mulligan and Olsson (2013) discussed the impact on the quality of living and education by the increased urbanisation of metropolitan areas. In 2007, Giffinger et al’s (2007) report on European smartness ranking expands the “smart city” concept to include evaluation measures and capabilities, to open the competition between European cities. Such measures include economy, people, governance, mobility, environment and living. Giffinger et al. (2007) developed 31 factors and 74 indicators for smart city ranking for 70 cities in the EU. Their main goal is reducing energy use and gas emissions by 2020. Hollands (2008) argues that smart cities should not be considered as large IT projects, whilst emphasising the human capital role in terms of education, creativity, innovation and entrepreneurship in determining the role and future of the city. Meijer and Bolivar (2016) also discussed the weight of smart city governance dimension and the need for strong infrastructure transformation abilities. Smart cities are proving to be an important phenomenon for urban living, promising better living for citizens; however, different challenges exist that need to be dealt with.

ISM and related organisational factors in smart city organisations
Cyber security is well-researched topic in the literature, in their study, Cavusoglu et al. (2004) concluded that the cost of poor cyber security is high for stakeholders, with the breach impact not limited to a single organisation. They also concluded that the cost of a security breach for an internet only organisation is higher than for regular firms. Andoh-Baidoo and Osei-Bryson (2007) indicated that a security breach could have a negative impact on the organisation’s performance, leading to lower revenues, higher expenses, a decrease in future prospects, in addition to a reduction in market value and investors trust. Goel and Shawky (2009) also investigated the cost of a security breach on an organisation that includes financial loss, client and partner loss, government sanctions, reputational loss and market value. In the context of smart cities, organisations are expected to be highly dependent on digital services and the ICT infrastructure, which, as per Cavusoglu et al. (2004), means that the impact of an information security breach will be larger than on any other type of organisations. The appropriate analysis of factors that impact information security issues in the smart city context requires careful consideration, being critical for the stability and sustainability of smart city organisational performance.

While information security has been justified to be of high importance for the safety of digital services, information security management (ISM) is noted to have an even higher significance in the context of smart cities being a combination of two of the smart city critical dimensions: information security and governance (Meijer and Bolivar 2016;
Sicari et al., 2015). On the other hand, Chourabi et al. (2012) and Whitmore et al. (2015) confirm that little research has been done on smart cities' management and related organisational factors, even though previous research highlighted these as major challenges and success factors that need to be well examined. In addition, a literature assessment by Whitmore et al. (2015) indicated that literature is dominated by technology research, and that advanced technology services are not well represented in the management literature. On the other hand, as smart cities are purposed towards improved growth and development, it is imperative that smart city organisations deliver enhanced performance that matches the smart city objectives (Ahvenniemi et al., 2017; Harrison et al., 2010).

In an organisational environment, organisational performance is one of the most important aspects and is measured by different methods and characteristics. ICT technologies have long been known to have the potential of delivering important improvements in organisational performance (Brynjolfsson and Hitt, 1996; Sircar and Choi, 2007). They are also known to reshape organisational processes, structures, culture and even the job descriptions of employees (Fulford and Doherty, 2003; Markus, 2004). It has also long been identified that the real threat from information security issues lies in their consequential impact on organisational performance, such as reputation, productivity, financial loss or customer loss (Menzies, 1993). Smart cities are mainly composed of different types of organisations that rely a great deal on ICT technologies; smart cities’ development evaluation will then come back to assessing an individual organisation's performance and efficiency.

Information assets protected by ISM represent a class of intangible capital, whose value is not easy to assess (Ittner and Larcker, 2003; Morgan and Strong, 2003). Multiple researchers have combined ISM with organisational performance to best understand its impact on organisational performance (Huang et al., 2006; Hall et al., 2011; Andoh-Baidoo and Osei-Bryson, 2007). The utilisation of the organisational performance angle in the context of this research is optimal to better understand organisational factors that influence ISM in smart city organisations, and therefore advance the aim of this research.

Drawing from the previously highlighted evidence on the importance of ISM in the smart city organisations, the lack of research in this area and the links in between OP and ISM, the aim of this research is to identify the ISM factors that most influence smart city organisational performance goals. It aims to assist towards developing a better understanding of ISM in the smart city organisational environment, whilst relying on research carried out in the ISM field for current and previous organisational environments.

Selecting the ISM organisational factors that most influence the smart city organisation

As organisations drive online services mainstream to become the main enabler for a large share of their businesses, smart cities will have high mandates for reliability and CIA levels. ISM issues are expected to be more significant, leading the way towards the decisions and actions required to protect the smart city and its organisations. Research is needed to better examine ISM in smart cities, to identify factors and aspects that influence ISM in organisations, and how those reflect on performance. This research will be based on a literature analysis, or both “information security management factors in current organisations” and “smart cities organisational factors”. The goal is to select the most influential factors that can impact ISM in the smart city organisations.

The smart city organisation

As one of the smart city stakeholders, organisations are at the core of a city’s operations. They are expected to offer quality living and opportunities for citizens; they are also expected to deliver services that are on the level of the city. Businesses are the main driver of a smart city, and are expected to leverage their infrastructure to offer better services; they
are also affected by the city’s problems (Gann et al., 2011). Businesses require long-term strategic studies and a vision of organisational evolution (Mulligan and Olsson, 2013). Kuk and Janssen (2011) highlight the need for a balanced approach between business models and information infrastructure to achieve short-term business goals without damaging innovation and service sustainability.

Anthopoulos and Fitsilis (2014) concluded that there were five types of organisations in smart city environments: public organisations handling state responsibilities; public-private partnerships where the government assigns the execution of projects to private companies; state-owned enterprises or new organisations that are created to develop or supervise a project; private companies that execute projects; and project companies that include alliances from different organisations to execute a project.

