Poster

TITLE

Personality Correlates with Business Outcomes in Developing Countries

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ABSTRACT

The current research examines links between personality and business success in developing countries. Our results show that personality impacts business success and provide an example of how research can link traditional I/O fields of study (e.g., personality and entrepreneurship) with real-world business outcomes at the organizational level.

PRESS PARAGRAPH

The current research examines links between personality and small to medium size business success in developing countries. We present and discuss a number of significant correlations between FFM scales and two objective outcomes: number of employees and revenue. Our results not only show that personality impacts business success, but also provide an important example of how research can link traditional I/O fields of study (e.g., personality and entrepreneurship) with real-world business outcomes at the organizational level. We discuss the implications of our results and provide recommendations for future research.

Personality Correlates with Business Outcomesin Developing Countries

I/O psychologists often express concerns over our field's lack of visibility in the business community. In a 2009 address to SIOP as the incoming president, Kurt Kraiger discussed the importance of "making SIOP louder." He cited, among others, objectives aimed at increasing our impact in the international business scene (Kraiger & Kerr, 2009). Current SIOP president Eduardo Salas outlined two similar goals during his 2010 SIOP presidential address: (a) building and strengthening our global efforts and (b) ensuring our advocacy and visibility (Salas & Ulrich, 2010).

In this paper, we present research linking two traditional I/O research topics, the study of personality and entrepreneurship, to impactful real-world outcomes. Specifically, we examine relationships between personality measures and financial metrics associated with the success of small to medium sized companies in developing countries.

The Missing Middle

The economics of many developing countries are composed primarily of two types of businesses: (a) informal microenterprises containing less than ten employees and (b) a small number of large firms, often created through foreign investment such as large mining operations or family-owned conglomerates that have been in existence for generations (de Ferranti & Ody, 2007). The relative lack of small to medium size enterprises (SMEs), often defined as those with between 10 and 250 employees, has been called the "missing middle". In discussing the missing middle, de Ferranti & Ody state:

> The World Bank estimates that SMEs contribute an average of 51.5 percent of GDP in high income countries – but only 15.6 percent in low income countries. By contrast, the "informal" micro-enterprise sector

> accounts for an average of 47.2 percent of GDP in low income countries, but just 13 percent in high income countries. (p. 3)

According to Sanders and Wegener (2006), SMEs play a central role in both the social and economic growth of developing countries. The authors argue that incomes rise as the number of SMEs grows, which in turn translates into the "fulfillment of basic human needs like health services, education, better homes, buffers for risk, etc." (p. 5). Also, SMEs often transform traditionally informal activities into structured business practices, thereby facilitating economic and market health.

To evaluate the impact of SMEs on employment and GDP, Ayyagari, Beck, and Demirgüc-Kunt (2003) developed a database containing market segment data and financial metrics across a broad range of countries. An examination of their data revealed a number of important links between the economic contribution of SMEs and other social and economic factors. For example, SME contributions to both employment and GDP were much smaller (18% and 16%) in low-income countries compared to high-income countries (57% and 51%). Also, SMEs play a larger economic role in countries with higher education levels and lower inflation rates. Finally, SMEs are more prominent in countries with more well established financial sectors, greater legal regulations, and lower barriers to entry for new start-ups.

Based on these and comparable findings, a number of researchers have argued for the importance of establishing practices that facilitate SME growth in low-income countries (de Ferranti & Ody, 2007). Similar efforts aimed at helping microenterprises have shown promise. For example, Grameen Bank and its founder, Mahammad Yunus, were awarded the Nobel Peace Prize in 2006 for "their efforts to create economic and

social development from below" (Storch, 2006). As a Professor of Economics at the University of Chittagong, Yunus pioneered the concept of microfinance, which describes activities associated with providing financial services to low-income clients who traditionally lack access to banks. Many microfinance institutions grant small loans, often around $1,000 USD, to individuals to assist with the development of microenterprises. Grameen Bank, which Yunus founded in 1983, has served over 8.3 million borrowers (Grameen Bank, 2010).

