

If Not Entrepreneurship, Can Psychological Characteristics Predict Entrepreneurial Orientation? – A Pilot Study

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Abstract

Prior research attempts to link entrepreneurship to personality traits have been inconclusive. One of the reasons for this has been inconsistent methods of defining and measuring entrepreneurship. To help clarify definitions, Lumpkin and Dess (1996) made a distinction between entrepreneurship and entrepreneurial orientation (EO) which provided a more fine grained approach to specifying the dimensions of entrepreneurial processes. This research revisits the question of whether personality characteristics -- locus of control, tolerance for ambiguity, risk-taking propensity, affiliation need and achievement motivation -- are useful predictors by investigating their relationship to dimensions of EO in a pilot study of 27 business owners.

Introduction

Prior research has suggested that individual involvement in entrepreneurial activity cannot be predicted by a simple set of characteristics (Sandberg & Hofer, 1987). Some scholars have blamed inconsistent findings, dissimilar methods and samples, and incompatible research questions for this conclusion; others have suggested that entrepreneurship is too complex to explain parsimoniously. Recognizing that both of these explanations may, to some extent, be valid, the present study proposes to build on previous work in construct clarification (Lumpkin & Dess, 1996) to seek new insights into the antecedents and corollaries of entrepreneurial activity.

In Lumpkin and Dess (1996), a contrast between entrepreneurship and "entrepreneurial orientation" was described. Drawing on prior theory and research, they suggested that an entrepreneurial orientation (EO) represents entrepreneurial processes that address the question of *how* new ventures are undertaken, whereas the term entrepreneurship refers to the content of entrepreneurial decisions by addressing *what* is undertaken. Five dimensions of EO – autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness – were identified. These dimensions represent distinct constructs that may vary independently of each other in a given context. Drawing on the finer-grained understanding of entrepreneurial activity suggested by the EO construct, we suggest that the antecedents and corollaries of these dimensions of EO may also differ. Thus, we propose this research question: Are there characteristics of individual entrepreneurs that will explain or predict the dimensions of an entrepreneurial orientation?

The remainder of this paper is divided into four parts. In the next section we briefly review the EO construct and research related to five personality characteristics – achievement motivation, affiliation need, locus of control, risk-taking propensity and tolerance for ambiguity. Then, we describe a pilot study of 27 business owners and present findings of a stepwise regression analysis in which the personality characteristics are independent variables and the dimensions of EO are the

dependent variables. Finally, we discuss the implications of our study and future research needs.

Literature Review

Numerous researchers have reminded us that there is no characteristic, predisposition, or set of traits at the individual entrepreneur level of analysis that consistently "predicts" entrepreneurial activity (e.g., Sandberg & Hofer, 1987). Among the problems entrepreneurship scholars have faced in seeking to understand these phenomena is disagreement on the definition of key terms. Inconsistent findings in the relationship between entrepreneurship and traits may be due to the fact that scholars have used various definitions and multiple operationalizations. In order to take a fresh look at the antecedents and corollaries of entrepreneurial activity, therefore, this research builds on Lumpkin and Dess' (1996) conceptual work aimed at construct clarification and refinement. In effect, Lumpkin and Dess' work served to "disaggregate" entrepreneurial processes into distinct dimensions or subconstructs. Scale development research on the EO construct (Lumpkin, 1998) revealed a set of five distinct dimensions: product/service innovativeness, a tendency to support creativity and experimentation in introducing new products/services; process innovativeness, a willingness to support novelty and technological research in developing new processes; risk taking, a willingness to take bold actions with uncertain outcomes; proactiveness, a forward-looking perspective involving acting in anticipation of future demand or change; and competitive aggressiveness, a tendency to be forceful and combative in efforts to outperform industry rivals.

Entrepreneurial orientation, when viewed in terms of these five dimensions, can be thought of as an organizational mindset that firms use to adapt to the business environment. As a result, it is related to the unique contexts in which an organization operates. Therefore, we may expect that characteristics of a firm's organization and environment will be important corollaries of the entrepreneurial orientation adopted by a given organization (Lumpkin & Dess, 1996).

