

# Personality, Intrinsic and Extrinsic Work Motivation, and Satisfaction

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## Abstract

This study re-explored the relationship between work-salient personality traits and intrinsic and extrinsic motivation. In all, 283 mainly middle-aged adults completed three questionnaires: assessing personality (HPTI: High Potential Trait Indicator), work motivation (WVQ: Work Values Questionnaire) and job satisfaction. We first investigated the factor structure of the WVQ, which measures how important 44 different job features are to the respondent. Results revealed five factors, two about intrinsic and three about extrinsic motivation. Using these factors as independent variables, we regressed gender, age, management level and personality traits as dependent variables. We found personality traits, more than demographic factors, related to motivation factors, particularly intrinsic motivation. We then repeated this analysis on the two higher-order factors (Intrinsic and Extrinsic) and six sub-factors of the WVQ, that was factor analysed by Furnham et al. (2021). Two of the six personality traits measured by the HPTI were consistently related to the various motivational factors, namely Curiosity (Openness) and Ambiguity Acceptance. The importance of personality traits in work motivation is discussed. Limitations are acknowledged.

## Keywords

Values, Motivation, Extrinsic, Intrinsic, Work Success

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## 1. Introduction

Often, education and work organization assessors and selectors are primarily interested in three modestly related individual difference variables: cognitive ability (IQ), personality and motivation. Many are particularly interested in how these variables are related to job motivation, productivity and satisfaction (Chamorro-

Premuzic et al., 2014; Judge & Ilies, 2002; Latham & Pinder, 2005; Lounsbury et al., 2007; Parks & Guay, 2009; Urban & Jirsáková, 2022). Whilst there is general agreement that ability and personality are relatively easy to measure reliably and validly, motivation is much more difficult, in part because people cannot rather than will not accurately report on their motives. Hence motivation is often done through assessing work values (Chamorro-Premuzic et al., 2014).

There have been a number of studies and reviews on the relationship between personality, job motivation and satisfaction. From a Five Factor Model (FFM) perspective, it seems clear that the traits Conscientiousness and Stability (Neuroticism) are strongly and consistently related to job satisfaction across many jobs and populations (Bui, 2017; Chamorro-Premuzic et al., 2014; Lounsbury et al., 2007; Steel et al., 2019; Templer, 2012; Topino et al., 2021; Törnroos et al., 2019; Ward, 2019). Recently, Kang & Malvaso (2023) explored the relationships between personality traits and various areas of job satisfaction namely pay, work, security, and hours worked. They found that Neuroticism consistently was negatively associated with all aspects of job satisfaction, whereas Agreeableness and Conscientiousness have positive associations with job satisfaction.

In this study we explore the relationship between personality and motivation using a measure of work personality (the HPTI) which assesses two traits, namely Ambiguity Acceptance (Tolerance) and Risk Appetite (Courage). In this sense, this study is both replicative and novel.

### 1.1. Two Factors of Motivation

One of the most well-known theories regarding motivation at work is Herzberg et al.'s (1959) two motivational dimensions: *hygiene* and *motivator* variables. Hygiene is often referred to as *extrinsic* motivation, whereas motivator variables are known as *intrinsic* motivation. The latter involves an internal drive to complete a task for its own sake or personal enjoyment (Deci & Ryan, 1985; Furnham et al., 2021).

Several early studies have explored the factorial structure of motivational values (Knoop, 1994a, 1994b). Most studies find two to four factors, though usually these can be classified according to the two-factor theory: hygiene and motivation. Research has also confirmed that the importance of a motivator influences the effect it has on employee job satisfaction (Knoop, 1994c; Rice et al., 1991).

Additional literature reviews, concerning values and motivation, have suggested that motivation can be classified into broad intrinsic and extrinsic types (Cotton et al., 1997; Furnham et al., 1999; Nord et al., 1990; Gagné & Vansteenkiste, 2013; Gagné et al., 2010, 2015; Waters & Waters, 1972; Wernimont, 1966). However intrinsic and extrinsic motivators are not always functions of the job task, nor are they necessarily mutually exclusive. Alternative early studies have demonstrated how introducing extrinsic motivators can reduce intrinsic motivation: in other words, external rewards can deprive tasks of any internal meaning or personal significance (Lepper & Greene, 1975; Deci et al., 1999).

