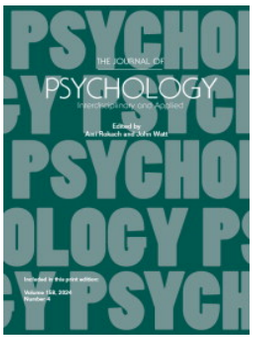

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# The Importance of Context-Relevance: Entrepreneurial Personality Relates to Entrepreneurial Outcomes Beyond the HEXACO and Dark Triad

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**ABSTRACT**

Entrepreneurial Personality (EP) is a collection of traits that causes someone to be entrepreneurial, including both an attraction to and success in entrepreneurial activities. Although EP and its inclusion criteria is defined by its relevance to entrepreneurship, research has yet to support that it relates to entrepreneurial outcomes more strongly than extant frameworks of personality, causing uncertainty regarding its theoretical rationale and conceptual foundation. Applying the bandwidth-fidelity dilemma as our theoretical lens, the current article reports two studies to test whether EP relates to entrepreneurial outcomes beyond the HEXACO and Dark Triad dimensions. Using a sample of non-business owners, Study 1 supports that EP explains both more variance than and variance beyond the HEXACO and Dark Triad in outcomes associated with the earlier phases of the entrepreneurial process, such as entrepreneurial goal setting, goal striving, and goal achievement. Using a sample of business owners, Study 2 supports that EP explains both more variance than and variance beyond the HEXACO and Dark Triad in outcomes associated with the later phases of the entrepreneurial process, including entrepreneurial performance and well-being. These results encourage future research on EP by supporting the validity of the personality framework, and we suggest several directions for future research, such as broader applications of the bandwidth-fidelity dilemma.

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Entrepreneurship; personality; entrepreneurial personality; HEXACO; Dark Triad; bandwidth-fidelity dilemma

Researchers have demonstrated a strong interest in the relation of personality and entrepreneurship, perhaps because various broad personality frameworks have been supported to relate to entrepreneurial outcomes even when accounting for other relevant predictors (e.g., contextual factors) (Holt et al., 2007; Karimi et al., 2017; Korunka et al., 2003). This established importance of personality has caused researchers to continuously (re)assess which frameworks produce the strongest relations with entrepreneurial outcomes, as identifying the most relevant frameworks could elucidate the role of personality in the entrepreneurial process and enable practitioners to leverage personality in improving personal and organizational outcomes.

Recently, Howard (2023; Howard & Boudreaux, 2024) developed a personality framework consisting of the traits most strongly related to entrepreneurial outcomes,

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which they labeled Entrepreneurial Personality (EP). The representative traits of EP are believed to make someone entrepreneurial, including both the attraction to and success at entrepreneurial endeavors. EP contains the dimensions of innovativeness, risk-taking propensity, achievement orientation, autonomy orientation, proactiveness, locus of control, and self-efficacy (Table 1). While EP is considered a unifying framework, these dimensions are included separately in analyses, as Howard (2023) proposed that each dimension may capture unique variance in outcomes that is not fully captured by the others (or by aggregating the dimensions together). This analytic and operational approach is similar to other personality frameworks of conceptually related traits, such as the Dark Triad (Furnham et al., 2013; Jones & Paulhus, 2014; Lee & Ashton, 2014).

Howard (2023) and Howard and Boudreaux (2024) supported that the EP dimensions explain sizable variance in entrepreneurial outcomes, encouraging their continued investigation; however, many essential aspects of EP have yet to be tested due to its nascency, including perhaps its most essential. The dimensions of EP were identified by their relevance to entrepreneurship, but it is unknown whether this narrower framework relates to entrepreneurial outcomes stronger than broader personality frameworks. While the framework and its inclusion criteria are defined by a relevance to entrepreneurial outcomes, it may collectively relate to relevant outcomes no stronger than broader frameworks, which would cast significant doubt upon its theoretical rationale and conceptual foundation. Without supporting this essential aspect of EP, researchers cannot reliably study the novel personality framework. In the current article, we address this tension in the present literature *via* the lens of the bandwidth-fidelity dilemma.

The bandwidth-fidelity dilemma proposes that broader traits and frameworks tend to produce significant relations with a larger number of constructs and outcomes, whereas narrower traits and frameworks tend to produce larger relations with specifically relevant constructs and outcomes (Meyer et al., 2021; Ones & Viswesvaran, 1996; Salgado, 2017). Broad traits and frameworks are expected to produce generally moderate relations with most constructs and outcomes, and narrow traits and frameworks are expected to produce strong relations with proximal and weak relations with distal constructs and outcomes. For instance, the broad construct of conscientiousness could be expected to significantly relate to most beneficial employee outcomes such as quality and quantity of outputs, whereas the narrower construct of perfectionism could be expected to relate stronger to quality but weaker to quantity of outputs due to its more direct relevance to the former (Dudley et al., 2006; Salgado et al., 2015). We argue that this phenomenon holds true for entrepreneurship, and we propose that the narrower framework of EP relates to entrepreneurial outcomes beyond broader

**Table 1.** Entrepreneurial Personality Dimensions and Their Definitions.

| Dimension | Definition |
|---|---|
| 1.) Innovativeness | Tendency to experiment and create novel and effective outcomes. |
| 2.) Risk-Taking Propensity | Tendency to perform behaviors with uncertain outcomes. |
| 3.) Achievement Orientation | Desire for accomplishment and exceeding standards. |
| 4.) Autonomy Orientation | Desire for freedom, independence, and discretion. |
| 5.) Proactiveness | Tendency to anticipate events and preemptively initiate action. |
| 6.) Locus of Control | Belief that outcomes are determined by own actions. |
| 7.) Self-Efficacy | Positive assessment of own capabilities. |

frameworks. In the current article, we specifically investigate the broader frameworks of the HEXACO and Dark Triad.

The HEXACO is similar to the Big Five personality framework; however, some variance is reorganized in the five dimensions shared between the HEXACO and Big Five, and the former framework also includes the additional dimension of honesty-humility (Ashton & Lee, 2020; Thielmann et al., 2020; Zettler et al., 2020). The inclusion of this additional dimension causes the HEXACO to often capture more variance in outcomes than the Big Five (Pletzer et al., 2019; Soutter et al., 2020), enabling its present application to be a stronger test of EP's capabilities. Alternatively, the Dark Triad is the most popular conceptualization of maladaptive personality traits, containing narcissism, Machiavellianism, and psychopathy (Furnham et al., 2013; Jones & Paulhus, 2014). Because the HEXACO and Big Five do not include dimensions representing overtly maladaptive personality traits, they are often studied alongside the Dark Triad to assess the entire spectrum of personality (Howard & Van Zandt, 2020; Lee & Ashton, 2014). Including this framework likewise provides an even more robust assessment of EP's capabilities, enabling the current article to effectively and conservatively test whether EP indeed relates to variance in entrepreneurial outcomes beyond broader and less-relevant personality frameworks.

Further, Howard (2023) tested the Pillar and Wheel Conceptualizations of EP, which represent two competing perspectives regarding the relation of EP's dimensions with relevant outcomes. The Pillar Conceptualization proposes that the dimensions of EP produce consistent relations with outcomes across all phases of the entrepreneurial process, and their importance is constant like pillars holding up a ceiling; whereas the Wheel Conceptualization proposes that the dimensions' relations with outcomes varies across the phases, and their importance varies like spokes in a wheel. The author empirically supported the Wheel Conceptualization, showing that each dimension is more strongly related with outcomes associated with either the earlier or later phases of the entrepreneurial process. This finding suggests that researchers should not assume that the dynamics of EP are consistent across all phases of the process. The dimensions of EP may together more strongly relate with outcomes associated with both the earlier and later phases of the entrepreneurial process, but they may also collectively explain more variance beyond the HEXACO and Dark Triad dimensions in outcomes associated with one phase but not the other.