However, entrepreneurial orientation may also be related to the personality characteristics of a firm's founders. It is widely recognized that founders and executives of an organization can exert important influences on the actions of the organization. For example, attraction-selection-attrition frameworks assert that the values of the founders will influence the value system in the organization because the founders will try to attract and select people who share their values. New entrants will also try to find organizations that fit their value systems (Schneider, Goldstein & Smith 1995). As a result, the values of the founders will exert important influences on the organizational culture. In newly established entrepreneurial organizations, founders of the organization will be able to shape the structures and strategies of the organization and will lead the organization in a direction that is consistent with their personal tendencies. Consequently, we may expect that personality characteristics of the entrepreneurs will influence the entrepreneurial orientation of the organization.

Identifying the relationship between personality characteristics and entrepreneurial orientation is important for theoretical and practical reasons, because entrepreneurs with a certain personality trait may have a tendency to identify with a sub-optimal entrepreneurial orientation and

identifying this tendency may provide benefits to the organization. In the past, achievement need, tolerance for ambiguity, risk taking and locus of control were analyzed with respect to entrepreneurial characteristics and were identified as correlates of being or desiring to be an entrepreneur (Ahmed, 1985; Begley & Boyd, 1987; Bonnett & Furnham, 1991). Due to its definition and conceptual closeness to achievement need, affiliation need is also included in the analyses that follow. As we have seen in past studies, however, findings related to these characteristics have been equivocal and thus this research is aimed at exploring these relationships by using more fine-grained measures. In the subsections that follow, therefore, we briefly describe the five personality characteristics and speculate about how they might be related to each of the dimensions of an entrepreneurial orientation.

Achievement Motivation

Achievement motivation can be defined as “behavior towards competition with a standard of excellence” (McClelland, 1953). People who have high levels of achievement motivation tend to set challenging goals, and try to achieve these goals. These people value feedback and use it to assess their accomplishments. They have a strong desire for self-efficacy and persist on a task only if they believe that they are likely to succeed. Achievement motivation is accepted as an important characteristic of the individual and influences work behaviors to a great extent.

Achievement motivation is a trait that is prevalent among entrepreneurs. Research indicates that it is higher in company founders, compared to managers (Begley & Boyd, 1987; Miner, Smith & Bracker, 1989). It is also related to company growth (Miner et al., 1989). Such findings that relate the level of achievement motivation of the founders and the financial growth of the organization may stem from a relationship between the personality traits of founders and the levels of entrepreneurial orientation they exhibit.

Certain characteristics of individuals with high achievement need may lead to different levels of entrepreneurial styles. For example, McClelland and Koestner (1992) suggested that people with high levels of achievement motivation will be future oriented and will take tasks seriously if they believe that current tasks will influence future goals. In addition, in a student sample, achievement motivation was positively correlated with proactiveness (Bateman & Crant, 1993). If personality traits of founders are reflected in the entrepreneurial orientation of an organization, it may be possible to observe higher levels of proactiveness in these companies. Proactiveness requires a preoccupation with future goals and high levels of achievement motivation may make the company more proactive.

Achievement motivation may also be linked to the innovativeness of the organization. Research linking achievement motivation to creativity suggests that in a highly intelligent group of children, achievement motivation explained high levels of variance in creativity (Jaswal & Jerath, 1991). In an entrepreneurial sample, achievement motivation was correlated with personal innovativeness (Miner et al., 1989). The innovativeness of the founders may make the organization more innovative due to its impact on organizational culture.

Achievement motivation refers to a desire to outperform other people. People with achievement motivation find satisfaction in comparing themselves to others and are motivated by this comparison. In college students, people with high achievement motivation are found to pursue competitive strategies (Ward, 1995). These results may suggest a link between achievement motivation and competitive aggressiveness.

Affiliation Need

Affiliation need refers to a desire to be close to other people in order to feel reassured that the self is acceptable (McClelland, 1953). People with higher levels of affiliation need tend to spend a significant amount of time socializing with other people. These people try to maintain harmonious relationships with others and may sometimes sacrifice work success to protect these relationships. People with high levels of affiliation need have a strong desire to be liked by their coworkers and subordinates, and this may influence their performance in a negative manner.

Based on this definition, it is possible to draw links between entrepreneurial styles and affiliation need. For example, we may expect a negative relationship between affiliation need and proactiveness. Proactiveness requires a certain level of future orientation, whereas people with affiliation need may be more concerned with protecting the status quo in order to protect their relationships with others. In addition, it may be possible to observe lower levels of competitive aggressiveness, because people with high levels of affiliation need want to be liked by people around them and they may avoid thinking in competitive terms. Being aggressive towards the competition may lead some people to have a negative attitude towards them and they may prefer to avoid these negative feelings.