Nevertheless, the effect is not always so clear-cut. Thus, [Vansteenkiste et al. \(2010\)](#) proposed that over 100 studies have investigated the effects of extrinsic rewards on intrinsic motivation, yet meta-analyses on the topic reveal mixed effects at best.

Also despite varying terminology and factorial structures, the literature clearly exhibits a multidimensional factor structure to all motivational measures. This is most frequently described as two primary dimensions that can be broadly categorized as extrinsic/intrinsic ([Hauber & Bruininks, 1986](#); [Knoop, 1994a](#); [Wakefield et al., 1987](#); [Gagné & Vansteenkiste, 2013](#); [Barkoukis et al., 2011](#)).

## 1.2. The Work Values Questionnaire

The present study utilises the latest 44-item version of the Work Values Questionnaire (WVQ) which has been revised a number of times ([Furnham et al., 2002](#); [Furnham et al., 2005](#); [Furnham et al., 2009](#); [Furnham and Impellizzeri, 2021](#); [Furnham & MacRae, 2020](#)). In 2021, Furnham et al. factor analysed the 44-item version and found that the scales fit a model with two factors and six facets, fitting an intrinsic-extrinsic factorial structure consistent with previous research. Extrinsic Values accounted for 22% of the variance, Intrinsic Values accounted for 20% of the variance. Factor analyses identified three factors explaining 64% of the variance with three extrinsic factors labelled: Security, Compensation and Conditions. A factor analysis on the 15 intrinsic items revealed three factors explaining 60% of the variance labelled: Intrinsic, Autonomy and Affiliation. The measure has construct, content and predictive validity.

## 1.3. The High Potential Traits Inventory

In this study, we utilized the High Potential Trait Indicator (HPTI), which is a work-related, validated trait measure grounded in the Big Five personality framework. The HPTI, referenced in several studies ([Cuppello et al., 2023](#); [Furnham & Treglown, 2018, 2021](#); [Teodorescu et al., 2017](#)). It measures three of the Big Five (FFM) traits but introduces three additional traits associated with success across various job roles.

The first and most extensively researched trait, *Conscientiousness*, is marked by self-discipline, organization, and impulse control. The second trait, *Adjustment*, related to low Neuroticism, involves emotional resilience, mood stability, and regulation. The third trait, *Curiosity*, akin to Openness, is characterized by an interest in new ideas, experiences, and situations. The fourth trait is *Ambiguity Acceptance*, sometimes described as Ambiguity Tolerance (AT), which indicates how individuals perceive and process unfamiliarity or incongruence. The fifth trait, *Competitiveness*, focuses on the adaptive aspects of competitiveness, encompassing self-improvement, a desire for individual and team success, and a propensity for learning. The trait of *Courage*, or *Approach to Risk*, which is the ability to combat or mitigate negative or threat-based emotions and broaden the potential range of responses.

## 2. This Study

In this study, we were interested in a number of issues and it was partly exploratory and partly replicative. *First*, we aimed to explore the factor structure of the WVQ to determine whether we could replicate the above results. Based on previous studies we hypothesized that the items would factor into two higher order factors, identifiable as intrinsic and extrinsic, but also that there would be subfactors of each. *Second*, we were interested in the work-personality trait and demographic correlates of work values and motives. As a result, we predicted that Conscientiousness and Adjustment would be generally positively associated with all aspects of motivation. We were particularly keen to investigate the role of the non-FFM traits measured by the HPTI, namely Ambiguity Acceptance and Risk Approach. *Third*, as essentially a replication of many studies, we measured job satisfaction and explored the extent to which this was determined by demography and personality. We predicted that Conscientiousness and Adjustment would be significantly positively associated with overall job satisfaction.

## 3. Method

### 3.1. Participants

In all, 283 individuals took part in the study, of whom 117 were male and 166 female. The ages ranged from 23 to 69 ( $M = 46.38$  years,  $SD = 10.77$  years). Seventy-six participants said they were not managers; 39 were first-line management; 74 were middle-management; and 94 were senior managers.