For this reason, the current article reports two studies. The first study tests relations of the EP, HEXACO, and Dark Triad dimensions with outcomes associated with the earlier phases of the entrepreneurial process in a sample of non-business owners. We investigate the outcomes of entrepreneurial goal setting, goal commitment, and goal achievement to understand how personality relates to the decision to become an entrepreneur. We also investigate entrepreneurial alertness to assess how personality relates to behaviors associated with entrepreneurial entry. The second study tests the relations of our studied personality dimensions with outcomes associated with the later phases of the entrepreneurial process in a sample of business owners. We investigate the outcomes of relative entrepreneurial performance, strategic entrepreneurial performance, and entrepreneurial success to understand how personality relates to organizational and personal performance. We also investigate life satisfaction to assess how personality relates to entrepreneur well-being. By conducting these two studies, we

provide a robust assessment of whether the dimensions of EP relate to entrepreneurial outcomes beyond the HEXACO and Dark Triad dimensions across multiple phases of the entrepreneurial process.

Finally, we also provide two sets of hypotheses associated with our research questions, one a more liberal assessment and the other a more conservative assessment of our proposals. Hypotheses 1 and 3 propose that the dimensions of EP relate to our studied outcomes beyond the HEXACO and Dark Triad dimensions. These hypotheses represent more liberal assessments of our research questions, as they only suggest that EP captures unique variance in outcomes from the HEXACO and Dark Triad. Hypotheses 2 and 4 propose that the dimensions of EP produce better fit (e.g., AIC and BIC) in regression analyses when predicting our studied outcomes than the HEXACO and Dark Triad dimensions together. These hypotheses represent more conservative assessments of our research questions, as they suggest that EP more strongly relates to outcomes than the HEXACO and Dark Triad. By testing all four hypotheses, we provide a more comprehensive analysis of EP and our applied theoretical perspectives.

**Hypothesis 1:** When controlling for the HEXACO and Dark Triad dimensions, the Entrepreneurial Personality dimensions explain variance in outcomes associated with the earlier phases of the entrepreneurial process in a sample of non-business owners.

**Hypothesis 2:** Relative to the HEXACO and Dark Triad dimensions together, the Entrepreneurial Personality dimensions produce better fit (e.g., AIC and BIC) in regression analyses when predicting outcomes associated with the earlier phases of the entrepreneurial process in a sample of non-business owners.

**Hypothesis 3:** When controlling for the HEXACO and Dark Triad dimensions, the Entrepreneurial Personality dimensions explain variance in outcomes associated with the later phases of the entrepreneurial process in a sample of business owners.

**Hypothesis 4:** Relative to the HEXACO and Dark Triad dimensions together, the Entrepreneurial Personality dimensions produce better fit (e.g., AIC and BIC) in regression analyses when predicting outcomes associated with the later phases of the entrepreneurial process in a sample of business owners.

Conducting our two studies provides many implications for research and practice. First, researchers have demonstrated a significant interest in the relation of personality with entrepreneurial outcomes, including the HEXACO and Dark Triad (Brownell et al., 2021; Hmieleski & Lerner, 2016; Howard, 2020). By supporting that the EP dimensions relate to relevant outcomes beyond the HEXACO and Dark Triad, we can redirect research efforts to investigate frameworks that have a more direct relevance to entrepreneurship. Second, also by supporting the relevance of EP beyond the HEXACO and Dark Triad, we empirically support the theorical basis of this newly created framework. Future researchers can utilize it with greater confidence in the soundness of its conceptual rationale. Third, we support the application of the bandwidth-fidelity dilemma to the study of entrepreneurship. This phenomenon has been regularly studied across other domains of research, particularly the study of management with general employees (Meyer et al., 2021; Ones & Viswesvaran, 1996; Salgado, 2017), and these prior insights can be generalized understand entrepreneurship. Fourth, we also replicate prior results. Namely, we show that EP and personality in general explains a sizable amount of variance in entrepreneurial outcomes, supporting

the continued study of personality and the entrepreneurial process. Together, these efforts collectively open many directions for future research, encouraging the broader study of EP, personality, and entrepreneurship.

## Study 1

### Method

#### Participants

Participants were recruited from Prolific in return for monetary compensation. Their mean age was 42.08 (*S.D.* = 14.68); 52% were female; 100% were located in the United States; and 0% were business owners. Participants' self-reported races were white (75%), Asian (9%), Black (8%), and other (8 %). Their highest degrees earned were high school (31%), associate's (16%), bachelor's (35%), master's (16%), and doctorate (1%). They worked on average 27.75 h per week (*S.D.* = 16.24), including those not currently employed (i.e., 0 h per week).

#### Procedure

Participants enrolled *via* Prolific, which is an online platform that connects researchers with potential participants. When registering on Prolific, participants must provide proof of identification to verify their identity, which is intermittently rechecked to ensure data quality. Study descriptions are provided on the Prolific platform, and participants self-select into the studies. For Study 1, we provided the description of "A Study on Your Perceptions", along with general details of the study including the number of surveys and items. We specifically chose this description to ensure that we attracted a wide range of non-business owners, rather than solely those interested in entrepreneurship. If we included terms like "Potential Entrepreneurs" in the study description, we would likely introduce range restriction into our sample, thereby producing biased estimates (Hunter et al., 2006; Sackett et al., 2007). We also did not include these and similar terms to avoid participant demand characteristics, wherein participants provide responses based on beliefs about the study intent (Hair et al., 2019; Nichols & Maner, 2008). Therefore, choosing this study description was ideal for the present investigation.

Upon enrolling, participants completed the first survey with the measures of EP, HEXACO, and Dark Triad ($n = 269$). Two weeks later, they were sent a survey with all outcome measures ($n = 202$). We removed 3 participants that failed more than one attention check per wave, and the reported sample sizes reflect the sample after removing these participants.

This observed attrition is typical based on prior reviews and studies of longitudinal research (Ribisl et al., 1996; Young et al., 2006; 2007). As recommended by prior authors (Atkinson et al., 2019; Hair et al., 2019), we conducted a series of t-tests in which we compared participants who completed both surveys to those who completed the first survey alone, which enabled us to probe whether systematic differences can be seen between our responders and non-responders. Of the 16 t-tests, none produced a statistically significant result (all $p > .05$), suggesting that the responders and non-responders did not substantially differ.

### Measures

Unless otherwise noted, all measures used a 1 (Strongly Disagree) to 7 (Strongly Agree) format.

***Entrepreneurial Personality.*** We administered the Entrepreneurial Personality Scale of Howard (2023)[1], who provided ample psychometric and validity support *via* a five-study scale creation process. The scale includes four items for each dimension, and example items are "I often approach tasks in unique ways" (innovativeness) and "I tend to plan ahead on projects" (proactiveness). The Cronbach's alpha of the dimensions ranged from .83 to .95.

***HEXACO.*** We administered the Brief HEXACO Inventory of De Vries (2013), which provided psychometric and validity support for the measure. The scale includes four items for each dimension, and example items are "I can look at a painting for a long time" (openness) and "I make sure things are in the right spot" (conscientiousness). We removed one agreeableness item, as it significantly lowered the internal consistency of the dimensions. The Cronbach's alpha of the dimensions ranged from .45 to .73.

***Dark Triad.*** We administered the Dirty Dozen scale of Jonason and Webster (2010), who provided significant psychometric and validity support for the measure. The scale includes four items for each dimension, and example items are "I tend to want others to admire me" (narcissism) and "I tend to manipulate to get my way" (Machiavellianism). The Cronbach's alpha of the dimensions ranged from .77 to .86.

***Entrepreneurial Goal Setting.*** We adapted the goal setting scale of Erez and Judge (2001) to measure entrepreneurial goal setting. The three items were: "Over the past year, I have set regular entrepreneurship goals", "Over the past year, I have ser regular goals for running a business", and "My entrepreneurship goals that I have set for myself are difficult to achieve." The Cronbach's alpha of the scale was .81.

