

# Personality and resilience: Domains, facets, and non-linear relationships

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## Abstract

**Background and aims** Personal resilience is an important construct in regard to understanding an individual's capacity to sustain psychological wellbeing under conditions of adversity. This study had two major aims: to examine the roles of personality domains and facets in predicting personal resilience; and to examine the possibility of curvilinear relationships between personality and resilience.

**Method** Employed individuals (n = 467) completed a five-factor personality inventory. A third party for each participant provided an external, objective (rather than self-report) rating of each participant's resilience. Participants and the third parties completed online questionnaires.

**Results** The findings revealed that (i) four specific facets of personality, drawn from the domains of extraversion, openness and conscientiousness explain a similar amount of variance in resilience compared with all five broad personality domains and (ii) there is little evidence that curvilinear relationships add unique variance in predicting resilience.

**Conclusions** The findings demonstrate that specific personality facets provide more finely grained information and are more parsimonious than the broad domains in predicting independent assessments of personal resilience.

**Keywords:** Resilience - five-factor model - personality facets - employee wellbeing

## Abstrait

**Contexte et objectifs** La résilience personnelle est une construction importante en ce qui concerne la compréhension de la capacité d'un individu à maintenir son bien-être psychologique dans des conditions d'adversité. Cette étude avait deux objectifs principaux: examiner les rôles des domaines et des facettes de la personnalité dans la prédiction de la résilience personnelle; et d'examiner la possibilité de relations curvilinéaires entre la personnalité et la résilience.

**Méthode** Les personnes occupées (n = 467) ont rempli un inventaire de personnalité à cinq facteurs. Un tiers pour chaque participant a fourni une évaluation externe, objective (plutôt qu'auto-rapportée) de la résilience de chaque participant. Les participants et les tiers ont rempli des questionnaires en ligne.

**Résultats** Les résultats ont révélé que (i) quatre facettes spécifiques de la personnalité, tirées des domaines de l'extraversion, de l'ouverture et de la conscience expliquent une variance de résilience similaire à celle des cinq grands domaines de la personnalité et (ii) il existe peu de preuves de relations curvilinéaires variance unique dans la prédiction de la résilience.

**Conclusions** Les résultats démontrent que les facettes spécifiques de la personnalité fournissent des informations plus fines et sont plus parcimonieuses que les vastes domaines en prédisant des évaluations indépendantes de la résilience personnelle.

**Mots clés:** Résilience - modèle à cinq facteurs - facettes de la personnalité - bien-être des employés

Resilience concerns the ability of an individual to sustain psychological health and wellbeing despite experiencing adversity (Herrman et al., 2011). In more detail, Leon, and Halbesleben (2014) propose that common attributes of resilience include “positive coping strategies to deal with stress (e.g., actively addressing the problem, finding alternative ways to compartmentalize the stress), an ability to adapt to stressful environments, and the ability to maintain stable mental and physical functioning during times of stress” (p. 67). In other words, resilience supports psychological wellbeing and enables people to retain their self-confidence and stay psychologically positive and healthy in the face of significant challenge and adversity. Resilience supports behaviour and enables people to retain a focus on what they are trying to achieve and to adapt and cope effectively with challenges that arise.

Resilience has been found to relate positively to a range of outcomes, including physical health (Yi, Vitaliano, Smith, Yi, & Weinger, 2008), mental health (e.g., Hu, Zhang, & Wang 2015), lifestyle practices (Black & Ford-Gilboe, 2004), career success (Sarkar & Fletcher, 2014), job satisfaction (Youssef & Luthans, 2007), and (mediated through positive affect) employee commitment to change (Shin, Taylor & Seo, 2012). Furthermore, Youssef and Luthans (2007) suggest that resilience permits “not only reactive recovery but also proactive learning and growth through conquering challenges” (p. 778). Accordingly, given the likelihood of experiencing stressful situations at work, identifying personal and environmental antecedents of resilience represents an important line of inquiry for understanding employee wellbeing and organizational performance (Carvalho & Areal, 2015; Cooper, Liu & Tarba, 2014; Leon & Halbesleben, 2014).

