

Innovation Potential in Small and Medium Enterprises in the Cordillera Administrative Region

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Abstract

The general aim of this study is to find out and explain the innovation potential among small and medium enterprises (SMEs) in the Philippines, with particular focus on the Cordillera Administrative Region (CAR). The study has three specific objectives: first, to establish specific groups of entrepreneurs and find the impact of environment, enterprise, and entrepreneur on the strategic behaviour of the SMEs' owners; second, to make the relationship between the above three elements and the firm's performance; and, third, to find out additional significant factors contributing to the differentiation of SMEs. The target was a group of 350 Filipino entrepreneurs who employ less than fifty people, and therefore regarded as owners of small or medium enterprises (Donckels & Mok, 1990). To achieve the aim, face-to-face interviews with managers/owners of the SMEs were carried out in the Northern Philippines. The questionnaire was based on the 7Ss framework (Peters & Waterman, 1982), and an approach of Loudon and Della Bitta (1993). Data evaluation by principal component, cluster, discriminant, and regression analyses, as well as cross-tabulation, was made. Results show that there are three groups of entrepreneurs. The first group is called 'Slightly Negative Innovators' and the third 'Strong Negative Innovators.' Both groups need to undergo an extensive training in managerial skills to develop ability to cooperate and innovate. The second group is labelled 'Very Positive Innovators' and represents most dynamic entrepreneurs who focus on new products and suppliers, thus having the strongest marketing strategies.

Keywords: *innovation potential, SMEs, Cordillera Administrative Region, consumer segmentation*

INTRODUCTION

An ability to develop and introduce new products is a fundamental condition for companies to hold their positions in intensified market competition. *New product innovation* is conducted for a number of reasons such as: to stabilise sales, to contribute to company's growth, or to reduce risk through diversification. True innovation and creativity drive competition, which in turn contributes to the growth of income and economy. Creativity together with comparative advantage thinking, unique local knowledge, and increased voluntary exchange are the key elements of entrepreneurial culture (Urban & Hauser, 1993). Such culture is specific to small and medium enterprises (SMEs) that are focused on relationships and learning. The entrepreneurial firm is aggressive and innovative, continually searching for risky environments, but also careful to remain in market niches or environments that are both dynamic and simple (Mintzberg, 1983).

The importance of the study of SMEs is related to five *potential roles* they fulfil. First, they create jobs. Second, they provide opportunities for people who are economically vulnerable (e.g. women, ethnic minorities, people with handicaps, etc.). Third, SMEs are frequently considered to be dynamic, innovative, and more adaptable to changing economic conditions. Fourth, small firms are regarded as a means of achieving sustainable economic growth in a local economy. Fifth, SMEs may limit the ability of larger firms to monopolize and charge excessive prices (McDonagh & Commins, 1999b).

The focus of the current study is on the Filipino *SMEs* and the goal is to see possible barriers to innovation in the current conditions. Such barriers are investigated through two kinds of capabilities. On the one hand, the extrinsic capability to innovate is related to environment. On the other hand, the intrinsic capability to innovate is influenced by the entrepreneur and the way s/he organised his/her enterprise. The question is what structural (the enterprise's organisation and interaction with the environment) and behavioural (the entrepreneur's values, attitudes, perceptions and strategies) factors determine innovation and how these can improve the firm's performance (Diederer *et al.*, 2000).

This study has three main objectives: first, to establish specific groups of entrepreneurs and find the impact of environment, enterprise, and entrepreneur on the strategic behaviour of the SMEs' owners; second, to make the relationship between the above three elements and the firm's performance; and, third, to find out additional significant factors contributing to the differentiation of SMEs.

RESEARCH FRAMEWORK

Successful enterprises develop a special organisational *culture* and *climate*. The company's culture is defined as 'the values, norms, beliefs and assumptions embraced by members,' while the company's climate reflects 'the feelings, attitudes and behavioural tendencies, which may be measured through the perceptions of its members (Nyström, 1990). *Innovation* can only take place in the appropriate culture and climate of an organisation, where the multifunctional and disciplined management process occurs (Kuczarski, 1988). Porter (1990) considers the innovative process as central for upgrading competitiveness. In his view, external environmental conditions can stimulate innovation; moreover, he discovered that successful companies are often clustered in limited geographical areas, called industrial districts. Also, internal elements, such as 'the role of the cross-functional new product development teams, are viewed as vehicle for integration and successful innovation' (Grant, 1995). The winners are those who 'have learned to combine the push of new technology from their R&D operations with the demand pull from the consumer, and developed the culture and leadership values that support continuous creativity' (Hoban, 1998).

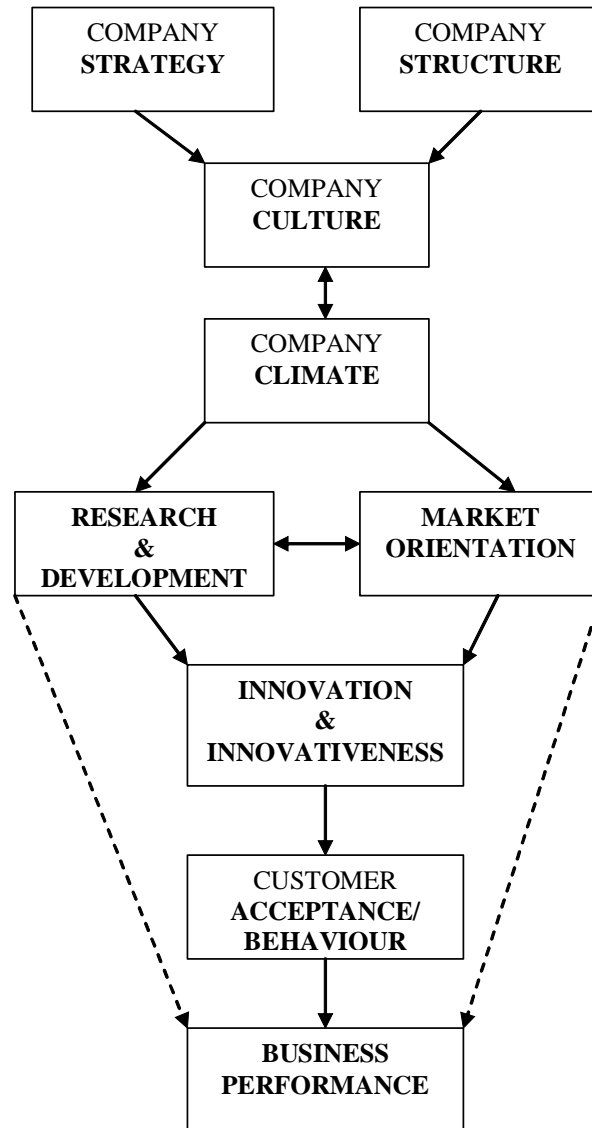
At the SME level, innovation depends on a culture and climate that is mostly influenced by the *entrepreneurial spirit* of the manager/owner. Entrepreneurship is seen as 'the visualisation and realisation of new ideas,' while creativity is 'the intellectual unfolding and converging of experience' (Nyström, 1990). There is a wide body of literature indicating the characteristics of the entrepreneur. In general, such a person has 'a special way of thinking, learning, and behaving that links knowledge with actions, which create new ventures or turns tired firms into vibrant companies' (cf. Caslin, 2000). The entrepreneur is a visionary activist, sometimes called 'an agent of change,' who has a crucial role in the creative destruction, transformation or renewal of

