

This is an unedited manuscript published in the *Career Development International*.  
Please note that the published version underwent minor additional editing in style and content.

Please cite as:

Abessolo, M., Hirschi, A., & Rossier, J. (2017). Work values underlying protean and boundaryless career orientations. *Career Development International*, 22(3), 241-259. doi: 10.1108/CDI-10-2016-0167

---

## Work Values Underlying Protean and Boundaryless Career Orientations

Marc Abessolo

University of Lausanne, Switzerland

Andreas Hirschi

University of Bern, Switzerland

Jérôme Rossier

University of Lausanne, Switzerland

### Author note

Correspondence concerning this paper should be addressed to Marc Abessolo, Université de Lausanne, Institut de Psychologie, Quartier UNIL-Mouline, Bâtiment Géopolis, CH-1015 Lausanne, Suisse; Tel: +41 21 692 37 54; e-mail: marc.abessolo@unil.ch

**Abstract**

**Purpose** – This study aimed to investigate the relation among work values and protean and boundaryless career orientations.

**Design/methodology/approach** – A sample of 238 employees aged 16 to 65 years from the French-speaking region of Switzerland completed two different work values scales as well as protean and boundaryless career attitudes scales. To assess the relationships among these constructs, correlations, multiple regression, and exploratory factorial analysis techniques were used.

**Findings** – Results suggested that protean and boundaryless career orientations were significantly positively related to intrinsic, social, and status work values. A boundaryless-organizational mobility orientation was significantly negatively associated with extrinsic/material work values.

**Research limitations/implications** – Results have important implications for understanding which work values are typically endorsed by people with a protean or a boundaryless career orientation.

**Originality/value** – The present study contributes to the understanding of protean and boundaryless careers by clarifying the relationships among these career orientations and work values.

**Keywords:** Work values, Protean careers, Boundaryless careers, Career orientations, Employees

## Introduction

Today's societies are becoming more "liquid" and uncertain (Bauman, 2007). In addition, individuals are compelled to define on their own their fundamental benchmarks or core standards to orient and navigate their careers across the lifespan (Rodrigues *et al.*, 2013). Thus, personal standards in terms of values have gained greater importance in contemporary careers that are increasingly described as more subjective, "protean" and "boundaryless" (e.g., Derr and Briscoe, 2007; Sullivan and Baruch, 2009). Having a protean career orientation (PCO) implies the pursuit of one's own criteria of career success and the active management of one's career (Gubler *et al.*, 2014). A boundaryless career orientation (BCO) involves the willingness to pursue career opportunities and relationships across organizational boundaries (Briscoe *et al.*, 2006).

Despite a growing research attention to consequences of these two career orientations for individual career actors, their fundamental nature remains insufficiently understood. Specifically, it remains unclear to what extent these newer career orientations are related to work values. For example, it is unclear whether the values of freedom and growth are inherent to a PCO (Hall, 2004) or, as proposed by several authors (e.g., Arnold and Cohen, 2008; Gubler *et al.*, 2014), whether all types of work values (e.g., status, money, interesting work) can drive protean individuals, as long as they are personally held values. Moreover, while research has shown that PCO and BCO are significantly correlated (e.g., Briscoe *et al.*, 2006), whether they correspond to similar or different work values remains unexplored. However, such an investigation would enhance the understanding of the unique and shared meanings of these two career orientations.

To address this issue, the present research investigates how PCO and BCO are related to longstanding classifications of work values. Moreover, it addresses limited and inconsistent research findings regarding the type of work values that are typically associated with PCO and BCO in an attempt to provide new insights into the communalities, differences, and underlying dimensions of career orientations and work values. Such an inquiry is important because work values represent significant sources of work satisfaction (cf. Dawis and Lofquist, 1984). Hence, they can serve as proximal criteria used by protean and boundaryless career actors to define career success subjectively. Therefore, work values may be important to explain the reasons why

protean and boundaryless individuals feel satisfied at work or in their career and what career goals they aspire to achieve.

### Work Value Classifications

Values are defined as the “guiding principles in people’s lives” (Ros *et al.*, 1999, p. 51) in the selection and evaluation of behaviors (Schwartz, 2012). Work values have been defined either as specific expressions of general values in the work setting (Ros *et al.*, 1999) or as generalized beliefs regarding desirable aspects of work or work conditions (e.g., Dose, 1997). Within the vocational and organizational literature, the work values classification in the theory of work adjustment (TWA) of Dawis and Lofquist (1984) and the classification in Super’s (1980) life-span, life-space approach of career development are generally regarded as the most accepted work values domains and scales (Leuty and Hansen, 2011).

In the theory of work adjustment (TWA; Dawis and Lofquist, 1984), work values are part of an individual’s work personality. Furthermore, they are important for individual job satisfaction. Lofquist and Dawis (1978) defined work values in reference to people’s needs. Vocational needs are viewed as life requirements and a foundational component of work values. The Minnesota Importance Questionnaire (MIQ; Rounds *et al.*, 1981) was developed to measure vocational needs and underlying work values with six work values: Achievement, comfort, status, altruism, safety, and autonomy. According to Rounds and Jin (2013), this work values system represents the most comprehensive taxonomy to describe work values and the most suitable work values system for investigating career development issues.

According to Super’s (1980) life-span, life-space approach, individuals choose an occupation that is consistent with their self-concept. Work values are a core part of the self-concept and, therefore, presumably determine career choices. The Work Values Inventory (Super, 1970) was developed to measure fifteen work values that represent goals that individuals seek to meet their needs: Altruism, aesthetics, creativity, intellectual stimulation, achievement, independence, prestige, management, economic returns, security, surroundings, supervisory relations, associates, way of life, and variety. Table I provides an overview and descriptions of all work values proposed by Dawis and Lofquist (1984; McCloy *et al.*, 1999) and Super (1970).