Existing research and theory relating to personal resilience suggest that it has both dynamic and stable components (Luthar, Chicchetti, & Becker 2000; Ong, Bergeman, Bisconti, & Wallace, 2006). Some research indicates that resilience varies as circumstances change, suggesting that it is not an entirely stable personal characteristic. In particular, studies have shown that resilience may be improved through training and development activities (e.g., Pipe et al., 2012; Sood, Prasad, Schroeder, & Varkey, 2011; see Robertson, Cooper, Sarkar, & Curran, 2015 for a review). Despite such evidence, there is also support for the idea that stable personality factors relate to personal resilience. Trait-orientated studies have found that neuroticism (negatively) and extraversion (positively) are related to personal resilience (e.g., Campbell-Sills, Cohan, & Stein,

2006). The extent to which resilience is a stable personal quality, associated with underlying personality factors, has important implications for the identification and assessment of personal resilience – and the impact that training and development programmes may have in building resilience. For example, selection and assessment specialists frequently use personality measures to provide information about candidates’ potential and their possible development needs. A better understanding of relationships between personality and personal resilience would provide useful information in this context. The aim of this paper is to advance understanding of the relationship between personality and resilience.

Our inquiry is based on the five-factor (FFM) model of personality (FFM; Costa & McCrae, 1992), which is a well-founded organizing framework for personality. On theoretical grounds, there is a reasonable likelihood that all of the five domains could be related to levels of personal resilience.

Neuroticism (N) encompasses the extent to which an individual is sensitive to distress and feels vulnerable to pressure and stress, both of which may be negatively related to resilience; Extraversion (E) includes sociability, which is likely to lead to greater access to social support and positive emotionality, both likely to be positively related to resilience; Agreeableness (A) includes feelings of low personal worth (modesty) and sympathy for others, both likely to be negatively related to resilience; Openness (O) covers an active imagination and sensitivity to emotional reactions, both of which may be negatively related to resilience; and Conscientiousness (C) includes resourcefulness and self-discipline, both of which may be positively related to resilience.

More specifically, Campbell-Sills et al. (2006) investigated linear relationships between personality and resilience in a sample of college students. They measured the five personality domains (neuroticism, extraversion, conscientiousness, openness, and agreeableness) and found relationships between resilience, measured using the Connor-Davidson Resilience Scale (Connor & Davidson, 2003), and neuroticism (negative) and extraversion (positive). Furnham, Crump and Whelan (1997) used consultants to produce ratings of various management capabilities (including resilience) for a sample of 160 managers and investigated linear relationships between these capabilities and personality. In their study Furnham et al. (1997) measured personality at both the domain and facet level. They found various linear relationships between personality facets and resilience. Our study adds to their

findings by exploring unique relationships between personality domains, facets and personal resilience, as assessed by third parties.

We therefore test the following hypotheses:

Hypothesis 1: The five personality domains will be uniquely related to resilience, with Neuroticism, Openness, and Agreeableness being negatively related to resilience, and Extraversion and Conscientiousness being positively related.

