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Opportunity Recognition Skill of Entrepreneurs and Its Association with Their Paths to Entrepreneurship and Types of Innovations: An Empirical Investigation of SME Firms

Kishinchand Poornima Wasdani

Indian Institute of Science, Bangalore, India

Mathew J. Manimala

Indian Institute of Management Bangalore, India

Abstract

Opportunity Recognition Skill (ORS) is often considered to be the most important skill needed for an entrepreneur. One of the few attempts to identify the components of this skill (Ucbasaran et al, 2003) has proposed that there are two approaches associated with it, namely, the developmental approach and the alertness approach, which they have measured using a 12-item questionnaire (8 items for the former and 4 for the latter dimensions). When the present authors administered this questionnaire to 279 respondents and subjected the data to factor analysis, the results did not conform to the findings of the original researchers. The analysis yielded 4 factors, which could be named as: *Alertness*, *Problem-solving*, *Learning*, and *Implementation* orientations. As the original questionnaire had limited numbers of items, the last two dimensions had only one variable each. The results pointed to the need for expanding the OR Skill questionnaire through a fresh (pilot) investigation. As there were 33 entrepreneurs among the respondents, for whom the data on their innovativeness and paths to entrepreneurship were also available, it was further proposed to explore the linkages, if any, among the nature of their innovativeness, paths to entrepreneurship and the dimensions of their OR Skills. For this analysis, we used the traditional classification of innovations as *radical* and *incremental* along with a newer classification based on functional areas, namely: *Operations, Marketing, Organizational* and *Boundary management* innovations. Since the present data showed that there were four major motives for entrepreneurship, namely: Innovation (28%), Growth (18%), Inheritance (18%) and Necessity (36%), these were deemed to be the four different paths to entrepreneurship. Associations of these paths and the major types of innovation with the components of OR Skill were tested, which has led to the generation of a few interesting insights and researchable propositions.

Keywords: *Entrepreneurship, Entrepreneurial innovation, Opportunity recognition skills, Paths to entrepreneurship*

INTRODUCTION

Opportunity recognition skill (ORS) is considered to be a pre-requisite for entrepreneurship and business ownership, even though the degree of this skill may vary for different paths to business ownership. According to Cooper and Dunkelberg (1984), there are four different paths to business ownership, namely: starting, purchasing, inheriting or being co-opted by the existing owners, where the choice of the path depends upon the attitudes, motivations and job experience of the entrepreneurial individual. Among these four paths, it is obvious that 'inheriting' would not call for any ORS for becoming a business owner (although it will be needed for managing and growing a business venture after inheriting it). In general, it could be stated that owning and managing a business venture (especially managing it towards growth) is a function of capturing and exploiting a series of opportunities. Hence it would be interesting to explore the association of ORS with the paths to business ownership.

The quality of opportunities identified and exploited for the management and growth of ventures would also depend on the innovativeness of the entrepreneurial individual. In fact, innovation is identified by many scholars as the distinguishing characteristic of an entrepreneur (Schumpeter, 1934; Drucker, 1998). Drucker (1998:3) defined innovation in the context of entrepreneurship as "the effort to create purposeful, focused change in an enterprise's economic or social potential". Traditionally innovations used to be classified as *radical* and *incremental* (Abernathy and Utterback, 1978). Schumpeter (1934) gave an additional classification of innovations based on the functional areas, in which the innovations occur, namely: product innovation, process innovation, market innovation, supply-source innovation and industry-organization innovation. In 1992, Manimala's study of Indian entrepreneurs showed that there were six other areas where entrepreneurs innovated, in addition to Schumpeter's first four (product, process, market and supply). The fifth type of Schumpeter's innovation (industry-organization) did not probably seem to be important for Indian start-ups in Manimala's study because it seemed that start-ups were generally too small for forming oligopolistic cartels and industry structures. Factor analysis of the ten types of innovations identified by Manimala (1992) in his study grouped the types of innovations into four major dimensions, namely: *Operations*, *Marketing*, *Organizational* and *Boundary management* innovations. It may be interesting to note that this scheme covered all the functional areas that an entrepreneur had to take care of in managing an enterprise, namely create products or services, sell them, organize for these activities and manage the stakeholders and external agencies. Hence, Manimala's (1992) taxonomy, along with the traditional categories of incremental and radical innovations, may be treated as a comprehensive classification of innovations (including Schumpeter's five categories and more), which we therefore proposed to use in the present study for understanding the linkages between innovation and opportunity recognition skills (ORS).