Like efforts aimed at providing loans to microenterprises, those aimed at facilitating growth of SMEs in developing countries must often look beyond traditional methods of measuring risk and potential. One such method is examining individual characteristics associated with successful entrepreneurial performance and using this information to identify business owners most likely to successfully grow SMEs. In this paper, we describe research examining relationships between personality and financial metrics associated with SMEs across Africa and Latin America.

The Predictive Validity and Structure of Personality

Personality assessment samples self-presentational behavior, or how a person portrays him or herself to others. As outlined by Hough and Oswald (2008), personality predicts numerous work and non-work related outcomes such as academic achievement, mortality, divorce, subjective well-being, and occupational attainment (O'Connor & Paunonen, 2007; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007; Rothstein, Paunonen, Rush, & King, 1994; Steel, Schmidt, & Shulz, 2008). Research also demonstrates that personality predicts health-related behaviors including the use of drugs and alcohol (Paunonen, Haddock, Forsterling, & Keinonen, 2003; Roberts,

Chernyshenko, Stark, & Goldberg, 2005). Illustrating the value of personality across contexts, Ozer and Benet-Martinez (2006) noted that, at an individual level, personality dispositions relate to happiness, physical and psychological health, spirituality, and identity. Finally, at a social/institutional level, personality relates to occupational choice, satisfaction, performance, community involvement, criminal activity, and political ideology.

Research also shows that personality predicts work-related outcomes such as overall job performance (e.g., Barrick, Mount, & Judge, 2001; Dudley, Orvis, Lebiecki, & Cortina, 2006; Hogan & Holland, 2003), task performance (Dudley et al., 2006; Hurtz & Donovan, 2000), expatriate performance (Mol, Born, Willemsen, & Van Der Molen, 2005) performance in teams (Peeters, Van Tuijl, Rutte, & Reymen, 2006), and a range of contextual performance variables including Organizational Citizenship Behaviors (OCBs), altruism, job dedication, interpersonal facilitation, and generalized compliance (Borman, Penner, Allen, & Motowidlo, 2001; Dudley et al., 2006; Hurtz & Donovan, 2000; LePine, Erez, & Johnson, 2002). Among leaders and managers, personality shows significant correlations with overall managerial effectiveness, promotion, and managerial level (Hough, Ones, & Viswesvaran, 1998), as well as leader emergence and effectiveness (Bono & Judge, 2004; Judge, Bono, Ilies, & Gerhardt, 2002). Finally, organizations can use personality measures to identify employees likely to engage in Counterproductive Work Behaviors (CWBs), or behaviors that violate the norms of an organization and cause harm to the organization itself, specific members of the organization, or both (Berry, Ones, & Sackett, 2007; Gruys & Sackett, 2003; Ones, Viswesvaran, & Schmidt, 1993; 2003).

Although hundreds of personality measures exist, factor analytic work shows that most personality scales can be organized according to five broad personality dimensions. The Five Factor Model (FFM) emerged from over fifty years of factor analytic research on the structure of observer ratings (cf. Norman, 1963; Thurstone, 1934; Tupes & Christal, 1961) and suggests that we think about and describe others and ourselves (Goldberg, 1990) in terms of five themes: (a) Extraversion - The degree to which a person is outgoing and talkative, (b) Agreeableness - The degree to which a person is rewarding to deal with and pleasant, (c) Conscientiousness - The degree to which a person complies with rules, norms, and standards, (d) Emotional Stability - The degree to which a person appears calm and self-accepting, and (e) Openness - The degree to which a person seems creative and open-minded.