### Common Work Values Domains

Some attempts have been made to conceptually and empirically investigate commonalities across work values from different classifications. Conceptually, Rounds and Armstrong (2005) compared three measures of work values: The Minnesota Importance Questionnaire (Rounds *et al.*, 1981), the Ronen's classification of Hofstede's (1980) Work Values (Ronen, 1994), and the Super's Work Values Inventory (SWVI; Super and Sverko, 1995) and postulated that five work values domains might underlie these measures: Achievement/self-actualization, autonomy, power or status, social relationships, and work environment. Similarly, Berings *et al.* (2004) compared similarities among different work values scales: The Twelve Work Values Inventory (TWVI; Berings, 2002), the SWVI, the MIQ, the Values Scale (VS; Nevill and Super, 1986), the Customer Service Questionnaire (CSQ; Saville and Holdsworth, 1992), and the Schwartz Values Survey (SVS; Schwartz, 1992) and concluded that the structure underlying these scales might be captured by six broad work values factors: Independence, creativity, coworker relationships, achievement, earnings, and security.

Three studies have provided empirical evidences about the underlying dimensions of work values. Macnab and Fitzsimmons (1987) used a multitrait-multimethod design to compare the four work values scales of the MIQ, the SWVI, the VS, and the Work Aspect Preferences (WAP; Pryor, 1981) and found eight distinct work values domains: Authority, co-workers, creativity, independence, security, altruism, work conditions, and prestige. Recently, Leuty and Hansen (2011) examined the underlying dimensions of three of the most frequently used measures of work values, the MIQ, the SWVI-Revised (SWVI-R; Zytowski, 2006), and the Manhardt's Work values Inventory (MWWI; Manhardt, 1972), and found empirical support for six work values dimensions: Environment, competence, status, autonomy, organizational culture, and relationships. Finally, Jin and Rounds' (2012) meta-analysis used the four domains of intrinsic, extrinsic, social, and status work values to organize results across longitudinal studies using work values from 1965 to 2009.

This literature review on work values shows that there is still a lack consensus about the underlying structure of the various work values scales. However, the most comprehensive studies suggest to consider four broader work values domains, (a) intrinsic work values (related to autonomy, creativity, variety, achievement, challenge, and intellectual stimulation), (b) extrinsic work values (related to money, security, and

work environment), (c) social/relational work values (related to interacting with people, altruism, and contribution to society), and (d) status work values (related to prestige, management, and influence) (e.g., Jin and Rounds, 2012). These four higher-order domains of work values may have the potential to summarize most of the needs and values individuals seek and try to satisfy through working. Thus, we expected that four work values factors similar to those mentioned above would underlie the work values scales from Dawis and Lofquist (1984; McCloy *et al.*, 1999) and Super (1970).

*Hypothesis 1: Intrinsic, extrinsic, social/relational, and status factors underlie work values from Dawis and Lofquist and Super's work values classifications.*

**Table I about here**

### **Protean and Boundaryless Career Orientations**

A career orientation can be viewed as a subjective construction of one's own career. In recent years, the PCO and BCO have received considerable attention in the career literature (e.g., Derr and Briscoe, 2007; Sullivan and Baruch, 2009). The protean career describes a self-determined and values-driven career (Hall, 2004). According to Gubler *et al.* (2014), PCO represents the subjective part of the protean career and can be defined as an "attitude towards developing one's own definition of what constitutes a successful career and taking action to achieve those success criteria as well as one's motivation to adapt to a changing environment" (pp. 23-24). Briscoe and Hall (2006) identified two dimensions underlying a PCO: (1) values-driven and (2) self-directed. The values-driven dimension refers to a "person's internal values that provide guidance and measure of success for the individual's career". The self-directed dimension refers to a person's "ability to be adaptive in terms of performance and learning demands" (Briscoe and Hall, 2006, p. 8).

The boundaryless career concept is based on the idea that new types of careers go beyond the boundary of a single employer or organization. DeFillippi and Arthur (1996) defined the boundaryless career as "one of independence from, rather than dependence on, traditional organizational career arrangements" involving "opportunities that go beyond any single employer" (p. 116). Sullivan and Arthur (2006) conceptualized the boundaryless career along the dimensions of physical and psychological mobility. These two dimensions have been reconceptualized in terms of (1) organizational mobility preference and (2) a boundaryless mindset (Briscoe *et al.*, 2006). Mobility preference describes the "actual movement between jobs, firms,

occupations, and countries" while the boundaryless mindset reflects the "capacity to move as seen through the mind of career actor" (Sullivan and Arthur, 2006, p. 21).

According to Briscoe *et al.* (2006) PCO and BCO are related but distinct constructs. A recent meta-analysis by Wiernik and Kostal (2015) investigated the validity of PCO and BCO measures. Their findings supported the construct validity and interrelations between PCO and the boundaryless mindset subscale of BCO. However, the mobility preference subscale of BCO seemed to form a separate construct. Therefore, knowing which work values differentiate subscales of PCO and BCO will permit to better understand typical motives underlying these career orientations as well as their differential impact on career outcomes (Briscoe *et al.*, 2006). For example, based on Wiernik and Kostal (2015), we might expect more similarities in work values between PCO and boundaryless mindset than between PCO and mobility preference.