Not all entrepreneurs are necessarily entrepreneurial. An entrepreneur is an individual who converts his/her ideas into a venture or in simpler terms does venture creation. An entrepreneurial individual goes beyond starting ventures to ensure the success of an enterprise s/he created. The difference between mere venture creation and ensuring venture success lies in the Opportunity Recognition Skill, which is the essential constituent of entrepreneurship (Shane and Venkataraman, 2000). The opportunity recognition skill helps not only to distinguish an idea from potential opportunity but also to direct the entrepreneur towards conversion of opportunities into successful ventures.

Being entrepreneurial is characterized by "preference for creating activity, manifested by some innovative combination of resources" (Carland et al., 1984:357). In Shane and Venkataraman's (2000:218) words, entrepreneurship is the "examination of how, by whom and with what effects opportunities to create future goods and services are discovered, evaluated and exploited", which highlights two important components underlying venture creation, namely: ability to innovate and ability to commercialize the innovation (Smallbone and Wyer, 2004). Thus venture formation requires an integration of the various types of innovation (Radical/Incremental; Operations, Marketing, Organizational and Boundary management inno-

vations) and methods of capitalizing them (Cunningham and Lischeron, 1991), which are intrinsically, related to their OR skills (Shane and Venkataraman, 2000). Hence, we proposed to explore the relationships among the following three sets of variables: (1) paths to entrepreneurship and ORS; (2) paths to entrepreneurship and types of innovation; (3) types of innovation and ORS.

PRIOR RESEARCH

Innovativeness of entrepreneurs

The classical school of entrepreneurship identified entrepreneurs with their exhibition of innovative behavior in the process of initiating and executing venture formation (Cunningham and Lischeron, 1991). The early researchers included Schumpeter (1934), Hornaday and Aboud (1971) and several others defined entrepreneurs as innovators who contributed to the growth of their nations through their innovation. According to Schumpeter (1934), there are five areas in which entrepreneurs innovate namely, product innovation, process innovation, market innovation, supply-source innovation, and industry-organization innovation. Manimala (1992) later extended the innovative ways to include finance innovation, structural innovation, cultural innovation, personnel innovation, R&D management innovation and boundary management innovation. Thus, innovation pervades all activities of an enterprise and helps it to survive, grow and make profits/surpluses.

Schumpeter defined innovation as "the process which brings about discontinuous changes in the economy, which alone can be recognized as development" and his definition of the entrepreneur is that s/he is "a major source of innovation and discontinuity in the sector of economic system". According to Khandwalla (1987), a major motive that drives the entrepreneur is the need for innovating, together with the need for pioneering it, which he called the Pioneering-Innovative (PI) Motive. In order to avoid failures and sustain the growth of the venture an entrepreneur must constantly innovate (Berggren and Nacher, 2000).

Since most of the start-up ventures are likely to be small, they are particularly susceptible to liabilities of newness (Stinchcombe, 1965) and liabilities of smallness (Hannan and Freeman, 1984), and so they need to be particularly innovative in order to overcome these liabilities and other vulnerabilities. Hence, a study on Small and Medium Enterprises (SMEs) would be particularly enlightening about the linkages among innovativeness, paths to entrepreneurship and ORS.

Attitudes towards opportunity recognition

The entrepreneur is considered to be more than an innovator (e.g. Krizner, 1973; Venkataraman, 1973). Innovation is an integral part of entrepreneurship. Sarasvathy et al (2002) in their work emphasized that innovation in itself being insufficient to derive economic gains. In other words, the entrepreneurial individual recognizes that monetization of his/her innovation is important to create an economic impact. Further, innovation and opportunity recognition are not one-time events in the life of an enterprise, which is usually punctuated by a series of innovations and recognition of opportunities. Such innovations may relate to any of the entrepreneurial functions, which may be either radical or incremental.