### 3.2. Instruments

1) *Work Values Questionnaire*: The WVQ asks participants to rate 44 items on a 10-point Likert scale, ranging from 1 (Not Important) to 10 (Important). Examples of items being rated include: “Flexibility—a job that allows me to work flexible hours to suit my personal needs”; “Recognition—a job that leads to clear and wide recognition of my achievements; and “Stimulation—a job that I personally find very interesting”.

2) *The High Potential Traits Inventory* (HPTI) is a measure of normal, “bright” personality traits designed to ascertain how individuals think, prioritise, and act in the workplace (MacRae & Furnham, 2020; Furnham & Treglown, 2018, 2021). The questionnaire includes 78 items. Previous research demonstrates that the HPTI assesses six dimensions of personality showing alphas: Conscientiousness (.70), Adjustment (.77), Curiosity (.68), Risk Approach (.68), Ambiguity (.68) and Competitiveness (.77).

3) *Job Satisfaction*: Participants were asked three questions rated on a 7-point agree-disagree scale: “I feel committed to my current organisation” ( $M = 5.54$ ,  $SD = 1.58$ ); “I feel satisfied with my current job” ( $M = 5.06$ ,  $SD = 1.74$ ); “I feel engaged at work” ( $M = 5.36$ ,  $SD = 1.59$ ). Responses were combined into a single satisfaction score with alpha of .89.

### 3.3. Procedure

Participants were recruited from a pool of individuals who had completed a psychometric assessment provided by the test publisher Thomas International for genuine occupational test use, and subsequently volunteered to take part in psychology research. Most were middle aged, middle managers with English as their mother tongue, hence not a representative sample of the workforce. Participants were incentivized to take part by being offered brief feedback on their results following the study. Participants were emailed to inform them of the study and provide them with a link to complete. They gave their informed consent to analyse and publish the anonymized data. The study was conducted on an online survey platform. The research was approved by the committee LSA/TI/2022. Finally, participants were debriefed, thanked for their time and provided feedback on their scores.

## 4. Results

### 4.1. Factor Analysis on the WVQ

**Table 1** shows the mean responses to each rating, in addition to the results of the varimax rotated Factor Analysis. In all, eight motivations were rated > 8.00, indicating high importance. These included: Balance, Independence, Pay, Personal Growth, Personal Relevance, Self-Expression, Stimulation and Supervision. Equally, five were rated as relatively unimportant, namely Competition, Effortlessness, Fame, Simplicity and Visibility.

**Table 1.** Means, SDs and results of the factor analysis.

|                         | <i>Mean</i> | <i>SD</i> | 1          | 2          | 3          | 4          | 5          | 6           | 7          | 8          | 9          |
|-------------------------|-------------|-----------|------------|------------|------------|------------|------------|-------------|------------|------------|------------|
| Balance                 | 8.41        | 1.6       | .31        | -.07       | .28        | .22        | .204       | <b>.52</b>  | -.05       | .06        | -.01       |
| Benefits                | 7.39        | 2.03      | .19        | .07        | <b>.68</b> | .11        | .13        | .31         | -.03       | .21        | .16        |
| Bonuses                 | 6.69        | 2.48      | .10        | .18        | <b>.70</b> | .20        | .07        | -.24        | .01        | -.14       | .02        |
| Clarity                 | 7.62        | 1.96      | .27        | -.09       | .19        | .29        | .22        | .09         | <b>.45</b> | .07        | -.03       |
| Comfort                 | 7.24        | 2.17      | .19        | .02        | .19        | <b>.74</b> | .28        | .01         | .01        | .04        | .06        |
| Competition             | 4.71        | 2.51      | .03        | .38        | .25        | -.01       | .05        | <b>-.64</b> | .11        | .03        | .03        |
| Conditions              | 7.74        | 2.11      | .29        | -.02       | .22        | <b>.81</b> | .10        | -.03        | -.01       | .05        | .01        |
| Contribution to society | 6.96        | 2.29      | .33        | .10        | -.07       | .06        | .05        | .06         | .04        | <b>.69</b> | .06        |
| Creativity              | 7.27        | 2.17      | <b>.62</b> | .09        | .01        | .05        | .13        | -.15        | -.18       | .30        | .19        |
| Effortlessness          | 3.78        | 2.09      | -.23       | .17        | .02        | .15        | <b>.77</b> | -.06        | .000       | -.06       | .09        |
| Entrepreneurial         | 5.13        | 2.64      | .19        | <b>.41</b> | .27        | .03        | .07        | -.52        | -.01       | -.06       | .20        |
| Equipment               | 6.58        | 2.21      | .29        | .14        | .22        | .39        | .18        | -.11        | .20        | -.01       | <b>.45</b> |
| Fame                    | 4.21        | 2.63      | .05        | <b>.75</b> | .09        | -.12       | .17        | -.14        | -.04       | .12        | .18        |
| Flexibility             | 7.60        | 2.16      | .31        | .16        | .14        | .22        | .23        | <b>.46</b>  | -.28       | -.10       | .23        |
| Fun                     | 6.27        | 2.22      | .38        | .35        | .12        | .08        | .24        | -.14        | -.13       | -.02       | .02        |