### **Relationships Between Work Values and PCO and BCO**

Hall (1976, 2004) postulated that protean careerists will primarily value freedom and growth. Later, Briscoe and Hall (2006) conceptualized a values-driven dimension as a core aspect of a PCO, suggesting that protean individuals will focus on personal values, rather than those from the organization, to guide and evaluate their career. Consequently, some authors have argued that any type of value (e.g., security, conformity) could be relevant to guide and evaluate a protean career, as long as it is congruent with the individual's internal core values (e.g., Arnold & Cohen, 2008). However, this notion contradicts common descriptions of a protean career as being directed by the specific values of personal growth and freedom (cf. Hall, 2004). This controversy reflects the lack of clarity in the conceptualization of the PCO in relation to values. Sargent and Domberger (2007) used semi-structured interviews with young adults and found that protean individuals attached primary importance to the values of contribution to society and work-life balance. In a quantitative study, Segers *et al.* (2008) reported that people who endorsed a self-directed protean career attached more importance to motives related to achievement and personal growth, whereas they assigned less importance to those related to job security. Individuals with higher scores on the values-driven dimension of PCO were less motivated by extrinsic motivators, such as money, status, and promotion. In sum, the few existing studies suggest that a PCO is more commonly related to some work values than others. However, these studies are not directly comparable due to their different methodologies and applied

work values taxonomies. Hence, the current literature lacks a more robust empirical investigation regarding the relationships among work values and PCO.

However, theoretical arguments suggest that protean individuals are primarily driven by the needs for freedom, growth, and self-determination (Hall, 2004; Segers et al., 2008). Also based on the findings of Segers et al. (2008), we might thus expect that being protean is positively associated with intrinsic work values (e.g., personal growth and achievement) and negatively associated with extrinsic work values.

*Hypothesis 2: PCO is positively related to intrinsic work values and negatively related to extrinsic work values.*

Similar to PCO, it is assumed that people with a BCO will generally value a non-traditional career path and not place high value on pay, promotion, or status (see Sullivan, 1999, p. 458). However, empirical research on this issue is sparse. To the best of our knowledge, only Segers et al. (2008) directly investigated the relationships among work values and BCO. They reported that individuals with BCO in terms of psychological mobility were motivated by autonomy and affiliation, while people with BCO in terms of physical mobility attached more importance to money, status, and promotion, placing less importance on job security. However, Segers et al. (2008) used types of motivators at work and an uncommon assessment of work values. Thus, a more precise picture of the relationship between work values and BCO is needed.

Based on theoretical considerations and the findings by Segers et al.'s (2008), we can assume that people who exhibit a boundaryless mindset will attach more importance to intrinsic (e.g., autonomy and independence) and social (e.g., affiliation) work values (Segers et al. 2008). Conversely, those who show a high mobility preference will exhibit a higher preference for status work values (e.g., to obtain greater responsibility), but a lower preference for extrinsic work values (e.g., security).

*Hypothesis 3: The boundaryless mindset dimension of BCO is positively related to intrinsic and social work values.*

*Hypothesis 4: The mobility preference dimension of BCO is positively related to status work values and negatively related to extrinsic work values.*



## Method

### Participants

We recruited 238 employees aged 16 to 65 years ( $M_{age} = 35.60$ ,  $SD = 13.03$ ) from the French-speaking region of Switzerland. Half of them were women ( $n = 121$ , 51%), and the majority were Swiss (86%). In addition, 46% of participants were employed in the public sector, whereas 44% worked in the private sector. The remaining 10% were self-employed. Two thirds of the participants worked full-time (67%). In terms of education, 5% of participants reported having completed a mandatory secondary school degree; 33% had vocational training; 14% obtained a high school degree; 8% acquired professional education and training; 15% earned a bachelor's degree; 18% held a master's degree; and 7% had a doctoral degree. In addition, 24% of participants worked in realistic occupations, 21% in investigation occupations, 5% in artistic occupations, 17% in social occupations, 15% in enterprising occupations, and 18% in conventional occupations.

### Measures

Means, standard deviations, and Cronbach's alpha coefficients of all measures are reported in Table II.

**Dawis and Lofquist's work values.** We used a French translation of the Work Importance Profiler (WIP; McCloy *et al.*, 1999) to measure Dawis and Lofquist's work values. It consisted of 21 items measuring the seven work values, including achievement (2 items; e.g., "It is important that the work could give me a feeling of accomplishment"), altruism (3 items; e.g., "It is important that I could do things for other people"), autonomy (3 items; e.g., "It is important that I could plan my work with little supervision"), internal comfort (3 items; e.g., "It is important that I could work alone on the job"), external comfort (3 items; e.g., "It is important that the job would have good working conditions"), safety (3 items; "It is important that I have supervisors who would back up their workers with management"), and status (4 items; e.g., "It is important that I would be looked up to by others in my company and my community"). The items were independently translated into French by the first author and a post-doctoral researcher in psychology, both of whom were native French speakers with high proficiency in English. A final French version was developed by consensus regarding wording and sentence structure. This version was then back-translated into English by a

post-doctoral researcher in vocational psychology with high proficiency in English and compared with the original version. This showed that the translation was adequate and that no further adjustments were necessary. As a response format, we used a five-point Likert scale ranging from 1 (*not important at all*) to 5 (*very important*).