his/her company (Nyström, 1990). Specifically, the entrepreneur sets clear goals, has a high amount of personal energy and drive, a high level of self-confidence, attaches a special meaning to money, prefers moderate risk, and desires to solve problems (Gaedeke & Tootelian, 1980).

During the early stages of the *creative process*, the entrepreneur increases business risk through an active search for new opportunities, experiments and rethinking of all alternatives. His/her level of ambiguity tolerance in such situations is very high. In the later stages of the process, s/he is active, focused and directed towards explicit solutions that lead directly to innovation. The key is the feeling of the entrepreneur that success is the result of blending business analysis and knowledge with intuition and creativity (Kuczmariski, 1988) and knowledge that innovation is an active creation of the future. Nyström (1990) concluded that entrepreneurship is a balancing act between strong risk creation and strong risk elimination.

Figure 1 shows a general *framework* for studying innovation potential at the company level. Both the company's strategy and structure influence the formation of the company's culture and climate. This has an impact on the style of R&D and marketing departments that start to cooperate between themselves. Innovation and innovativeness are regarded as an outcome of this cooperation and lead to better consumer acceptance and improved business performance (Nyström, 1990; Trail & Grunert, 1997). It is suggested that the framework can be operationalised through analysis of external and internal factors that have an impact on the entrepreneur's creative process.

Figure 1. Framework for Studying Innovation Potential in the Company

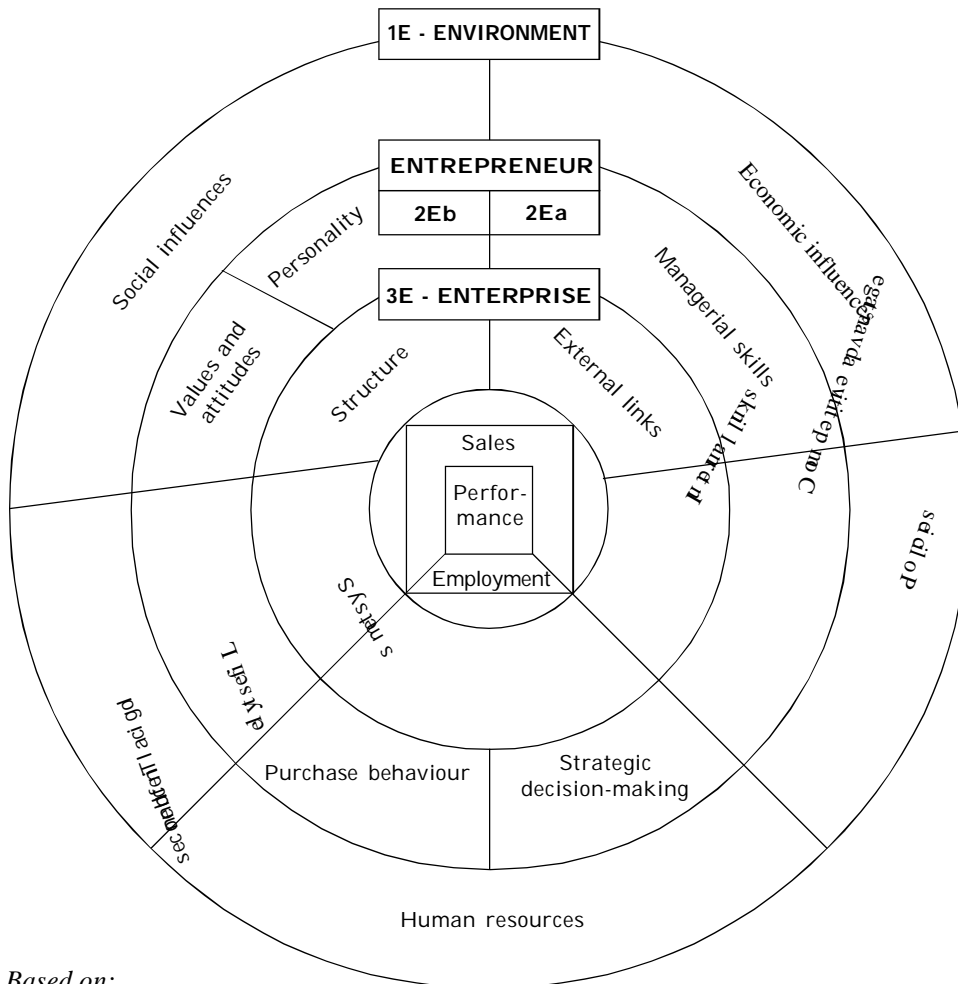


The *external* determinants come from the environment, while the *internal* determinants are associated with the individuality of the entrepreneur and the performance of the enterprise s/he creates. Additionally, the external factors may include rivalry and cooperation, both of them regarded as the driving forces of competition (Porter, 1990). Håkansson (1992) concluded that successful companies are strongly aware of the fact that 'ability to cooperate is important for the ability to compete.' Fanfani and Lagnevik (1995) suggested that full understanding of the dynamics of competitiveness might be accomplished while 'breaking down the analysis to the regional level and getting better insight into socio-economic conditions and division of work.' They also point to the importance of 'better understanding of the role of entrepreneurs, local and regional governments and unique competitiveness-creating actions.'