## Continued

|                      |      |      |            |            |            |            |            |       |            |       |            |
|----------------------|------|------|------------|------------|------------|------------|------------|-------|------------|-------|------------|
| Independence         | 8.16 | 1.70 | <u>.59</u> | .12        | .04        | .21        | -.04       | .21   | -.13       | -.19  | .33        |
| Insurance            | 6.40 | 2.70 | .08        | .14        | <u>.57</u> | .18        | .04        | .01   | .02        | .31   | .38        |
| Intellectuality      | 7.94 | 1.74 | <u>.60</u> | .09        | .11        | .19        | -.43       | -.04  | .05        | .07   | .25        |
| Location             | 7.65 | 2.08 | .20        | .07        | .07        | <u>.60</u> | .07        | .30   | .10        | -.02  | .08        |
| Organizational image | 6.74 | 2.27 | .12        | <u>.51</u> | .15        | .33        | -.12       | .004  | .13        | .49   | -.11       |
| Pay                  | 8.01 | 1.64 | .18        | .26        | <u>.70</u> | .13        | -.07       | .14   | .07        | -.21  | -.05       |
| Perks                | 6.09 | 2.33 | -.003      | .19        | <u>.74</u> | .13        | .16        | -.19  | .07        | .03   | -.01       |
| Personal growth      | 8.45 | 1.69 | <u>.65</u> | .27        | .25        | .24        | -.27       | .09   | .09        | .04   | -.02       |
| Personal relevance   | 8.52 | 1.56 | <u>.77</u> | .17        | .03        | .17        | -.20       | .11   | .15        | .04   | .04        |
| Power                | 7.19 | 2.08 | .44        | <u>.60</u> | .08        | .06        | -.09       | -.12  | .03        | -.12  | .16        |
| Promotion            | 6.74 | 2.23 | .16        | <u>.63</u> | .44        | .09        | -.02       | -.10  | .12        | -.15  | -.10       |
| Rationality          | 6.60 | 2.23 | .22        | .30        | .07        | .17        | -.12       | -.12  | .28        | .13   | <u>.47</u> |
| Recognition          | 6.94 | 2.14 | .24        | <u>.62</u> | .22        | .10        | .15        | .13   | .29        | .07   | .03        |
| Regularity           | 6.19 | 2.18 | -.09       | .256       | .18        | .39        | .39        | .08   | <u>.53</u> | .12   | .10        |
| Responsibility       | 7.61 | 1.56 | <u>.53</u> | .33        | .11        | .14        | -.15       | .05   | .26        | -.01  | .10        |
| Safety               | 7.77 | 2.03 | .32        | -.03       | .18        | <u>.73</u> | .08        | .07   | .13        | .12   | .07        |
| Security             | 7.90 | 2.02 | .11        | .03        | <u>.48</u> | .26        | .09        | .35   | <u>.40</u> | .12   | -.14       |
| Self Expression      | 8.31 | 1.72 | <u>.75</u> | .09        | .01        | .20        | .06        | .11   | -.05       | .17   | -.01       |
| Simplicity           | 4.47 | 2.24 | -.07       | .21        | .13        | .21        | <u>.76</u> | .04   | .20        | .08   | -.10       |
| Social interaction   | 6.64 | 2.27 | <u>.48</u> | .20        | .10        | .03        | .25        | -.13  | .10        | .41   | -.45       |
| Status               | 5.49 | 2.33 | .09        | <u>.78</u> | .07        | .05        | .10        | -.02  | .04        | .07   | -.07       |
| Stimulation          | 8.61 | 1.59 | <u>.70</u> | .12        | .10        | .26        | -.26       | .16   | .11        | -.07  | -.08       |
| Supervision          | 8.92 | 1.45 | <u>.57</u> | .05        | .16        | .20        | .08        | .46   | .16        | -.02  | -.03       |
| Teaching             | 7.30 | 2.20 | <u>.61</u> | .12        | .02        | -.08       | .000       | -.03  | .28        | .26   | .28        |
| Teamwork             | 7.78 | 1.95 | <u>.69</u> | .05        | .12        | .12        | -.02       | -.09  | .21        | .28   | .02        |
| Tradition            | 5.91 | 2.30 | .11        | .12        | -.02       | -.02       | .15        | -.18  | <u>.73</u> | -.02  | .10        |
| Tranquility          | 5.27 | 2.31 | -.02       | .10        | .15        | .17        | <u>.81</u> | .16   | .20        | .06   | -.02       |
| Variety              | 7.91 | 1.73 | <u>.75</u> | .10        | .12        | .14        | .045       | .01   | -.05       | .01   | -.13       |
| Visibility           | 4.60 | 2.45 | .15        | <u>.79</u> | .08        | -.06       | .19        | -.08  | -.003      | .14   | .09        |
| Eigenvalue           |      |      | 11.52      | 4.48       | 3.68       | 2.17       | 1.65       | 1.43  | 1.28       | 1.07  | 1.01       |
| Variance             |      |      | 26.12%     | 10.17%     | 8.35%      | 4.92%      | 3.75%      | 3.25% | 2.91%      | 2.42% | 2.29%      |

