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Abstract

An innovative organisational culture is one in which continuous improvement throughout the organisation is the norm. This is achieved through the generation and implementation of ideas. In other words, innovation is not confined to something that a small minority are charged with doing (e.g. those in R&D), with the results appearing at fixed times.

Literature in the area shows little agreement on the type of organisational culture needed to improve creativity and innovation. Previous research findings are paradoxical in the sense that organisational culture can stimulate or hinder creativity and innovation. Several researchers have worked on identifying values, norms and assumptions considered to be important in promoting and implementing creativity and innovation. However, very few empirical studies involving quantitative research have been carried out to support the findings of researchers.

This paper presents the results from a quantitative study on innovation in SMEs. Data were obtained from a total of 25 respondents to a questionnaire regarding innovation within companies.

The findings deal with issues such as current innovation strategies, product and process innovation, drivers, constraints, and sources of innovation, and the company environment/cultural factors that contribute to innovation within companies.

The paper concludes with a discussion of the salient cultural factors that can contribute to the stimulation of innovation and creativity within organizations. Further expansion of this research is also explored mindful of the constraints of the sample size.

Introduction

In today's business world, successful product or process innovation provides companies with major opportunities and advantages. Successful innovation is increasingly important in the current globally competitive economy. There is a considerable amount of literature on innovation from a variety of disciplines. Furthermore, many research studies have attempted to gather information on different aspects of innovation. Given this body of information, one would expect that most companies could successfully innovate. However, many SMEs have difficulty achieving successful innovation, despite significant investment in research and development (O Regan et al., 2006).

This paper presents the results from a study on innovation in rural SMEs. The purpose of this research was to investigate issues such as current innovation strategies, distinction between product and process innovation, main drivers, constraints, and sources of innovation. The study also investigated the company environment/cultural factors that contribute to innovation within companies, e.g. information sources, role of management/leadership, attitude to success/failure, staff creativity, attitude to risk taking, strategic direction. These, and other factors were examined in the context of Cumming's (1998) three stages of innovation; namely, the creative/invention stage, the development stage, and the application stage. The results provide

an insight into the factors impacting innovation in SMEs and confirm an association between various aspects of organisational culture, commitment to R & D and innovation.

Literature Review

This paper draws from literature on organizational culture, innovation, and innovation culture. General literature on innovation with specific reference to SMEs is also reviewed in this section.

Organizational culture

The empirical work on organisational culture can be traced back to the early work of classical organisation theorists such as Lawrence and Lorsh (1967). Literature on the subject began with writers such as Peters and Waterman (1982) who put forward a theory of excellence, which identified cultural characteristics of successful companies.

Earlier studies such as Kotter and Heskett (1992) produced evidence which highlighted the importance of culture to organisational performance and effectiveness. More recently, Deshpande et al. (1993) linked culture types to innovativeness.

Furthermore, Dennison and Mishra (1995) identified four cultural traits and values that are associated with cultural effectiveness, namely, involvement, consistency, adaptability, and a sense of mission. Denison and Mishra (1995) proposed that for effectiveness, organisations need to reconcile all four of these traits. This focus is consistent with Schein's (1985) observation that culture is developed as an organisation learns to cope with the dual problems of external adaptation and internal integration.

There are few quantitative empirical research studies on the impact of culture on innovation (Ashkanasy et al., 2000). O Regan et al. (2006) focused on organizational culture with specific reference to leadership and innovation. Lau and Ngo (2004) investigated the link between the HR system, organizational culture, and product innovation. Some qualitative work was carried out in the context of innovation within the Biotechnology Industry by Terziovski and Morgan (2006) and the effects of firm's size on innovation was investigated empirically by Mc Adam et al. (2004). This study adds to this growing stream of research by focusing on manufacturing SMEs in a rural setting.

Defining Innovation

Rogers (1995; p.11) defined innovation as 'any idea, practice or object that is perceived to be new by an individual or other unit of adoption'. Innovation involves the adoption of new products and/or processes to increase competitiveness and overall profitability. It involves new ways of identifying the needs of new and existing clients. Innovation is one of the principal challenges to the management of SMEs.