Several studies, however, have found independent effects for facets nested within the five domains even when there is no overall relationship at the domain level. For instance, Fein and Klein (2011) constructed a composite personality variable to predict behavioural self-regulation. The composite variable was made up of four facets from conscientiousness (achievement striving, deliberation, self-discipline, dutifulness), two facets from extraversion (assertiveness, activity), one facet from openness (ideas), and none from neuroticism or agreeableness. As Fein and Klein hypothesized, this composite performed as well or better than any single factor or facet of the FFM. Paunonen (1998, p. 538) comments that “aggregating personality traits into their underlying personality factors could result in decreased predictive accuracy due to the loss of trait-specific but criterion-valid variance.” In regard to the present study, we contend that the broad domains might include some facets that are less important to resilience than others. Neuroticism encompasses facets that may not be so directly related to vulnerability (to stress and anxiety), such as impulsiveness. Openness facets of sensitivity to emotional reactions (feelings) and imagination (fantasy) may exert a combined influence causing individuals to foresee emotional challenges and difficulties more readily. Openness facets related to aesthetics and values, though, are likely to be less important for resilience. Extraversion covers enthusiasm (positive emotionality) and higher scorers on this facet experience positive emotions more readily, which may be important for personal resilience. Extraversion, however, also covers warmth and adventurousness (excitement seeking), facets that may be of less relevance in determining resilience. Although conscientiousness includes facets related to resourcefulness (competence) and self-discipline, which are likely to be important for resilience, it also covers dependability and deliberation, factors that may be less important for personal resilience. If specific facets alone explain as much, or more of the criterion variance, as the broad domains, identifying the specific facets that are important will provide a richer and more focused understanding of the personality

components that determine personal resilience. There would also be benefits of parsimony in measuring personality at the facet level. For example, if it can be established that specific facets are important, using fewer items to measure personality at facet level would provide better information than domain level measurement in less time. We therefore hypothesize that a small number of specific facets, within the broad domains will explain at least as much variance as the overall broad domain. Specifically, we test the following hypotheses<sup>1</sup>:

Hypothesis 2a: *Neuroticism facets of N3 (sensitivity to distress/depression) and N6 (vulnerability to pressure) will be negatively related to resilience.*

Hypothesis 2b: *Openness facets of O1 (imagination/fantasy) and O3 (emotional experience/feelings) will be negatively related to resilience.*

Hypothesis 2c: *Agreeableness facets of A5 (modesty) and A6 (sympathy for others/tender-mindedness) will be negatively related to resilience.*

Hypothesis 2d: *Extraversion facets of E2 (sociability/gregariousness) and E6 (enthusiasm/positive emotions) will be positively related to resilience.*

Hypothesis 2e: *Conscientiousness facets of C1 (resourcefulness/competence) and C5 (self-discipline) will be positively related to resilience.*

A further aspect of our study that adds to previous research concerns the exploration of curvilinear relationships between personality and resilience. To date, the majority of studies have explored linear relationships between personality and resilience (see above).

However, recent studies indicate that the relationships between personality variables and criteria may not always be linear (Grant & Schwarz, 2011). For example, Grant (2013) found a curvilinear relationship between extraversion and sales performance, with ambiverts, rather than extreme extraverts or introverts, delivering the best performance. Furthermore, Le, Oh, Robbins, Ilies, Holland, and Westrick (2011) have found curvilinear relationships between job performance and personality factors, including neuroticism and conscientiousness. These researchers also found curvilinear relationships between personality and training performance and between personality and college achievement. To the best of our knowledge, there is no previous investigation of curvilinear effects for resilience. Given the findings noted above, however, it is worth exploring such relationships. For example, individuals high on conscientiousness

are organized, self-disciplined, and strive for achievement. Very highly conscientious individuals, though, may put too much pressure on themselves and behave less resiliently than someone who is more relaxed about achievement or self-discipline; whereas, those low on conscientiousness may lack focus on achieving work goals, fail to organize their work effectively, place themselves under pressure and appear to lack resilience. However, this part of the study is fundamentally exploratory and therefore we do not state an hypothesis.

## METHOD

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### Sample and procedure

The sample comprised 467 cases (individuals who completed the personality questionnaire and for whom independent ratings of personal resilience were obtained). The average age was 44.62 ( $SD = 9.50$ ), 307 were female, 280 held managerial roles, and 414 and 53 worked in public and private organizations respectively. Participants completed online questionnaires that were hosted on a website specifically designed to provide open access to the questionnaires. Invitations to visit the website were (1) presented on an existing website that provides information and resources relating to wellbeing at work and (2) issued by a variety of electronic mail-shots, word of mouth, conference presentations etc. The invitations offered participants a free personal resilience report, providing an assessment of the implications of their personality results in relation to their personal resilience. In order to obtain informed consent participants were invited to opt in to participate in a research study and to allow their results to be included in the research. They were also invited to provide email contact details for a third party who knew them well and could provide information about their personal resilience. A separate invitation to complete a questionnaire about the target individual's resilience was sent to the third parties.