The FFM provides the starting point for several prominent personality inventories constructed within the last thirty years (e.g., NEO-PI: Costa & McCrae, 1992; HPI: Hogan & Hogan, 2007; Personal Characteristics Inventory: Mount & Barrick, 2001). The five dimensions provide a useful taxonomy for classifying individual differences in social behavior (i.e., reputation). Evidence suggests that most existing multidimensional personality inventories conform to these five dimensions (Wiggins & Pincus, 1992). Consequently, the FFM represents the dominant paradigm for current research in personality assessment (R. Hogan & J. Hogan, 2007).

Hypotheses

Researchers have identified a number of individual characteristics associated with entrepreneurial success in both the U.S. and abroad. These characteristics include innovation (de Mel, McKenzi, & Woodruff, 2009; Rauch & Frese, 2007), the need for

achievement (Rauch & Frese), tendencies to set lofty goals (Baum & Locke, 2004), and social-political skills (Baron & Tang, 2009).

Individual personality characteristics have also been linked to entrepreneurial success. For example, research has found that successful entrepreneurs are higher than average on Extraversion (Schmitt-Rodermund, 2004), Conscientiousness (Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004, Schmitt-Rodermund, 2004; Zhao & Seibert, 2006), Emotional Stability (Zhao & Seibert, 2006), and Openness (Schmitt-Rodermund, 2004; Zhao & Siebert, 2006) and lower than average on Agreeableness (Rothman & Hogan, 2007; Schmitt-Rodermund, 2004; Zhao & Seibert, 2006).

These results indicate that successful entrepreneurs are likely to be outgoing and value social interactions but also direct and confrontational when needed, will be intellectually curious and driven to apply their ideas, and will not only be motivated by success but able to apply effect stress copying strategies when faced with obstacles. Based on these results, we developed the following hypotheses:

Hypothesis 1: Extraversion will be positively correlated with entrepreneurial success.

Hypothesis 2: Agreeableness will be negatively correlated with entrepreneurial success.

Hypothesis 3: Conscientiousness will be positively correlated with entrepreneurial success.

Hypothesis 4: Emotional Stability will be positively correlated with entrepreneurial success.

Hypothesis 5: Openness will be positively correlated with entrepreneurial success.

Regardless of location or economic status, starting any new business venture involves risk. Although the FFM provides a useful mechanism for categorizing most personality scales, risk taking is not clearly identified by any one factor. Research shows, however, that successful entrepreneurs are more prone to risk than their business counterparts (Macko & Tyszka, 2009; Rothman & Hogan, 2007). Therefore, we developed the following hypothesis:

Hypothesis 6: Risk taking will be positively correlated with organization size and revenue.

Methods

We examined data collected by the Entrepreneurial Finance Lab Research Initiative (EFLRI) at Harvard's Center for International Development. The goal of the EFLRI is to unlock the entrepreneurial potential of the developing world's missing middle through innovations in new risk screening tools and financial contracts that allow for profitable, sustainable, and scalable financing of SMEs, primarily by commercial banks. Since 2006, EFLRI has been experimenting with psychometric assessments as viable risk screening tools for SME owners who lack the credit history and collateral required by traditional credit scoring models. To this end, it has partnered with a number of leading test providers as well as a network of financial institutions and entrepreneurship training organizations across Latin America and Africa.

Measures

Predictor Measures. EFLRI collected personality data using components of the Hogan Personality Inventory (HPI; Hogan & Hogan, 2007) and Hogan Development Survey (HDS; Hogan and Hogan, 2009).

The HPI was the first measure of normal personality developed explicitly to assess the FFM in occupational settings. The measurement goal of the HPI is to predict real-world outcomes. As such, it is an original and well-known measure of the FFM and considered a marker instrument for personality measures in English and other languages. It incorporates the FFM with an internal factor structure supporting seven scales. The HPI has been used to study every job in the U.S. economy and rests on an archival data base of over 1,000,000 cases.