Innovation represents an orientation fundamentally different from traditional financial or market-based outcomes of a firm. Muffatto (1998) suggested that in the innovation process, the creation of an innovative climate and related professional knowledge and capabilities are needed to support innovation activities. Hence, there is a need to change organisational arrangement and culture in order to foster innovation. This argument is in line with human capital theory used to explain an organisation's competitiveness in innovation outcomes (Chan et al., 2004).

Hitt et al. (2001) stated that innovation is critical to enable SMEs to compete in domestic and global markets. The importance of innovation for SMEs and start-up firms was highlighted by Lee et al. (2001) who argued that due to resource shortcomings, scale diseconomies, and questionable reputation, innovation is a key competitive advantage for SMEs as it depends on

quality and quantity of R & D personnel and the complex social relationship. All of these are difficult to mimic.

Innovation is increasingly seen as a contributory factor to higher performance in a growing number of industries (Zahra et al., 1999) and in particular, strengthening the firm's competitive advantage (Mone et al., 1998). Yet earlier literature indicated that many firms believed their existing ways and processes were sufficient for the preceding decade (Utterback, 1994).

SMEs are renowned for their creativity and new product development. This applies in particular to SMEs that have the ability to innovate effectively and develop new products more rapidly than larger firms (Vossen, 1998). Indeed, Harrison and Watson (1998) contended that there was little doubt that SMEs were capable of effective innovation. However, many SMEs still fail to see the opportunities and advantages that are open to them, such as the flexibility of customising products to the requirements of the consumer, an advantage adopted by larger firms (O Regan et al. 2006).

Innovation is holistic in nature. It covers the entire range of activities necessary to provide value to customers and a satisfactory return to the business. As Buckler (1997; p45) suggested, innovation "is an environment, a culture - almost spiritual force - that exists in a company" and drives value creation. Cumming (1998) highlighted that many studies have been conducted on the important elements required to achieve the successful application of a new idea, but in general all relate to three basic steps to be considered:

(1) idea generation (creativity);
(2) the successful development of that idea into a useable concept ;
(3) the successful application of that concept.

These stages will be revisited later in the findings section of this paper.

Innovation Culture

An innovation-oriented culture may be initially defined as the need for the maximum number of innovative ideas to appear within a certain period. (Fons-Boronat, 1992). A more precise definition was proposed by AECA (1995) and refers to an innovative culture as a way of thinking and behaving that creates, develops, and establishes values and attitudes within a firm, which may in turn raise, accept, and support ideas and changes involving an improvement in the functioning and efficiency of the firm, even though such changes may mean a conflict with conventional and traditional behavior. For innovative culture to succeed, certain requirements must be met involving four kinds of attitudes: corporate management is willing to take risks, the participation of all members of the firm is requested, creativity is stimulated, and there is shared responsibility. Deshpande, Fancy and Webster (1993) pointed out that without a strong, shared culture which is clearly innovation-oriented, a firm can hardly be competitive due to innovative development.

A similar view was that of Canalejo (1995) who considered that an innovation-based organisational culture must possess the following values: client-orientation, commitment towards objectives, challenge and initiative, exemplary behaviour, team work and permanent improvement.

Link between creativity and innovation with organisational culture

Organisational culture seems to be a critical factor in the success of any organization (Martins and Terblanche, 2003). Successful organisations have the capacity to absorb innovation into the organisational culture and management processes (Tushman and O'Reilly, 1997). Organisational

culture was believed by Tushman and O'Reilly (1997) to lie at the heart of organisation innovation.

Organisational culture affects the extent to which creative solutions are encouraged, supported and implemented. A culture supportive of creativity encourages innovative ways of representing problems and finding solutions (Martins and Terblanche, 2003). Creativity is regarded as both desirable and normal and innovators are favoured as models to be emulated (Lock and Kirkpatrick, 1995).