### Measures

**Personality** Respondents completed the Robertson Cooper FFM Personality Questionnaire (Robertson Cooper Ltd., 2008), measuring Neuroticism (N), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C), with six facets in each domain (e.g., N1-N6). The questionnaire included a total of 180 items (six items for each facet). Example item: "I often worry about what might happen" (Neuroticism domain). Responses were recorded on a five-point scale from 0 = Strongly disagree

to 4 = Strongly agree. The reliability and construct validity for the domain and facet scores compare favourably with existing measures, such as the NEO-PI-R (Costa & McCrae, 1992). Full psychometric information on the personality questionnaire is available from the authors.

**Resilience** In conducting studies of resilience, self-report measures of resilience have been typically used (e.g., Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005; Campbell-Sills et al.). We add to this evidence through use of third-party accounts (i.e., individuals who the target participants felt knew them well provided an assessment of their resilience). More specifically, this approach enabled us to examine the extent to which underlying personality is related to judgements that observers make about an individual's personal resilience. Based on recent resilience research and theory (e.g., Atkinson, Martin, & Rankin, 2009), resilience was assessed with four items, he/she: "Is generally a confident person"; "Normally appears to have a very clear sense of what he/she wants to achieve"; "Is someone with a good network of social support"; "Generally can adapt well to whatever arises". Third-party responses were recorded on a six-point scale, Strongly disagree (1) to Strongly agree (6). Cronbach's Alpha for these items was 0.75.

## RESULTS

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Zero-order correlations between each facet of personality and resilience are reported in Table 1, along with corresponding linear and quadratic associations. The pattern of zero-order and linear relationships, across the facets, is largely consistent with our expectations (see above). Although some facets from the domains of openness and agreeableness are significantly related to resilience (albeit weak effects), the corresponding domain-level variables for these facets are not statistically significant. Only two of the facet-level quadratic terms are significant in predicting resilience (N6, vulnerability to pressure and A1, trust). Zero-order correlations between the demographic variables of age, gender, and organizational membership with resilience are non-significant ( $r = 0.02$ ,  $r = 0.01$ , and  $r = 0.05$ , respectively). Although the size of the effect is small, findings revealed that role had a statistically significant and positive association with resilience ( $r = 0.09$ ,  $p < 0.05$ ), indicating that managers were rated as more resilient than non-managers.