Research also highlights the important role of the citizen in a smart city, acting as the consumer but also using smart city participation utilities to send feedback and advance his quality of living, and acting as a developer of smart city services (Vilajosana et al., 2013; Cardone et al., 2013). While discussing smart city governance, Nam and Pardo (2014) describe the metrics for assessing smart governance initiatives by measuring efficiency, effectiveness, transparency and collaboration. They also categorise the smart governance challenges and opportunities as follows:

- technological factors that are needed to implement smart governance services running through the ICT infrastructure;
- organisational factors that consist of budgetary challenges, employees skills and organisational culture are to be considered to better enhance city efficiency and transparency; and
- cross-organisational challenges that mostly lie in inter-departmental or inter-agency information sharing, requiring a governance body to rule conflicts and control sharing agreements and cross-boundary collaboration.

Interaction with citizens is an important factor of collaboration in smart cities; feedback from the population is essential to best deliver transparent and efficient services.

**Organisational performance**

Organisational performance is a complex multi-dimensional phenomenon; it could be defined by multiple goals such as profit, growth and stakeholders' satisfaction, which are often in conflict with each other (Cameron, 1986; Chakravarthy, 1986; Venkatraman and Ramanujam, 1986). Researchers have proposed different measures of performance and evaluation of results; this has also opened the way to more difficulties, such as dealing with the different priorities that are assigned for organisational goals, and how each organisation could have different priorities. Other difficulties include the need to deal with fluctuating results, and how to define the success or failure of an organisation based on goals and priorities. Organisational performance in the context of complex smart city environments would bring new difficulties for the understanding of services, challenges, priorities and accountability, and in defining the key performance indicators that an organisation needs to attain. To cope with the smart city model, businesses need to adapt (Harrison et al., 2010). ISM inside the smart city organisation therefore needs to be well-developed and maintained to meet maturity levels; failing to achieve this could cause a severe collapse of the organisational performance and therefore impact the success of smart city stakeholders.

**Information security and its management in the smart city**

The smart city will run a highly interconnected infrastructure, which needs to be protected; it is a complex environment of interconnected systems. Threats to the critical infrastructure
could have devastating results on national security, the economy and citizens. Information security and privacy maturity must be taken to new levels before IoT and sensors can be deployed on a larger scale (Sicari et al., 2015; Bekara, 2014; Gubbi et al., 2013; Li et al., 2012; Marias et al., 2011; Kitchin, 2014; Ruiz-Romero et al., 2014; Martinez-Balleste et al., 2013; Elmaghraby and Losavio, 2014).

The management of information security is essential for protecting the interest of shareholders and the business. This relies on information-based services that are widely available today; information security maturity and control is not an investment but a necessity for survival in the modern world. The role of ISM within organisational governance is to define best practices, a means of managing costs efficiently, improve employee behaviour, strengthen business controls and define accountability. Establishing ISM requires the involvement of senior management, sharing of information and visibility on occurrences and incidents is not only important for business success, but also to ensure alignment with business goals; these include the prioritisation of selective security investments that best minimise risks (Williams, 2001; Nam and Pardo, 2014; Herath and Herath, 2009). While smart applications are expected to be widely deployed and reachable in a smart city (Zanella et al., 2014), information security problems are expected to surge (Whitmore et al., 2015), threatening not only the CIA triad of data protection but also the usability of digital services.

The impact of falling to ISM malpractices could have catastrophic results on an organisation’s business. Von Solms and von Solms (2004) detail the impact that ISM could have on the organisational level; this includes resources and financial loss, mis-prioritised investments, a false sense of security, serious accountability on executive management, operational frustration and blame on information security departments for incidents, in addition to the non-compliance of users with the security policy. However, even though smart governance is a major aspect of the city, there is a lack of literature about smart cities that address smart governance issues (Chourabi et al., 2012). The governance of the information security aspects will be highly delicate; the right decisions need to be made to protect not only the businesses, but also the resources and citizens. The lack of development in this area is another indicator of a need for more research and efforts to be exerted.

Literature review on organisational factors and ISM
A review of the literature was conducted to gain more insight into factors that would influence ISM in the context of smart city organisations. The literature clearly highlights the influence of organisational factors on information security’s conduct in organisational environments, and therefore their severe impact on organisational performance. The literature review conducted was systematic and attempted to identify and map most common organisational factors related to ISM inside organisations. Another literature review was then conducted to identify and map the organisational factors that influence smart city organisations. The literature quest was carried out using prevalent sources and an initial search for source identification was conducted in SCOPUS, Science Direct and Google Scholar. The queries that were used contained “smart city” and other research relevant terms (i.e. “information security”, “ISM”, “organisational factors”, “organisational performance”, “smart city”, “smart city organisation”, etc.).

Research scope and limitations
While the literature is well-developed around ISM-related organisational factors in current world organisations, little research has been found in the literature around ISM in smart city organisations or smart city organisational factors. This is a research area that requires more exploration; this is being attempted in this research.
**ISM organisational factors in current organisations**

There is a wide range of organisational factors that impact information security in organisations. These are scattered in the literature and discussed in the context of each research paper. As shown in Table I, the most prevalent and cited organisational factors that impact modern organisations growth and prosperity had visibility over the literature emphasis and identified the most discussed aspects. The citation frequency is the number of scholarly documents in which the organisational factor was found.

**Smart city governance linked organisational factors**

There is a wide range of organisational factors that impact organisations in smart city environments. They are disseminated in the literature and discussed in the context of each research paper.

Table II shows the most prevalent and cited organisational factors that impact the growth of smart city organisations and their prosperity. The aim of the table is to have visibility over the literature emphasis and identify the most discussed aspects.

**Selected organisational factors that are expected to most influence ISM in smart city organisations**

After identifying the organisational factors that influence ISM and smart city organisations, ten factors were selected to be further analysed and investigated. Selected factors are expected to have a high influence on the smart city organisational ISM. The justification of the selection is then further rationalised.