Against the background of the systems approach which sees organisations as open systems consisting of different sub-systems interacting with one another, Martins and Terblanche (2003) explained the relationship between organisational culture, creativity and innovation as follows:

- External environment (e.g. economy and competitiveness encourage continual changes in products, technology and customer preferences) (Tesluk et al., 1997).
- Reaction to critical incidents outside and within the organisation, which is reflected in the strategy (e.g. innovation strategy) of the organisation (Tesluk et al., 1997).
- Managers' values and beliefs (e.g. free exchange of information, open questioning, support for change, and diversity of beliefs) (Tesluk et al., 1997).
- The structure of the organisation, which in turn allows management to reach organisational goals (e.g. flexible structure characterised by decentralisation, shared decision making, low to moderate use of formal rules and regulations, broadly defined job responsibilities and flexible authority structure with fewer levels in the hierarchy) (Hellriegel et al., 1998).
- Technology, which includes knowledge of individuals and availability of facilities (e.g. computers, Internet) to support the creative and innovative process (Shattow, 1996).

According to the literature there is some broad agreement on the type of organisational culture needed to improve creativity and innovation. However, there is a subtle balance required as there also seems to be a paradox in the sense that organisational culture can stimulate or hinder creativity and innovation (Tushman and O'Reilly, 1997). Researchers such as (Martins and Terblanche 2003) have worked on identifying values, norms, and assumptions involved in promoting and implementing creativity and innovation. The current study aims to expand on this work within an Irish SME context.

Methodology

Data were collected by means of 'face-to-face' administered questionnaires and semi-structured interviews with senior management. All respondents were involved in the decision making process within their SME.

The sampling frame for this research was derived by combining company listings from relevant semi-state agencies. A sample of 25 manufacturing SMEs (companies with 10 to 249 employees) was randomly selected. The manufacturing sector was considered capable of providing greater scope for measuring innovation issues. The sample included a range of manufacturers, from food and beverages to wood and furniture.

Research findings

The research findings are presented in the following six sections: sample profile, markets and customers served, number of new products or services, general organisational culture, specific organisational culture regarding innovation, and the relationship between organisational culture factors and successful innovation.

Sample Profile

A broad range of manufacturing enterprises were included in the sample. Food products and beverages accounted for a quarter of the sample (n = 6) with textile manufacturing the next most frequent (n = 4), followed by manufacturing machinery and equipment (n = 3) and manufacturing medical and optical (n = 3). Companies manufacturing electrical, non-metallic minerals, wood and furniture, chemicals and fabricated metal were also sampled.

Almost half the sample companies had between 10 to 49 full-time employees. Three-quarters of the sample companies were in operation for 10 or more years.

Nineteen companies answered the question on turnover and reported robust figures. The minimum reported turnover was €1million. Furthermore, these nineteen companies expected their turnover to increase year-on-year for the next three years The remaining six companies refused to disclose their turnover figures. A number of different sources of capital funding were listed but the majority of companies(n=17) indicated their sources were internal.

Markets and customers served.

Respondents were allowed to make multiple responses with regard to the markets and customers they served. Almost 90% of the sample (n = 22) served the domestic market. The next most frequent responses were UK (n = 17), European (n = 14), North American (n = 8) and Australasian (n = 5) markets were also served. Nineteen companies (76% of the sample) served Business to Business customers and the remainder served a combination of Business to Business and Business to Customer customers.

New products or services launched in the past five years

Successful innovation is highly dependant on external factors such as the nature of the market, industry sector, competitive behaviour. A particular focus of the current research was to investigate a possible link between new products and services and certain internal factors such as organisational culture. In the current study, innovation was measured by asking respondents how many new products or services their company had launched in the past five years. The measure was reliant on the respondents self report. The results are categorised in Table 1.

Table 1. New Products or Services Launched

New products or services launched past five years	Frequency
0	4
1 to 9	9
10 to 49	5
50 to 99	4
100+	3
Total	**25**

General organisational culture

The general organisational culture factors measured in relation to innovation were the existence and familiarity with a company mission statement and various research and development (R&D) aspects of the company.