Stevenson and Jarillo (1990) claimed that opportunity recognition is at the "heart of entrepreneurship", irrespective of the availability of resources. Opportunities are not discovered; instead, they are developed from changes in the environment (Krueger, 1998). This is why Krueger (1998) defined opportunity as "an attribution individuals can make from clues and signals in the environment". The efficacy of such attribution depends on two important perceptions, namely, perception of desirability and perception of feasibility.

Singh et al. (1999:1) defined opportunity recognition as "perceiving the possibility for new profit potential through founding and forming of new venture and significant improvement of an existing venture". This definition emphasized that the act of opportunity recognition is not a one-time activity of an entrepreneur; instead, it is a perpetual process that encompasses perception, discovery and creation (Singh et al. 1999). De Koning (1999:3) defined opportunity recognition as "the specific eureka experience when suddenly an idea crystallizes" and as an "evolution of initial idea into full blown business concepts". The difference between the two

definitions is that the former emphasized on opportunity recognition as the activity in the originating phase of the venture, whereas the later definition called it as ongoing activity of the entrepreneur. Eckhardt and Shane (2003:339) defined opportunity recognition as "… situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends or means-ends relationship". From the above definitions, it is clear that there is an interrelationship between innovation and opportunity recognition.

Entrepreneurship can be explained using two perspectives: one is the firm creation perspective and the other is the opportunity exploitation perspective (Eckhardt and Shane, 2003). The former limits itself to utilizing existing resources, while the latter goes beyond to understand the innovative ways of resource utilization. In the process of creating a venture, the central activity of entrepreneurs is opportunity recognition, which is normally confused with an idea (Singh et al., 1999). Ideas are usually at the heart of opportunities, but not all ideas are necessarily opportunities (Singh et al., 1999).

Commercial exploitation of innovation is mostly driven by attitudes that entrepreneurs have towards opportunity recognition. Research by Ucbasaran et al (2003) identifies two prominent attitudes that the entrepreneurs have towards opportunity recognition, namely developmental attitude and alertness attitude. The developmental attitude is based on the process of accumulating the information about specific needs in the environment and placing one's innovation in the direction of those needs. On the other hand, alertness attitude emphasizes on being attentive to the nonexistent markets and creating ventures to realize them. The two attitudes may differ in the approaches for organizing their innovations into ventures. One of the objectives of the present research is to test the sturdiness of these dimensions and identify additional dimensions, if any, of ORS. Once these dimensions are identified, it is possible to test their association with paths to entrepreneurship as well as types of innovation.

Paths to entrepreneurship

Venture creation is a medium of expressing the abilities and aspirations of entrepreneurs (Smallbone and Wyer, 2004). These aspirations can take different forms such as a need for innovation and growth or necessity for earning a living (Smallbone and Wyer, 2004). Researchers identified the start-ups as powerful sources of innovation (Audretsch et al, 2002; Wennekers and Thurik, 1999). Conversely, as observed earlier, innovations can also be a source of a new venture. A popular classification of paths to entrepreneurship, as explained above, is by Cooper and Dunkelberg (1984) where they identify four such paths: namely, starting, purchasing, inheriting or being co-opted by the existing owners. However, when the present study explored these sources through pilot interviews of a few entrepreneurs, the commonly observed paths to entrepreneurship were: innovation, growth, inheritance and necessity.

Objectives and hypotheses of the study

As mentioned above, the purpose of this investigation is to explore the tripartite linkages among the following set of variables:

(1) Paths to entrepreneurship and attitudes to OR.
(2) Paths to entrepreneurship and types of innovation.
(3) Types of innovation and attitudes to OR.

Accordingly, we propose the following hypotheses:

H1a: Developmental attitude towards OR is likely to be positively associated with paths of innovation and growth.

H1b: Alertness attitude towards OR is likely to be positively associated with paths of inheritance and necessity.

H2a: Radical innovation is likely to be positively associated with paths of innovation and growth.

H2b: Incremental innovation is likely to be positively associated with paths of inheritance and necessity.