**Leadership attitude.** Multiple researchers highlighted the importance of leadership attitude in smart city organisational environments (AlAwadhi and Scholl, 2013; Nam and Pardo, 2013; Giffinger et al., 2007). Leadership attitude in matters of information security is also noted as an important aspect of organisational performance (Ashenden and Sasse, 2013). Therefore, in an

<table>
<thead>
<tr>
<th>Category/organisational factor</th>
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<tbody>
<tr>
<td>Business IT alignment</td>
<td>Employees engagement</td>
<td>22</td>
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<tr>
<td>Information security leadership issues</td>
<td>Organisational identity of the CISO</td>
<td>1</td>
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<td></td>
<td>Lack of confidence</td>
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<td>Organisational size</td>
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<td>Organisational type of industry</td>
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<td>4</td>
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<tr>
<td>Uncertainty of environmental elements</td>
<td>Rapid change of technology and complexity of such</td>
<td>4</td>
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<td>Competitors’ behaviour</td>
<td>3</td>
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<td></td>
<td>Customer security requirements</td>
<td>1</td>
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<td>Changes in legislation</td>
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<tr>
<td>Organisational support</td>
<td>Top management support</td>
<td>16</td>
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<td>Information security projects financing priority</td>
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<td></td>
<td>Organisational structure effectiveness</td>
<td>10</td>
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<td>Organisational awareness</td>
<td>Staff and management, awareness and training</td>
<td>13</td>
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<tr>
<td></td>
<td>Information security culture</td>
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<td></td>
<td>IT competencies</td>
<td>11</td>
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<td>Security controls’ development</td>
<td>Risk management</td>
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<td></td>
<td>Standards compliance</td>
<td>9</td>
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<tr>
<td></td>
<td>Performance evaluation, controls effectiveness and quality assurance</td>
<td>14</td>
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**Source:** Devised by authors

Table I. ISM organisational factors in current organisations
environment such as smart cities, which rely a great deal on digital infrastructure that is more criticality assigned to information security issues (Sicari et al., 2015; Bekara, 2014; Gubbi et al., 2013), leadership attitude towards ISM is expected to have higher consequences on overall business continuity and growth.

Legislative compliance and government influence. Smart city governments are expected to have high levels of engagement with city components and stakeholders, ensuring that government and citizen data does not get misused. Legislative compliance in matters of information security is then extremely important for the organisations (Backhouse et al., 2006; Chang and Ho, 2006; von Solms, 2005; von Solms and von Solms, 2004). Compliance should have higher priority in the context of smart city environments due to the higher criticality of information security issues (Sicari et al., 2015; Bekara, 2014; Gubbi et al., 2013). Non-compliance with legislation might be the source of great damage to organisational performance and national security (Gubbi et al., 2013; Amin, 2002; Ruiz-Romero et al., 2014; Naphade et al., 2011); this could lead to government sanctions (Goel and Shawky, 2009) and serious accountability for executives (von Solms and von Solms, 2004).

Adaptation to rapid technology development. In fast paced complex environments, such as smart cities, organisational changes need to follow the pace of the environment. It is essential to stay up-to-date with legislative, structural and processes adaptation to rapid technological developments (Zanella et al., 2014; Hernández-Muñoz et al., 2011 Gil-García et al., 2014). ISM is expected to follow the pace of the changes, adapting to new services and features, defending against new types of threats and weaknesses.

Vendor selection and management. Research has discussed the importance of the selection of smart city vendors and their independence (Mulligan and Olsson, 2013; Kitchin, 2014; Hollands, 2008, 2015). This is to protect organisations against monopolies, push for standardisation and protect competitiveness between technology vendors. Managing
information security technology requirements and selection is expected to be more challenging for ISM departments in smart city organisations.

**Human capital.** Human knowledge and skills are major influence factors of advanced environments such as smart cities. Managing the development of human capital inside organisations is of great importance for the protection of an organisation and for maintaining safe production services (Chang et al., 2011; Eloff and Eloff, 2003; Bassellier et al., 2001; Gil-Garcia and Pardo, 2005). Information security aspects are expected to have high importance in smart city environments; citizens’ and workers’ awareness of information security threats and challenges are expected to be different. Smart cities are expected to do their best to attract skilled labour (Caragliu et al., 2011; Hollands, 2008; Toppeta, 2010).

**Better utilisation of the ICT infrastructure.** ICT technologies have long been known to positively impact organisational performance (Brynjolfsson and Hitt, 1996; Sircar and Choi, 2007). They also have a role in reshaping organisational processes, structures and cultures, and even the job descriptions of employees (Fulford and Doherty, 2003; Markus, 2004). As smart city organisations are expected to be highly dependent on the ICT infrastructure (Dameri, 2013), it is anticipated that smart city organisations will research how to benefit more from that infrastructure (Nam and Pardo, 2011; Mulligan and Olsson, 2013; Gil-Garcia and Aldama-Nalda, 2013; Gann et al., 2011). This is not only for better performance and more features but also to protect the information flows and availability, which need to be adapted and controlled adequately.

**Type of organisation and business model.** Developing strategies to protect the information assets in an organisation is the role of the ISM (Williams, 2001; Moulton and Coles, 2003; Zafar and Clark, 2009; Johnston and Hale, 2009); however, the information security role is different from one organisation to another. Smart city organisations are also expected to be different from current organisations (Kuk and Janssen, 2011; Anthopoulos and Fitsilis, 2014), therefore requiring modified strategies towards the protection of their data, services and businesses.

**Bureaucracy.** Excessively complicated procedures inside organisations are the cause of delays, clients’ disappointment and loss of business. In smart city organisations, bureaucracy is anticipated to have a higher impact on the business and its safety (Toppeta, 2010; Nam and Pardo, 2013). Not being able to approve a decision, a change, a test or a budget in a timely manner could be the cause of a breach or loss of competitive edge and reputation; this could then result in the imposition of government sanctions (Goel and Shawky, 2009; von Solms and von Solms, 2004).