**Super's work values.** We used a validated French translation (Super, 1991) of Super's Work Values Inventory (SWVI; Super, 1970) to measure the 15 work values with 45 items (three items per value) of achievement (e.g., "Work in which you get the feeling of having done a good day's work"), altruism (e.g., "Work in which you help others"), associates (e.g., "Work in which you form friendships with your fellow employees"), creativity (e.g., "Work in which you create something new"), aesthetic (e.g., "Work in which you add beauty to the world"), economic returns (e.g., "Work in which you are paid enough to live comfortably"), intellectual stimulation (e.g., "Work in which you have to keep solving new problems"), independence (e.g., "Work in which you make your own decisions"), management (e.g., "Work in which you have authority over others"), prestige (e.g., "Work in which you gain prestige in your field"), security (e.g., "Work in which you are sure of always having a job"), supervisory relations (e.g., "Work in which you have a boss who gives you a square deal"), surroundings (e.g., "Work in which you like the setting in which your job is done"), variety (e.g., "Work in which you do not do the same thing all the time"), and way of life (e.g., "Work in which you can be the kind of person you would like to be"). The response format consisted of a five-point Likert scale ranging from 1 (*not important at all*) to 5 (*very important*).

**Protean career orientation.** We used a validated French translation (Stauffer *et al.*, 2016) of the PCO Scale (PCAS; Briscoe *et al.*, 2006) consisting of 14 items that measure the self-directed career management (8 items; e.g., "I am responsible for my success or failure in my career") and values-driven (6 items; e.g., "I navigate my own career, based on my personal priorities, as opposed to my employer's priorities") dimensions of PCO. The response format consisted of a five-point Likert scale ranging from 1 (*to little or no extent*) to 5 (*to a great extent*).

**Boundaryless career orientation.** A validated French translation (Stauffer *et al.*, 2016) of the BCO Scale (BCAS; Briscoe *et al.*, 2006) was used consisting of 13 items that measure the two dimensions of boundaryless mindset (8 items; e.g., "I seek job assignments that allow me to learn something new") and mobility preference (5 reversed items; e.g., "In my ideal career, I would work for only one organization"). The

response format consisted of a five-point Likert scale ranging from 1 (*to little or no extent*) to 5 (*to a great extent*).

### Procedure

Participants were recruited by student assistants who sent email invitations or posted them on social networking sites (e.g., Facebook). The survey invitation contained a brief description of the study purpose and a link to the questionnaire. A consent form was presented at the beginning of the questionnaire. Participants who provided their written informed consent were assured of their anonymity and confidentiality. Moreover, participants were informed that they could receive personalized feedback on their career profile based on their responses if desired. The response rate cannot be exactly estimated due to the sampling strategy used. However, among the 310 individuals who started the questionnaire 238, 77% completed the entire survey. Only data from participants who completed the entire questionnaire were included in the analyses.

## Results

### Preliminary analyses

First, as we used self-reported measures of PCO, BCO, and work values, a certain amount of common method variance can be expected. To test the presence of a common method effect, we conducted the Harman's single factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Strong common method variance would be indicated if a general factor, which contains all assessed variables, accounts for the majority of variance among the variables or if such a one factor model fits the data well according commonly used model-fit criteria. To be considered as adequate Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Squared Residual (SRMR) values should be lower than .08, Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values higher than .90, and chi-square per degree of freedom should be equal or lower than 3 (Hu and Bentler, 1999; Kline, 2005). Results showed that the one general factor did not account for a substantial amount of variance (i.e., 17% of total variance) and also did not fit the data well: ( $S-B\chi^2(4278) = 12856.58, p < .001, \chi^2/df = 3.01, CFI = .268, RMSEA = .092, 90\% IC [.090, .094], SRMR = .123$ ). Second, because we used newly adapted French versions of the PCO and BCO scales, we wanted to

evaluate the validity of their respective two factor models (Briscoe et al. 2006). A model distinguishing the two PCO factors of self-directedness and values driven fit the data well ( $S-B\chi^2(76) = 151.80, p < .001, \chi^2/df = 1.99, CFI = .870, RMSEA = .065, 90\% IC [.050, .080], SRMR = .065$ ). Similarly, a model distinguishing between the boundaryless factors of mobility preference and boundaryless mindset showed good fit ( $S-B\chi^2(64) = 183.85, p < .001, \chi^2/df = 2.87, CFI = .910, RMSEA = .089, 90\% IC [.074, .104], SRMR = .065$ ). Thus the structure of both scales was supported.

### **Bivariate Correlations Among PCO, BCO, and Work Values**

In the first step, we examined the bivariate correlations among the measures (Table II). Significant positive correlations were found between the PCO self-directed dimension and 19 work values, with the largest correlations with internal comfort ( $r = .32$ ), variety ( $r = .34$ ), creativity ( $r = .39$ ), independence ( $r = .41$ ), achievement ( $r = .42$  and  $.34$ ), and autonomy ( $r = .46$ ). The PCO values-driven dimension was positively and significantly associated with 11 work values, with the largest correlations being with supervisory relations ( $r = .16$ ), variety ( $r = .18$ ), achievement ( $r = .18$  and  $.24$ ), altruism ( $r = .23$ ), autonomy ( $r = .27$ ), way of life, ( $r = .28$ ), and independence ( $r = .29$ ). The BCO boundaryless mindset dimension was significantly positively related with 19 work values, with the largest correlations with status ( $r = .30$ ), autonomy ( $r = .32$ ), achievement ( $r = .32$ ), associates ( $r = .33$ ), intellectual stimulation ( $r = .40$ ), creativity ( $r = .42$ ), and variety ( $r = .48$ ). Finally, the BCO mobility preference dimension was significantly positively related only to variety ( $r = .20$ ), and had significant negative correlations with prestige ( $r = -.15$ ), economic returns ( $r = -.15$ ), external comfort ( $r = -.29$ ), and security ( $r = -.46$ ). As shown in Table 2, the results of the bivariate correlations confirmed H3 and H4, but only partially supported H2, as only the BCO mobility preference dimension – but not PCO – exhibited significant negative correlations with extrinsic work values.