H2c: Operations innovations are likely to be positively associated with paths of innovation.

H2d: Marketing innovations are likely to be positively associated with paths of necessity.

Table 1: Factor analysis of OR questionnaire

Variables	Factor Loadings			
	F-1	F-2	F-3	F-4
1. I have a special "alertness" or sensitivity toward new venture opportunities.	**.483**	-.410	.306	.032
2. Recognizing opportunities is really several learning steps over time, rather than a "eureka" experience.	.157	.332	**.648**	-.309
3. The new venture opportunities I have recognized over the years have been mostly unrelated to each other.	**.418**	-.270	-.345	.097
4. Recognizing good opportunities usually requires "immersion" in a specific industry or marketplace.	.225	**.491**	.291	.271
5. It is very important that the idea represent a concept, which can be developed over time.	.376	**.389**	.164	-.219
6. The problem is not to identify the idea but to obtain capital and other resources.	.125	-.122	.276	**.813**
7. The consideration of one opportunity often leads to other opportunities.	**.323**	.457	-.431	-.058
8. New business opportunities often arise in connection with a solution to a specific problem.	.402	**.535**	-.294	.111
9. New business opportunities often arise due to market or technological changes.	**.474**	.401	-.006	.242
10. I can usually spot a real opportunity better than a professional researcher/analyst.	**.571**	-.399	-.065	.122
11. I just enjoy thinking about and/or looking for new business opportunities.	**.680**	-.211	-.143	-.199
12. I would describe myself as opportunistic.	**.618**	-.265	.206	-.265

Factor loadings smaller than .30 have been highlighted

H2e: Organizational innovations are likely to be positively associated with paths of inheritance.

H2f: Boundary management innovations are likely to be positively associated with paths of growth.

H3a: Radical innovations are likely to be positively associated with developmental attitude towards OR

H3b: Incremental innovation is likely to be positively associated with alertness attitude towards OR

H3c: Operations innovations are likely to be positively associated with developmental attitude towards OR.

H3d: Marketing innovations are likely to be positively associated with alertness attitude towards OR.

H3e: Organization innovations are likely to be positively associated with developmental attitude towards OR.

H3f: Boundary management innovations are likely to be positively associated with alertness attitude towards OR.

DATA AND ANALYSIS

The present research is part of the larger project, which explored the attitudes towards OR of individuals in different vocations. Among the 279 responses obtained, there were 33 entrepreneurs. We have used the full set of respondents for factor analysis of the OR questionnaire of Ucbasaran et al (2003). It was found that there were four factors instead of the previously mentioned two (see Table-1), which were named as *Alertness* (combining 5 variables, with Cronbach alpha of 0.63), *Problem-solving* (combining 3 variables, with Cronbach alpha of 0.50), *Systematic analysis* (single variable) and *Implementation* (single variable). Apparently the developmental attitude (the second dimension of Ucbasaran et al (2003) got split into three of its components namely problem-solving, systematic analysis and implementation. Two of these factors, namely 'systematic analysis' and 'implementation' have only one variable each. Notwithstanding this we have decided to accept these for our preliminary analysis because they suggest a possibility that the ORS scale could have more dimensions than the two identified by Ucbasaran et al. (2003). The additional dimensions could be brought out by en-

Table 2: Correlation between OR factors and Incremental/Radical types of innovations

	Incremental innovation	Radical innovation	Alertness	Problem solving	Systematic analysis	Implementation
Incremental innovation	1	0.609**	0.118	0.023	-0.335	0.254
Radical innovation	0.609**	1	0.241	-0.059	-0.58**	0.183
Alertness	0.118	0.241	1	-0.008	-0.256	0.082
Problem solving	0.023	-0.059	-0.008	1	-0.026	0.184
Systematic analysis	-0.335	-0.58**	-0.256	-0.026	1	-0.285
Implementation	0.254	0.183	0.082	0.184	-0.285	1

*&** denote significance at 95 and 99% respectively

hancing the existing scale by increasing the number of items identified through pilot investigation and extracting the dimensions through an exploratory factor analysis.