**Organisational support.** As organisations in smart cities are anticipated to be more dependent on the digital infrastructure, being a core tool in modern economies (Dutta and Mia, 2010; Audretsch and Welfens, 2013), the overall support of the organisation to the information security department role in the context of smart city organisations is expected to be higher; this is because the department is in charge of protecting the business goals and objectives (Johnston and Hale, 2009; Chang and Ho, 2006; Posthumus and von Solms, 2004).

**Inter- and intra-organisational collaboration.** The collaboration between different departments inside an organisation is essential for achieving its objectives through efficient decision making, conflicts resolution (Silia, 2010), etc. Intra-organisational collaboration is expected to be of higher importance for the development of a smart city organisation, especially in the context of ISM, where innovation and problem solving needs to be delivered quickly (Kitchin, 2014). Therefore, this requires timely decision making and highly efficient communication skills and tools, all prioritisation to be performed by top management. On the other hand, collaboration between organisations is important for sharing experience and learning about new threats and challenges (Bekara, 2014); such collaboration would
also enhance defence capabilities against attackers. In the context of smart city organisations, inter-organisational collaboration is anticipated to be of utmost importance for the overall defence of organisations against new threats and weaknesses (Hawryszkiewycz, 2014). Inter-organisational collaboration is also expected to happen directly between business clients and partners, to secure data communication, share latest threat information and guarantee safe collaboration: this is a mutual benefit.

Conclusions
Analysing the efforts being put into the development of smart city and IoT solutions, a great deal is being done to define technologies and solutions to deal with the ICT infrastructure, to develop services and tools for the businesses and the infrastructure, which will benefit smart city advanced services, performance and sustainability. The lack of security consideration in the development of smart city solutions should not be justified by sustainability and cost effectiveness goals. It will be a root cause for problems that could only cause damage and losses and therefore delay the diffusion of the smart city concept globally. Information security issues will also place more dependence and accountability on robust and wise management of ICT security threats; smart governance will be significant in strategically driving business assurance and security to run over safe environments mitigating the smartness digital downsides.

More research is needed to solve the current issues with information security governance for smart cities; this is in order to best comply with needs and requirements, also helping the control and management of future cyber threats. In this paper we discussed smart city issues related to information security governance, we highlighted the significance of information security and ISM issues for smart city organisations and the lack of research in this area, we also selected the ISM-related organisational factors that are expected to be most influential on the smart city organisational performance.

References


Further reading


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Social entrepreneurship through digital communication in farming

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La Trobe University, Melbourne, Australia

Abstract
Purpose – Despite the interest in non-profit and sustainable ways of connecting farms to society, less is known about how to conduct this through digital technology and communication. Thus, the purpose of this paper is to discuss how to connect farms to society through digital technology and communication.

Design/methodology/approach – In-depth interviews of 15 Australian farmers were conducted in order to understand their perceptions of how to engage in digital forms of social entrepreneurship and thematic analysis techniques were utilized to understand the content from the interview transcripts.

Findings – The findings suggest that digital social farm entrepreneurship can be categorized into social bricoleurs, social constructionists and social engineers.

Research limitations/implications – This typology helps to understand the contextual role farm entrepreneurs play in rural economies and their place in global societies.

Practical implications – Many Australian farms are in remote locations far from urban centers, which makes digital forms of social entrepreneurship an important way that farmers can promote social entrepreneurial ventures.

Originality/value – This paper highlights how there has been a growing interest in developing social entrepreneurship in Australian farms due to their connection with rural communities and environments.

Keywords Ethics, Values, Social responsibility, Entrepreneurship

Paper type Research paper

Introduction
Entrepreneurship is one of the most important parts of farming as it encourages innovation and proactive thinking about future trends. In farming, there are often seasonal and economic changes that make entrepreneurship a necessity. Korsgaard et al. (2015, p. 11) stated “farming is a form of production is prevalent in the countryside for obvious geographic and topographical reasons.” Farm entrepreneurs utilize agriculture as a way to develop creative and/or innovative businesses. This involves the blending of risk taking with agricultural-related business ventures that enables economic activity to develop. Farmers are defined in this paper as “those occupied on a part- or full-time basis and engaged in a range of activities that are primarily dependent on the farm and agriculture in the practice of cultivating the soil, growing crops and raising livestock as the main source of income” (McElwee, 2006). In rural locations, entrepreneurs are an important part of the community and link farms to business development. Bryant (1989) suggested that entrepreneurs in the rural environment are key decision makers as they are embedded in the socio-economic environment. However, despite the importance of farmers in rural economies, more farmers are trying to diversify their businesses away from a reliance on one supplier or type of crop.

The definition of an entrepreneur in agriculture has changed from a reliance on the land to include additional value added services such as tourism. McElwee (2006, p. 191) stated that in the past farm entrepreneurs were “synonymous with being a good craftsman while striving for a high level of production and product quality and making efficient use of inputs (labor, nutrients, crop protection and energy).” This has resulted in a farm entrepreneur being different to a farm manager as they focus on developing innovations for the future success of their business. This is reflected in farmers increasingly using new technologies that enable more efficient production methods and less labor intensive activities.
Entrepreneurial activities in rural areas can have positive spillover effects (Korsgaard et al., 2015). This affects farmers who can utilize rural policies around entrepreneurship to develop their businesses. Anderson et al. (2015, p. 1) stated “rurality offers an interesting dimension because these businesses face the problem of scattered population, distance from customers and suppliers and cost and delays in communication.” This study contextualizes the process of rural entrepreneurship by focusing on the intersection between technology and farm business ventures. Welter (2011) suggested that it is important to contextualize entrepreneurship research because the context helps explain behavior. The importance of entrepreneurship to rural economies is often misunderstood due to negative connotations of the word. This has resulted in there being debates about the merits of entrepreneurship in regional development (Soliva, 2007).