**Table II about here**

### **Exploration of Factors Underlying Work Values**

Next, we conducted an exploratory factor analysis (EFA) with principal axis factoring (PAF) and promax rotation to determine the underlying dimensions among the assessed work values. We examined the eigenvalues, scree plot, parallel analysis, and interpretability of factor solutions to determine the number of factors to retain. A parallel analysis suggested the retention of four factors, which was confirmed by the

scree plot (Fig. 1). Moreover, the four retained factors appeared to be easily interpretable in light of the work values structures proposed in the literature. These four factors yielded initial eigenvalues of 7.13, 3.10, 1.86, and 1.10, respectively, and explained 59.92% of the total variance. The value of the sampling adequacy of .85 was satisfactory. Furthermore, Bartlett's test of sphericity was significant at  $p < .001$ . Table III shows the results of the PAF. Each work value variable had loadings greater than .40 on its respective factor. No cross-loading higher than .40 was observed. Each factor retained encompasses work values from Dawis and Lofquist (1984) and Super's (1970) classification. The first factor, which explained 32.38% of the total variance, reflected intrinsic work values (e.g., autonomy, independence, creativity, or variety). The second factor (14.10%) was associated with extrinsic work values (e.g., safety, surroundings, or economic returns) and the supervisory relations work value. The third factor (8.45%) included social/relational work values (e.g., altruism or associates). Aesthetics work values as defined by Super (1970) (i.e., work values that permit one to contribute beauty to the world) also loaded on this factor. Finally, the fourth factor (4.99%) included status work values (i.e., management, status, and prestige). Taken together, results of the EFA suggested that four meaningful factors did underlie the used work values measures, confirming H1.

**Table III and Figure I about here**

### **Work Values Factors in Relation to PCO and BCO**

In order to describe the relation between work values and career orientations and to map PCO and BCO dimensions into the work values structure, we conducted a factor extension analysis (FEA; Horn, 1973). This analysis provides an unbiased and comprehensive picture of connections among factors extracted in a factor analysis with newly associated variables. Technically, factor extension analysis (See Revelle, 2009, for more details) calculates loadings of new variables on previously extracted factors, without including these new variables in the original factor analysis. Thus, the relevance of newly added variables can be estimated without impacting the original factor structure. Results (see Fig. 2), using the *fa.extension* function in the *psych* package in R, reproduced the factor loadings obtained in the above FA. In addition, it showed significant loadings of PCO and BCO dimensions on the four work values factors (see Table III for overall loadings). Specifically, FEA indicated that self-directed and values-driven dimensions of PCO loaded significantly on the intrinsic work values factor with

factor loadings above .50 and .40, respectively, partially confirming H2. Similarly, the mobility preference dimension of BCO loaded significantly (above .40) on the intrinsic work values factor. Finally, the boundaryless mindset dimension of BCO loaded above .30 on the social/relational factor, confirming H3. However, no significant and negative relation was found between BCO mobility preference and extrinsic work values and a negative relation was found with status work values, rejecting H4.

**Figure II about here**

### **Proportion of Variance in PCO and BCO accounted by Work Values**

In a final analysis, we evaluated the amount of variance in PCO and BCO that is accounted for by work values in order to assess the relative importance of work values in explaining individual differences in PCO and BCO. The results, using multiple regression analysis (Table 4), showed that intrinsic work values explain a significant part of the variance of PCO and BCO, and their respective sub-dimensions, confirming H2 and H3. Extrinsic work values explained (negatively) significantly BCO, including both sub-dimensions, confirming H4. Social/relational work values explained a part of the variance of BCO-boundaryless mindset confirming H3. Status values (negatively) explained a part of the variance of PCO and of the values-driven sub-dimensions as well as the BCO-mobility preference, rejecting H4. Combined, the work values factors explained between 15% and 27% of variance of PCO and BCO and of their respective sub-dimensions.

**Table IV about here**

## **Discussion**

The aim of the present study was to investigate overlap between PCO, BCO, and work values. Towards this aim, we assessed the underlying factors of different work values scales (Dawis and Lofquist, 1984; Super, 1970) as well as their relations with PCO and BCO, including their sub-dimensions. Overall, our results confirmed most of our hypotheses and provided support for four factors underlying work values: Intrinsic, extrinsic, social/relational, and status. Moreover, we found that both PCO and BCO show meaningful relations with intrinsic work values factor (e.g., autonomy, independence, and achievement), accounting for about 22% and 15% of respectively PCO and BCO.

### Work Values Domains

In the work values literature, empirical evidence about the factors underlying different work values questionnaires suggested that four higher-order factors should be considered (Jin & Rounds, 2012): (a) intrinsic work values (including autonomy, creativity, variety, achievement, challenge, and intellectual stimulation), (b) extrinsic work values (including money, security, and work environment), (c) social/relational work values (including interacting with people, altruism, and contribution to society), and (d) status work values (including prestige, management, and influence). We found support for a similar factorial structure across our measures of work values. Thus, our study supports the notion that researchers can use these four work values domains to better understand the construct of work values and to compare and integrate different work values classifications. Moreover, these four work value domains have the advantage to correspond to Schwartz's (e.g., Schwartz and Blisky, 1987; Ros et al., 1999) universal values and motivational dimensions in terms of openness to chance (related to intrinsic work values), conservation (related to extrinsic work values), self-enhancement (related to status work values), and self-transcendence (related to social/relational work values). This opens avenues to further investigate the relation between work values, more general personal values, and how they are related to different career orientations.