For the subsequent analyses related to paths to entrepreneurship and types of entrepreneurial innovation, we used the responses from the 33 entrepreneurs. For identifying the functional types of innovation, we used the scale developed by Manimala (1992). Since the functional types of innovation was obtained from the factor analysis conducted by Manimala, (1992) in an earlier study, these were accepted as they are for the present analysis. The testing of the association among the different sets of variables was done using correlation analysis (for continuous data) and ANOVA technique (for category data). Based on the results of these analyses, a few theoretical propositions are suggested. As the number of the respondents was not very high, the present study may be treated as an exploratory study for developing propositions for further research.

RESULTS AND DISCUSSION

Table 2 shows the correlations between the different attitudes to OR and incremental and radical innovations. There is only one significant and negative correlation between the different attitudes to OR on the one hand and the radical/incremental innovation on the other hand. Systematic analysis was negatively correlated to radical innovation (r = -0.58, $p < .01$). It suggests that in order to develop radical innovations one has to make a major departure from the existing thought patterns using divergent thinking. A systematic analysis is a logical procedure using convergent thinking and hence is unlikely to break the conventional frameworks. The present finding therefore confirms the generally held belief that radical innovations are a product of holistic and intuitive thinking rather than mere analysis of data and logical inferences from them.

Table 3 shows three sets of significant correlations: (1) systematic analysis has significant negative correlations with all the functional types of innovation, suggesting that for innovations, as we have noted above, divergent thinking is more important than convergent thinking, irrespective of the type of innovations; (2) alertness has a significant positive correlation with marketing innovation, suggesting that the entrepreneur has to be constantly vigilant about the happenings in the market for him/her to be innovative in marketing; (3) implementation has a significant positive correlation with boundary management innovations, suggesting that implementation of new opportunities would require the co-operation of external agencies, for securing the resources required for such implementation.

Two other sets of correlation or the lack of it may specially be noted. One is the very high positive correlations among the different types of innovations, highlighted in italics at the right hand bottom corner of Table 3. This has provided a confirmation of the findings of Manimala (1992) that the functional boundaries of innovation are rather thin and that an individual innovating in one functional area is likely to innovate in others as well. This was in fact the reason why the innovativeness scale could be constructed as an aggregation of the innovativeness in different functional areas, as was

Table 3: Correlations between OR factors and functional type of innovations

	Alertness	Problem solving	Systematic analysis	Implementation	Operations Innovation	Marketing innovation	Orgl. innovation	Boundary mgt inno.
Alertness	*1*	*-0.01*	*-0.26*	*0.08*	0.04	**0.35***	0.13	0.23
Problem solving	*-0.01*	*1*	*-0.03*	*0.18*	-0.06	-0.04	-0.05	0.09
Systematic analysis	*-0.26*	*-0.03*	*1*	*-0.29*	**0.35 (-0.1)***	**0.36 (-0.1)***	**0.55 (-0.1)****	**0.43 (-0.1)***
Implementation	*0.08*	*0.18*	*-0.29*	*1*	0.15	0.18	0.17	0.37*
Operations innovation	0.04	-0.06	**0.35 (-0.1)***	0.15	*1*	*0.63***	*0.76***	*0.56***
Marketing innovation	**0.35***	-0.04	**0.36 (-0.1)***	0.18	*0.63***	*1*	*0.55***	*0.61***
Orgl. innovation	0.13	-0.05	**0.55 (-0.1)****	0.17	*0.76***	*0.55***	*1*	*0.46***
Boundary mgt innov	0.23	0.09	**0.43 (-0.1)***	0.37*	*0.56***	*0.61***	*0.46***	*1*

Table 4: ANOVA table showing the differences in the paths to entrepreneurship, types of innovation and dimensions of OR