Locus of Control

Locus of control refers to the perceived control over the events in one's life (Rotter, 1966). People with internal locus of control believe that they are able to control what happens in their lives. On the other hand, people with external locus of control tend to believe that most of the events in their lives result from being lucky, being at the right place at the right time, and the behaviors of powerful individuals. People's beliefs in personal control over their lives influence their perception of important events, their attitude towards life, and their work behaviors. In a student sample, internal locus of control was associated with a desire to become an entrepreneur (Bonnett & Furnham, 1991). Internal locus of control of the founders is associated with company performance (Boone, DeBrabander & Van Witteloostujin, 1996; Nwachukwu, 1995). The impact of locus of control on company performance may stem from a relationship between locus of control and entrepreneurial orientation.

Locus of control may be related to proactiveness. When the individuals believe that they can make a difference in their lives by performing certain actions, they may be more willing to think about the future and act proactively. Research indicates that people with higher degrees of internal locus of control tend to monitor the environment to obtain information (Van Zuuren &

Wolfs, 1991). This tendency may be the result of a desire to act on the environment.

Internal locus of control may also be related to risk-taking orientation. Research shows that internals tend to estimate probability of failure as lower and decide in favor of risky options (Hendrickx, Vlek & Calje, 1992). As an example of this tendency, internals are found to plan for expansion of their businesses even when unemployment rates are high (Ward, 1993). These results show that firms in which founders have higher internal locus of control may be more risk taking.

There is also reason to expect a positive relationship between locus of control, innovativeness and competitive aggressiveness. To the extent that individuals feel that being competitively aggressive or being innovative are ways of exerting control over the environment, we can expect a positive relationship between these variables.

Risk-Taking Propensity

Risk-taking propensity is defined as “the perceived probability of receiving rewards associated with the success of a situation that is required by the individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation” (Brockhaus, 1980). Risk taking is identified as a trait that distinguishes entrepreneurs from non-entrepreneurs and managers (Ahmed, 1985; Shane, 1996; Miner et al., 1989). The level of risk-taking propensity of the owners may lead to certain entrepreneurial orientations.

Risk-taking propensity of the individual founder is expected to be related to the risk-taking level of the entrepreneurial firm. When entrepreneurs have the ability to influence the actions of the organization with their personal decisions, their personal characteristics may be reflected in the actions of the organization and as a result the organization may be more risk taking.

Risk-taking propensity may positively influence innovativeness, especially product innovativeness. Product innovativeness requires a certain degree of tolerance for taking risks, because innovativeness benefits from a willingness to take risks and tolerate failures. The risk-taking propensity of the founders and owners will positively influence innovative attempts of the employees and as a result the organization may adopt an innovative orientation to face the competition.

Tolerance for Ambiguity

Budner (1962) defines *intolerance* for ambiguity as “a tendency to perceive ambiguous situations as sources of threat.” From this definition, we can infer that tolerance for ambiguity refers to a tendency to perceive ambiguous situations in a more neutral way. People who have low levels of tolerance for ambiguity tend to find unstructured and uncertain situations uncomfortable and want to avoid these situations. A certain level of tolerance for ambiguity may influence organizational success positively because organizational events are uncertain and unstructured

most of the time and organizational success requires the willingness and ability to cope with uncertainty.

Tolerance for ambiguity may be related to certain entrepreneurial styles. Tolerance for ambiguity is found to be related to personal creativity (Tegano, 1990) and the ability to produce more ideas during brainstorming (Comadena, 1984). These findings suggest that creativity and innovativeness requires a certain level of tolerance for ambiguity. The ability to tolerate ambiguous situations may also be positively related to the risk-taking style of the organization. Risk taking requires a certain level of tolerance for ambiguity. Additionally, research indicates that people with intolerance for ambiguity tend to perceive higher levels of risk under the same circumstances (Tsui, 1993). This tendency may lead them to select less risky alternatives. Tolerance for ambiguity may also be positively related to proactiveness. Proactiveness requires a desire to think about the future and take actions to answer future situations and threats. Proactive organizations need to think beyond conventional ways of operating and question the status quo. As a result, proactiveness requires the capability to handle the unknown. People who are able to tolerate ambiguity may lead their organizations to become more proactive.