### Relations among PCO, BCO, and Work Values

Despite the increasing number of studies on PCO and BCO, little is known about how these career orientations are related to work values. This is an important theoretical question in order to better understand the nature of these orientations. For instance, it is important to clarify whether the values of freedom and growth are inherent to PCO (Hall, 2004) or, as proposed by several authors (e.g., Arnold and Cohen, 2008; Gubler et al., 2014), whether all types of work values (e.g., status, money, interesting work) can drive protean individuals, as long as they are personally held values. Thus, we used correlational, regression, and exploratory factor analyses techniques to investigate communalities, differences, and underlying dimensions of PCO, BCO, and work values.

Our results confirmed that PCO and BCO are related but distinct constructs (Briscoe et al., 2006) that also relate to work values in unequal ways. The present study suggested that both PCO dimensions are positively correlated with intrinsic,

social/relational, and status work values. More specifically, our results revealed that individuals who were values-driven in their careers attached the strongest importance to independence, way of life, autonomy, achievement, and altruism work values. The self-directed dimension of PCO exhibited the strongest significant positive correlation with work values, such as autonomy, achievement, and independence. These findings support both Hall's (2004) protean core values of freedom and growth and Sargent and Domberger's (2007) values of work-life balance (i.e., way of life) and contribution to society (i.e., aesthetic). Overall, our results confirmed that the work values most typically associated with PCO are intrinsic work values. Using factor extension analysis technique, we found that both the self-directed and the values-driven sub-dimensions of PCO loaded above .50 on an intrinsic work values factor that explained 22% of the variance of PCO. In sum, we found that intrinsic rewards are core criteria for protean individuals. In addition, our results do not support the idea that being protean can equally well be associated with valuing security or good working conditions, as shown by the usual negative correlations with these work values. Future research could analyze in more details for what type of people or under which conditions PCO is related to extrinsic or status work values.

BCO has theoretically been associated with seeking non-traditional career paths and rewards (Sullivan, 1999). This suggests that boundaryless careerists are likely to value work aspects related to autonomy or independence. Supporting this notion, we found a significant positive correlation between the boundaryless mindset sub-dimension of BCO and intrinsic and social work values, such as variety, creativity, intellectual stimulation, autonomy, achievement, and associates. These findings imply that people with a boundaryless mindset seem to value autonomy and seek challenges, creativity, and affiliation across varied professional and organizational situations. Taken together, these results are consistent with those of previous studies. They support Briscoe *et al.*'s (2006) finding of an association between a boundaryless mindset and openness to experience as well as the association reported by Segers *et al.* (2008) between a boundaryless mindset and both autonomy and affiliation motives. However, we also found a positive correlation between a boundaryless mindset and status, indicating that being boundaryless is not incompatible with holding traditional career values (cf. Baruch, 2006). With regard to the mobility preference dimension, we found significant negative correlations with extrinsic work values, such as security, external comfort, and economic returns. These findings suggest that people with a mobility



preference are likely to reject extrinsic (material) rewards. However, this finding contradicts that of Segers *et al.* (2008), who found a positive association between mobility preference and valuing money. The reason for this difference might be that Segers *et al.* used status and money as interchangeable work motives. In contrast, we distinguished between status and money (i.e., economic returns) work values. In addition, we found that work values were differently related to different BCO sub-dimensions. Factor extension analysis suggested that boundaryless mindset is positively related to social/relational work values. However, mobility preference was more strongly related to intrinsic work values.

### Limitations and Avenues for Future Research

The present study is not without limitations. First, some work values measures (e.g., achievement, way of life, or supervisory relations) had low reliability estimates, possibly due to the small number of items in these scales. Second, the present study lacked comparisons in terms of gender, age, educational level, or occupational domains as they were not part of our purpose. Finally, we only provided a description of relationships between work values and both PCO and BCO at a particular time point and cultural context, which might have limited the scope of the present findings and their generalizability.

Despite these limitations, our findings have important implications for future research. First, we provided detailed empirical knowledge on career orientations in relation to work values. In sum, our findings revealed that PCO and BCO are meaningfully related to the expression of intrinsic work values, with exception of the boundaryless mindset orientation that was more consistently related to social/relational work values. These findings suggest that protean and boundaryless actors may be driven by such work values and use them as criteria to define subjective career success. Second, as we used the four higher-order work values domains of intrinsic, extrinsic, social/relational, and status work values, a meaningful connection of our results to Schwartz's (Ros *et al.*, 1999) higher-order human values domains can be drawn. As such, our results might have implications for cross-cultural studies. For instance, based on Schwartz's values framework, Sagiv *et al.* (2011) mapped national groups according to their typical values. Therefore, the four work values orientations may create a bridge for future research to match career orientations with cultural orientations.

In sum, we showed communalities and differences among work values and career orientations that make a contribution to the protean and boundaryless career literature. Our study helps to clarify what people who are high in PCO and BCO typically value in their career. As such, we shed light on which criteria of subjective career success are typically applied by people who manage their careers in a self-directed, values-driven way and who go beyond organizational boundaries in their career development.