The benefit of digital technologies to rural areas is in the reduction of economic and social inequalities. Current research about farm entrepreneurship offers limited insight into how digital and social business ventures are combined in a rural environment. We argue that research that explicitly discusses digital social farm entrepreneurship will add societal value to the area of rural entrepreneurship.

The structure of this paper is as follows. First, the importance of rural entrepreneurship to society is discussed with a focus on emerging and contextual influences. This leads to the next section on social entrepreneurship that bridges the gap between profit and non-profit motives for farmers in rural economies. The methodology and results are discussed, which lead to the development of a typology for understanding digital forms of social farm entrepreneurship. Finally, suggestions for future research and managerial implications are stated.

**Literature review**

**Digital entrepreneurship**

Nambisan (2017, p. 1029) stated digital entrepreneurship is about the “careful consideration of digital technologies and their unique characteristics in shaping entrepreneurial pursuits.” There is increasing emphasis on digital entrepreneurship due to the role of new digital technologies in business (Nambisan, 2017). Nambisan (2017) suggested that digital technologies in entrepreneurship involve artifacts, platforms and infrastructures. Hull et al. (2007) defined digital entrepreneurship as when material that was physical has been digitized in an organization. Increasingly more organizations are using digital ventures to incorporate information technology. Digitalization can include online marketing, distribution or interactions with consumers (Waker, 2006). Due to the knowledge economy, it is becoming more important for organizations to use digitalization as a business model in order to compete globally (Richter et al., 2015).

Social technologies incorporate digital forms of entrepreneurship through coordinating knowledge and innovation (Segarra-Ona et al., 2017). Nelson and Sampart (2001, p. 31) defined social technology as “how knowledgeable people act and interact where the effective coordination of interaction is key to accomplishment.” In digital entrepreneurship, social technology provides a way to create social value through technological innovation. This is important as more people are using digital forms of communication as part of their daily lives (Waker, 2006).

Digital entrepreneurship is a category of entrepreneurship that incorporates the use of information technology in a business manner. There are increasing digital practices used by entrepreneurs aimed at creating social change (Hafezieh et al., 2011). The digital forms of communication enable the reconfiguration of business ventures through the integration of new organizational structures. Due to the ease of using digital technology, more enterprises are viewing online platforms as a way to improve business performance. The advancement of information and communications technology in society has given rise
to more digital businesses (Cohen et al., 2000). Hafezieh et al. (2011) suggested that digital entrepreneurship enables the carrying out of a business using electronic commerce, the internet and other social media devices. More businesses are using digital entrepreneurship as a way to compete in the global economy (Gerguri-Rashiti et al., 2017).

Digital technology transcends location disadvantages to increase direction communication with customers. This helps businesses to take advantage of direct selling that can increase overall profitability (Koyana and Mason, 2017). Being in physical proximity to other members of a community is no longer needed as it can occur online. Barrett (2015, p. 183) stated that “social rather than physical proximity is sufficient for the kinds of interaction patterns traditionally associated with place.” Thus, digital technology offers opportunity for farmers to create new business ventures that are complementary to the knowledge economy.

**Rural entrepreneurship**

Rural entrepreneurship involves business ventures developed in large open spaces that are part of the natural environment (Kalantaridis and Bika, 2006). Korsgaard et al. (2015, p. 7) stated that rural entrepreneurship involves “the innate (natural, cultural, historical, human, social and/or financial) resources of a place, which the venture needs to support its development.” This means that there is a close relationship between the creation of entrepreneurship and the rural location. The spatial context of being in a rural location influences the entrepreneurship process differently compared to urban areas. This is due to rural locations having unique attributes that enable distinctive business ventures to develop that often highlight the reputation of a region.

The businesses within certain regions often play on the name recognition and agricultural environment. Farmers utilize the place of rural regions to provide a contextualized form of entrepreneurship that emphasizes the natural setting. Korsgaard et al. (2015) suggested that rural entrepreneurship has the benefit of adding value to other types of entrepreneurship because of the emphasis on location. In the past, many rural locations were geographically hard to get to but this has changed with advances in transportation and the use of communication technologies. This has resulted in farmers playing an important role in rural locations as they link employment to agricultural production.

Communities within rural areas are important in facilitating information exchange amongst members. There are intrinsic associations with a place that are more evident in rural communities (Barrett, 2015). In rural settings, communities enable intimate ties that generate strong feelings of attachment to a place (Markey et al., 2010). This is important in rural areas that have shared expectations amongst community members about courses of action. Often rural areas have a sense of community that provides a way for individuals to share their sentiments about the economic and social progress of a region (Barrett, 2015). Farmers are part of rural communities due to their loyalty to a place but also obligations in terms of economic conditions. The functioning of communities in rural areas has changed with the increased usage of information technology such as the internet for social networking. This has meant that there are more virtual online communities that have replaced traditional conceptualizations of a community (Chayko, 2008).

Rural areas enable the use of a location for meaningful pursuits and connection to community life (Korsgaard et al., 2015). Some entrepreneurs move to rural areas due to their advantages in terms of smaller city living and closer social ties to the region. This means some rural entrepreneurs are particularly interested in how they are part of the social embeddedness of a region (Fortunato, 2014). For rural entrepreneurs, this enables new combinations of the utilization of resources that can improve the economic conditions of a region. There are location-specific advantages that depend on geographic position and time elements within rural regions. These location-specific advantages enable the utilization of
cultural amenities for business purposes. The material resources of a region in terms of land and type of agriculture will further enable the development of business activities. Some rural areas are developing more than others due to the increased labor mobility and desire of people to live in rural regions. Rural locations often transform from places of pure agricultural production to mixed usages including creative pursuits aimed at connecting to the social life of a community. Mitchell (2013) discussed how the cultural elements within rural regions are often linked to the historical changes in terms of farming business development. People who set up businesses in rural regions are often interested in pursuing their cultural aspirations without purely thinking about profit motives. This means that rural entrepreneurs engage in resource use within rural locations in a creative manner by building a sense of value from the use of land in rural regions and the engagement of business practices (Williams et al., 2004). There are distinctive opportunities for entrepreneurs to relocate to rural areas to take advantage of the more quality of life concerns.