To examine risk taking, EFLRI used the Mischievous scale of the Hogan Development Survey (HDS; Hogan & Hogan, 2009). The HDS is a 168-item self-report assessment that contains 11 primary scales that assess "dark side" personality. These scales index behavioral tendencies that can emerge and negatively impact performance, particularly when an individual is fatigued, stressed, bored, or lacking social vigilance. The HDS Technical Manual (Hogan & Hogan, 2009) defines Mischievous as "concerns seeming to enjoy taking risks and testing the limits" (p. 13). Construct validity information shows that individuals high on Mischievous are viewed us rule breaking, deceitful and arrogant.

Criterion Measures. All participants were owner/operators of microenterprises and SMEs who had risk products with an EFLRI-partner financial institution. In addition to completing the psychometric assessments, the participants were asked about the size of

their business, both in terms of number of employees and in terms of financial revenues (sales). These are self-reported figures, and the participants had little incentive to over- or under-report, given that they were existing clients of the financial institutions rather than new applicants, and they were guaranteed that their responses would not be shared with local tax authorities.

Sample

Data were collected from 1,870 business owners who were active in directing their companies. Each of these entrepreneurs had an active loan with one of EFLRI's financial institution partners: an SME Venture Capital company in South Africa (116 clients tested), a commercial bank in South Africa (183 clients tested), an SME-focused commercial bank in Kenya (126 tested), a microenterprise-focused commercial bank in Kenya (370 tested), a microfinance institution in Colombia (542 clients tested), an urban microfinance institution in Peru (115 clients tested), and a rural microfinance institution in Peru (418 clients tested). Clients were requested to complete the assessments by their loan officers, and were offered prizes for their participation (in most cases, the chance to win a computer). These assessments were completed from May 2009 to June 2010. Participants were clearly explained that the assessments were for research purposes, and had no bearing on their relationship with the financial institution. Response rates were between 45 and 80%.

Analytical Approach

We examined correlations between each personality scale and both number of employees and revenues to test our hypotheses. In addition, we examined multiple

regression results to determine the overall predictive validity of the combined personality measures and unique contributions of each for predicting both outcomes.

Results

Table 1 presents results between each personality measure and both business outcomes previously described. Table 2 presents multiple regression results for these outcomes.

Results in Table 1 show that Extraversion was significantly correlated with both outcomes (r = .27 and .28 for number of employees and revenue respectively, $p < .01$), thereby supporting Hypothesis 1. These results indicate that individuals who are more outgoing, social, and driven are more likely to own larger companies both in terms of size and revenues.

Agreeableness was significantly correlated with both outcomes (r = -.12 and -.11 for number of employees and revenue respectively, $p < .01$), thereby supporting Hypothesis 2. These results indicate that individuals who are more direct, willing to confront others, and less concerned with catering to others' wishes are more likely to own larger companies both in terms of size and revenues.

Conscientiousness was not significantly correlated with either outcome (r = -.04 and - .02 for number of employees and revenue respectively, $p > .05$). We did not, therefore, find support for Hypothesis 3.

Emotional Stability was significantly correlated with both outcomes (r = .19 and .19 for number of employees and revenue respectively, $p < .01$), thereby supporting Hypothesis 4. These results indicate that individuals who are even tempered, adaptable,

and tend to stay calm during stressful situations are more likely to own larger companies both in terms of size and revenues.

Openness was significantly correlated with both outcomes (r = .12 and .08 for number of employees and revenue respectively, $p < .01$), thereby supporting Hypothesis 5. These results indicate that individuals who are imaginative, quick-witted, and open to change are more likely to own larger companies both in terms of size and revenues.

Finally, Mischievous behavior was significantly correlated with both outcomes (r = .18 and .17 for number of employees and revenue respectively, $p < .01$), thereby supporting Hypothesis 6. These results indicate that risk-prone individuals are more likely to own larger companies both in terms of size and revenues.