Mission statement.

One of the findings from the literature was that correctly formulated corporate philosophies and mission statements can have a positive impact on the organisation. Martins and Terblanche (2003) included vision and mission as a strategic determinant of organisational culture that influenced innovation. In the current study, nineteen companies reported they had a mission statement.

The extent of their employees familiarity with the mission statement was then probed. Of the nineteen companies who had a mission statement, approximately one-third of these did not have all their employees familiar with it. This finding suggests that even when companies subscribe to the philosophy of a mission statement it does not necessarily receive the required follow through. Therefore, the benefits of such a statement, in terms of driving the organisation forward, may be lost.

Having a clear corporate philosophy enables individuals to co-ordinate their activities to achieve common purposes, even in the absence of direction from their managers (Ouchi, 1983). One effect of corporate statements is their influence in creating a strong culture capable of appropriately guiding behaviours and actions.

Despite these concerns, Ledford et al. (1995) suggested that if correctly formulated and expressed, philosophy statements can guide behaviours and decision making, express organisational culture, and contribute to organisational performance by motivating employees or inspiring feelings of commitment (Lock and Kirkpatrick, 1995).

Research and Development (R&D).

The organisational culture with respect to research and development (R&D) was believed by the authors to be very important in relation to innovation. R&D in relation to innovation has also been identified in the literature (Lee et al., 2001). Three aspects of R&D were measured in the current study: number of employees in R&D, who was responsible for R&D within the company, and finally, the company's commitment to R&D. It was found that 60% of the sample (n = 15) did not have any specific R&D employees and the maximum number of R&D employees in any sample company was seven. The fact that such a high number of companies did not have any specific R&D employees would indicate that this function may be carried out within companies but subsumed within other departments/roles and/or on an ad-hoc basis.

Respondents were also questioned on who was responsible for R&D within companies. A number of specific functions were mentioned but these could be generally classified under managing directors, directors, and management.

Respondents were asked to rate their company's commitment to R&D on a five point scale ranging from very low to very high. It was hoped to examine the relationship between number of employees in R&D and the amount of new products or services launched by the company in the past five years. However as only ten of the companies had specific R&D employees, this analysis was not carried out.

The rating of the company's commitment to R&D was correlated with the number of new products or services launched by the company in the past five years. A significant positive correlation was found between the two variables, ($r = 0.469$, $p < .05$). This result indicates that there is a positive relationship between the company's commitment to R&D and the number of new products and services launched.

Specific organisational culture factors regarding innovation

The specific aspects of organisational culture examined in relation to innovation were: company's innovation strategy, type of innovation engaged in, drivers and constraints of innovation.

Company innovation strategy.

Respondents were asked whether their company's innovation strategy was proactive, reactive, pre-emptive or any combination of same. The most common strategy was proactive ($n = 15$), followed by reactive ($n = 7$). Two companies used both strategies while one company used all three strategies (Proactive, Reactive and Pre-emptive).

An innovation strategy is a strategy that promotes the development and implementation of new products and services (Robbins, 1997). Covey (1993) claimed that the origin of creativity and innovation lay in a shared vision and mission, which are focused on the future. Judge et al. (1997) described successful innovation as chaos within guidelines; in other words top management prescribes a set of strategic goals, but allows personnel great freedom within the context of the goals. Organisational goals and objectives reflect the priorities and values of organisations and as a result may promote or hinder innovation (Arad et al., 1997).

Innovation type.

Respondents were asked to indicate the type of innovation their company engaged in. For the purposes of the current study, product innovation is production of a new product on a commercial basis and process innovation is the establishment of new methods of production (for a product and/or a service), supply and distribution, introduction of changes in work organisation, management and the working conditions and skills. The majority of respondents ($n = 16$) engaged in product innovation. The next most frequent response was a combination of both product and process innovation ($n = 6$) and three companies engaged in process innovation only.