For rural entrepreneurs to be successful in the long term they need to capitalize on the agricultural potential of rural regions and build up a distinctive product based on the use of local resources. However, the development of rural regions has the potential to exclude some social groups who are less inclined to be involved in business activities. Shucksmith and Chapman (1998) in a study of social exclusion in rural areas found that it was important to encourage the embeddedness of business in local communities. This can be conducted via both personal and digital forms of communication that build a sense of trust in rural economies.

Tontis and Greive (2002) in a study of an Australian rural town found that there is a risk of economic development destroying the cultural heritage of regions. This is due to the increased use of business instead of community interests by rural entrepreneurs. In rural areas, social entrepreneurship provides a way to connect community concerns to business interests. In rural areas, there is often more need to engage in trying to solve inequalities. Social entrepreneurship provides a way to transform society by focusing on finding solutions to community problems.

Social entrepreneurship and innovation
Social entrepreneurship has a way of linking social and environmental resources to economic performance. Farmers are creating socially purposeful digital enterprises that enable the marketing and selling online of socially related products and services. Social innovation is a wide concept that has a range of meanings but is linked to entrepreneurship due to the emphasis on change. At the core of social innovation is the ability to help in a positive way by solving problems that affect a community. The demand for social innovation is growing in society as there is a greater divide between for-profit entities, the community and government services. This has meant that social innovation provides a way to bring together disparate interests to work on finding creative solutions.

There is a need for more innovation particularly around disadvantaged or neglected issues due to the problems increasing in magnitude. Social innovation helps find improvements in the delivery of social services by encouraging the development of entrepreneurial business ventures. Social innovation involves solving problems through new changes in behavior (McKelvey and Zaring, 2007; Mirvis et al., 2017). The advantage of social innovation is that it brings about a way to engage citizens in innovation strategies. In a seminal article by Moulaert et al. (2005), they proposed that social innovation incorporated three major dimensions: satisfaction of unmet human needs, social relation changes and empowerment of society. Thus, particularly in disadvantaged areas, social innovation brings about action that can target particular causes (Abazi-Alili et al., 2016). This is important in rural communities that may have unanswered needs that can be addressed through social innovation. Moreover,
the social innovation literature has to an extent ignored the role of rural communities using digital technology (Van der Have and Rubalcaba, 2016).

Murphy and Coombes (2009, p. 325) stated “social entrepreneurship is an effective mechanism for generating value in societal, economic and environmental forms.” Digital social entrepreneurship can bridge the gap between farmers typically being located in remote locations to sell their products in an online environment that showcases their unique social elements of being on a farm. Social resources such as environmentally friendly farming methods or sustainable tourism are entrepreneurial business ventures that can be marketed online. This helps build social entrepreneurial opportunities for farmers when they are accompanied by a website discussing the social cause.

Social entrepreneurial discoveries are more likely to occur through an emergent nature when opportunity and resources converge (Murphy and Coombes, 2009). For farmers, the linkage between resources and business is important way by which they can discover more entrepreneurial opportunities. For example, farmers can utilize renewable energy such as solar power as a new business venture that is part of their portfolio of business activities. Social entrepreneurship can enhance wealth by creating new or managing existing ventures in an innovative way (Zahra et al., 2009). This is important for farmers who need to diversify their products and services in order to co-create value.

Social entrepreneurship creates both economic and social wealth that enables creative solutions to persistent social problems. This is helpful to farmers who are part of rural societies and can utilize social entrepreneurship as a way of offering solutions to complex issues impacting communities. In this paper, I adapt the definition espoused by Murphy and Coombes (2009, p. 326) of social entrepreneurship as “the creation and undertaking of a venture intended to promote a specific social purpose or cause in the context of mobilization.” This definition is relevant to farm entrepreneurship as social purposes are important to farmers as they usually have a greater connection to a region and community. In addition, the social causes can include the natural environment or disadvantaged groups of society that are part of rural regions. In addition, Santos (2012, p. 335) stated “social entrepreneurs usually starts with small initiatives, they often target problems that have a local expression but global relevance.” Thus, social issues in rural areas affect farmers in different ways compared to urban regions due to their connection with the land and agricultural industry.

Normally social entrepreneurial opportunities come from inefficiencies in the market that require new ways of thinking to solve (Austin et al., 2006). In a farming context, social entrepreneurial ideas include the reduction of pollution from farming machines and the use of land for a communities benefit. They can also include environmental change such as the giving of excess product to non-profits or for other uses. There is also social entrepreneurship derived from technological change such as internet sites for community farming projects. Moreover, increasingly there has been more emphasis on technological change affecting the farming sector, which has influenced the growth of digital forms of social entrepreneurship.