Methods

Research Instrument

The research instrument was a mailed questionnaire. For each of the five dimensions of entrepreneurial orientation, a single item was originated for this study. The wording of these items was very similar to EO scales developed and tested for reliability by Khandwalla (1977), Miller (1983), Covin and Slevin (1986, 1989) and Covin and Covin (1990). Subsequent scale enhancement work conducted by Lumpkin (1998) was also consulted to capture distinctions between product/service and process innovativeness. A 7-point Likert-type scale format was used.

Achievement need was measured by the five items that were developed by Steers and Braunstein (1976). Respondents indicated their level of agreement with these items by using a 7-point Likert-type response style. One item is slightly modified to suit the characteristics of the sample. Instead of using the item, "I try to perform better than my *coworkers*," we used the term "*colleagues*." In the original study, the reliability for these five items was 0.66. In our sample, the coefficient alpha is 0.48.

Affiliation need was also measured using four of the original five items developed by Steers & Braunstein (1976). In the original study, the reliability was 0.56. In our study, coefficient alpha appeared to be 0.38 when all five items were used. Dropping one item resulted in an alpha of 0.54 so we used these four items to construct the scale. A 7-point Likert-type format was used.

Tolerance for ambiguity was measured by using six items selected from among the 16 items from the scale of intolerance for ambiguity (Budner 1962). We selected items that would be most relevant to company owners and eliminated items dealing with student-teacher relationship and

items unrelated to working life. These six items resulted in a coefficient alpha of 0.64. This reliability is close to what was found in past entrepreneurship research (e.g., Begley & Boyd, 1987). A 7-point Likert-type answering format was used. The responses are coded in a way that higher scores reflected higher levels of tolerance for ambiguity.

Internal-external locus of control was measured using items from Rotter's locus of control scale (Rotter, 1966), one of the most frequently used scales in this area. The original scale consists of 29 pairs and has a forced choice format. Due to space constraints, we chose a shorter version of this scale adapted by Valecha (1972). Valecha's version of the scale consists of 22 items (11 pairs). Among these, we selected 18 items that seemed most suitable for an adult sample. To preserve consistency across the questionnaire, and to make it easier for the respondents to answer quickly, we used a 7-point Likert-type answer format. Rotter's scale has been demonstrated to show similar levels of reliability and validity using a Likert-type answer format (Collins, 1974). The reliability in our sample was 0.88. Responses were coded in a way that higher scores reflect internal locus of control.

Propensity for risk taking was measured using eight items from the Jackson personality inventory (Jackson, 1976). The eight items used are the same as those selected by Begley & Boyd (1987). A 7-point Likert-style format was used. The coefficient alpha in our sample was 0.82.

Sample

The sample for the study consisted of all of the respondents to a previous study of entrepreneurial orientation by the first author. Thus, the questionnaire was a follow-up survey sent to 167 respondents. The original sample included owners and managers from non-diversified, non-affiliated firms. Firms were selected from the Business Marketing Source, a commercial database of a large southwestern metropolitan area, from Chamber of Commerce small business lists, and the American Business Disk, a yellow-pages based listing, from two southwestern states. Fifteen different industries (indicated by three-digit SIC codes) were represented in the original study.

Surveys from 43 respondents were received in time to be included in the follow-up study for an overall response rate of 24%. However, since this study focused on personality characteristics, only owners and founders who owned 50% or more of their firm were included in the study. (The original study included top managers and < 50% owners). This left a final sample of 27 respondents.

Analysis

A field study using mailed questionnaires was conducted. Correlational and stepwise multiple regression analysis was used to investigate the relationships between the five personality characteristics and five dimensions of EO. Stepwise regression is a search procedure used to examine the contribution of each independent variable (IV) to a regression model using successive steps. It is a useful technique for discriminating between several independent variables in a model-building process.

Results

Table 1 presents means, standard deviations and correlations among personality traits and entrepreneurial orientation variables. As can be seen from the correlation table, personality variables are strongly correlated among each other. This was expected due to the self-report nature of the data, as well as conceptual relationships between personality traits. According to zero-order correlations, achievement need and internal locus of control are positively correlated ($r = .574, p < .01$), whereas achievement need and affiliation need are negatively correlated with each other ($r = -.383, p < .05$). The correlations between the dimensions of entrepreneurial orientation and personality traits show that proactiveness and risk taking are not significantly correlated with any of the personality traits at the .05 level. Process innovativeness is positively correlated with risk-taking propensity ($r = .524, p < .01$). Product innovativeness is negatively correlated with tolerance for ambiguity ($r = -.393, p < .05$); competitive aggressiveness is positively correlated with internal locus of control ($r = .438, p < .05$).