The actions of entrepreneurs have many similarities with the process of *decision-making by consumers* when both external environment and individual determinants shape the scheme of problem recognition and final purchase behaviour (Loudon & Della Bitta, 1993). The external determinants may be those of cultural, social, or personal influences, while the internal ones are attitudes, values or personality. For the entrepreneurial firm, both determinants can be studied within McKenzie 7Ss framework (Peters & Waterman, 1982).

The *conceptual model* was developed with the aim of focussing on the 7Ss as follows: structure, systems, style, skills, shared values, strategy, and staff (Figure 2). It was called the *3EN-model* as it brings all variables into three levels. The first level (*1E*) consists of *environmental* variables while the second level (*2Ea – 2Eb*) relates to the *entrepreneur's* characteristics. The third level (*3E*) indicates how the *enterprise* is organised and works.

Figure 2. The 3EN-Model for Studying Innovation Potential in the SMEs



Based on:

Peters & Waterman (1982), Loudon & Della Bitta (1993), Januszewska et al., (2002)

In relation to the 7Ss framework, it may be noticed that the structure, systems (internal and external links) and style (involvement of top management) are studied at the 3E level. The skills are analysed at two levels, i.e., managerial skills of the entrepreneur (2Ea) and technical skills of staff (1E). Both shared values and strategies relate to the 2Ea level, as the entrepreneur is a driving force of all changes inside his/her firm having a decisive impact on its formation. Level 2Eb cannot be explained by the 7Ss framework, since personality,

values, lifestyle and purchase behaviour were not originally measured within this approach. These variables are added to the 3EN-model to find relation between entrepreneurs' personality traits and performance of their firms.

All items from *1E* and *3E* levels are constructed according to two studies indicating general situation of SMEs (Soloducho, 2000; Mizgajska, 2000). These external variables are also suggested by other authors (Bradley, 1991; Herbig, 1994; Herbig & Day, 1994; McCarthy & Pereaault, 1993). The scales developed at this research do not represent any specific study.

Variables of *2Ea* level represent managerial skills and perception of competitive advantage as well as strategic decision-making. All of these variables come from the study of STRATOS Group (Bamberger *et al.*, 1990). Variables of *2Eb* level analyse personality (Januszewska *et al.*, 2000), values and attitudes (Bamberger *et al.*, 1990; Bass, 1990), lifestyle and purchase behaviour (Piirto, 1992) of the entrepreneur. Donckels and Mok (1990) suggested items measuring performance, as well as those included in a Data Matrix.

METHODOLOGY

Target sample and the survey

The target sample was a group of owners of SMEs from the Cordillera Administrative Region (CAR) in northern Philippines. In this region, high competition is observed due to a great concentration of such firms. Initially, a pilot test was conducted to check the validity of the questionnaire that was used as the guide during face-to-face interviews. Interviews were finally made with a total of 350 owners in 2006. The ad random sample is quite large in order to show the present situation of the firms, as well as the entrepreneurs' strategies and perception of barriers to development or innovation.

The questionnaire

A questionnaire was based on the 3EN-model. The three levels of variables studied were the environment (*1E*), the entrepreneur (*2Ea* & *2Eb*), and the enterprise (*3E*).

The *first* level (1E) of the 3EN-model consists of environmental barriers, which were analysed through five elements: economy-influences, policies, human resources, technological-influences, and social-influences (Annex 1). *Economy-influences (Eco)* reflect financial barriers to setting up the firms, perception of the current financial capability or participation of foreign investors. *Policies (Pol)* indicate legal barriers in inadequate environmental or employment policies. Lack of the *human resources (Hur)* may also create the barrier to business performance. *Technological-influences (Tech)* are analysed through the current state of equipment or application of modern technologies in SMEs sector. *Social-influences (Soc)* focus on the cultural connection of the entrepreneurs with the local environment.

The *second* level relates to the entrepreneur who is considered to have a decisive impact on formation of his/her enterprise's image or the organisational style (Carson *et al.*, 1995). This level splits into two sub-levels. The sub-level *2Ea* explains how previous experience helps the entrepreneur in running the firm (Annex 2). There are three elements to study: *managerial skills (Mas)*, perception of the *competitive advantage (Cad)* and *strategic-decision making (Stra)*. The sub-level *2Eb* consists of four individualistic entrepreneur's characteristics: *personality (Per)*, *values and attitudes (Vat)*, *lifestyle (Lif)*, and *purchase behaviour (Pur)* (Annex 3).

The *third* level (3E) of the 3EN-model indicates how an enterprise is organised and works in the environment. The following five elements are studied: external links, internal links, new product orientation, systems and structure (Annex 4). *External links (Ext)* point to the barriers in cooperation with scientific institutions, suppliers or other firms, participation in the confectionery fairs, etc. *Internal links (Int)* reflect the flow of information inside the firm. Next, the *structure (Struc)* element shows the basic organisation structure inside the firm as well as the major role of the entrepreneur. Finally, the items reflecting *systems (Sys)* show the communication and control style.

Performance was analysed through four questions related to the increase of income, sales, number of employees during the last three years, and whether a manager/owner controls the firm's performance himself/herself. The last element is regarded as the measurement parameter and a direct motivational factor (Mintzberg, 1983). Additional information about enterprise and the entrepreneur were included in the Data Matrix at the beginning of the questionnaire.

Enterprise-related variables included: enterprise type, production mode, assortment, main customers, age of firm, number of employees, ownership state, and production amount. The entrepreneur variables were: age, gender, education, business experience, and the question 'Who will take over your firm after you retire?'

Four types of *scales* were applied in the questionnaire. The first scale with edges 'strongly disagree' (1) and 'strongly agree' (5) was used for a majority of items (Eco, Pol, Hur, Tech, Soc, Mas, Cad, Ext, Int, Sys, and Struc) as well as questions about Performance. The frequency of the entrepreneur's behavior (Sdm, Pur, and Lif) was measured on the second type of scale with the edges marked 'never' (1) and 'always' (5). The values and attitudes (Vat) of entrepreneurs were measured on the third type of scale with edges 'extremely unimportant' (1) and 'extremely important' (5). Finally, the personality traits of the entrepreneurs (Per) were analysed on the 5-point bi-polar scales (Annex 3).

DATA ANALYSIS AND RESULTS

Data analysis starts from analysis of reliability of scales. The internal reliability (Cronbach's alpha) is indicated in the Annexes. The values are high and acceptable for a majority of scales (Malhotra, 1996). However, the values for Social-influences and Systems are lower (.29), indicating difficulties in measuring some social and organisational barriers. Later on, data are analysed in four steps: factor, cluster, discriminant, and regression analyses. Finally, cross-tabulation points to a few significant differences between the groups of entrepreneurs.