**Methods**

This study took an exploratory approach to understand the role of digital social entrepreneurship amongst farmers. The in-depth semi-structured interviews were conducted with 15 farmers in an Australian rural region. The farmers were identified through purposeful snowball sampling and invited to participate in the interviews. In order to be included in the study, the farmers needed to be actively engaged in their business through direct ties to the agricultural district. In total, 12 of the respondents were men, reflecting the typical gender imbalance in farming communities in terms of management. Two-thirds of the respondents indicated they were actively engaged in establishing entrepreneurial farming ventures. Many of the respondents had taken education courses to learn more about entrepreneurship.
There were 12 open-ended questions included in the interview protocol designed to understand more about the intentions of farmers to utilize digital social entrepreneurship. The questions were designed to understand the motivations and reasons for farmers to engage in digital forms of entrepreneurship. In addition, questions about strategies utilized by farmers in a digital economy were asked in order to understand the environmental context of farming in more detail. The data were collected during face-to-face interviews that typically ranged from 30 minutes to 1 hour in duration. The interview data were transcribed and then analyzed for their content. The data were categorized into specific concepts concerning digital farm and social forms of entrepreneurship. This helped to understand the themes and patterns emerging from the interviews. The responses were grouped together into electronic files then analyzed for patterns emerging from the data. The answers to specific questions were analyzed to see the similarities and differences in response. This process enabled a better understanding about how digital social farm entrepreneurship is perceived and how it affects rural regions.

Results

**Digital entrepreneurship**

Most farmers interviewed expressed the view that it was increasingly important to include more digital forms of communication about their products and services. This was due to the way consumers are demanding more connection and information about where products are made and more personal information about the farms. Participants stated:

- Not many people know how we farm except other farmers. Having an online presence helps us tell the story of who we are. How we live. Our lives. Our family. I think it is helpful in today's economy to connect online. But for us was hard initially to do this. We are still opening up. Online web sites mean we can market new ideas to different people.

- It is difficult to start an online presence. But it must be done if we are to evolve. We sell a lot to Asia but how are they to known about us unless we tell them? I have started to put more information about the farm online. Sometimes we get emails or messages from customers about the farm. It helps connect us to the world.

Much of the discussion in the interviews about digital entrepreneurship on farms involved the farmers talking about how it was initially hard to set up an online presence but was necessary in the global economy. Some farmers discussed the training programs and information the farmers' federation and government bodies were giving them. These training programs involved focusing on how to engage with customers online and develop online business ventures. One participant stated:

- There are a lot of training programs about online sites. In the town I go to learn about how to create online websites. This is useful but hard work. It makes me think of school again. It helps to get the training though. Some set up the websites for me.

**Social entrepreneurship**

There was a fair amount of discussion about the importance of highlighting the social aspects of farm businesses in terms of community engagement, connection to the environment and sustainability. There was a general sentiment amongst the farmers that they could improve the performance of their businesses by highlighting the social aspects as part of them being located in rural areas. As one participant stated:

- We are farmers and that means a connection to the land. The ongoing productivity of our region is linked to the land. We need to protect it but also cherish it. I have been trying to use more socially responsible farming methods depending on finances.
Increasingly, farmers were adding to their existing businesses by developing new ones especially via online portals that emphasized the social aspects. Most farmers thought by stressing the social environment in which their products are made, it would help them to export more products. This is due to the perception of Australian farms as being pollution free and in attractive rural regions, which influences the brand image of their products to international markets. This is stated in the quotes below:

Asia is increasingly our biggest market. But our land is the soul of our production. Many in Asia live in cities and don’t come to farms. Due to issues around pollution it is important to see how clean our land is.

I never thought we could sell products based on my farm. But why not? The land here is beautiful. This can be sold as a story online. The land is the best in the district. It is clean and free of pollution.

Farm entrepreneurship

Most of the participants were new to using digital forms of communication for farm entrepreneurship as they saw it more as a marketing activity. This was reflected in the cultural attitudes toward more traditional forms of communication such as face to face rather than digital forms for selling products and services. Despite this reluctance to come up with new business ideas using online and digital formats there was still a sense of interest in how to bridge the current gaps between business ideas and practicalities. This is evident in the following quotes:

I prefer to talk to people personally. I use digital communication for email and web browsing. But for creating new business ideas. That is harder.

We tend to think of online material as marketing rather than as value creation. I am a bit old fashioned when it comes to using Kickstarter, GoFundMe or crowdfunding. I have donated to other projects but are still yet to come up with my own idea and post it in these forums.

Participants tended to see farm entrepreneurship as being linked to tourism and selling products in a personal way rather than through digital forms of communication. This was reflected in the attitudes of some participants who saw digital communication as being not relevant for farms as there was direct linkage to consumers. However, this attitude was changing amongst some participants particularly lifestyle farmers or those who had worked in other areas before or during the development of their farm business. This was due to some receiving information about new markets and the potential to add value to their existing businesses particularly in terms of exporting products and services to Asia, which was seen as an untapped potential market. This is seen in the following quotes:

We have a lot of Asian tourists coming to the farm. It seems natural that we could use digital technology to communicate with them directly. After the contaminated milk and other food scares they are wanting to know where their products come from. This is good for our farm.

A lot of the products go to Asia. But we have a long term supply agreement that is hard to get out of. Maybe in the future we can sell directly but let’s see. I don’t know. But it could increase our profits. But adding some social cause to our products would sell more products. In my opinion that is. I would have to test it in the market though. Let’s see.

Overall the participants in the interviewees saw digital, social and farm entrepreneurship as being important for the ongoing sustainability and viability of their businesses. However, the way to combine digital social farm entrepreneurship was less understood and needed probing by the interviewer to see how the participants saw the connection. There seemed to be uncertainty about the term “digital entrepreneurship” as many
answered with reference to online communication rather than the creation of businesses. The next section will further discuss the outcomes of the interviews and how the findings link to the literature.