TABLE 1: Means, Standard Deviations and Correlations Between Variables

Variables	Mean	SD	Achievement Need	Affiliation Need	Risk taking propensity	Tolerance for ambiguity	Locus of Control	Proactiveness	Product Innovative.	Process Innovative.	Risk Taking
Achievement Need	5.95	.583									
Affiliation Need	3.32	1.08	-.383*								
Risk Taking Propensity	4.50	1.10	.084	.056							
Tolerance for Ambiguity	4.56	1.02	.317	-.103	.162						
Locus of Control	5.13	.939	.574**	-.334	-.009	.133					
Proactiveness	5.55	1.52	.245	.165	.210	-.227	.354				
Product Innovativeness	4.92	1.63	.069	-.175	-.186	-.393*	.115	.309			
Process Innovativeness	5.48	1.45	.345	-.097	.524**	.039	.332	.291	-.065		
Risk Taking	4.70	1.89	.113	-.129	.362	-.026	.166	.550**	.327	.361	
Competitive Aggressiveness	5.66	1.54	.291	.118	.082	-.326	.438*	.783**	.385*	.212	.424*

*: Correlation is significant at the 0.05 level (2-tailed)

** : Correlation is significant at the 0.01 level (2-tailed)

To explore the relationships between personality traits and each entrepreneurial orientation dimension, we regressed each entrepreneurial style on the personality traits, using stepwise regression. In this method, each variable in the block is analyzed for entry and removal. Considering the smallness of the sample and the exploratory nature of the study, we specified $p = 0.1$ as the selection criterion. The results of the stepwise regression are reported in Table 2.

A review of the analyses indicates that some of the expected relationships seem to exist in the sample, although most of them are only marginally significant. The results for risk taking entrepreneurial dimension indicate that the only significant predictor of this construct is individual level risk-taking propensity. The variance explained, controlling for number of variables entered in the equation (Adjusted R^2), is .096 ($p < 0.1$). Although this result may not seem very surprising, it is important because it serves as a reliability check for our data. Since our dependent variables were measured by single items, and since our sample size is relatively small, we have low statistical power to uncover existing relationships. However, the relationship between risk-taking personality trait and risk-taking orientation of the organization indicates that it may be a valid approach to relate personality of owners to entrepreneurial style of the organization with this sample.

For proactiveness, the only significant predictor appears to be locus of control ($\beta = 0.575$, $p < 0.10$). Adjusted R^2 for the equation is 0.09, $p < .1$. This finding is again consistent with our expectations. However, contrary to our expectations, proactiveness is not related to tolerance for ambiguity, achievement motivation or affiliation needs in our sample.

For competitive aggressiveness, the predictors appear to be locus of control and tolerance for ambiguity. In a regression equation that includes these two variables, adjusted R^2 is 0.287 ($p < 0.01$). Both of these variables have significant coefficients — for locus of control, $\beta = 0.805$, $p < 0.01$; for tolerance for ambiguity, $\beta = -0.588$, $p < 0.05$). No significant relationship exists between achievement motivation, affiliation need and competitive aggressiveness, contrary to our expectations. In addition, the negative relationship between tolerance for ambiguity and competitive aggressiveness was unexpected. However, it is possible to make a post hoc explanation of this finding: if the owners of entrepreneurial organizations use competitive aggressiveness as a means of reducing uncertainty in the environment, it would be understandable to observe a negative relationship between tolerance for ambiguity and competitive aggressiveness.

For product innovativeness, the stepwise regression results indicate that the significant predictor is tolerance for ambiguity (Adjusted $R^2 = .121$, $p < 0.05$, $\beta = -0.627$, $p < 0.05$). Contrary to expectations, risk-taking propensity was not related to product innovativeness. In addition, tolerance for ambiguity is negatively related to product innovativeness, which means that lower levels of tolerance for ambiguity is related to higher levels of product innovativeness. If these results are true estimates of population parameters, this may indicate that tolerance for ambiguity has a different meaning in an entrepreneurial context: owners of entrepreneurial companies may be trying to reduce ambiguity in the environment by mechanisms such as competitive aggressiveness and product innovativeness.

The regression equation for process innovativeness indicates that risk-taking propensity and locus of control are the significant predictors (Adjusted $R^2 = .337$, $p < 0.01$; for risk-taking

propensity, $\beta = 0.691$, $p < 0.01$; for locus of control, $\beta = 0.520$, $p < 0.05$). Achievement need and tolerance for ambiguity were not related to process innovativeness, contrary to expectations.