To examine the total predictive validity of a combination of personality scales, we conducted a series of multiple regressions. First, we examined full models containing all six personality scales for both outcomes. Results in Table 2 show that full models including all dependent variables produced *MRs* of .39 for both outcomes ($p < .01$). Next, we used stepwise regression to identify the most economic set of personality variables for predicting each outcome. When using number of employees as the dependent variable, only Conscientiousness fell out of the model as a non-significant predictor. When using revenues as the dependent variable, both Conscientiousness and Openness fell out of the model as non-significant predictors. *MRs* remained high, at .39 for number of employees and .38 for revenues ($p < .01$). Furthermore, Ambition remained the highest predictor of both outcomes, with partial correlations of .23 for number of employees ($p < .01$) and .25 revenues ($p < .01$).

Discussion

Our results show that multiple personality characteristics are significantly related to two important indicators of entrepreneurial success: number of employees and revenues. We tested our hypotheses using a large global sample containing data from real-world organizations. Our results supported five of our six hypotheses, thereby contributing to a growing body of research examining relationships between individual characteristics and entrepreneurship.

Developing SMEs is particularly important for low-income countries but presents a unique set of challenges that business start-ups in high-income countries often do not face. One of those challenges is a lack of access to both business knowledge and financial backing. Our results show that personality characteristics predict how well a person can overcome these obstacles.

Given the number of contextual, financial, political, and environmental characteristics that lead to business success, we believe that our findings are not only statistically but also practically significant. Furthermore, the number of variables we found to be statistically related to important success measures shows that no one individual personality measure exemplifies the primary characteristic of successful business owners. Instead, several characteristics contribute to success. As such, our results provide a means for not only identifying individuals who are more likely to be successful in such endeavors but also identifying developmental opportunities for others.

Based on limitations with the current study, we present a number of directions for future research. First, our outcome measures were self-report. Although self-report measures raise concerns over common method variance affecting results, our use of

objective and verifiable metrics collected with the help of financial institutions helps reduce error. Still, future research should replicate our results using similar outcomes collected using other methods.

Second, our research was cross-sectional. Although previous research confirms that HPI scores tend to remain stable over time in working adults (Hogan, Barrett & Hogan, 2007; Hogan & Hogan, 2007), we cannot conclude that individual characteristics definitively influenced business success. Until longitudinal data for the current or future samples becomes available, our results remain correlational.

Third, future research should examine additional outcome measures such as long-term growth and profitability. One primary contribution of the current study is the financial nature of the data, but additional metrics should also be examined. Profitability, in particular, would be useful not only as an additional measure of success but as a method for presenting potential lending institutions with a reliable method of calculating the expected return on their future investments in SMEs.

Finally, it would be valuable to replicate our results with additional samples. Although our sample was large and obtained from multiple countries, additional samples would help determine how well our results generalize to other populations, industries, market sectors, and geographic regions.

Despite these limitations, our results contribute financial knowledge to organizations seeking to aid in the development of SMEs in low-income countries. Just as importantly, our efforts and partnership with EFLRI provides an important example of how research can effectively link traditional I/O practices and services to critical business performance metrics on a global scale.

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Table 1

Variable Intercorrelations

	1	2	3	4	5	6	7	8
1. Extraversion								
2. Agreeableness	.29**							
3. Conscientiousness	.29**	.34**						
4. Emotional Stability	.52**	.19**	.27**					
5. Openness	.31**	.10**	.00	.01				
6. Mischievous	-.03	-.15**	-.36**	-.19**	.34**			
7. # of Employees	.27**	-.12**	-.04	.19**	.12**	.18**		
8. Revenue	.28**	-.11**	-.02	.19**	.08**	.17**	.62**	

Note. N = 1,656-1,680; *Correlation is significant at .05 level; **Correlation is significant at .01 level.

Table 2:

Multiple Regression Results

Standardized Regression Weights	# of Employees	Revenue
Extraversion	.28**	.30**
Agreeableness	-.18**	-.17**
Conscientiousness	-.04	-.01
Emotional Stability	.12**	.10**
Openness	-.01	-.06*
Mischievous	.17**	.19**
Total MR	.39**	.39**

Note. * Result is significant at .05 level; ** Result is significant at .01 level.