Training on innovation

Another important aspect of innovation is the investment in training. Respondents were asked if they invested resources to train staff or management to adopt and manage innovation within the company. Sixteen companies did invest resources while the remaining nine did not.

In analyzing the alignment of different operations in a technology firm to improve innovation performance, Leede, Looise, and Alders (2002) found that high-performing organizations spend more time on education and training—not just on technical, task-related skills, but also on communication and team skills. In the implementation of innovation, firms have to create an organizational climate that fosters innovation by ensuring employee skills, providing incentives,

and removing obstacles (Klein and Sorra, 1996). Furthermore, having an innovation budget is one of the factors that distinguishes innovative firms from their less innovative counterparts (Souitaris, 2002).

Innovation drivers.

The drivers of innovation within the company were then investigated. Some categories were prompted to respondents and any open-ended responses were probed. Multiple responses were possible. The biggest drivers of innovation were the market (n = 22) and customers (n = 20). Company culture (n = 9) and technical developments (n = 9) were believed to drive innovation to a lesser extent. Employees, suppliers, legislation, and finance were all mentioned as innovation drivers.

In a review of current research on the determinants of innovation, Read (2000) found that the most important determinant identified was management support for innovation and an innovative culture. This was followed by customer/market focus and communication/networking. Other drivers that featured in Read's (2000) review were human resource innovation strategies, team emphasis, and knowledge management.

The basis of innovation is knowledge, and innovation is realized through the ability to use knowledge to identify and pursue opportunities. This notion is supported by Day (1994), who suggested that a market orientation is the basis of innovation. This market-oriented culture is evident in the organization's ability to equip employees with the necessary innovation-related behaviors to support ideation and engagement (Dobni, 2006).

Innovation constraints.

Respondents were asked to consider the constraints of innovation in their company. Again, some response categories were prompted, any open-ended responses were probed and multiple responses were possible. Financial constraints (n = 8), market size (n = 8) and customers (n = 7) were mentioned as the most restrictive obstacles to innovation. These were followed closely by management risk-taking (n = 6), technical (n = 6) and legislative constraints (n = 6). Financial constraints may always play a part in innovation, but in the current study only five (20%) of the companies mentioned grants as a source of capital funding.

In a similar vein, Loewe and Dominiquini (2006) listed the major obstacles to innovation as follows: Short-term focus, lack of time, resources or staff, leadership expects payoff sooner than is realistic, management incentives are not structured to reward innovation, lack of a systematic innovation process, and belief that innovation is inherently risky.

Mc Adam et al. (2004) in a study of SMEs in Northern Ireland found that the barriers or weaknesses were culturally based issues that required substantial effort and time to overcome. Mc Adam et al. (2004) stated that there is a need for SMEs to take a long-term strategic approach to innovation rather than a short-term quick fix initiative.

Sources of innovative ideas

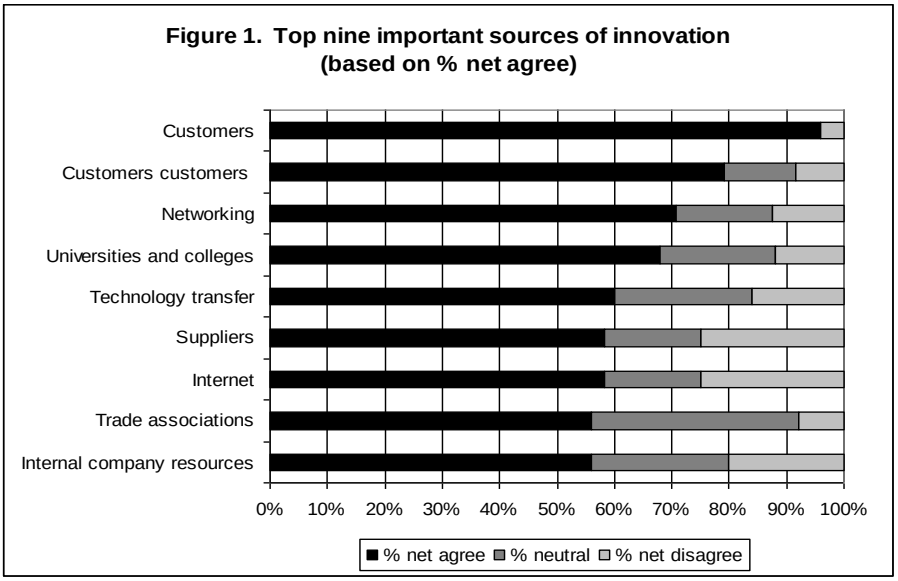
Respondents were asked from whom or where they sourced ideas for innovation. This was an open-ended question where the interviewer probed for clarification where necessary. It was found that innovative ideas came from a range of internal and external sources. This is