Paths to Entrepreneurship Types of Innovation & Dimensions of OR		Innovation (F-Values)	Growth (F-Values)	Inheritance (F-Values)	Necessity (F-Values)
Types of Innovation	Incremental Innovation	1.089	1.675	0.404	1.488
	Radical Innovation	1.433	0.683	0.493	0.737
	Operations Innovation	4.470*	0.758	0.822	1.120
	Marketing Innovation	1.541	1.225	0.459	3.080*
	Organizational Innovation	3.200	1.123	2.178*	1.288
	Boundary Management Innovation	1.077	0.608	1.474	1.086
Dimensions of OR	Alertness Attitude to OR	0.360	0.987	1.970*	1.352
	Problem Solving Attitude to OR	1.066	0.402	1.328	1.042
	Systematic Analysis Attitude to OR	5.084*	0.401	0.770	1.291
	Implementation Attitude to OR	0.346	1.658	1.614	1.153

* denote significance at 95% respectively

explained by Manimala (1992). Contrary to this, one may take note of the lack of correlations (highlighted in italics at the left-hand top corner of Table 3) among the four different components of the OR scale. This finding may call into question the legitimacy of aggregating the given items as components of a single scale to measure ORS and thereby highlight the need for further studies to develop a more appropriate and inclusive scale for measuring ORS.

The ANOVA technique was used for finding out if there are differences among the entrepreneurs who have taken different paths to entrepreneurship in respect of their mean scores on six types of innovation and four dimensions of ORS. There were only five significant results, which are listed below (see also Table 4):

1. Entrepreneurs who inherited their ventures showed a slightly greater degree of alertness.
2. Entrepreneurs who took the path of innovation to entrepreneurship had a significantly low preference for systematic analysis for opportunity identification.
3. Entrepreneurs who took the path of innovation to entrepreneurship had a significantly

higher preference for operations innovations.
4. Entrepreneurs who started their ventures out of necessity showed higher degrees of marketing innovations.
5. Entrepreneurs who inherited their ventures showed higher degrees of organizational innovations.

These results are in conformity with the earlier correlation analyses. The negative role of systematic analysis in innovation is reconfirmed. Inheriting a venture usually requires a lot of restructuring of the existing structures and systems and alertness for newer opportunities so as to make it more effective. Similarly, those who become entrepreneurs out of necessity will have to find innovative ways for surviving in the competitive market, as they may not be having a new product or a process.

DISCUSSIONS AND THEORETICAL PROPOSITIONS FOR FUTURE STUDY

In this concluding section, we will briefly comment on the initial hypotheses and develop certain theoretical propositions, which could be empirically tested by future studies. From the results of correlation and ANOVA analysis, it was found that H1b (alertness and path of inheritance), H2c (operations innovation and path of innovation), H2d (marketing innovation and path of necessity), and H2e (organizational innovation and path of inheritance) were supported. Paths to entrepreneurship apparently do influence innovativeness, suggesting that all entrepreneurs have to be innovative irrespective of their paths to entrepreneurship. A corollary to the proposition above is the relationship identified between the path of necessity and marketing innovation, which supports an earlier finding of Manimala (1992) where it was observed that the largest proportion (85%) of entrepreneurial innovation relates to marketing. This may be because a large number of entrepreneurs enter the field without any innovative product or process and so the only way for them to survive is to innovate in finding new markets or in employing new marketing strategies in the existing or new market. Further, the necessity of this kind is felt mainly by the alert entrepreneurs, as suggested by the significant correlation between alertness and marketing innovations. Most of the innovations of entrepreneurs who take the innovation path seem to be in the areas of product and process development, which may be the reason for the significant positive correlation between the path of innovation and operations innovation. The significant positive correlation between the path of inheritance and organizational innovations is probably an indication that a new incumbent often has a new style of management and hence may introduce changes in the structure and management of the organization. Divergent thinking seems to be the critical factor in innovation and hence there is a negative correlation between systematic analysis used for identifying opportunity and innovative performance.

Other hypotheses, namely: H1a-alertness attitude and paths of inheritance and necessity' H2a-radical innovation and paths of innovation and growth, and H2b -incremental innovation and paths of inheritance and necessity, were not supported. It is obvious that the path of inheritance may not require the entrepreneur to be alert about opportunities; similarly when under necessity one may pick the first opportunity rather than waste time by being alert in exploring the market for the best opportunities. H2a was not supported probably because the kind of innovation and growth reported by the present sample of respondents was not of great significance. For a similar reason, H2b was also not supported; those who inherited a business or are pushed into it out of necessity may not have any ambitions beyond the maintenance of status-quo, and so may not be interested in innovations, be it incremental or radical.