An initial Principal Components factor analysis suggested that there was no multicollinearity among the factors, no SMC was greater than .8. We followed this with both a VARIMAX and EQIMAX (orthogonal and oblique).

The results in **Table 1** identified five factors with an Eigenvalue > 1.5, which, in total, accounted for over 55% of the variance. This seemed the most parsimonious criteria to use in the interpretation of the factor analysis. The first factor had 13 item loading > .40, the highest of which were Personal Relevance, Self-Expression

and Variety, thus was labelled *Intrinsic Mastery* because these items seemed to capture this dimension as described by Pink (2009). The second factor had eight items loading on it > .40, the highest of which were Visibility, Status and Fame, and was called *Extrinsic Image*. The third factor had six items loading on it, the highest of which were Perks, Bonuses and Pay, and was named *Extrinsic Rewards*. The fourth factor had four items loading on it, the top three of which were Conditions, Comfort and Safety, and was labelled *Extrinsic Conditions*. The fifth factor had only three items loading > .40, these were Tranquility, Effortlessness and Simplicity, and was called *Intrinsic Ease* because they seemed to capture the idea of the job being easy to succeed at.

These items were combined into factor scores which were the criterion variable for a hierarchical factor analysis, shown in Table 2. The first step was sex, age and managerial level, and the second was the six traits.

Following the analysis of Furnham et al. (2021), we computed eight further factors and calculated their alphas: Total *Extrinsic* (15 items) Alpha .73; Total *Intrinsic* (15 items) Alpha .75; *Extrinsic Security* (5 items) Alpha .74; *Extrinsic Compensation* (5 items) Alpha .79; *Extrinsic Conditions* (5 items) Alpha .81; *Intrinsic Autonomy* (5 items) Alpha .84; *Intrinsic Recognition* (6 items) Alpha .86; *Intrinsic Affiliative* (5 items) Alpha .74.