***Entrepreneurial Goal Commitment.*** We adapted the goal commitment scale of Hollenback et al. (1989) to measure entrepreneurial goal commitment. An example item is, "I am strongly committed to pursuing entrepreneurship goals." The Cronbach's alpha of the scale was .90.

***Entrepreneurial Goal Attainment.*** We adapted the goal attainment scale of Judge et al. (2005) to measure entrepreneurial goal attainment. The items were: "I have made considerable progress towards my business goals in the past few months" and "I accomplished what I set out to do with my entrepreneurship goals in the past few months." The Cronbach's alpha of the scale was .88.

***Entrepreneurial Alertness.*** We administered the entrepreneurial alertness scale of Tang et al. (2012), which includes three dimensions: scanning and search (5 items), association and connection (4 items), and evaluation and judgment (3 items). We did not include an original scanning and search item, as it is outdated. Example items are, "I am an

avid information seeker" (scanning and search) and "I have a gut feeling about potential opportunities" (evaluation and judgment). The Cronbach's alpha of the dimensions ranged from .78 to .93.

## Results

To conduct our analyses for both studies, we utilized all participants available. For instance, in calculating estimates between variables measured in the first survey, we used all participants who completed the first survey regardless of their participation in the second survey; and in calculating estimates between variables measured in the first and second survey (or second survey alone), we included all participants who completed the second survey. To ensure that our results do not arise due to this statistical decision, we provide two additional sets of analysis in Supplemental Materials A and B. Supplemental Material A includes a reanalysis of our findings solely utilizing participants that complete both surveys. Supplemental Material B includes a reanalysis of our findings when using a stochastic regression imputation missing data approach to address non-responses to the second survey. Our inferences are consistent between our primary analyses and these supplemental analyses, providing significant support for the robustness of our results and indicating that our findings are not due to this analytical decision.

Correlations and Cronbach's alphas are provided in Table 2. To test Hypothesis 1, we performed a series of linear stepwise regression analyses. The HEXACO dimensions were entered in the first step; the Dark Triad dimensions were entered in the second step; and the EP dimensions were entered in the third step of the analyses. By conducting our analyses in this manner, we could assess the extent that EP explains variance in the studied outcomes beyond the other conceptualizations of personality. The results of these analyses are presented in Table 3.

Two predictors had variance inflation factor values slightly above the conservative cutoff of 3.00 ($VIF = 3.23$ & 3.07) (Hair et al., 2019). Because these values approached the cutoff and removing any dimensions may alter interpretations of the broader frameworks, we chose to retain these two predictors (Cohen et al., 2013; O'Brien, 2007); however, the interpretation of individual beta coefficients should be avoided. The conceptual meaning of beta coefficients may be unclear, as they represent the relations of the dimensions with outcomes when controlling for all other personality dimensions. For instance, it is difficult to interpret the relation of openness with outcomes when controlling for innovativeness, as the two dimensions share some conceptual overlap. Nevertheless, the effects of dimensions together can still be reliably interpreted, even in cases of greater conceptual overlap and multicollinearity (Hair et al., 2019).

In the first step of our analyses, the HEXACO dimensions explained between .14 and .34 of the variance in our outcomes, and they were together significant in explaining five of the six outcomes (all $p < .05$). In the second step, the Dark Triad dimensions additionally explained between .01 and .06 of the variance in outcomes beyond the HEXCO dimensions, and the Dark Triad dimensions were together significant in explaining the variance in five of the six outcomes (all $p < .05$). In the final step, the EP dimensions additionally explained between .06 and .17 of the variance in outcomes

**Table 2.** Correlations and Cronbach's Alphas of Study 1.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.) Inno. | .94 | | | | | | | | | | | | |
| 2.) Risk | .46** | .91 | | | | | | | | | | | |
| 3.) Ach. O. | .50** | .56** | .86 | | | | | | | | | | |
| 4.) Auto. O. | .56** | .38** | .61** | .85 | | | | | | | | | |
| 5.) Proact. | .28** | .37** | .55** | .44** | .83 | | | | | | | | |
| 6.) LoC | .51** | .42** | .58** | .65** | .51** | .95 | | | | | | | |
| 7.) S. Eff. | .23** | .07 | .24** | .28** | .19** | .33** | .92 | | | | | | |
| 8.) H.H. | −0.07 | −0.16** | .04 | .01 | .13* | .04 | .12* | .55 | | | | | |
| 9.) Emo. | −0.24** | −0.36** | −0.27** | −0.32** | −0.34** | −0.53** | −0.07 | −0.02 | .45 | | | | |
| 10.) Extra. | .43** | .32** | .46** | .47** | .45** | .49** | .18** | .19** | −0.32** | .73 | | | |
| 11.) Agree. | .12 | .11 | .27** | .23** | .27** | .33** | −0.02 | .26** | −0.29** | .27** | .47 | | |
| 12.) Consc. | .30** | .12* | .45** | .64** | .32** | .48** | .21** | .15* | −0.28** | .32** | .28** | .62 | |
| 13.) Open. | .57** | .24** | .25** | .27** | .02 | .22** | .25** | −0.14* | .02 | .23** | −0.04 | .17** | .65 |
| 14.) Narc. | .22** | .20** | .24** | .22** | .15* | .11 | −0.07 | −0.49** | .11 | .15* | −0.12 | .01 | .14* |
| 15.) Mach. | .05 | .08 | −0.11 | −0.10 | −0.07 | −0.13* | −0.16** | −0.57** | .13* | −0.18** | .26** | −0.28** | .07 |
| 16.) Psych. | −0.10 | .03 | −0.29** | −0.15* | −0.19** | −0.15* | −0.16** | −0.52** | .02 | −0.36** | −0.40** | −0.36** | −0.07 |
| 17.) Ent. Goals. | .32** | .35** | .34** | .22** | .20** | .25** | −0.01 | −0.03 | −0.24** | −0.30** | .10 | .12 | .23** |
| 18.) Goal Com. | .35** | .41** | .36** | .21** | .26** | .36** | .08 | .00 | −0.30** | .37** | .20** | .21** | .21** |
| 19.) Goal Att. | .36** | .47** | .33** | .41** | .32** | .36** | .02 | .02 | −0.28** | .30** | .20** | .28** | .23** |
| 20.) Scanning | .60** | .45** | .45** | .44** | .30** | .40** | .14* | −0.09 | −0.25** | .43** | .27** | .30** | .40** |
| 21.) Assoc. | .68** | .39** | .47** | .48** | .26** | .47** | .21** | −0.09 | −0.20** | .39** | .16* | .30** | .44** |
| 22.). Eval. Jud. | .57** | .43** | .51** | .47** | .39** | .50** | .21** | −0.12 | −0.33** | .44** | .22** | .35** | .31** |

| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|
| 14.) Narc. | .86 | | | | | | | | |
| 15.) Mach. | .37** | .85 | | | | | | | |
| 16.) Psych. | .17** | .51** | .77 | | | | | | |
| 17.) Ent. Goals. | .22** | .13 | −0.06 | .81 | | | | | |
| 18.) Goal Com. | .16* | −0.04 | −0.12 | .74** | .90 | | | | |
| 19.) Goal Att. | .16* | .06 | −0.08 | .43** | .45** | .88 | | | |
| 20.) Scanning | .30** | .08 | −0.13 | .52** | .52** | .50** | .78 | | |
| 21.) Assoc. | .28** | .11 | −0.10 | .37** | .40** | .46** | .68** | .92 | |
| 22.). Eval. Jud. | .29** | .13 | −0.17* | .44** | .53** | .55** | .59** | .68** | .93 |

Note. Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy; H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness; Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Ent. Goals = Entrepreneurial Goal Setting; Goal Com. = Entrepreneurial Goal Commitment; Goal Att. = Entrepreneurial Goal Attainment; Scanning = Scanning and Search; Assoc. = Association and Connection; Eval. Jug. = Evaluation and Judgment. Cronbach's alphas are listed on the diagonal.