interesting as customers, suppliers and knowledge/education institutes are generally found to be significant sources for innovation in SMEs (Appiah-Adu and Singh, 1998). However the top sources for innovative ideas volunteered by the respondents were management (n = 8), the managing director (n = 4) and customers (n = 4). Other sources were designers, sales, marketing, research, suppliers, competitors, trade shows and seminars.

Sources of innovation

The last section of the questionnaire contained two questions, each comprised of a series of statements relating to innovation. The first question contained 18 statements relating to important sources of innovation. Respondents rated each statement on a five-point scale as to the degree to which they agreed each was an important source of innovation. The scale ranged from strongly disagree (1) to strongly agree (5). A broad range of sources was provided e.g. exhibitions, internet, customers, technical literature, suppliers, etc. The data was recoded into net agree (strongly agree, agree), neutral, and net disagree (disagree, strongly disagree) for analysis purposes. The top nine statements sorted by the percentage net agree are shown in Fig 1. Customers, customers' customers and networking were the top three important sources. This is consistent with previous findings identified in the literature (Appiah-Adu and Singh, 1998).

Figure 1. Top nine important sources of innovation.



With regard to networking, Mc Adam et al. (2004) recommended that there should be much more use of cluster networks and university-SME links (e.g. science parks) to develop and spread innovative practice, thus overcoming the limited resources and knowledge of the individual SME. Buhalis and Main (1998) referred to these actions as increasing the "interconnectivity" of SMEs to overcome the effects of being situated in a peripheral region such as Ireland. However, Gomez Arias (1995) cautioned that networks can simultaneously promote and block innovation in partner companies.

The relationship between organisational culture factors and successful innovation.

Based on a review of the innovation literature, Cummings (1998) identified a number of variables that have a positive effect on innovation. The current study adapted these variables into a series of statements, which, respondents rated on the degree they considered each would contribute to the successful launch of a new product or service. Ratings were on a five-point scale ranging from very low (1) to very high (5). Ultimately the authors' aim is to develop a measurement scale of company culture positively impacting on innovation. This final question was an initial step in that direction, was purely exploratory, and the results are reported here in that context only.

After an examination of the initial correlation analysis (Pearson and partial), 20 statements were included in the factor analysis - Principal Components Analysis (PCA), varimax rotation. Three statements had missing data from one or two respondents and in those cases mean substitution was used. Initial statistics from PCA produced a measure of sampling adequacy (KMO MSA) = 0.474 and Bartlett's Test of Sphericity = 231.593, $p < .001$. Four, five, and six factor solutions were obtained as the authors believed that this would be the optimum range to conceptually represent the statements. A cut-off loading of 0.50 was used to screen out statements which were weak indicators. The five factor model was determined to be the best in terms of representing the dimensions of the statements. Eighteen statements loaded on the five factors and these are shown in Table 2. All statements had communalities => 0.50 except 'diverse information sources are used' = 0.38. However, it was decided to retain this statement as it fitted well with the other two items in the factor. Summated scales were then constructed for each of the factors and the internal consistency of statements corresponding to each factor was analysed (see Table 2).