## References

- Arnold, J. and Cohen, L. (2008), "The psychology of careers in industrial-organizational settings: A critical but appreciative analysis", *International Review of Industrial-Organizational Psychology*, Vol. 23, pp. 1-44.
- Baruch, Y. (2006), "Career development in organizations and beyond: Balancing traditional and contemporary viewpoints", *Human Resource Management Review*, Vol. 16, No. 2, pp. 125-38.
- Bauman, Z. (2007), *Liquid times: Living in an age of uncertainty*, Polity Press, Cambridge.
- Berings, D. (2002), *The twelve work value inventory*, EHSAL, Brussels.
- Berings, D., De Fruyt, F. and Bouwen, R. (2004), "Work values and personality traits as predictors of enterprising and social vocational interests", *Personality and Individual Differences*, Vol. 36, No. 2, pp. 349-64.
- Briscoe, J.P. and Hall, D.T. (2006), "The interplay of boundaryless and protean careers: Combinations and implications", *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 4-18.
- Briscoe, J.P., Hall, D.T. and DeMuth, R.L.F. (2006), "Protean and boundaryless careers: An empirical exploration", *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 30-47.
- Davis, R.V. and Lofquist, L.H. (1984), *A psychological theory of work adjustment*, University of Minnesota Press, Minneapolis.
- DeFillippi, R.J. and Arthur, M.B. (1996), "Boundaryless contexts and careers: A competency-based perspective", in Arthur, M.B. and Rousseau, D.M. (eds), *The boundaryless career*, Oxford University Press, New York, NY, pp. 116-31.
- Derr, C.B. and Briscoe, J.P. (2007), "The catalytic 1970s: Lessons for the 2000s", in Gunz, H. and Peiperl, M. (eds), *Handbook of career studies*, Sage, London, pp. 528-41.
- Dose, J.J. (1997), "Work values: An integrative framework and illustrative application to organizational socialization", *Journal of Occupational and Organizational Psychology*, Vol. 70, No. 3, pp. 219-40.
- Gubler, M., Arnold, J. and Coombs, C. (2014), "Reassessing the protean career concept: Empirical findings, conceptual components, and measurement", *Journal of Organizational Behavior*, Vol. 35, No. 1, pp. 23-40.
- Hall, D.T. (1976), *Careers in organizations*, Goodyear, Pacific Palisades, CA.

- Hall, D.T. (2004), "The protean career: A quarter-century journey", *Journal of Vocational Behavior*, Vol. 65, No. 1, pp. 1-13.
- Hofstede, G. (1980), *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*, Sage, Thousand Oaks, CA.
- Horn, J.L. (1973), "On extension analysis and its relation to correlations between variables and factor scores", *Multivariate Behavioral Research*, Vol. 8, No. 4, pp. 477-89.
- Hu, L.T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", *Structural Equation Modeling*, Vol. 6, No. 1, pp. 1-55.
- Jin, J. and Rounds, J. (2012), "Stability and change in work values: A meta-analysis of longitudinal studies", *Journal of Vocational Behavior*, Vol. 80, No. 2, pp. 326-39.
- Kline, R.B. (2005), *Principles and practice of structural equation modeling*, 2 edn, The Guilford Press, New York.
- Leuty, M.E. and Hansen, J.-I.C. (2011), "Evidence of construct validity for work values", *Journal of Vocational Behavior*, Vol. 79, No. 2, pp. 379-90.
- Lofquist, L.H. and Dawis, R.V. (1978), "Values as second-order needs in the theory of work adjustment", *Journal of Vocational Behavior*, Vol. 12, No. 1, pp. 12-9.
- Macnab, D. and Fitzsimmons, G.W. (1987), "A multitrait-multimethod study of work-related needs, values, and preferences", *Journal of Vocational Behavior*, Vol. 30, No. 1, pp. 1-15.
- Manhardt, P.J. (1972), "Job orientation of male and female college graduates in business", *Personnel Psychology*, Vol. 25, No. 2, pp. 361-8.
- McCloy, R., Waugh, G., Medsker, G., Wall, J., Rivkin, D. and Lewis, P. (1999), *Development of the O\* NET computerized work importance profiler*, National Center for O\* NET Development, Raleigh.
- Nevill, D.D. and Super, D.E. (1986), *The value scale: Theory, application, and research*, Consulting Psychologists Press, Palo Alto, CA.
- Pryor, R.G.L. (1981), "Interests and Values as Preferences: A Validation of the Work Aspect Preference Scale", *Australian Psychologist*, Vol. 16, No. 2, pp. 258-72.
- Revelle, W. 2009, 'An introduction to psychometric theory with applications in R', Retrieved from <http://www.personality-project.org/r/book/>