* $p < .05$.

** $p < .01$.

**Table 3.** Stepwise Regression Results of Study 1.

| | Entrepreneurial Goal Setting | | | Entrepreneurial Goal Commitment | | | Entrepreneurial Goal Attainment | | |
|---|---|---|---|---|---|---|---|---|---|
| | β | β | β | β | β | β | β | β | B |
| 1.) H.H. | −0.07 | .14 | .16 | −0.7 | .00 | .02 | −0.04 | .17 | .19* |
| 2.) Emo. | −0.16* | −0.21** | −0.18* | −0.17* | −0.19* | −0.09 | .16* | −0.18* | −0.07 |
| 3.) Extra. | .22** | .13 | .12 | .25** | .21* | .17* | .14 | .09 | .02 |
| 4.) Agree. | −0.02 | −0.01 | −0.03 | .06 | .06 | .04 | .05 | .07 | .04 |
| 5.) Consc. | −0.02 | .00 | .03 | .04 | .03 | .15 | .15* | .18* | .11 |
| 6.) Open. | .17* | .16* | .11 | .12 | .12 | .00 | .15* | .14* | .10 |
| 7.) Narc. | | .20* | .15 | | .14 | .10 | | .16* | .08 |
| 8.) Mach. | | .21* | .21* | | −0.02 | −0.02 | | .18 | .15 |
| 9.) Psych. | | −0.06 | −0.03 | | .01 | .05 | | .04 | −0.01 |
| 10.) Inno. | | | .02 | | | .14 | | | −0.01 |
| 11.) Risk | | | .19* | | | .26** | | | .34** |
| 12.) Ach. O. | | | .23* | | | .16 | | | −0.08 |
| 13.) Auto. O. | | | −0.07 | | | −0.00 | | | −0.08 |
| 14.) Proact. | | | −0.12 | | | −0.37** | | | .16 |
| 15.) LoC | | | −0.08 | | | −0.04 | | | .07 |
| 16.) S. Eff. | | | −0.05 | | | .08 | | | −0.02 |
| $\Delta R^2$ | .14 | .06** | .06† | .19** | .01 | .10** | .17** | .04* | .11** |
| | Scanning and Search | | | Association and Connection | | | Evaluation and Judgment | | |
| | β | β | β | β | β | β | β | β | β |
| 1.) H.H. | −0.17** | .00 | −0.03 | −0.14* | .04 | −0.04 | −0.21** | −0.04 | −0.10 |
| 2.) Emo. | −0.04 | −0.08 | −0.02 | −0.02 | −0.07 | .08 | −0.13 | −0.20** | −0.10 |
| 3.) Extra. | .29** | .22** | .16* | .27** | .20* | .04 | .31** | .20** | .08 |
| 4.) Agree. | .14* | .15* | .18** | .02 | .03 | .02 | .05 | .04 | .03 |
| 5.) Consc. | .11 | .13 | .11 | .14* | .17* | .00 | .19** | .20** | .10 |
| 6.) Open. | .29** | .28** | .08 | .33** | .32** | .02 | .17** | .15* | −0.05 |
| 7.) Narc. | | .21** | .13 | | .19* | .07 | | .17* | .08 |
| 8.) Mach. | | .11 | .05 | | .14 | .07 | | .25** | .20** |
| 9.) Psych. | | .00 | .03 | | −0.00 | −0.02 | | −0.16 | −0.15 |
| 10.) Inno. | | | .38** | | | .51** | | | .31** |
| 11.) Risk | | | .17* | | | .05 | | | .10 |
| 12.) Ach. O. | | | .06 | | | .11 | | | .10 |
| 13.) Auto. O. | | | .03 | | | .03 | | | .10 |
| 14.) Proact. | | | −0.05 | | | −0.00 | | | −0.05 |
| 15.) LoC | | | .05 | | | −0.02 | | | .06 |
| 16.) S. Eff. | | | −0.19 | | | .11 | | | .04 |
| $\Delta R^2$ | .34** | .04** | .10** | .31** | .04* | .17** | .33** | .06** | .10** |

Note. H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness; Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy.

† $p = .051$.

* $p < .05$.

** $p < .01$.

beyond the HEXACO and Dark Triad dimensions, and the EP dimensions were together significant in explaining the variance in five of the six outcomes (all $p < .05$). These findings support Hypothesis 1, as the EP dimensions explained variance in most of the studied outcomes beyond the HEXACO and Dark Triad dimensions.

We also conducted two additional regression analyses. In the first, the EP dimensions predicted each outcome, which is included in Table 4. In the second, the HEXACO and Dark Triad dimensions predicted each outcome, which is included in Table 5. All VIF statistics were below the cutoff of 3.00. The EP dimensions alone ($R^2$ = .19-.50) explained more variance in five of the six outcomes than the HEXACO and Dark Triad dimensions together ($R^2$ = .20-.40). Likewise, the EP dimensions alone

**Table 4.** Regression Results of Study 1 with Entrepreneurial Personality Dimensions Alone.

| | Ent. Goals. β | Goal Com. β | Goal Att. β | Scanning β | Assoc. β | Eval. Jud. β |
|---|---|---|---|---|---|---|
| 1.) Inno. | .18* | .18* | .10 | .46** | .55** | .35** |
| 2.) Risk | .20* | .25** | .32** | .18** | .05 | .11 |
| 3.) Ach. O. | .25* | .21* | −0.03 | .13 | .14 | .14 |
| 4.) Auto. O. | −0.10 | −0.03 | −0.08 | −0.02 | .02 | .05 |
| 5.) Proact. | −0.11 | −0.27** | .20* | .03 | .01 | .02 |
| 6.) LoC | −0.02 | .01 | .10 | .07 | −0.02 | .11 |
| 7.) S. Eff. | .03 | .21* | .02 | −0.07 | .05 | .09 |
| $\Delta R^2$ | .19** | .26** | .29** | .42** | .50** | .42** |
| AIC | 680 | 646 | 689 | 557 | 589 | 635 |
| BIC | 709 | 675 | 719 | 587 | 619 | 664 |

Note. Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy; Ent. Goals = Entrepreneurial Goal Setting; Goal Com. = Entrepreneurial Goal Commitment; Goal Att. = Entrepreneurial Goal Attainment; Scanning = Scanning and Search; Assoc. = Association and Connection; Eval. Jug. = Evaluation and Judgment.
* $p < .05$.
** $p < .01$.

**Table 5.** Regression Results of Study 1 with Broad Frameworks Alone.

| | Ent. Goals. β | Goal Com. β | Goal Att. β | Scanning β | Assoc. β | Eval. Jud. β |
|---|---|---|---|---|---|---|
| 1.) H.H. | .14 | .00 | .17 | .01 | .04 | −0.04 |
| 2.) Emo. | −0.23** | −0.21** | −0.24* | −0.13 | −0.09 | −0.23** |
| 3.) Extra. | .11 | .21* | .05 | .22** | .19* | .18* |
| 4.) Agree. | −0.08 | .02 | −0.22** | −0.03 | −0.08 | −0.10 |
| 5.) Consc. | .02 | .04 | .25** | .16* | .19** | .23** |
| 6.) Open. | .15* | .12 | .12 | .28** | .31** | .14* |
| 7.) Narc. | .21** | .14 | .18* | .22** | .19** | .18* |
| 8.) Mach. | .21* | −0.02 | .19* | .11 | .15 | .26** |
| 9.) Psych. | −0.08 | −0.00 | −0.04 | −0.05 | −0.03 | −0.19* |
| $\Delta R^2$ | .21** | .20** | .25** | .36** | .36** | .40** |
| AIC | 681 | 667 | 705 | 580 | 641 | 646 |
| BIC | 717 | 703 | 741 | 616 | 677 | 682 |

Note. H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness; Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Ent. Goals = Entrepreneurial Goal Setting; Goal Com. = Entrepreneurial Goal Commitment; Goal Att. = Entrepreneurial Goal Attainment; Scanning = Scanning and Search; Assoc. = Association and Connection; Eval. Jug. = Evaluation and Judgment.
* $p < .05$.
** $p < .01$.