Latent perceptions of innovation potentials

In the *first* step, the principal component analysis, with Varimax rotation, was calculated for Z-scores of the variables. Determination of the number of factors (underlying constructs) is based on Eigenvalues greater than 1. The factors loading scores indicate how these constructs are related to the measured variables. More specifically, the loadings are correlations between the factors and the variables. Five principal components (PC) from *1E* level; five from *2Ea*; six from *2Eb*; and five from *3E*, were established. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to

the magnitude of the partial correlation coefficients (Norusis, 1993). The KMO is acceptable and Bartlett's Test of Sphericity (BTS) is significant. Also the cumulative percentage of variance explained by a number of factors is satisfactorily high (Annexes).

The five factors extracted from *1E* relate to the perception of economic, technological, and social potentials to innovate and develop the firm. Also opinion about current policies for the setting up of business, environment and employment was studied. Examples of the factors are the self-perception of 'Access to technologies,' 'Business related policies' or 'Social infrastructure.'

The five factors established from *2Ea* show dimensions such as 'Highly educated and capable,' 'Innovative and creative' or 'Low cost strategy oriented.' Next, six factors calculated from *2Eb* show the relation between the entrepreneurs' purchase behavior, lifestyle, values, attitudes, and personality. Examples of the factors are 'Socially active and dynamic,' 'Optimistic and ambitious,' or 'Intelligent and culturally sensitive.'

Finally, five factors from *3E* show the connection between the ways the firm is organised and indicate how the entrepreneurs are involved in product development. Some factors such as 'Socialisation and information exchange,' 'Control and planning,' or 'Partnerships' indicate the positive structure for further development of the firm.

Groups of entrepreneurs

Second, a cluster analysis is computed to identify the entrepreneurs with similar characteristics. Ward's hierarchical procedure, which involves calculation of squared Euclidean distance, was used. The distances, at which clusters were combined, were used to determine the final number of clusters. This procedure led to a three-cluster solution with 139 persons in the first cluster, 131 people in the second and 80 people in the third cluster.

Characteristics of the groups of entrepreneurs

Third, the discriminant analysis with cross-validation procedure (leave-one-out classification) is applied to characterise the groups of entrepreneurs. The classification result is high (96%) and Wilk's Lambda is very significant ($p < 0.000$) that indicates the rejection of

null hypothesis about the groups having the same means. Therefore, it is assumed that classification of cases into groups is correct.

The total mean discriminant score (D) indicates the hypothetical impact of three levels of variables in the 3EN-model on performance and innovation inside the firm (Table 1).

Table 1. Classification Function Coefficients from Discriminant Analysis

FACTOR	LABEL	FACTOR EXPLANATION	GROUPS		
			Slightly Negative Innovators S-NEG	Very Positive Innovators V-POS	Very Negative Innovators V-NEG
		ENVIRONMENT			
1E-1	EVTECH	Access to technologies		635	-420
1E-4	VPOLI	Business-related policies	-614	693	
1E-5	EVSOCI	Social infrastructure		741	-944
		ENTREPRENEUR Skills, Perceptions, Strategies			
2Ea-1	EREDUC	Highly educated and capable			-984
2Ea-2	ERINNO	Innovative and creative		544	-637
2Ea-3	ERLEAD	Leadership and executive skills	421		-690
2Ea-5	ERLCOS	Low cost strategy oriented	427	-518	
		ENTREPRENEUR Personality and Values			
2Eb-1	ERDYNA	Socially active and dynamic			-504
2Eb-2	ERUNIQ	Unique and authentic		642	-1098
2Eb-3	EROPTI	Optimistic and ambitious		477	-1255
2Eb-4	ERENTE	Entertainer and explorer		515	-442
2Eb-5	ERINTE	Intelligent and culture sensitive		408	
		ENTERPRISE			
3E-1	ESSOCI	Socialization and information exchange	-478	625	
3E-2	ESSTRU	R & D structure and external links			-617
3E-3	ESPLAN	Control and planning			-742
3E-5	ESPART	Partnerships	-662	916	
D** Hypothetical impact of 3E's on the business performance			Total -906	5678	-8333
Number of Cases			139	131	80

Source: Fisher's linear discriminant functions
96% of original (40% of cross-validated) grouped cases correctly predicted
D** - Discriminant Score

In general, the Group One (D = -906) is characterised by slightly negative and Group Three (D = -8333) very negative potential to innovate. Group Two (D = 5678) shows very positive potential to innovate.

More specifically, Group One indicates negative influence of the environment (*1E*) and the enterprise (*3E*) on performance of the firm. Group Three shows stronger tendency of negative influence of environmental and enterprise factors on its innovative performance. Additionally, for Group Three many characteristics of the entrepreneur (*2Ea and 2Eb*) are negative. In contrary to these groups, Group Two indicates very positive influence of entrepreneurs' characteristics (*2Ea and 2Eb*) on both development and innovation in their businesses.

4.4. The impact of environment, entrepreneur and enterprise on performance

Fourth, regression coefficients between principal components for each level of research variables and performance measures are calculated (Table 2).

Table 2. Coefficients ($\hat{\alpha}$) between Components of the 3EN-Model and Performance for All Firms

COMPONENTS OF THE 3EN-MODEL	P E R F O R M A N C E	
	Sales growth	Employment growth
ENVIRONMENT 1E-1 – 1E-5	EVTECH = .151 EVFINA = .118 $R^2 = .226$ ANOVA $p = .003$	ns
ENTREPRENEUR Skills, perceptions & strategies 2Ea-1 – 2Ea-5	EREDUC = .107 ERINNO = .111 ERLEAD = .178 $R^2 = .253$ ANOVA $p = .000$	ERINNO = .119 ERLEAD = .208 $R^2 = .256$ ANOVA $p = .000$
ENTREPRENEUR Behaviour, lifestyle, values, attitudes & personality 2Eb-1 – 2Eb-6	ns	ns
ENTERPRISE 3E-1 – 3E-5	ESSOCI = .189 ESSTRU = .156 $R^2 = .267$ ANOVA $p = .000$	ESSOCI = .140 ESSTRU = .121 $R^2 = .227$ ANOVA $p = .003$

Source: Linear regression analysis

*MOW** - manager/owner

The regression analysis was calculated for all respondents. Two directions of performance were measured and all of them relate to the last three years. These are the growth of sales and employment growth.