It was rather strange that the path to growth was not correlated with the boundary management innovations. It is logical to assume that growth happens because of accumulation of resources from outside, which requires many innovations in managing the external agencies, as observed in Manimala (1992). The result was different for the present study probably because the sample contained mainly low growth enterprises. The limited growth achieved by them was probably the outcome of natural expansion, for which there was hardly any need of mobilizing large amounts of external resources through 'boundary-management'

innovations.

Since the factor analysis did not identify the 'developmental' approach to OR as a separate dimension, it is not possible to say anything about three hypotheses in the H3-set of six, namely, H3a, H3c and H3e, which link 'Developmental-OR' with different types of innovations. Of the remaining three hypotheses in the H3-set, which are about the association of 'Alertness-OR' with different types of innovations, the one linking 'Marketing Innovation' with 'Alertness-OR' (H3d) was supported with a significant correlation of 0.35. The other two hypotheses (H3b and H3f) linking Alertness with Incremental and Boundary-Management innovations respectively were not supported. In these cases too, the reason for the lack of support could be that the sample contained more of low-growth / low-innovation ventures, which probably failed to bring out the authentic characteristics of innovators.

It is apparent that the findings of the present study raise more questions than provide answers, and therefore will have to be supported by further studies. In view of the limited number of responses used for the present analysis, the findings reported above should be treated as tentative and propositional. A few such propositions / research questions emanating from the present study are listed below.

- There is apparently a need to take a fresh look at the scale for measuring ORS, as the existing one did not produce the expected results (as proposed by the original researchers) in the factor-analysis, neither in terms of the number of factors and their reliabilities nor in terms of reasonably high correlations among them suggesting that they could be part of a single measure. There were more factors (four) than the two proposed by the original researcher. The new set of factors also cannot be taken as conclusive because of the limitations of the data (a relatively small sample of 279 with entrepreneurs constituting only about 12% of it) as well as the inadequacies of the outcomes such as low Cronbach alpha for one factor and the two single-variable factors. Hence it is recommended that there could be a fresh study using an enhanced questionnaire (with additions based on pilot interviews of entrepreneurs), administered to a much larger sample, with a view to identifying the dimensions of ORS in a statistically justifiable manner.
- Systematic analysis as a means of identifying new opportunities is likely to reduce the innovativeness of the opportunities identified. While it is logical to assume that systematic analysis is based on convergent thinking and therefore is unlikely to produce radically different ideas, this proposition needs to be tested using a larger sample of highly innovative individuals.
- Implementation tasks may often require the use of external resources and so may call for boundary management innovations for raising such resources. This is all the more likely to be true for fast growth and diversification. Though the latter part was not supported by the findings of the present study (although the former was), it is worth exploring through a fresh study of high-growth and low-growth entrepreneurs.
- Alertness, in this study, was found to be associated with marketing innovations and the path of inheritance. The indication here could be that those who become entrepreneurs primarily because of the circumstantial pressures (such as necessity or inheritance) can survive and grow mainly by being alert to the relevant environment and innovating in marketing one's products, as the chances of their having innovative products or creating them are limited in the short run. A more detailed study on the relationship between paths to business ownership and the preferred innovations is likely to bring out many useful insights.
- Entrepreneurs who take the innovation route to business ownership are likely to be strong on operations innovations, as there is still a dominant view among practitioners that entrepreneurial innovation is mainly about product or process. A large-sample study of entrepreneurs taking different routes to business ownership can substantiate the prevalence of such a stereotypical perception

among them.

The findings of the present study suggest that the OR-process is much more complex than can be contained within just two dimensions, and may need to be explored further. Similarly there could be differences among entrepreneurs in terms of their ORS and the quality of opportunities identified based on the paths they have taken to business ownership.

NOTES

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Kishinchand Poornima Wasdani is Doctoral Scholar, Indian Institute of Science, Bangalore, India.
kishinchandpoornima@gmail.com
Mathew J. Manimala is Professor, Indian Institute of Management Bangalore, India.