(*AIC* = 557-689) produced between model fit for all six outcomes compared to the HEXACO and Dark Triad dimensions together (*AIC* = 580-705). These findings support Hypothesis 2, as the EP dimensions produced better model fit with each of the studied outcomes relative to the HEXACO and Dark Triad dimensions together.

## Study 2

### *Method*

#### *Participants*

Participants were recruited from Prolific in return for monetary compensation. Their mean age was 42.96 (*S.D.* = 13.51); 42% were female; 100% were located in the United States; and 100% were current business owners. Participants' self-reported races were:

white (71%), Black (19%), and other (10%). Their highest degrees earned were: high school (30%), associate's (15%), bachelor's (38%), master's (14%), and doctorate (3%). They reported working at their business an average of 31.43 h per week (*S.D.* = 16.24), and the reported average number of years owning their business was 7.94 years (*S.D.* = 7.97).

### Procedure

Participants enrolled *via* Prolific. For Study 2, we again provided the description of "A Study on Your Perceptions", along with general details of the study including the number of surveys and items; however, we restricted participation to solely those who reported owning a business in the Prolific screening survey. Similar to Study 1, we chose this description to ensure that we attracted a wide range of business owners (Hunter et al., 2006; Sackett et al., 2007), and we did avoided certain terms to reduce participant demand characteristics (Hair et al., 2019; Nichols & Maner, 2008). Thus, choosing this description was ideal for the present investigation.

Upon enrolling, participants completed the first survey with the measures of EP, HEXACO, and Dark Triad ($n = 275$). Two weeks later, they were sent a survey with all outcome measures ($n = 205$). We removed 4 participants that failed more than one attention check per wave, and the reported sample sizes reflect the sample after removing these participants.

Like Study 1, this attrition is typical based on prior reviews of longitudinal research (Ribisl et al., 1996; Young et al., 2006; 2007). We again conducted a series of t-test comparing participants who completed both surveys (responders) to those who completed the first survey alone (non-responders), as recommended by prior authors (Atkinson et al., 2019; Hair et al., 2019). Of the 16 t-tests, none produced a statistically significant result (all $p > .05$), suggesting that the responders and non-responders did not substantially differ.

### Measures

Unless otherwise noted, all measures used a 1 (Strongly Disagree) to 7 (Strongly Agree) format.

***Entrepreneurial Personality, HEXACO, and Dark Triad.*** We administered the same personality measures as Study 1. The Cronbach's alphas of the Entrepreneurial Personality Dimensions ranged from .81 to .94; the HEXACO dimensions ranged from .42 to .59; and the Dark Triad dimensions ranged from .77 to .86. We did not remove any items from the HEXACO dimensions, as doing so would not notably improve their internal consistency.

***Relative Entrepreneurial Performance.*** We administered the relative entrepreneurial performance scale of Brändle et al. (2019), which includes three dimensions: enterprise performance, community performance, and societal performance. The scale asks participants to respond from 1 (Much Worse) to 7 (Much Better) regarding their business's performance "compared to other comparable businesses." Example items are, "Profitable compared to other comparable businesses" (enterprise performance) and "Developing a new solution to a specific problem existing in society" (societal performance). The Cronbach's alpha of the dimensions ranged from .90 to .97.

***Entrepreneur Success.*** We administered 13 items from the entrepreneur success scales of Babalola (1998) and Lanivich (2015). An example item is, "I am a successful entrepreneur." The Cronbach's alpha of the scale was .96.

***Strategic Entrepreneurial Performance.*** We administered the strategic entrepreneurial performance scale of Kantur (2016). The scale asks participants to respond regarding the extent that they have achieved the following at their business, and an example item is, "introduced new product/service lines". The Cronbach's alpha of the scale was .92.

***Life Satisfaction.*** We administered the Satisfaction with Life Scale of Diener et al. (1985). An example item is, "In most ways, my life is close to ideal." The Cronbach's alpha of the scale was .94.

## Results

Like Study 1, we utilized all participants available for our analyses. Supplemental Material A includes alternative analyses when only including participants that completed both surveys, and Supplemental Material B includes alternative analyses with a stochastic regression imputation approach to non-responses in the second survey. All inferences were consistent between the these analyses and our primary analyses, supporting the robustness of our findings.

Correlations and Cronbach's alphas are provided in Table 6. To test Hypothesis 3, we utilized the same statistical approach as Study 1 using linear stepwise regression analyses, and the results of these analyses are presented in Table 7. One predictor had a variance inflation factor values slightly above the conservative cutoff of 3.00 ($VIF = 3.22$) (Cohen et al., 2013; Hair et al., 2019). For the same reasons as above, we chose to retain this predictor, but readers should be cautioned against the over-interpretation of specific beta coefficients.

In the first step of our analyses, the HEXACO dimensions explained between .14 and .34 of the variance in our outcomes, and they were together significant in explaining all six outcomes (all $p < .05$). In the second step, the Dark Triad dimensions additionally explained between .03 and .12 of the variance in outcomes beyond the HEXCO dimensions, and the Dark Triad dimensions were together significant in explaining the variance in all six outcomes (all $p < .05$). In the final step, the EP dimensions additionally explained between .07 and .15 of the variance in outcomes beyond the HEXACO and Dark Triad dimensions, and the EP dimensions were together significant in explaining the variance in all six outcomes (all $p < .05$). Together, these results support Hypothesis 3, as the EP dimensions explained variance in all the studied outcomes beyond the HEXACO and Dark Triad dimensions.

We again conducted two separate series of regression analyses. Table 8 provides the results of the EP dimensions predicting each outcome, whereas Table 9 provides the results of the HEXACO and Dark Triad dimensions together predicting each outcome. All VIF statistics were below the cutoff of 3.00. The EP dimensions alone ($R^2$ = .23-.36) explained more variance in three of the six outcomes than the HEXACO and Dark Triad dimensions together ($R^2$ = .18-.39), and the EP dimensions alone ($AIC = 593$-$735$) produced between model fit for four of six outcomes compared to the