The growth of *sales* was related to the perception of the environment (access to technologies and financial capability), the entrepreneur (education and capabilities, innovation and creativity and leadership and executive skills), and the enterprise (socialisation and information exchange and R&D structure and external links).

The growth of *employment* was influenced by the managerial skills, perceptions and strategies of the entrepreneur (education and capabilities, innovation and creativity and leadership and executive

skills) and the enterprise (socialisation and information exchange and R&D structure and external links).

It is concluded that both the managerial skills of the entrepreneur and the way s/he manages the enterprise, as well as the links of the enterprise with the outside world, are the most important elements influencing business innovation and final performance.

Profiling of groups

The major characteristics of the entrepreneurs in three groups are described in relation to discriminant (Table 1) and regression (Table 2) analyses.

The First Group was labelled the '*Slightly Negative Innovators*' (S-NEG) due to the following factors: perception of disadvantageous business related policies, lack of socialisation and information exchange, and lack of partnerships in business operations. These entrepreneurs possess however quite high leadership and executive skills. Unfortunately, their main strategies are focussed on low costs, which indicate why they are not able to perform expensive innovations. The Second Group was called '*Very Positive Innovators*' (V-POS) since his/her firm either started from scratch or rapidly acquired new technology (Nyström, 1990). These entrepreneurs admit no problems in access to technologies, positive perception of business related policies, social infrastructure as well as information exchange between the businesses. Very Positive Innovators possess characteristics of true leaders, creative personalities focussed on products that are unique and authentic. Moreover, their intelligence and ambitious attitude are linked with sensitivity for the culture, entertainment and exploration of new areas in their personal life. Table 1 shows that the low cost strategy is not their priority in the business development, while creation of strong partnerships with suppliers, customers and retailers is probably a core of their success in innovations.

The last Group was called '*Very Negative Innovators*' (V-NEG). This groups is truly disconnected from the business partnerships, has very negative perception about social infrastructure in the Filipino environment, pessimistic view on the access to technologies and very weak R&D structure of their enterprises. They do not know how to

structure their business in order to make research and develop new products. They also do not perform control and planning activities in their businesses. The personal characteristics of Very Negative Innovators are just opposite to those in the second Group. These entrepreneurs lack education and managerial skills as well as the qualities of leaders and innovators. Moreover, they do not explore the markets in order to learn about the competitive products, which may be linked to their overall pessimism and lack of social dynamism. A cross-tabulation is done to determine significant differences between the three groups of entrepreneurs and other variables related to the performance, the enterprise, and the entrepreneur that were included in the Data Matrix of the questionnaire (Table 3).

Table 3. Cross-Tabulation Analysis in the Groups of Entrepreneurs

In %	GROUPS			VALIDATION		
	S-NEG	V-POS	V-NEG	χ^2	df	p
Location				49.27	12	.000
<i>Baguio City</i>	14	16	11			
<i>Benguet</i>	12	18	11			
<i>Mt. Province</i>	19	12	11			
<i>Ifugao</i>	11	21	9			
<i>Abra</i>	23	9	9			
<i>Kalinga</i>	11	16	18			
<i>Apayao</i>	10	8	31			
Business Age				9.59	4	.048
<i><5 years</i>	45	47	42			
<i>6-15 years</i>	40	27	29			
<i>>16 years</i>	15	26	29			
Legal form of business				17.31	6	.008
<i>Sole proprietorship</i>	85	87	92			
<i>Partnership</i>	6	2	3			
<i>Cooperative/association</i>	6	2	5			
<i>Corporation</i>	3	9	-			
Employee relations				24.68	10	.006
<i>Strongly negative</i>	1	1	3			
<i>Negative</i>	-	1	5			
<i>Neither/Nor</i>	21	18	27			
<i>Positive</i>	27	21	29			
<i>Strongly positive</i>	49	53	36			
<i>Don't know</i>	2	6	-			

In %	GROUPS			VALIDATION		
	S-NEG	V-POS	V-NEG	X^2	<i>df</i>	<i>p</i>
Economic environment				24.85	10	.006
<i>Strongly negative</i>	3	1	4			
<i>Negative</i>	8	4	7			
<i>Neither/Nor</i>	27	28	49			
<i>Positive</i>	26	32	28			
<i>Strongly positive</i>	32	33	12			
<i>Don't know</i>	4	2	-			
Attitude to change				36.55	10	.000
<i>Strongly negative</i>	2	1	6			
<i>Negative</i>	1	1	5			
<i>Neither/Nor</i>	22	15	38			
<i>Positive</i>	24	27	27			
<i>Strongly positive</i>	48	52	19			
<i>Don't know</i>	3	4	5			
Sex of respondents				12.13	2	.002
<i>Male</i>	31	47	52			
<i>Female</i>	69	53	48			
Number of children				13.52	4	.009
<i>0</i>	12	21	16			
<i>1-3</i>	56	47	35			
<i>>4</i>	32	32	49			
Level of education				14.42	2	.001
<i>Elementary/High School</i>	16	26	39			
<i>College/Vocational</i>	84	74	61			
Experience in business				8.85	2	.012
<i><10 years</i>	79	63	66			
<i>>10 years</i>	21	37	34			

It is noticed that the V-NEG group exists mainly in Apayao (31%) and Kalinga (18%). This group has about 30% of enterprises that are established more than 16 years ago. V-NEG people are more pessimistic than others about employees' relationships, economic environment and has rather negative attitude to change. Their households include more children and the educational level of these people is lower than that in other groups.

In contrast, the V-POS group is mostly located in Ifugao (21%), Benguet (18%) and Baguio City (16%). They have 47% of businesses younger than 5 years. They are very positive in relation to the business environment, employees' relationships and show strong attitude for a positive change. There are about 20% of them who are single, in

comparison to 12% in S-NEG group and 16% in V-NEG group. About 75% of them have college or university education. The distribution of male and female is quite equal in V-POS and V-NEG groups, while there are more females (70%) in the S-NEG group. The cross-tabulation between gender and type of business shows that female participation is more characteristic for SMEs operating in services/merchandising (63%) than for SMEs dealing with manufacturing/production (46%).