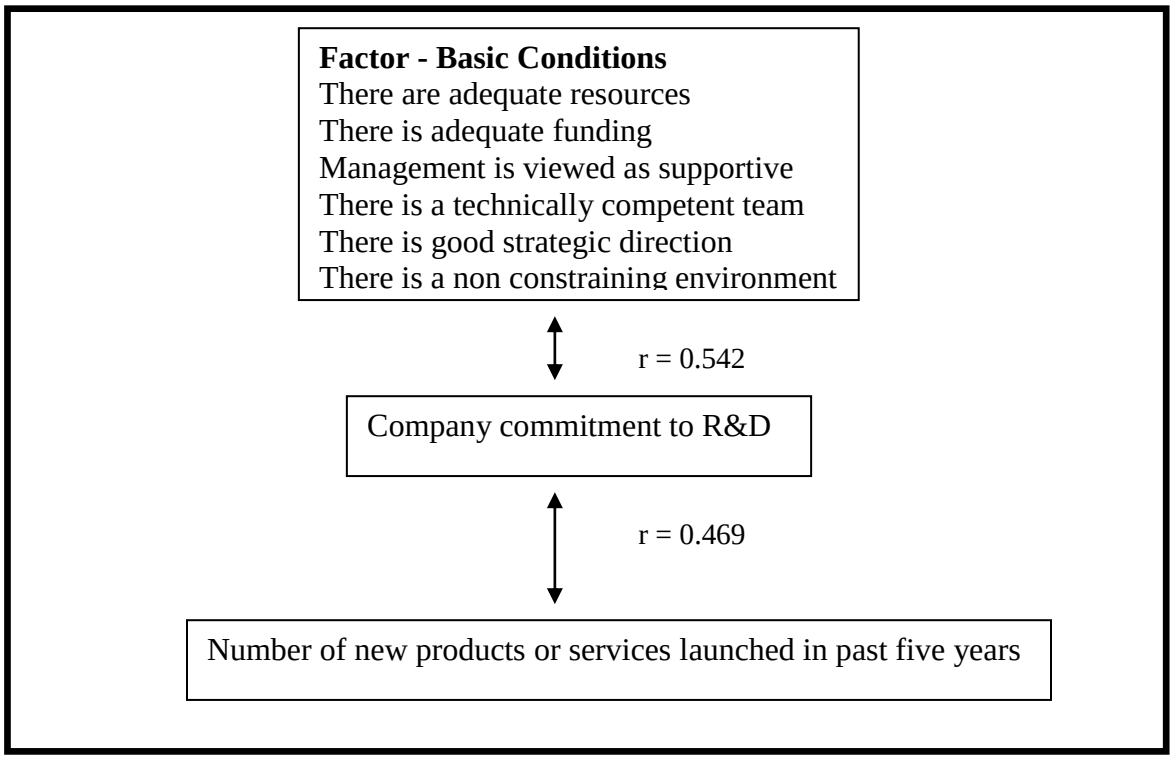
Table 2. Five factor solution: statements, loadings and Cronbach's Alpha.

Factor	Statement	Factor Loading	Cronbach's Alpha
Basic Conditions	There are adequate resources	.852	
	There is adequate funding	.798	
	Management is viewed as supportive	.751	
	There is a technically competent team	.743	
	There is good strategic direction	.684	
	There is a non constraining environment	.635	$\alpha = 0.868$
Open Communication	Staff have diverse interests	.888	
	Brainstorming is encouraged	.700	
	There is access to external stimuli	.689	$\alpha = 0.740$

Entrepreneur	Failures are willingly tolerated	.798	
	Risk taking is encouraged	.784	
	Staff have freedom to pursue own ideas	.740	$\alpha = 0.723$
Organisational Empowerment	There is a challenging environment	.752	
	Non conformity is tolerated	.711	
	Diverse information sources are used	.574	$\alpha = 0.562$
Procedures	Patent programmes are in operation	.804	
	Suggestion programmes are in operation	.705	
	There is adequate manpower	.648	$\alpha = 0.665$

These five factors were then correlated with the number of new products or services launched in the past five years and the degree of commitment to R&D. No statistically significant relationship was found between any of the five factors and the number of new products or services launched. A statistically significant relationship was found between the Basic Conditions factor and the degree of commitment to R&D, $r = 0.542$, $p < .01$. No other statistically significant relationships were found between the remaining four factors and the degree of commitment to R&D. These relationships are displayed in Fig.2.