## 4.2. Regressions

The first regression was onto the general Job Satisfaction score. This showed three significant betas, which accounted for nearly a fifth of the variance. Consistent with many other studies, the results revealed Conscientiousness and low Neuroticism were associated with job satisfaction but also with Ambiguity Acceptance.

**Table 2.** Regressions onto General Job Satisfaction and the factors.

|                                | TOTSAT   |           |             |          | Factor 1 |           |             |          | Factor 2 |           |             |          | Factor 3 |           |             |          |
|--------------------------------|----------|-----------|-------------|----------|----------|-----------|-------------|----------|----------|-----------|-------------|----------|----------|-----------|-------------|----------|
|                                | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> |
| Gender                         | -.25     | .54       | -.03        | -0.45    | -.19     | .13       | -.10        | -1.54    | .06      | .12       | .03         | 0.47     | .00      | .14       | .00         | 0.00     |
| Age                            | -.05     | .03       | -.13        | -1.95    | -.01     | .01       | -.06        | -0.86    | -.01     | .01       | -.10        | -1.51    | -.02     | .01       | -.17        | -2.40*   |
| Manage Level                   | .09      | .24       | .03         | 0.39     | .09      | .06       | .11         | 1.61     | .07      | .05       | .08         | 1.20     | -.06     | .06       | -.07        | -0.96    |
| Conscientiousness              | .11      | .04       | .21         | 2.69**   | .00      | .01       | -.02        | -0.30    | .00      | .01       | .02         | 0.24     | .01      | .01       | .09         | 1.14     |
| Adjustment                     | .12      | .03       | .33         | 4.69***  | .01      | .01       | .15         | 2.06*    | -.01     | .01       | -.08        | -1.11    | .00      | .01       | .04         | 0.58     |
| Curiosity                      | -.02     | .04       | -.04        | -0.64    | .04      | .01       | .31         | 4.41***  | .03      | .01       | .21         | 3.27**   | .00      | .01       | -.01        | -0.12    |
| Risk Approach                  | -.06     | .04       | -.14        | -1.63    | .02      | .01       | .20         | 2.31*    | -.01     | .01       | -.11        | -1.39    | .00      | .01       | .00         | 0.01     |
| Ambiguity Acc                  | .09      | .03       | .21         | 2.90**   | -.02     | .01       | -.18        | -2.40*   | .00      | .01       | .04         | 0.55     | -.01     | .01       | -.15        | -1.88    |
| Competitiveness                | -.03     | .02       | -.09        | -1.43    | .00      | .01       | -.06        | -0.82    | .04      | .01       | .46         | 7.22***  | .01      | .01       | .16         | 2.26*    |
| Adjusted <i>R</i> <sup>2</sup> | .187     |           |             |          | .162     |           |             |          | .258     |           |             |          | .082     |           |             |          |
| <i>F</i>                       | 7.326    |           |             |          | 6.330    |           |             |          | 10.562   |           |             |          | 3.462    |           |             |          |
| <i>p</i>                       | .000     |           |             |          | .000     |           |             |          | .000     |           |             |          | .000     |           |             |          |

## Continued

|                                | Factor 4 |           |             |          | Factor 5 |           |             |          |
|--------------------------------|----------|-----------|-------------|----------|----------|-----------|-------------|----------|
|                                | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>Beta</i> | <i>t</i> |
| Gender                         | -.18     | .14       | -.09        | -1.26    | -.14     | .13       | -.07        | -1.07    |
| Age                            | .00      | .01       | -.05        | -0.65    | .01      | .01       | .09         | 1.34     |
| Manage Level                   | -.09     | .06       | -.11        | -1.44    | -.03     | .06       | -.04        | -0.51    |
| Conscientiousness              | .01      | .01       | .05         | 0.60     | -.03     | .01       | -.22        | -2.85**  |
| Adjustment.                    | .00      | .01       | .05         | 0.64     | .01      | .01       | .14         | 1.95     |
| Curiosity                      | .00      | .01       | .02         | 0.20     | .00      | .01       | .02         | 0.31     |
| Risk Approach                  | -.01     | .01       | -.09        | -0.95    | -.01     | .01       | -.12        | -1.40    |
| Ambiguity Acc                  | -.01     | .01       | -.13        | -1.60    | -.03     | .01       | -.27        | -3.60*** |
| Competitiveness                | -.01     | .01       | -.07        | -0.94    | .00      | .01       | -.04        | -0.65    |
| Adjusted <i>R</i> <sup>2</sup> |          | .037      |             |          |          | .163      |             |          |
| <i>F</i>                       |          | 2.061     |             |          |          | 6.362     |             |          |
| <i>p</i>                       |          | .034      |             |          |          | .000      |             |          |

\*\*\**p* < .001; \*\**p* < .01; \**p* < .05; Gender: 1 = Male, 2 = Female.