DISCUSSION

The firms' *measure of success* can be indicated through growth of sales and profit. Increased employment also reflects prosperity for a company and has a specific value for the overall wealth of society. It is believed that competitive sales growth is related to internal product development and is the outcome of a mix of strategic and operational factors (Johne & Snelson, 1990). The current study presents the opportunity to confirm this statement as an attempt to describe the strategies of the SMEs, operating in a turbulent transition economy in the Philippines. The major observation is that the three main groups of entrepreneurs can be described as low (S-NEG, V-NEG) and high (V-POS) achievers.

Johne and Snelson (1990) explain that *the high achievers* 'have an explicit product development strategy, pursue a proactive competitive strategy, and explore a wide range of product development options.' They also 'have formal product planning procedures, distinguish themselves by using simultaneous loose-tight methods, and use a business-centred organisation structure rather than a functionally based one.' Additionally, in the high achiever businesses, top management directly controls new ideas and monitors the performance of the firm.

These findings can be confirmed in the current study. On the one hand, the *V-POS Innovators* possess a few characteristics of the potential achievers-innovators such as personal and trustful contacts with the society, and positive attitude to the networking concept. According to Piirto (1992), such people show social altruism, home-style activities with attention to authenticity, and attention to aesthetics. They are also oriented towards inner-growth and show cognitive style-life, all of which is confirmed for V-POS group.

On the other hand, the *S-NEG and V-NEG Innovators* are recognised as those who are less integrated into social groups and feel freer to break group norms by adopting new products very early in their life cycle (cf. Mowen, 1993). Even though they have clear and open strategies, such as low cost strategy, they are limited by the lack of formal planning structures or some form of loose-tight methods.

Management commitment is one of the features of *innovative strategies* (Trail & Grunert, 1997) and innovation has the potential to occur in V-POS's firm. The V-POS entrepreneurs show commitment into both R&D and marketing, and the interaction of these two orientations is expected to be a major determinant of innovation and innovativeness (Grunert *et al.*, 1995; Trail & Grunert, 1997). It is therefore proposed that focus on the integrated development of both *strategies for marketing and R&D* can contribute to a more favorite innovation culture at the level of any SME. To improve the consumer-approach, the SMEs should learn about customer needs and look for special *niche markets* in which they can best fit to be in an advantageous position (Broom & Longenecker, 1979). To enhance *product quality and variety*, they can diversify their products that are well known to the Asian consumer. The suggestion is that they should prepare a radical change in their assortment if they wish to impress consumers, who are in daily contact with local products. They also have to focus on quality and service-oriented policy, which can have a multiplier effect on investment, employment and value added for Filipino SMEs.

Additionally, a change in the firm's internal organisational culture and establishment of *networks* for creative collaboration is necessary. Especially the last concept presents a great challenge for Filipino SMEs because 'the network is still an innovation in terms of organisation and in terms of marketing channel' (Nicholls & Sargent, 1996). Even the pioneering spirit is evident among Filipinos; they have to realise the comparative advantage of being the first and the best and actively design the future of their firms. The local and regional networks are believed to strengthen the innovative capacity of the small firms, and the importance of knowledge infrastructure, technology diffusion and networking are the key elements of regional innovation systems (Keeble & Wilkinson, 1999). Cooke (1998) suggested that 'SMEs may benefit from being encouraged to form self-managing networks, through which they can engage in informal know-how trading, benchmarking, and identification of possible innovation

projects.' It is also well known that high networking-capabilities of firms create competitive force (Fanfani & Lagnevik, 1995).

The successful Japanese managers/owners believe that networking and competition brings a lot of *joy* to the innovator because his/her work includes three elements. These elements are as follows: creativity (the joy of thinking), physical activity (the joy of working with sweat on the forehead), and sociality (the joy of sharing pleasure and pain with colleagues). The entrepreneurial firm possesses all the possible dimensions of joy. First, creativity may prosper because there are few job descriptions and specifications, or the centralised control. Second, physical activity may be in abundance since there is usually no overstaffing. Third, sociality can be cultivated because of the easy communication channels and a flat organisational structure of many SMEs (Ho, 1999).

It is also suggested that entrepreneurs should develop the concept of *emotional intelligence (EQ)* that is achieved through authentic trust, ability to perform under pressure, and a risk-taking attitude (Goleman, 1995). The leaders of successful companies show integrity, trust, empathy, purpose, and the ability to be role models. Creative and dynamic leaders bring the EQ concepts of perceiving, learning, creating, trusting, initiating, and bringing conscience to their employees. They trust their intuition to find solutions outside the traditional schemes as 'solving innovative problems requires divergent thinking that breaks away from old routines and standards' (Mintzberg, 1993). They have skills to lead with emotional influence vs. control, logic, and analysis. High EQ leaders perceive problems as challenges, and their work as a series of opportunities to create solutions, not just an endless succession of problems that need to be fixed. Entrepreneurship alone is not the key to innovative processes. There is a growing body of evidence that the leadership dimension is such a key as it ensures continuing success of the enterprise.

A few creative ideas to improve the performance of Filipino SMEs were proposed in the current study. One of them is the proposal to set-up an award system (incentives) for those SMEs that will take part in collaborative network. A policy of high safety and quality of services should be adopted. The collaborators can be involved in preparation of training courses for their employees and managers.

Delegation skills may be learned and mutual trust gradually built up. Contacts with experts preparing the software for consumer segmentation, electronic data exchange, and production management, can be established (Chaston, 2000). The network will then organise internal fairs and small competitions, sponsor special cultural events while looking for investors and business angels. The logo of this network may appear in a promotional package of the participating SMEs, making a direct link with loyal consumers. Also consumer-directed mini-projects could be realised since it is well known that most innovations come from product users, not manufacturers or salesmen (Urban & Hauser, 1993).

The future leaders of such organisation should be conservative in pursuing the sector's goals and radical in finding them outside the current operational space. As true leaders, they should take pleasure in the development of other people, and possess high ethics and status quo in the society (Bass, 1990). They should also be the facilitators of risk-taking and experiential learning at sector level that would lead to innovations in the products, processes, services and enterprises. Finally, they should advance the consumer-sensitive-approach that can help to develop sensitivity to Filipino culture and ability to fulfil needs of other Asian consumers.

Finally, it is believed that the 3EN-model is a *tool* to understand relations between the firms' culture and barriers or potentials to innovate at the level of the SME.