Figure 2. Relationship between organizational culture factors and reported successful innovation in past five years.



Therefore, there is a positive relationship between the basic conditions (for innovation) in terms of organizational culture and companies' commitment to R & D A statistically significant relationship was found between the company's commitment to R&D and the number of new products or services launched in the past five years. This is in contrast to O Regan et al.'s (2006) study, who found that empowerment culture, transformational and human resources leadership, and the staff creativity characteristic of strategy are associated with successful innovation to a significant extent.

With regard to management style, Delbecq and Mills (1985) argued that if decisions regarding innovation are left to a single executive, power and personality can be strong determinants in the allocation of resources to support innovation rather than the feasibility of the proposal. However, Laursen and Foss (2003) observed that relatively little attention has been paid in the literature to management practices and how they affect innovation performance.

Terziovski and Morgan (2006) argued that if managers are to become more effective and focus on a faster time to market, there is a need to change from traditional management approaches that focus on processes, R&D, cost savings and stand-alone improvements to an approach that places a strong emphasis on the value of knowledge and innovation. This approach fosters faster new product development and increased cost effectiveness particularly if management practices are strategically aligned with the corporate objectives.

Baptista and Swann (1998) also found that organisations that had 'seamless' interfaces between functions are likely to perform better than organisations which had functions which were managed as separate and discrete entities with their independent supporting mechanisms.

On the management of innovation, Pavitt (1999) argued that as products and firms are incorporating an increasing range of technologies, a more precise and practical understanding of both the firm-specific 'routines' associated with innovation, and the factors determining what might be called the 'knowledge boundaries' of the firm is called for.

In SMEs the owner/entrepreneur has a larger direct influence on employees, as compared to managers of large organizations (Bodewes and de Jong, 2003). Leaders in small firms can successfully instil an "entrepreneurial dynamism" in the behaviour of others in their organizations. A positive attitude towards innovation correlates with continual attention being paid to innovative opportunities and it provides employees with support for their innovative behaviour. This, in turn, strongly affects the decision to innovate and the ways that innovation is carried out in small firms (Hoffman et al., 1998).

Conclusion

From the data available, some salient points emerge from the innovative actions of these companies in this region:

- Companies have a strong reliance on their own internal funding for innovation and R&D.
- The majority of companies had a mission statement, however, only a third of these stated that their employees were familiar with the exact content of this statements.
- Over half of the companies did not have any specific R&D employees and this would indicate that this function may be carried out within other departments/roles, and/or on an ad-hoc basis.
- A significant correlation was found between a company's commitment to R&D and the number of new products and services launched.
- Over half of the companies consider their innovation strategy to be proactive and are involved in product innovation.
- Over half the respondents invested in training for innovation and R&D.
- The biggest drivers of innovation were the market and customers
- Financial constraints, market size, and customers proved the most restrictive factors on innovation
- Innovative ideas came from a range of internal and external sources, and the top two sources mentioned were management and the managing director.
- Customers, customers' customers and networking were the top three important sources of innovation.
- There is a relationship between the following elements of culture factors and companies commitment to R&D: adequate resources, adequate funding, supportive management, technically competent team, good strategic direction, and a non constraining environment.

This study provided two levels of information. Firstly, a snapshot of organizational culture factors and innovation within SMEs in this region. A number of the findings were consistent with previous studies, e.g. drivers and constraints of innovation. Other findings gave an insight

as to how certain key elements of innovation actually operate within SMEs, e.g. sources of ideas for innovation and the lack of specific R&D employees. Secondly, the study has gone someway to identify the management perspective as to what organizational culture determinants impact on innovation within SMEs in this region. The latter finding must be treated with a certain element of caution due to the sample size, and further research is necessary to both validate the current results and provide a better understanding of the relationship between management thinking and innovation.

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