To test hypothesis 1, hierarchical regression analysis was used,

**Table 1. Zero-order, linear, and quadratic associations between personality and third-party ratings of resilience**

| Variables                                 | Alpha coefficient | Zero-order correlation | Linear | Quadratic |
|---|-------------------|------------------------|--------|-----------|
| <b>Neuroticism</b>                        | .86               | -.24**                 | -.24** | -.05      |
| N1. Apprehension/Anxiety                  | .87               | -.18**                 | -.18** | -.04      |
| N2. Frustration/Angry hostility           | .80               | -.10*                  | -.10*  | -.03      |
| N3. Sensitivity to Distress/Depression    | .78               | -.22**                 | -.22** | -.06      |
| N4. Social Anxiety/Self-Consciousness     | .79               | -.19**                 | -.19** | -.02      |
| N5. Impulsivity/Impulsiveness             | .57               | -.12**                 | -.12** | -.03      |
| N6. Vulnerability to pressure             | .80               | -.28**                 | -.28** | -.13**    |
| <b>Extraversion</b>                       | .77               | .28**                  | .28**  | -.09      |
| E1. Warmth                                | .71               | .12*                   | .12*   | -.02      |
| E2. Sociability/Gregariousness            | .79               | .20**                  | .20**  | -.08      |
| E3. Assertiveness                         | .77               | .25**                  | .25**  | -.02      |
| E4. Activity                              | .81               | .24**                  | .24**  | -.05      |
| E5. Adventurousness/Excitement Seeking    | .79               | .11**                  | .11*   | -.02      |
| E6. Enthusiasm/Positive emotions          | .75               | .22**                  | .22**  | -.04      |
| <b>Openness</b>                           | .65               | -.07                   | -.07   | -.02      |
| O1. Imagination/Fantasy                   | .72               | -.14**                 | -.14** | .01       |
| O2. Aesthetics                            | .77               | -.09*                  | -.09*  | -.03      |
| O3. Emotional Experience/Feelings         | .72               | -.03                   | -.03   | .02       |
| O4. Openness to Change/Actions            | .60               | .01                    | .01    | .01       |
| O5. Openness to Ideas                     | .70               | -.02                   | -.02   | -.01      |
| O6. Social Values/Values                  | .54               | -.01                   | -.01   | .01       |
| <b>Agreeableness</b>                      | .55               | -.06                   | -.06   | -.03      |
| A1. Trust                                 | .82               | .08                    | .08    | .10*      |
| A2. Directness/Straightforwardness        | .76               | -.05                   | -.05   | .01       |
| A3. Consideration/Altruism                | .72               | .05                    | .05    | -.05      |
| A4. Compliance                            | .56               | -.01                   | -.01   | -.03      |
| A5. Modesty                               | .77               | -.16**                 | -.16** | .05       |
| A6. Sympathy for Others/Tender mindedness | .66               | -.12*                  | -.12*  | .01       |
| <b>Conscientiousness</b>                  | .75               | .20**                  | .20**  | .05       |
| C1. Resourcefulness/Competence            | .80               | .29**                  | .29**  | -.06      |
| C2. Order                                 | .68               | .11*                   | .11*   | .03       |
| C3. Sense of duty/Dutifulness             | .72               | .10*                   | .10*   | .07       |
| C4. Achievement Striving                  | .77               | .14**                  | .14**  | .01       |
| C5. Self-Discipline                       | .69               | .23**                  | .23**  | -.04      |
| C6. Deliberation                          | .70               | -.03                   | -.03   | .03       |

\*  $p < .05$ , \*\*  $p < .01$

**Table 2. Regression analysis for personality domains and facets predicting third-party ratings of resilience**

| Domains           | Facets |        |             |           |           |          |               |          |              |          |                   |
|-------------------|--------|--------|-------------|-----------|-----------|----------|---------------|----------|--------------|----------|-------------------|
|                   | Step 1 |        | Neuroticism |           | Openness  |          | Agreeableness |          | Extraversion |          | Conscientiousness |
|                   | Step 1 | Step 2 | Step 2      | Step 2    | Step 2    | Step 2   | Step 2        | Step 2   | Step 2       | Step 2   | Step 2            |
| Role              | .09*   | .05    | Role .05    | Role .08  | Role .07  | Role .03 | Role .04      | Role .03 | Role .03     | Role .04 | Role .04          |
| Neuroticism       |        | -.08   | N1 .11      | O1 -.16** | A1 .09    | E1 -.02  | C1 .21**      |          |              |          |                   |
| Extraversion      |        | .24**  | N2 .05      | O2 -.10   | A2 -.01   | E2 .06   | C2 .01        |          |              |          |                   |
| Openness          |        | -.13** | N3 -.08     | O3 .09    | A3 .09    | E3 .15** | C3 .04        |          |              |          |                   |
| Agreeableness     |        | -.01   | N4 -.08     | O4 .03    | A4 .01    | E4 .11*  | C4 -.02       |          |              |          |                   |
| Conscientiousness |        | .12**  | N5 -.03     | O5 .03    | A5 -.13** | E5 -.02  | C5 .17**      |          |              |          |                   |
|                   |        |        | N6 -.26**   | O6 .01    | A6 -.14** | E6 .12*  | C6 -.10       |          |              |          |                   |
| $R^2$             | .01    | .13    |             |           |           |          |               |          |              |          |                   |
| $\Delta R^2$      |        | .12    |             |           |           |          |               |          |              |          |                   |
| Adj. $R^2$        |        | .11    |             |           |           |          |               |          |              |          |                   |