CONCLUSIONS

Innovation potential is described by reference to three groups of entrepreneurs that were found among the SMEs in CAR. In the group called Very Positive Innovators (V-POS), there are people who showed strong connection with the local environment. They possess strong managerial skills and financial resources to organise their enterprises in such a way that innovation would have a favourable opportunity to occur. Their strongest potential to innovate lay in their closeness to the environment, and their open and experimenting personality. The other two groups show unfavorable characteristics that hinder from engaging in innovations. Both Slightly Negative Innovators (S-NEG) and Very Negative Innovators (V-NEG) exhibit lack of qualities typical for 'high achievers.' They do not generally understand the ideas of competitiveness and networking. These entrepreneurs create the least advantageous conditions for innovation practices in their businesses.

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Annex 1: Environment Variables in 3EN-Model and Factor Loadings

VARIABLES	LABEL	EXPLANATION			
1E – Eco Economy influences $\alpha = .62$	Eco1	-we had no financial problems in <i>setting up</i> a firm			
	Eco2	-we do not have problems in <i>accessing credits</i> , loans etc.			
	Eco3	-our firm shows <i>financial capability</i>			
	Eco4	- <i>equity investment</i> is involved in our business			
1E – Pol Policies $\alpha = .50$	Pol1	- <i>governmental institutions</i> help in development of our firm			
	Pol2	- <i>business should be able to fire employees</i> without legal restrictions			
	Pol3	- <i>environmental policies</i> don't restrict development of confectionery firms			
	Pol4	-general <i>politics</i> related to <i>setting up</i> a business are profitable			
1E – Hur Human resources $\alpha = .67$	Hur1	-managers should <i>earn significantly more</i> than employees			
	Hur2	-there are plenty of workers with good <i>technological competence</i>			
	Hur3	-our employees are <i>willing</i> to participate in additional training courses			
	Hur4	-it is easy to <i>motivate</i> our employees to more effective work			
1E – Tech Technological influences $\alpha = .84$	Tech1	-we have easy access to <i>information</i> about new technologies			
	Tech2	- <i>changes</i> in new technologies and materials are fast			
	Tech3	-our business involves plenty of <i>imported</i> machinery			
	Tech4	-our technology is constantly <i>improved and adapted</i>			
1E – Soc Social influences $\alpha = .51$	Soc1	-Managers should have an <i>active role in local and national politics</i>			
	Soc2	-business should <i>support cultural institutions</i>			
	Soc3	- <i>local knowledge and personal contacts</i> help in business			
	Soc4	-we attend <i>management courses</i> in college			
54 % of variance					
1E-1 ACCESS TO TECHNOLOGIES (EVTECH)	.838	Tech4	1E-4 BUSINESS RELATED POLICIES (EVPOLI)	.835	Pol3
	.829	Tech3		.793	Pol4
	.769	Tech1		.453	Pol1
	.689	Tech2			
	.404	Soc4			
1E-2 HUMAN RESOURCES (EVHUMA)	.806	Hur3	1E-5 SOCIAL INFRA-STRUCTURE (EVSOCI)	.822	Soc2
	.777	Hur4		.701	Soc1
	.646	Hur2		.666	Soc3
1E-3 FINANCIAL CAPABILITY (EVFINA)	.756	Eco1			
	.701	Eco2			
	.638	Eco3			
	.406	Eco4			

Source: Principal component analysis, Varimax rotation;
1E-1 – 1E-5: KMO=.767, TS p<.039

Annex 2: Entrepreneur (a) Variables and Factor Loadings

VARIABLES	LABEL	EXPLANATION				
2Ea – Mas Managerial skills $\alpha = .78$	Mas1	-I have high <i>leadership skills to manage/organise</i> my firm				
	Mas2	-I have high <i>skills to execute</i> tasks of my employees				
	Mas3	-I can find quickly new <i>information</i> for my business				
	Mas4	-I can find information through the <i>Internet</i>				
	Mas5	-I use a <i>computer</i> for my business management on a day to day basis				
	Mas6	-I can evaluate data by <i>statistical methods</i>				
	Mas7	-I seek for <i>additional training</i> in managerial skills				
	Mas8	-I tolerate <i>ambiguity</i> during difficult moments in my firm				
	Mas9	-I often provide <i>additional training</i> for my employees				
2Ea – Cad Competitive advantage $\alpha = .90$		<i>I see our competitive advantage through...</i>				
	Cad1	-better <i>pricing policy</i>				
	Cad2	-lower <i>costs levels</i>				
	Cad3	- <i>variety</i> within product group				
	Cad4	-better <i>quality</i> of our products				
	Cad5	-quick and reliable <i>delivery</i>				
	Cad6	- <i>personal selling</i>				
	Cad7	- <i>skills of our workers</i>				
	Cad8	-special <i>distribution channels</i>				
	Cad9	- <i>creativity</i>				
	Cad10	-good <i>image of our brands</i>				
	Cad11	- <i>flexibility</i> of our firm to consumer's requirements				
	Cad12	-higher <i>quality of management</i>				
Cad13	- <i>financial capability</i>					
2Ea – Stra Strategic decision making $\alpha = .89$		<i>In our firm, we focus on...</i>				
	Stra1	-new <i>processes</i>				
	Stra2	-new <i>products</i>				
	Stra3	-new <i>markets/clients</i>				
	Stra4	-new <i>packages</i>				
	Stra5	-new <i>product brands</i>				
	Stra6	-new <i>products to use</i>				
	Stra7	-new <i>recruitment methods</i>				
	Stra8	-new <i>ways of delivery</i> (Internet)				
	Stra9	-new <i>consumers out of a country</i>				
	Stra10	-new <i>firms/partners</i>				
58 % of variance						
2Ea-1 HIGHLY EDUCATED AND CAPABLE (EREDUC)	.804	Cad13	2Ea-3 LEADERSHIP AND EXECUTIVE SKILLS (ERLEAD)	.807	Mas1	
	.803	Cad12		.766	Mas2	
	.754	Cad11		.614	Mas3	
	.720	Cad7				
	.714	Cad5				
	.710	Cad9				
	.629	Cad6		2Ea-4	.842	Mas5
	.605	Cad4		HIGH TECH	.818	Mas4
	.568	Cad3		ENTREPRENEUR	.635	Mas6
	.542	Cad10		(ERTECH)		
2Ea-2 INNOVATIVE AND CREATIVE (ERINNO)	.775	Stra6	2Ea-5 LOW-COST STRATEGY ORIENTED (ERLCOS)	.587	Cad2	
	.751	Stra4		.535	Cad1	
	.742	Stra7		-.529	Mas8	
	.728	Stra9				
	.727	Stra5				
	.722	Stra10				
	.709	Stra2				
	.691	Stra1				
	.652	Stra8				
	.481	Stra3				