TABLE 2: Results of Stepwise Regression Analysis

Variables	Risk Taking		Proactiveness		Competitive Aggressiveness		Product Innovativeness		Process Innovativeness					
	Model 1		Model 1		Model 1		Model 2		Model 1		Model 1		Model 2	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
Constant	1.913	1.48	2.599	1.58	1.970	1.54	4.21**	1.71	7.78***	1.37	2.39**	1.03	-.29	1.60
Risk taking Propensity	.620*	.32									.687***	.22	.69***	.209
Locus of control			.575*	.304	.719**	.295	.805***	.275					.52**	.247
Achievement Need														
Affiliation Need														
Tolerance for Ambig.							-.588**	.251	-.627**	.293				
F	3.763*		3.58*		5.93**		6.23***		4.567**		9.46***		7.6***	
R^2	.131		.125		.192		.342		.154		.275		.388	
Adj. R^2	.096		.090		.159		.287		.121		.245		.337	

N = 27

*: p<0.1

** : p<0.05

***: P<0.01

Discussion

The EO construct -- consisting of the subconstructs innovativeness, risk taking, proactiveness and competitive aggressiveness -- represents a more fine-grained conceptualization of entrepreneurial activity than has been used in previous research. This paper reports the results of a pilot study that asks whether investigating this level of detail is useful in understanding the relationship between personality characteristics and entrepreneurial processes. Previous research into the implications of entrepreneurial processes has focused on the effects of EO and the principle dependent variable has been financial performance (e.g., Sandberg & Hofer, 1987; Dess, Lumpkin, & Covin, 1997). Additionally, a preponderance of research into the relationship between entrepreneurship and personality characteristics has been aimed at exploring the performance implications (e.g., Begley & Boyd, 1987). In contrast, this research endeavored to consider the dimensions of EO as the dependent variable. Because this is a complex phenomenon, we did not expect to find a unique or parsimonious set of traits that explain EO. Nevertheless, we do think that this approach, which focuses on more narrowly defined aspects of entrepreneurial activity, may reveal nuances and insights that have not been observed in previous research. Thus, the preliminary findings that are reported in this study may serve as a guide to a renewed interest in traits as useful means for understanding the behaviors of people in organizations.

Future research should be designed to overcome some of the limitations of this study. The small sample size is perhaps acceptable for a pilot study, but it is still far too small to draw lasting conclusions. Future research with a larger sample of entrepreneurs might provide stronger results.

A more carefully selected sample, such as one that distinguishes between “growth oriented” and “income replacement” entrepreneurs might also aid in zeroing-in on important relationships. Another limitation is the use of a single-item measure to assess the dimensions of EO. Although the items that were developed were closely linked to the wording of scale items used in prior research (Covin & Slevin, 1989; Lumpkin, 1998; Miller, 1983), they were, in essence, new scale items. Thus, future research should pay attention to both reliability and validity issues in the measurement of the dimensions of EO. Future researchers might also choose different analytical techniques. The stepwise regression approach is, by nature, very exploratory and statistics texts usually recommend that the stepwise method be cross-validated with another sample.

Even with these limitations, however, this research has numerous potential implications. For example, results of such research might be useful for evaluation of new venture success by external funding sources such as venture capitalists. Practitioners of this type of high-risk lending are interested in methods of assessing entrepreneurial capabilities and tendencies that can be introduced into their risk calculus and potentially improve the likelihood of higher returns on their new venture investments. The findings of future research could be used to evaluate entrepreneurs engaged in such ventures thus improving the risk assessment methodologies used by venture capitalists. Similarly, this research could provide insights for team building in start-up environments by, for example, providing guidance in finding team members that can make unique contributions to new venture efforts.

Another potential implication is for organizations that are concerned with entrepreneurship pedagogy. Identifying trends in the relationship between EO and personality characteristics could be used to develop pedagogical techniques and methods of instruction that are more aptly suited to different entrepreneurial styles and predispositions, thus enhancing the preparedness of both educators and students to pursue entrepreneurial careers.

In summary, the ongoing effort to learn if there is a consistent and meaningful link between personality characteristics and entrepreneurial activity may benefit from advances that have recently been made in defining and clarifying the distinctions between entrepreneurship, entrepreneurial orientation and the entrepreneur.

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