\*  $p < .05$ , \*\*  $p < .01$ .

which involved entering role (control variable, step 1) and the five personality domains (step 2). The results of this analysis are shown in the first main column of Table 2. The findings show that extraversion, openness, and conscientiousness uniquely predict third-party ratings of resilience ( $\beta = .24$ ,  $p < .001$ ,  $\beta = -.13$ ,  $p < .001$ ,  $\beta = .12$ ,  $p < .001$ , respectively). Higher levels of openness predict weaker resilience, whereas higher levels of extraversion and conscientiousness predict stronger resilience. This pattern of findings, therefore, offers partial support for hypothesis 1.

To examine hypotheses 2a-e, a separate hierarchical multiple regression analysis was conducted for the facets within each domain. The results of these analyses are shown in the second main column (headed facets) in Table 2. For hypotheses 2a, b, and d, the findings offer partial support, see Table 2: N6 (vulnerability to pressure), O1 (imagination/fantasy), and E6 (enthusiasm/positive emotions) uniquely predict resilience, whereas N3 (sensitivity to distress/depression), O3 (emotional experience/feelings), and E2 (sociability/gregariousness) do not. Unexpectedly, E3 (assertiveness) and E4 (activity) were also found, positively and uniquely, to predict resilience. In respect of hypotheses 2c and 2e, the findings offer full support in that

A5 (modesty), A6 (sympathy for other/tender-mindedness), C1 (resourcefulness/competence), and C5 (self-discipline) uniquely predict resilience. This pattern of findings indicates that within the domains there is redundancy, that some facets (i.e., N6, O1, E3, E4, E6, A5, A6, C1, and C5) are more important in predicting resilience than others. The results of these analyses indicate the unique contribution of facets within each domain. In order to identify which of these facets show unique relationships with resilience across all of the domains additional hierarchical regression analysis using only the facets identified above (i.e., N6, O1, E3, E4, E6, A5, A6, C1, and C5) was conducted. The findings (see Table 3) indicate that higher levels of E3 (assertiveness), E6 (enthusiasm/positive emotions), and C5 (self-discipline) and lower levels of O1 (imagination/fantasy) are particularly important in predicting resilience. A comparison of the adjusted R square statistics (.11 and .13, Tables 2 and 3 respectively) indicates that the effect size for these facets compares favorably with the domains in explaining variance of the criterion variable. In addition, the facets (E3, E6, O1, and C5) provide a more nuanced and parsimonious means to predict resilience than the broader personality domains (extraversion, openness, and conscientiousness), see above discussion.

**Table 3. Regression analysis for facets predicting third-party ratings of resilience (additional analysis)**

|                                      | Facets |            |
|--------------------------------------|--------|------------|
|                                      | Step 1 | Step 2     |
|                                      | Role   | .09* .02   |
| Vulnerability to pressure            | N6     | -.04       |
| Assertiveness                        | E3     | .12*       |
| Activity                             | E4     | .04        |
| Enthusiasm/positive emotions         | E6     | .13**      |
| Imagination/Fantasy                  | O1     | -.11*      |
| Modesty                              | A5     | -.02       |
| Sympathy for others/tendermindedness | A6     | -.05       |
| Order                                | C1     | .08        |
| Self-discipline                      | C5     | .11*       |
| $R^2$                                |        | .01* .15** |
| Adj. $R^2$                           |        | .13        |
| $\Delta R^2$                         |        | .14**      |

\*  $p < .05$ , \*\*  $p < .01$

Table 1 shows a lack of support for curvilinear relationships between personality and resilience, with just two significant curvilinear effects. We might expect to observe these findings due to chance alone.