We then calculated six hierarchical regressions with sex, age and management level in the first step and the six personality variables in the second step. **Table 2** depicts the results from the second step. The first regression onto the *Intrinsic Mastery* factor displayed that it was positively related to Adjustment, Curiosity and Risk Approach but negatively correlated with Ambiguity Acceptance. For the second regression onto the *Extrinsic Image* factor, results revealed it was positively associated with traits, Competitiveness and Openness. For the third regression onto the *Extrinsic Rewards* factor, the results portrayed that it was negatively associated with age but positively related to Competitiveness. The fourth regression onto the *Intrinsic Mastery* factor showed no significant predictors. The final regression onto the *Intrinsic Ease* factor exhibited that those low on Conscientiousness and Ambiguity Acceptance rated this factor highly.

We also calculated similar regressions for the eight factors (Total Extrinsic and three factors; Total Intrinsic and three factors). All regressions were significant: *Total Extrinsic*  $F(9, 234) = 6.09$ ,  $R^2 = .19$ , Ambiguity Acceptance  $\beta = -.37$ ,  $t = 4.97$ ,  $p < .001$ ; *Extrinsic Security*  $F(9, 234) = 14.26$ ,  $R^2 = .35$ , Ambiguity Acceptance  $\beta = -.49$ ,  $t = 7.41$ ,  $p < .001$ ; *Extrinsic Compensation*  $F(9, 234) = 3.33$ ,  $R^2 = .11$ , Ambiguity Acceptance  $\beta = -.19$ ,  $t = 2.41$ ,  $p < .001$ , Competitive  $\beta = .17$ ,  $t = .17$ ,  $p < .001$ ; *Extrinsic Conditions*  $F(9, 234) = 3.74$ ,  $R^2 = .10$ , Gender  $\beta = -.16$ ,  $t = 2.45$ ,  $p < .001$ , Ambiguity Acceptance  $\beta = -.22$ ,  $t = 2.90$ ,  $p < .001$ . *Total Intrinsic*  $F(9, 234) = 8.75$ ,  $R^2 = .19$ , Curiosity  $\beta = .38$ ,  $t = 5.72$ ,  $p < .001$ , Ambiguity Acceptance  $\beta = -.21$ ,  $t = 2.97$ ,  $p < .001$ , Competitiveness  $\beta = .24$ ,  $t = 3.72$ ,  $p < .001$ ; *Intrinsic Autonomy*  $F(9, 234) = 6.99$ ,  $R^2 = .18$ , Curiosity  $\beta = .40$ ,  $t = 5.75$ ,  $p < .001$ ; *Intrinsic Recognition*  $F(9, 234) = 11.05$ ,  $R^2 = .27$ , Curiosity  $\beta = .29$ ,  $t = 4.47$ ,  $p < .001$ , Competitive  $\beta$

= .42,  $t = 6.77$ ,  $p < .001$ ; *Intrinsic Affiliative*  $F(9, 234) = 4.83$ ,  $R^2 = .12$ , Curiosity  $\beta = .26$ ,  $t = 3.63$ ,  $p < .001$ , Ambiguity Acceptance  $\beta = -.24$ ,  $t = 3.19$ ,  $p < .001$ .