**Table 6.** Correlations and Cronbach's Alphas of Study 2.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.) Inno. | .87 | | | | | | | | | | | | |
| 2.) Risk | .46** | .91 | | | | | | | | | | | |
| 3.) Ach. O. | .62** | .49** | .87 | | | | | | | | | | |
| 7.) Auto. O. | .45** | .19** | .29** | .88 | | | | | | | | | |
| 4.) Proact. | .55** | .23** | .61** | .44** | .81 | | | | | | | | |
| 5.) LoC | .30** | .21** | .43** | .25** | .35** | .94 | | | | | | | |
| 6.) S. Eff. | .52** | .30** | .53** | .41** | .54** | .53** | .87 | | | | | | |
| 8.) H.H. | −0.06 | −0.33** | −0.09 | .19** | .01 | .02 | .04 | .54 | | | | | |
| 9.) Emo. | −0.29** | −0.24** | −0.26** | −0.10 | −0.26** | −0.40** | −0.52** | .02 | .52 | | | | |
| 10.) Extra. | .26** | .11 | .24** | .28** | .31** | .25** | .46** | .10 | −0.26** | .61 | | | |
| 11.) Agree. | .17** | .06 | .10 | −0.04 | .17** | .32** | .35** | −0.04 | −0.26** | .26** | .42 | | |
| 12.) Consc. | .30** | .01 | .42** | .25** | .50** | .21** | .43** | .20** | −0.23** | .33** | .21** | .59 | |
| 13.) Open. | .47** | .26** | .23** | .33** | .23** | .02 | .24** | .03 | −0.03 | .29** | .08 | .19** | .51 |
| 14.) Narc. | .16* | .36** | .29** | −0.04 | .12* | .12* | .11 | −0.60** | .01 | .08 | .12 | −0.12* | −0.03 |
| 15.) Mach. | −0.01 | .25** | −0.05 | −0.15* | −0.13* | −0.12 | −0.23** | −0.48** | .10 | −0.15* | −0.21** | −0.37** | −0.06 |
| 16.) Psych. | −0.07 | .14* | −0.10 | −0.16** | −0.14* | −0.19** | −0.28** | −0.39** | −0.01 | −0.30** | −0.28** | −0.31** | −0.15* |
| 17.) Ent. Perf. | .33** | .36** | .33** | .09 | .38** | .24** | .34** | −0.18* | −0.21** | .16* | .26** | .19** | −0.00 |
| 18.) Com. Perf. | .42** | .38** | .41** | .16* | .42** | .21** | .36** | −0.14* | −0.16* | .33** | .25** | .32** | .15* |
| 19.) Soc. Perf. | .30** | .36** | .42** | .07 | .33** | .16* | .30** | −0.28** | −0.11 | .13 | .26** | .22** | .05 |
| 20.) Ent. Succ. | .40** | .26** | .38** | .31** | .46** | .37** | .51** | .04 | −0.30** | .33** | .34** | .37** | .12 |
| 21.) Strat. Ent. | .47** | .50** | .47** | .13 | .41** | .23** | .32** | −0.31** | −0.16* | .22** | .28** | .19** | .16* |
| 22.) Life Sat. | .27** | .18* | .28** | .12 | .38** | .41** | .50** | −0.03 | −0.37** | .38** | .42** | .31** | −0.01 |

| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|
| 14.) Narc. | .87 | | | | | | | | |
| 15.) Mach. | .36** | .87 | | | | | | | |
| 16.) Psych. | .26** | .58** | .79 | | | | | | |
| 17.) Ent. Perf. | .26** | .10 | .05 | .97 | | | | | |
| 18.) Com. Perf. | .32** | −0.00 | −0.09 | .62** | .90 | | | | |
| 19.) Soc. Perf. | .46** | .10 | .02 | .59** | .70** | .91 | | | |
| 20.) Ent. Succ. | .16* | −0.11 | −0.11 | .73** | .64** | .51** | .96 | | |
| 21.) Strat. Ent. | .44** | .20** | .09 | .60** | .69** | .69** | .54** | .92 | |
| 22.) Life Sat. | .24** | −0.14* | −0.06 | .44** | .45** | .33** | .59** | .33** | .94 |

Note: Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Ent. Perf. = Entrepreneurial Performance; Com. Perf. = Community Performance; Soc. Perf. = Social Performance; Ent. Succ. = Entrepreneurial Success; Strat. Ent. = Strategic Entrepreneurial Performance; Life Sat. = Life Satisfaction; Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy; H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness. Cronbach's alphas are listed on the diagonal.

* $p < .05$.

** $p < .01$.

**Table 7.** Stepwise Regression Results of Study 2.

| | Entrepreneurial Performance | | | Community Performance | | | Social Performance | | |
|---|---|---|---|---|---|---|---|---|---|
| | β | β | β | β | β | β | β | β | β |
| 1.) H.H. | −0.20** | −0.02 | .01 | −0.22** | −0.02 | .02 | −0.33** | −0.03 | −0.00 |
| 2.) Emo. | −0.10 | −0.12 | .05 | −0.00 | −0.04 | .07 | .02 | −0.03 | .06 |
| 3.) Extra. | .09 | .06 | .02 | .23** | .16* | .15* | .06 | −0.04 | −0.05 |
| 4.) Agree. | .16* | .17* | .15* | .13 | .09 | .10 | .17* | .13* | .17* |
| 5.) Consc. | .16* | .20** | .08 | .25** | .26** | .18* | .24** | .26** | .14 |
| 6.) Open. | −0.07 | −0.07 | −0.20** | .03 | .03 | −0.11 | −0.01 | −0.01 | −0.10 |
| 7.) Narc. | | .18* | .08 | | .31** | .23** | | .44** | .33** |
| 8.) Mach. | | .14 | .08 | | .07 | .01 | | .10 | .06 |
| 9.) Psych. | | .00 | .02 | | −0.09 | −0.09 | | −0.08 | −0.07 |
| 10.) Inno. | | | .13 | | | .21* | | | .02 |
| 11.) Risk | | | .26** | | | .25** | | | .17* |
| 12.) Ach. O. | | | −0.13 | | | −0.09 | | | .14 |
| 13.) Auto. O. | | | −0.09 | | | −0.08 | | | −0.02 |
| 14.) Proact. | | | .27** | | | .19* | | | .10 |
| 15.) LoC | | | .01 | | | −0.04 | | | −0.11 |
| 16.) S. Eff. | | | .12 | | | −0.01 | | | .08 |
| $\Delta R^2$ | .14** | .04* | .13** | .22** | .06** | .10** | .19** | .12** | .07** |
| | Entrepreneurial Success | | | Strategic Performance | | | Life Satisfaction | | |
| | β | β | β | β | β | β | β | β | β |
| 1.) H.H. | −0.01 | .15 | .13 | −0.36** | −0.08 | −0.05 | −0.06 | .11 | .12 |
| 2.) Emo. | −0.15* | −0.16* | −0.02 | −0.02 | −0.05 | .09 | −0.20** | −0.21** | −0.06 |
| 3.) Extra. | .17* | .12 | .05 | .13 | .07 | .06 | .27** | .22** | .17* |
| 4.) Agree. | .21** | .20** | .21** | .17** | .18** | .20** | .27** | .26** | .20** |
| 5.) Consc. | .24** | .25** | .15* | .16* | .21** | .07 | .17* | .17* | .14 |
| 6.) Open. | .00 | .01 | −0.10 | .09 | .09 | −0.07 | −0.15* | −0.13* | −0.15* |
| 7.) Narc. | | .22** | .13 | | .32** | .18* | | .26** | .24** |
| 8.) Mach. | | .03 | .01 | | .19 | .12 | | −0.09 | −0.11 |
| 9.) Psych. | | .02 | .05 | | −0.02 | −0.02 | | .10 | .14 |
| 10.) Inno. | | | .07 | | | .19* | | | .01 |
| 11.) Risk | | | .13 | | | .26** | | | .10 |
| 12.) Ach. O. | | | −0.10 | | | .07 | | | −0.25* |
| 13.) Auto. O. | | | .11 | | | −0.04 | | | −0.09 |
| 14.) Proact. | | | .15 | | | .17** | | | .15 |
| 15.) LoC | | | .03 | | | .00 | | | .10 |
| 16.) S. Eff. | | | .19 | | | −0.06 | | | .28** |
| $\Delta R^2$ | .26** | .03* | .10** | .24** | .09** | .15** | .34** | .05** | .07** |

Note. H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness; Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy.

* $p < .05$.

** $p < .01$.

HEXACO and Dark Triad dimensions together (*AIC* = 596-716). These findings support Hypothesis 4, as the EP dimensions produced better model fit with most of the studied outcomes relative to the HEXACO and Dark Triad dimensions together.