**DISCUSSION**

The roles of personality and resilience in determining health and wellbeing are of theoretical and practical significance. In fact, as recent research indicates, resilience may play an important mediating role between personality and wellbeing. Lu, Wang, Liu, and Zhang, (2014) found that resilience partially mediates the associations between extraversion, neuroticism, and subjective wellbeing and fully mediates relationships between these personality domains and positive and negative affect. The present study contributes to understanding of personal resilience by making use of independent evaluations of resilience

and by examining the unique contribution of personality domains and specific personality facets to resilience. The results indicate that the broad domains of extraversion, openness, and conscientiousness (see hypothesis 1) are uniquely associated with third party evaluations of resilience. At the facet level, we are aware of only one previous study that has used personality facets and third-party ratings of resilience: Furnham et al. (1997). The pattern of their findings, in terms of the number of significant zero-order correlations, is similar to that of neuroticism and conscientiousness as reported in this study, see Table 1. Importantly, both sets of findings demonstrate the value of a facet-level inquiry.

Furnham et al. did not examine the unique contribution of the facets to resilience (linear or curvilinear). Our findings (see Table 3) indicate that third-party evaluations of resilience are uniquely positively associated with two specific facets of extraversion (E3, assertiveness; E6, enthusiasm/positive emotions) and one facet of conscientiousness (C5, self-discipline), and negatively associated with a facet of openness (O1, imagination/fantasy). This pattern indicates that people who are confident and forceful (E3), cheerful, light-hearted, and positive (E6), focused and resistant to distractions from the task at hand (C5), and who are not particularly receptive to their inner thoughts (O1) are most likely to be seen as resilient by others. Although some other facets (e.g., N6, vulnerability to pressure; A6, sympathy for others/tender-mindedness; C1, resourcefulness/competence) do predict resilience (Table 2) there is no unique effect for such facets when others are taken into account (Table 3). The exploration of facets (and domains) in regard to curvilinear relationships did not advance understanding of resilience beyond that associated with linear relationships. Recent research (see above), though, has found evidence for curvilinear relationships between personality and other dependent variables; it may be premature therefore to dismiss the possibility of such relationships between personality and resilience, although our results offer no evidence of such relationships beyond that expected by chance.

Overall, the results of this study are only in partial agreement with results that have been based on self-reports of personality and resilience. Self-report studies (e.g., Campbell-Sills et al.) indicate links between extraversion and resilience (positive) and between neuroticism and resilience (negative). Although zero-order correlations in the current study show that neuroticism is associated with third-party assessments of resilience, the hierarchical regression analysis reveals no unique effect for

neuroticism. The results of the current study show that extraversion does predict, to some degree, third-party assessments of resilience and extend this broad conclusion by identifying the specific facets of extraversion, openness, and conscientiousness that are related to resilience. The facet-level results, accordingly, provide a more focused and nuanced understanding of the aspects of personality related to resilience. For example, the broad domain of extraversion covers interpersonal elements (sociability and warmth), activity, and adventurousness but the results reveal that the key elements for resilience are assertiveness (E3) and enthusiasm/positive emotionality (E6). The results for conscientiousness are similarly revealing. Openness also covers a range of facets, including aesthetic appreciation and intellectual curiosity but the results of the current study indicate that the key facet for resilience is a limited imagination and low inclination to fantasise about what might happen (low score on O1). Conscientiousness covers aspects of orderliness, dependability, and achievement striving but by isolating effects at the facet level the current research reveals a unique effect for one specific facet of conscientiousness, namely self-discipline (C5). Importantly, these unique facet-level predictors appear equivalent to their corresponding domains in explaining variance in the criterion variable, thereby indicating that they represent a more targeted and efficient (i.e., fewer items) approach to the prediction of resilience.