**Discussion**
Digital social farm entrepreneurship is practical and relevant to rural communities due to its ability to utilize technological innovation. The findings of this study highlight the importance of farmers investing more resources into digital entrepreneurship especially those having a social value to rural areas. There is more interest in social innovation due to the decline in public spending and growing disparity between different economic classes of society (Van der Have and Rubalcaba, 2016). The results show that digital communication provides a cost effective way for farmers to disseminate ideas about social ventures. Digital entrepreneurship provides a way to decrease barriers to communication between farmers and consumers. Compared to traditional farm entrepreneurship, which is orientated at innovations in the agricultural industry, the more contemporary digital forms of entrepreneurship enable the recognition of technology as an enabler for societal change. Thus, the results of this study complement research by Carrier et al. (2004) who suggested that the use of digital entrepreneurship is a way to exploit business opportunities using digital spaces. Some farmers will not have easy access to digital resources that are required for social entrepreneurship. However, as expressed in the interviews there are government and non-profit agencies trying to help farmers learn more about digital communication. Some farmers are more technologically literate than urban entrepreneurs and do not need financial help but rather education about ideas around social ventures. This supports the work of Ratten and Dana (2017) who found that farmers are interested in entrepreneurship primarily due to market reasons but also sustainability concerns.

Rural governments concerned about farming can focus on the benefits of digital entrepreneurship in expanding markets and increasing profitability. In rural areas particularly in Australia that are geographically located far from other urban areas, digital communication has provided a way to link farmers directly to consumers. As suggested by Pato and Teixeira (2014) there are many different ways to measure rural entrepreneurship and one of the ways is through communication mechanisms. The increased interest in the origins of food and where it is grown provides a way for farmers to better market their products. Business support agencies need to train farmers about the benefits of digital farm entrepreneurship as a way to connect to the knowledge economy. This can include more educational programs tailored to farmers about how to set up websites, utilize online social networking and engage in online blogs about their products.

Local governments can stress the importance of farmers having online presences as a way to connect to international consumers and potential business partners. However, there needs to be more effective delivery of entrepreneurial policies in rural areas (Stathopoulou et al., 2004). Policy makers can emphasize the role of creating an integrated online marketing communications strategy for farmers engaging in digital entrepreneurship. In addition, farmers that highlight the social or sustainable contributions of their products can further differentiate themselves in the marketplace. Based on the interview findings, a typology of digital farm entrepreneurship based on Zahra et al.’s (2009) typology of social entrepreneurship was developed especially for the rural context. This typology as seen in Table I incorporates the main analysis of the interviews based on different views of how social ventures can be utilized by farm entrepreneurs utilizing digital communication.

**Management implications**
This paper has several implications for the management of digital entrepreneurship in farms and the stakeholders they need to rely on for support. This is due to the increasing
need for farmers to emphasize the social advantages of their businesses due to their rural location. In addition, as discussed in this paper, farmers need to embrace the power of digital communication to set up enterprises that can compete in the global economy. The potential of the large international market should encourage farm entrepreneurs to adopt effective digital strategies to help them establish social ventures. Farm entrepreneurs share many of the same characteristics as urban entrepreneurs including being proactive but need to emphasize their closeness to the rural environment as a way to highlight their social business initiatives. As such, farm entrepreneurs might be more susceptible to establishing social ventures that can be marketed through digital communication mechanisms. It might be helpful for farm entrepreneurs to utilize education and training courses to establish online social ventures. This could help farm entrepreneurs better utilize digital technology that enables them to communicate information about their products to a more global audience.

Future research suggestions

There are some caveats on the findings and analysis of this research. There is the limitation of focusing on one geographic area, which means further research would be useful to support the findings. In addition, the conceptualization of digital entrepreneurship in this research is a limitation that requires future studies to examine to see if it is correct in rural settings. Due to the limited research on digital social entrepreneurship in rural environments, future research may try to examine these relationships in more detail. As digital entrepreneurship is an emerging field, there needs to be more longitudinal analysis on the way farmers are creating social innovations.

This paper highlights the need for farm entrepreneurs to embrace the social elements of the natural environment to establish digital ventures. Given that more farmers are being encouraged to market their businesses as being socially relevant, this paper has advanced our understanding about digital social forms of farm entrepreneurship. Future researchers would benefit from studying how Australian farmers are utilizing their country of origin in establishing new ventures. The “Made in Australia” label has an impact on the quantity of farm goods sold particularly in Asia after recent food contamination scandals.

More research is also needed about what social issues consumers are most interested in terms of farm businesses and how these can be integrated into existing products. This is an interesting research avenue as most research has tended to focus on social entrepreneurship

<table>
<thead>
<tr>
<th>Social bricoleurs</th>
<th>Social constructionists</th>
<th>Social engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Develop portfolio of online linked social ventures that are motivated by problems in rural communities</td>
<td>Build different business models that incorporate social issues communicated via online portals</td>
</tr>
<tr>
<td>Social significance</td>
<td>Enables the use of online technology and the natural environment to address social farm needs</td>
<td>Develops regulations and political systems to harness the use of digital technology for relevant social issues confronted by farmers</td>
</tr>
<tr>
<td>Effect on communities</td>
<td>More locally focused in terms of online communication about farm social ventures</td>
<td>Small to large scale focused on integrating different stakeholders in the development of online social farm ventures</td>
</tr>
</tbody>
</table>

Source: Adapted from Zahra et al. (2009)
Conclusions
This paper has explored digital social farm entrepreneurship as an emerging form of business important for the sustainability of the agricultural industry. The present study argued that Australian farmers need to focus more on ways to embrace digital farm entrepreneurship in order to capture emerging markets especially those in Asia. Digital farm entrepreneurship is a way farmers can capitalize on their culture and region to diversify existing business practices. Thereby, the social part of digital farm entrepreneurship is a way farmers can connect with their communities. This paper discussed how social forms of digital farm entrepreneurship provide a way to contribute to communities. As more global consumers become interested in locally grown and sustainable farming methods, digital social farm entrepreneurship provides a way for farmers to capitalize on these opportunities. This paper has contributed to the development of farm entrepreneurship by focusing on digital and social innovation. It extends the established literature about entrepreneurship in rural areas by delving deeper into areas about social projects that help farming communities. It is hoped that it serves as a prelude to the growing body of research about the need for more digital and social businesses for farm entrepreneurs.

References


Further reading


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