Source: Principal component analysis, Varimax rotation;
2Ea-1 – 2Ea-5: KMO=.875, BTS p<.000

Annex 3: Entrepreneur (b) Variables and Factor Loadings

VARIABLES	LABEL	EXPLANATION			
2Eb – Pur Purchase behavior $\alpha = .87$	Pur1	<i>When shopping, I pay attention to...</i> <i>-ecology</i>	Pur4	<i>-eclectic taste</i>	
	Pur2	<i>-authenticity (country of origin)</i>	Pur5	<i>-homemade/grown products</i>	
	Pur3	<i>-aesthetics</i>	Pur6	<i>-unique products</i>	
	Lif6	<i>In my free time, I...</i> <i>-read literature</i>	Lif7	<i>-listen to classical music</i>	
	Lif7	<i>-participate in cultural events</i>	Lif8	<i>-go to the movies</i>	
	Lif8	<i>-participate in civics, politics</i>	Lif9	<i>-take interest in art/crafts</i>	
2Eb – Lif Lifestyle $\alpha = .83$	Lif3	<i>-participate in civics, politics</i>	Lif9	<i>-cook/do-it-yourself</i>	
	Lif4	<i>-watch the educational TV</i>	Lif10	<i>-special interest magazines</i>	
	Lif5	<i>-do unconventional activities</i>	Lif11	<i>-travel</i>	
	2Eb – Vat Values and attitudes $\alpha = .75$	Vat1	<i>For me to...is...</i> <i>-be involved in various activities</i>	Vat6	<i>-experiment - new things</i>
		Vat2	<i>-have broad interests</i>	Vat7	<i>-seek changes in business</i>
		Vat3	<i>-have a natural, healthy life</i>	Vat8	<i>-be ambitious in plans</i>
Vat4		<i>-improve the world</i>	Vat9	<i>-achieve success in a sector</i>	
Vat5		<i>-be rebellious in life</i>	Vat10	<i>-play an active role</i>	
Vat11		<i>-sustain traditions</i>			
2Eb – Per Personality $\alpha = .89$	Per1	<i>I perceive myself as...</i> <i>-timid vs. self-confident</i>			
	Per2	<i>-suspicious vs. trusting</i>			
	Per3	<i>-conservative vs. experimenting</i>			
	Per4	<i>-socially passive vs. socially active</i>			
	Per5	<i>-slow vs. dynamic</i>			
	Per6	<i>-not-creative vs. creative</i>			
	Per7	<i>-not-impulsive vs. impulsive</i>			
	Per8	<i>-not using intuition vs. using intuition</i>			
54 % of variance					
2Eb-1 SOCIALLY ACTIVE AND DYNAMIC (ERDYNA)	.824	Per6	2Eb-4 ENTERTAINER AND EXPLORER (ERENTE)	.745	Lif7
	.816	Per5		.651	Lif10
	.797	Per8		.624	Lif11
	.777	Per7		.622	Lif8
	.747	Per4		.612	Lif6
	.711	Per1		.581	Lif5
	.710	Per2		.521	Lif4
	.624	Per3			
2Eb-2 UNIQUE AND AUTHENTIC (ERUNIQ)	.774	Pur2	2Eb-5 INTELLIGENT AND CULTURE SENSITIVE (ERINTE)	.699	Lif2
	.766	Pur3		.642	Lif3
	.750	Pur4		.599	Lif1
	.738	Pur5			
	.729	Pur1			
	.704	Pur6			
2Eb-3 OPTIMISTIC AND AMBITIOUS (EROPTI)	.774	Vat3	2Eb-6 SUSTAINABLE INNOVATOR (ERSUST)	.737	Vat5
	.756	Vat2		.574	Vat6
	.724	Vat9		.473	Vat7
	.618	Vat1		.425	Vat11
	.570	Vat8			
	.524	Vat4			
	.444	Vat10			

Source: Principal component analysis, Varimax rotation;
2Eb-1 – 2Ea-6: KMO=.853, BTS p<.000

Annex 4: Enterprise Variables in 3EN-Model and Factor Loadings

VARIABLES	LABEL	EXPLANATION
3E – Struc Structure $\alpha = .64$	Struc1	-we have a <i>distinct division</i> of functions in our firm
	Struc2	-main manager/owner is highly involved in <i>R&D activities</i>
	Struc3	-we are <i>flexible</i> and may change people's functions
3E – Sys Systems $\alpha = .61$	Sys1	-there are written <i>procedures</i> for every employee in our firm
	Sys2	-managers/owners <i>communicate</i> with employees <i>on daily basis</i>
	Sys3	- <i>hard control</i> helps to keep order in our firm
	Sys4	-our continuous <i>planning</i> helps in the firms' performance
3E – Ext External links $\alpha = .60$	Ext1	-we co-operate with <i>scientific institutions</i>
	Ext2	-small firms, such as ours, should <i>keep together</i> to avoid competition
	Ext3	- <i>co-operation</i> is important, even if a part of independence is lost
	Ext4	-we <i>subcontract</i> to and from other businesses
	Ext5	-we continuously look for <i>new suppliers</i>
3E – Int Internal links $\alpha = .67$	Int1	-managers should regularly <i>inform employees</i> about <i>shared values</i>
	Int2	-in our firm, we have a lot of <i>information exchange</i>
	Int3	-our employees spend a part of their <i>free time together</i>
	Int4	-we organise some <i>social events</i> for our employees
	Int5	-the manager/owner directly <i>controls the performance</i> of the business
55 % of variance		
3E-1 SOCIALIZATION AND INFORMATION EXCHANGE (ESSOCI)	.775 Int3 .689 Int4 .581 Int2	3E-3 CONTROL AND PLANNING (ESPLAN) .724 Int1 .600 Int5 .580 Sys3 .519 Sys4
3E-2 R & D STRUCTURE EXTERNAL LINKS (ESSTRU)	.766 Struc2 .702 Struc1 .494 Struc3 .453 Sys2 .441 Ext1	3E-4 COOPERATION (ESCOOP) .837 Ext3 .782 Ext2 3E-5 PARTNERSHIPS (ESPART) .719 Ext5 .580 Ext4 .493 Sys1

Source: Principal component analysis, Varimax rotation;
3Ea-1 – 3Ea-5: KMO=.828, BTS $p < .000$