## Discussion

Research has supported that personality relates to entrepreneurial outcomes, even when accounting for other relevant predictors (Holt et al., 2007; Karimi et al., 2017; Korunka et al., 2003). Due to its known importance, our first goal was to test whether a recently developed narrow collection of personality traits with theoretical relevance to entrepreneurship, known as EP, relates to entrepreneurial outcomes beyond broad conceptualizations of personality, namely the HEXACO and Dark Triad. Our second goal was to

**Table 8.** Regression Results of Study 2 with Entrepreneurial Personality Dimensions Alone.

| | Ent. Perf β | Com Perf β | Soc Perf β | Ent. Succ. β | Strat. Ent. β | Life Sat. β |
|---|---|---|---|---|---|---|
| 1.) Inno. | .06 | .14 | −0.04 | .05 | .17 | −0.04 |
| 2.) Risk | .28** | .22** | .22** | .08 | .33** | .08 |
| 3.) Ach. O. | −0.12 | .02 | .24* | −0.07 | .09 | −0.20* |
| 7.) Auto. O. | −0.17* | −0.10 | −0.12 | .05 | −0.13 | −0.16* |
| 4.) Proact. | .32** | .27** | .17 | .23** | .24** | .25** |
| 5.) LoC | .07 | −0.03 | −0.06 | .11 | .04 | .20** |
| 6.) S. Eff. | .12 | .09 | .10 | .28** | −0.06 | .42** |
| $\Delta R^2$ | .25** | .28** | .23** | .31** | .36** | .31** |
| AIC | 685 | 593 | 624 | 607 | 613 | 735 |
| BIC | 715 | 623 | 654 | 637 | 643 | 765 |

Note. Inno. = Innovativeness; Risk = Risk-Taking Propensity; Ach. O. = Achievement Orientation; Auto. O. = Autonomy Orientation; Proact. = Proactiveness; LoC = Locus of Control; S. Eff. = Self-Efficacy; Ent. Perf. = Entrepreneurial Performance; Com. Perf. = Community Performance; Soc. Perf. = Social Performance; Ent. Succ. = Entrepreneurial Success; Strat. Ent. = Strategic Entrepreneurial Performance; Life Sat. = Life Satisfaction.
* $p < .05$.
** $p < .01$.

**Table 9.** Regression Results of Study 2 with Broad Personality Frameworks Alone.

| | Ent. Perf β | Com Perf β | Soc Perf β | Ent. Succ. β | Strat. Ent. β | Life Sat. β |
|---|---|---|---|---|---|---|
| 1.) H.H. | −0.02 | −0.02 | −0.03 | .15 | −0.08 | .11 |
| 2.) Emo. | −0.12 | −0.04 | −0.03 | −0.16* | −0.05 | −0.21** |
| 3.) Extra. | .06 | .16* | −0.04 | .12 | .07 | .22** |
| 4.) Agree. | .17* | .09 | .13* | .20** | .18** | .26** |
| 5.) Consc. | .20** | .26** | .26** | .25** | .21** | .17* |
| 6.) Open. | −0.07 | .03 | −0.01 | .01 | .09 | −0.13* |
| 7.) Narc. | .18* | .31** | .44** | .22** | .32** | .26** |
| 8.) Mach. | .14 | .07 | .10 | .03 | .19* | −0.09 |
| 9.) Psych. | .00 | −0.09 | −0.08 | .02 | −0.02 | .10 |
| $\Delta R^2$ | .18** | .28** | .31** | .29** | .33** | .39** |
| AIC | 706 | 596 | 607 | 618 | 629 | 716 |
| BIC | 743 | 633 | 643 | 655 | 665 | 752 |

Note. H.H. = Honesty-Humility; Emo = Emotionality; Extra. = Extraversion; Agree. = Agreeableness; Consc. = Conscientiousness; Open. = Openness; Narc. = Narcissism; Mach. = Machiavellianism; Psych. = Psychopathy; Ent. Perf. = Entrepreneurial Performance; Com. Perf. = Community Performance; Soc. Perf. = Social Performance; Ent. Succ. = Entrepreneurial Success; Strat. Ent. = Strategic Entrepreneurial Performance; Life Sat. = Life Satisfaction.
* $p < .05$.
** $p < .01$.

test whether the EP produces better model fit in regression analyses with our studied outcomes than the HEXACO and Dark Triad dimensions together. The results of two studies supported that EP significantly related to outcomes associated with both the earlier and later stages of the entrepreneurial process beyond the HEXACO and Dark Triad, as the additional variance explained was statistically significant for eleven of twelve outcomes. These two studies also showed that EP produced better fit (AIC and BIC) in regression analyses than both the HEXACO and Dark Triad together for ten of twelve outcomes. These results support the clear importance of EP in the entrepreneurship process, which provides several directions for future research and practice.

## *Theoretical Implications and Future Research Directions*

Many prior studies have investigated the relation of various broad frameworks with entrepreneurial outcomes, including the HEXACO, Dark Triad, and Big Five (Brownell

et al., 2021; Hmieleski & Lerner, 2016; Howard, 2020). While these investigations have provided significant insights, they may not effectively elucidate how people navigate the entrepreneurial process because they do not encompass the most relevant traits to entrepreneurship. For this reason, future researchers should reinvestigate these prior studies with EP. Notably, prior researchers have supposed that these frameworks explain significant variance in outcomes beyond other relevant predictors, and EP may explain even more variance than presently known when reinvestigated (Holt et al., 2007; Karimi et al., 2017; Korunka et al., 2003). Likewise, several theories have been applied to study these relations, and they can be adapted to similarly study EP. For instance, Zhao and Seibert (2006) utilized attraction-selection-attrition theory to propose why certain dimensions of the Big Five relate to entrepreneurial status, and the even closer relevance of EP suggests that this theory could also be used to propose and understand the relation of EP with entrepreneurial status. Therefore, a clear next step for future research is to replicate prior findings using EP rather than broad personality frameworks.

It should also be highlighted that many researchers have also investigated the role of individual personality traits in the entrepreneurial process (Brandstätter, 2011; Collins et al., 2004; Crant, 1996). Again, these studies are valuable, but they may provide an incomplete view of the role of personality in entrepreneurship. Multiple traits are important to entrepreneurship, both individually and together, and studying only one trait may downplay the value of personality through all stages of the entrepreneurial process. For instance, investigations into individual traits may have produced results that explain much less variance in entrepreneurial outcomes than entire frameworks, causing the relation of personality and entrepreneurship to appear weak. Perhaps more importantly, studying only one trait does not account for the variance explained by other traits. A trait studied in isolation may produce significant relations that are no longer significant when accounting for the more relevant personality trait(s). Future researchers should similarly reinvestigate these prior studies by incorporating EP, which can accurately depict the amount and proportion of variance explained by personality traits. In conducting these investigations, researchers should also remain cognizant of the Wheel Conceptualization of EP. The proportion of variance explained by each trait is expected to differ based on the phase of the entrepreneurial process, and researchers should not assume that a single trait explains the most variance in entrepreneurial outcomes based on a single study alone.

Future researchers can now study EP with more assurances for its theoretical and conceptual soundness. The framework is intended to include the traits that make someone entrepreneurial, including the attraction to and success at entrepreneurial endeavors (Howard, 2023; Howard & Boudreaux, 2024). By showing that this narrower personality framework relates to relevant outcomes more strongly than broader frameworks, we support the theoretical foundation of EP. Future researchers should continue to investigate essential aspects of the framework. Particularly, the representative traits may more strongly relate to either attraction or success, and the associations of the traits may produce a second-order factor structure that has yet to be identified. Both possibilities would align with the Wheel Conceptualization of EP, enabling an avenue to incorporate these possibilities into conceptual arguments.

While multicollinearity was not a significant issue with our analyses, we chose not to interpret individual beta coefficients due to difficulties with interpretations when accounting for traits across frameworks. For instance, the meaning of innovativeness's relations when controlling for openness (and vice versa) is unclear. Understanding these specific relations is important to relevant theory, however, and future researchers should perform theoretically driven investigations into EP to understand the relations of its dimensions. The dimensions of EP (and most other personality frameworks) are relatively orthogonal, easing interpretations when these frameworks are studied independently. Thus, while not interpreted in the current article, future researchers should assess the relations of specific dimensions when studying EP.