#### **LIMITATIONS AND FUTURE RESEARCH**

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Recent interest in resilience has been triggered, to some extent, by its role in enhancing or protecting psychological wellbeing and in underlying organizational performance (Carvalho & Areal, 2015). It has been clear for some time that there are relationships between personality and individuals' reports of their overall psychological wellbeing, with research indicating that the personality domains of neuroticism, extraversion, and conscientiousness are predictive of reported levels of subjective wellbeing (DeNeve & Cooper, 1998; Siegler & Brummet, 2000). In regard to the present study, it is important to recognize that some of the facets showing a unique relationship with third-party evaluations of resilience are based on socially relevant personality facets and reflect aspects of behavior (enthusiasm, assertiveness, and self-discipline) that would be relatively easy for others to observe. According to our results an individual who appears cheerful, confident, and focused is more likely to be judged

resilient. Of course, it could be, as our results suggest, that more cheerful and assertive individuals are actually more resistant to pressure but it could be that, although individuals with these characteristics are seen to be more resilient, in practice they are not. As noted at the beginning of this article, resilience concerns the capability of an individual to "sustain psychological health and wellbeing despite experiencing adversity". Our results do not establish the extent to which personality traits are linked to an individual's capacity to actually sustain psychological health under adversity. Future research, for instance, could involve an examination of work intensity (i.e., work pressure), comparing personality facets, multi-method assessments of resilience (e.g., self, work colleague), and wellbeing within and between low and high intensity conditions.

It would also be worthwhile to examine the interplay between personality and more discrete challenging or tough work experiences (c.f., Solomon, Berger, & Ginsberg, 2007) in predicting resilience levels. For example, we might expect that personality characteristics would moderate the impact of challenging experiences (e.g., rapid promotion with a lack of training) such that only individuals with a specific personality profile will be sufficiently resilient to flourish. This clearly has implications for stress prevention and wellbeing, both in terms of the selection and placement of individuals into specific job roles and for the diagnosis of training and support that may be helpful for individuals whose scores on the key facets indicate potentially lower levels of resilience.

Another limitation of the current research is the lack of detail available concerning the third party assessors. Although individuals were instructed to select someone who knew them well to make the assessments, the role of the assessor (e.g., relative, colleague, boss) could be a significant factor in the judgements made. Future research exploring the relationship between resilience assessment and role, in relation to the target individual, would be useful.

Although our results indicate some clear relationships between resilience and personality the size of effect involved is relatively small, indicating that, although resilience may have a stable component linked to personality, it may also be amenable to change. Research elsewhere has already demonstrated that systematic training and development may enhance levels of personal resilience. Resilience training has been found to have a positive impact on various mental health and subjective wellbeing outcomes, including stress, depression, negative affect



(for a review, see Robertson, Cooper, Sarkar, & Curran, 2015), and our results leave much of the variance in resilience to be explained, or determined by factors other than stable personality. Nonetheless, this study does provide a foundation on which researchers and HR professionals can tailor employee selection and development to improve employees' capacity to sustain wellbeing and performance in respect of challenges to their resilience. Practitioners/HR managers should consider the significance of E3, E6, O1, and C5 for resilience.

## CONCLUSION

The findings of this study provide a foundation on which future studies can build. The examination of unique effects suggests that a small number of personality facets are important in predicting independent assessments of resilience. In conducting future

studies of this kind, it is evidently important to examine naturally occurring and/or manipulated conditions that represent personal challenge, along with assessments of resilience from different perspectives. ■

<sup>1</sup> The facet labels correspond to facet labels in other FFM model questionnaires (e.g. Costa & McCrae, 1992). Facet labels are also mostly the same. When the facet label used is different we have also provided the term used by Costa & McCrae. The facet numbers referred to above and in subsequent discussion refer to facets from the Robertson Cooper FFM Personality Questionnaire (Robertson Cooper Ltd., 2008). The facet numbers correspond to facet numbers in other FFM model questionnaires (e.g., Costa & McCrae, 1992).

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