## 5. Discussion

There were four major findings from this study. The first was the confirmation that work motives can be meaningfully and psychometrically classified, at the domain and facet level, into Intrinsic and Extrinsic factors. The facet-level analysis also fits well with various theories in the field (Deci & Ryan, 1985; Pink, 2009), which allows for a finer-grain analysis regarding the issue of work motivation. However, it is interesting to note from **Table 1** which of the possible specified motives seemed not to load on any factor. These included: *Regularity*—a job that can be performed in a standard, stable and controlled manner; *Rationality*—a job that values science, technology and data; *Flexibility*—a job that allows me to work flexible hours to suit my personal needs; and *Tradition*—a job that celebrates old fashioned values like science, thrift and hard work. In this sense they may be job factors and motives that do not fit neatly into the two different higher-order categories.

Second, the findings on the relationship between personality and work motivation replicate the well-established relationship, namely that high Conscientiousness and high Adjustment (low Neuroticism) are major trait correlates. An additional major trait correlate was Ambiguity Acceptance, which adds new insight into the relationship. Indeed, recent studies of the HPTI have unique importance in understanding the role of this trait (Cuppello et al., 2023). As work and jobs change, it may well be that the ability to tolerate ambiguities of many kinds plays an increasingly important role in job motivation and satisfaction (Watts et al., 2020).

Third, while traits are related to motivation, it is apparent that different traits associate with different motives. Furthermore, traits seem more closely related to intrinsic factors, which is sensible as there is more variability in what people find intrinsically satisfying than extrinsically rewarding. Thus one assumes that there is more consensus about extrinsic traits like benefits and bonuses than the intrinsic traits. However, the working-from-home changes that have occurred as a function of the COVID experience may lead to some important and long-term changes which are worth exploring (Furnham et al., 2024).

Fourth, there are relatively few demographic, and even management-level differences in work motivation and satisfaction. despite there being many investigations concerning sex and generational differences. Whilst there is some suggestion that males favour certain extrinsic factors (e.g., pay, title) over females and females favour certain intrinsic factors over males, there were few associations at the facet level. Equally, while there is great debate about generational differences at work (Zabel et al., 2017), there seems relatively little evidence that age was related to motivation. There is much less work on management level and job motivation, despite the suggestion that motivation changes as people get more senior.

The regression that accounted for most of the variance based on the factor analysis in this study (see **Table 2**) showed that two traits, Curiosity (Openness) and

Competitiveness (low Agreeableness), were related to an Extrinsic factor whose highest loading items were: Visibility, Status and Fame, and namely Recognition, which was confirmed by the analysis of the MacRae and Furnham (2014) model.

The importance of two factors not assessed in the FFM, Ambiguity Acceptance and Risk Approach, has become evident from the various studies that have used the HPTI (Cuppello et al., 2023; Furnham & Impellizzeri, 2021; Teodorescu et al., 2017). In this study, one of the variables was particularly related to motivation, namely Ambiguity Acceptance. de Vries (2021) noted the many concepts related to tolerance to ambiguity, including “epistemic curiosity”, “curiosity and exploration inventory”, “need for cognition”, “openness for ideas”, “typical intellectual engagement”, “need for structure”, “need for precision”, “need for evaluation” as well as “dialectical” and “paradoxical” thinking. The idea is that this trait leads to behaviours like the need to know more and understand the environment and that intellectually challenging environments become very attractive. This trait is similar to Curiosity (Openness), though curiosity emphasises the intellectual side of new experiences more.

Like all studies in this field, this paper contained limitations, including the use of a cross-sectional study confined to self-report data; this is a common problem amongst similar research. However, it should be recognised that it is particularly difficult to measure the three concepts used in this study by any other means than by self-report. Moreover, we utilised a volunteer group of mainly middle-aged managers whose work history we did not know. Hence, participants may not accurately represent the general population, due to differences in factors like their personal motivation and availability. We had a relatively restricted age range and we know that work motivation changes with age, although personality factors do not. Ideally, we would have explored also the role of differences in the education of the participants, as well as whether there were differences between people from different industry sectors, but our sample was too restricted to do this. Nevertheless, we successfully re-investigated some interesting relationships between personality and motivation at work.

### **Data Availability**

This is obtainable from the first author on request.

### **Registration**

This paper was not pre-registered with the journal.

### **Author Contribution**

SC collected the data and did the statistical analyses. AF wrote the paper.

### **Ethics**

This was sought and obtained.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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