Researchers should also consider broader applications of the bandwidth-fidelity dilemma to the study of entrepreneurship. We utilized this lens to study entire frameworks, but it is also commonly used to study individual traits. Applying it to study entrepreneurship may provide justifications as to why traits like innovativeness may more strongly relate to entrepreneurial outcomes than traits like openness (Meyer et al., 2021; Ones & Viswesvaran, 1996; Salgado, 2017). Further, authors have applied arguments underlying the bandwidth-fidelity dilemma to better understand how personality relates to outcomes, especially in conjunction with novel statistical analyses. For instance, Cheng et al. (2009) used multidimensional Rasch analysis to improve the measurement precision of multiple short subtests composing a larger test of thinking styles, producing more appropriate estimates of correlations among the thinking style subtests; and Vasilopoulos et al. (2007) utilized quadratic analyses to show that traits and their facets produce non-linear effects, and the contribution of narrow traits beyond broad traits may not be fully explained by linear analyses alone. We urge researchers to conduct similar investigations into the effects of narrow personality traits on entrepreneurial outcomes, which can determine whether the bandwidth-fidelity dilemma can be a theoretical lens to study personality and entrepreneurship. Such lenses are especially needed for the study of EP, which has few theories or frameworks applied to investigate its relations due to its nascency (Howard, 2023).

Lastly, the current findings provide some insights into the bandwidth-fidelity dilemma. Recent authors have highlighted that studies have both supported and failed to support this theoretical perspective (Meyer et al., 2021; Salgado, 2017; Salgado et al., 2015). In these investigations, authors have most often investigated the incremental predictive ability of narrow facets subsumed within larger constructs, such as whether facets of conscientiousness relate to outcomes beyond conscientiousness itself. It may be fruitful for future researchers to conduct further investigations similar to the present article, wherein the incremental relations of multiple narrow traits beyond entire broad frameworks are investigated. A single narrow trait may produce inconsistent incremental relations beyond its associated broad construct, but multiple narrow traits together may provide significant incremental predictive abilities beyond entire frameworks. Therefore, research on the bandwidth-fidelity dilemma may benefit in a slight change in the number and nature of the constructs under investigation.

In conducting these future studies on the bandwidth-fidelity dilemma, researchers should also consider taking an alternative perspective than the current article. We tested whether the dimensions of EP (a narrow framework) related to relevant outcomes more strongly than the HEXACO and Dark Triad (broader frameworks), as we were

specifically interested in further investigating EP. Future researchers should test the broader proposals of the bandwidth-fidelity dilemma and conduct studies to test whether the HEXACO and Dark Triad indeed relate to outcomes more tangential to the entrepreneurial process than EP. When paired with the current investigation, these future studies could provide a complete understanding of whether the bandwidth-fidelity dilemma is an appropriate lens to understand the relations of EP. Therefore, such an investigation would be a clearly fruitful directions for future research endeavors.

### Practical Implications

The current results provide encouraging insights for practice. Present empirical findings on EP are not sizable enough to justify selecting for these traits, as more research is needed before the framework should be used for selection decisions; however, it could be used to potentially diagnose why someone may struggle with entrepreneurial endeavors. For instance, a person may have the resources and willingness to develop a business, but they may be unable to perform the requisite behaviors. It should then be considered whether this person has low standings on certain EP dimensions, especially those associated with the earlier phases of the entrepreneurial process. If the person has a low standing on risk-taking propensity, for example, they could consider enrolling in programs to develop this aspect of their personality, especially considering recent findings supporting that interventions can improve standings on personality traits (Atherton et al., 2021; Hudson et al., 2019). While EP may not yet be ideal for selection, it can be used for diagnostic and perhaps even training purposes.

### Limitations

Future researchers should improve upon our studies' methodology. We used three established measures to assess the EP (Howard, 2023), HEXACO (De Vries, 2013), and Dark Triad (Jonason & Webster, 2010) dimensions. We chose these measures, in part, because they each included four items for each dimension, helping to ensure consistency across the operationalizations of our constructs. That is, we felt that administering measures with four items per dimension would help ensure that the operationalizations of our studied frameworks would have similar psychometric and validity considerations (e.g., content coverage), enabling more direct comparisons of the relations produced by each of the multidimensional measures.

While widely used (De Vries, 2013), the applied 24-item, HEXACO measure produced subpar internal consistency estimates, and researchers should reconsider the application of this measure in future studies. Instead, longer HEXACO measures should likely be applied, such as the HEXACO-60 (Ashton & Lee, 2009) or HEXACO-100 (Lee & Ashton, 2018), which have been meta-analytically supported to produce appropriate internal consistency estimates and similar dimensional relations (Howard & Van Zandt, 2020). Regarding the present investigation, Hair et al. (2019) recommends that estimates of internal consistency produced by this measure within the current article fall within the range appropriate for exploratory research. Because the study of EP is in its infancy, our present findings can be utilized to provide initial inferences regarding the framework and identify directions for future research. These future researchers,

however, should indeed apply alternative measures if they choose to also study the HEAXCO.

It should also be highlighted that these observed internal consistency estimates support the applied EP scale. This measure was created only recently (Howard, 2023), and it produced satisfactory CFA results and stronger estimates of internal consistency than the applied (and popular) HEXACO measure (De Vries, 2013) while using the same number of items per dimension. For this reason, future researchers can have greater confidence in the study of EP by using this measure, as the present studies further supported its psychometric properties.

We utilized a time-separated research design to partially address common method bias (Podsakoff et al., 2003), but this design cannot provide robust insights into causal effects. Future researchers should apply designs that can better assess causality, such as panel studies (Finkel, 1995). Further, we observed typical rates of attrition in both studies based on prior reviews of longitudinal designs (Ribisl et al., 1996; Young et al., 2006; 2007). Because these reviews suggests that the benefits of utilizing longitudinal research designs is greater than the potential concerns arising from participant attrition when typical rates are observed, our decision to apply longitudinal research designs was supported. We also found in both studies that participants' standing on all variables did not differ between those who did (responders) and did not complete (non-responders) the second survey, further minimizing concerns regarding participant attrition in Studies 1 and 2. Nevertheless, future researchers should replicate the current results utilizing longitudinal methods that may produce less participant attrition.

Finally, both of our studies solely relied on a self-report response format. Future researchers should replicate the current results using more objective indicators of entrepreneurial performance, such that concerns with common method bias could be more fully addressed.

## Conclusion

Broad frameworks like the HEXACO and Dark Triad are known to influence entrepreneurial outcomes when accounting for other relevant predictors. We showed that EP relates to outcomes associated with multiple parts of the entrepreneurial process even when accounting for these broad frameworks, and we further showed that EP even more strongly relates to these outcomes than the broad frameworks. These results bolster the importance of both EP and personality in understanding how people navigate the entrepreneurial process. Due to the established importance of personality, we urge future researchers to incorporate our suggestions into their future studies, particularly those that apply novel theory to understand the effects of EP. By following these suggestions, future researchers can obtain a better understanding regarding who does—and who does not—succeed in entrepreneurial endeavors.

## Note

1. Because the Entrepreneurial Personality Scale was only recently created, we conducted a confirmatory factor analysis (CFA) to assess its psychometric properties. As in the original work of Howard (2023), we loaded each set of four items onto their own first-order latent

factor, and we then loaded each of the first-order latent factors into a second-order latent factor. The resulting fit indices (SRMR = .06, RMSEA = .06, CFI = .95, IFI = .95, and $\chi^2$/df = 2.78) met or closely approached most recommended cutoffs (Brown, 2015; Brown & Moore, 2012; Harrington, 2009). Each item loaded strongly onto its respective first-order latent factor (>.55), and each first-order latent factor loaded strongly onto the second-order latent factor (>.40). Together, these results provide strong support for the psychometric properties of the Entrepreneurial Personality Scale (Howard, 2023).

## Disclosure Statement

No potential conflict of interest was reported by the author(s).

## Notes on contributor

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