- Rodrigues, R., Guest, D. and Budjanovcanin, A. (2013), "From anchors to orientations: Towards a contemporary theory of career preferences", *Journal of Vocational Behavior*, Vol. 83, No. 2, pp. 142-52.
- Ronen, S. (1994), "An underlying structure of motivational need taxonomies: A cross-cultural confirmation", in Triandis, H.C., Dunnette, M.D. and Hough, L.M. (eds), *Handbook of industrial and organizational psychology*, vol. 4, Consulting Psychology Press, Palo Alto, CA, pp. 241-70.
- Ros, M., Schwartz, S.H. and Surkiss, S. (1999), "Basic individual values, work values, and the meaning of work", *Applied psychology*, Vol. 48, No. 1, pp. 49-71.
- Rounds, J.B. and Armstrong, P.I. (2005), "Assessment of needs and values", in Brown, S.D. and Lent, R.W. (eds), *Career development and counseling: Putting theory and research to work*, John Wiley & Sons Inc; US, Hoboken, NJ, pp. 305-29.
- Rounds, J.B., Henley, G.A., Dawis, R.V., Lofquist, L.H. and Weiss, D.J. (1981), *Manual for the Minnesota Importance Questionnaire: A measure of vocational needs and values*, Department of Psychology, University of Minnesota, Minneapolis, MN.
- Rounds, J.B. and Jin, J. (2013), "Nature, importance, and assessment of needs and values", in Brown, S.D. and Lent, R.W. (eds), *Career Development and Counseling: Putting Theory and Research to Work*, 2 edn, John Wiley & Sons, Inc, Hoboken, New Jersey, pp. 417-48.
- Sagiv, L., Schwartz, S.H. and Arieli, S. (2011), "Personal values, national culture and organizations: Insights applying the Schwartz value framework", in Ashkanasy, N.N., Wilderom, C.P. and Peterson, M.F. (eds), *The handbook of organizational culture and climate*, Sage, Editors, pp. 515-37.
- Sargent, L.D. and Domberger, S.R. (2007), "Exploring the development of a protean career orientation: values and image violations", *Career Development International*, Vol. 12, No. 6, pp. 545-64.
- Saville, P. and Holdsworth, R. (1992), *Customer service questionnaire*, Saville & Holdsworth, Esher, UK.
- Schwartz, S.H. (1992), "Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries", in Zanna, M. (ed.), *Advances in experimental social psychology*, Academic Press, Orlando, FL, pp. 1-65.
- Schwartz, S.H. (2012), "An Overview of the Schwartz Theory of Basic Values", *Online Readings in Psychology and Culture*, Vol. 2, No. 1, pp. 1-20.

- Segers, J., Inceoglu, I., Vloeberghs, D., Bartram, D. and Henderickx, E. (2008), "Protean and boundaryless careers: A study on potential motivators", *Journal of Vocational Behavior*, Vol. 73, No. 2, pp. 212-30.
- Stauffer, S.D., Abessolo, M., Zecca, G. and Rossier, J. 2016, 'French Translation and Validation of The Protean and Boundaryless Career Attitudes Scales: Relationships to Career Adaptability, Proactive Personality, and Career Satisfaction', Unpublished manuscript.
- Sullivan, S.E. (1999), "The Changing Nature of Careers: A Review and Research Agenda", *Journal of Management*, Vol. 25, No. 3, pp. 457-84.
- Sullivan, S.E. and Arthur, M.B. (2006), "The evolution of the boundaryless career concept: Examining physical and psychological mobility", *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 19-29.
- Sullivan, S.E. and Baruch, Y. (2009), "Advances in career theory and research: A critical review and agenda for future exploration", *Journal of Management*, Vol. 35, No. 6, pp. 1542-71.
- Super, D.E. (1970), *Manual, work values inventory*, Riverside Publishing, Chicago.
- Super, D.E. (1980), "A life-span, life-space approach to career development", *Journal of Vocational Behavior*, Vol. 16, No. 3, pp. 282-98.
- Super, D.E. (1991), *Manuel du questionnaire des valeurs professionnelles*, Editions du Centre de Psychologie Appliquée, Paris.
- Super, D.E. and Sverko, B. (eds) 1995, *Life roles, values, and careers: International findings of the work importance study*, Jossey-Bass, San Francisco, CA.
- Wiernik, B.M. and Kostal, J.W. 2015, 'Protean and boundaryless career orientations: Meta-analyses of construct and criterion validity', *Academy of Management Annual Meeting Proceedings*, vol. 2015, Academy of Management, p. 13726.
- Zytowski, D.G. (2006), "Super's Work Values Inventory-Revised user's manual", *Adel, IA: Kuder. 0*, Vol. 89, No. 66, p. 7.

Table I

*Empirical relationships among Dawis and Lofquist's Work Values, Super's Work Values, and Protean and Boundaryless Career Orientations*

Work values	Descriptions	Relationship with PCO and BCO	
		<i>In the literature</i>	<i>In the present study</i>
<b>Dawis and Lofquist's (1984; McCloy et al., 1999) work values</b>			
Achievement	Results oriented, using strongest abilities, having a feeling of accomplishment.	PCO: positive (self-directed; Segers et al. 2008) BCO: no study available	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
Altruism	Provide service to others and work with co-workers in a friendly non-competitive environment.	PCO: no study available BCO: positive (boundaryless mindset; Segers et al. 2008)	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Autonomy	Work on one's own and make decisions.	PCO: positive (self-directed; Segers et al. 2008) BCO: positive (boundaryless mindset; Segers et al. 2008)	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
External comfort	Job security and good extrinsic working conditions.	PCO: negative (self-directed and values-driven; Segers et al. 2008) BCO: negative (mobility preference; Segers et al. 2008)	PCO: no relationship BCO: negative (mobility preference)
Internal comfort	Good intrinsic working conditions.	PCO: no study available BCO: no study available	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Status	Advancement, potential for leadership, and prestigious occupation.	PCO: negative (values-driven; Segers et al. 2008) BCO: positive (mobility preference; Segers et al. 2008)	PCO: positive (self-directed) BCO: positive (boundaryless mindset)

---

Safety	Supportive management that stands behind employees.	PCO: <i>no study available</i> BCO: <i>no study available</i>	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
--------	---	--	---

**Note.** Results provided by McCloy *et al.* (1999) suggested to split comfort into external and internal comforts.

---

**Super's (1970) work values**

Achievement	Feeling of accomplishment in doing a job well.	PCO: positive (self-directed; Segers <i>et al.</i> 2008) BCO: <i>no study available</i>	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
Aesthetics	Permitting one to make beautiful things and to contribute beauty to the world.	PCO: positive (Sargent and Domberger, 2007) BCO: <i>no study available</i>	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
Altruism	Enabling one to contribute to the welfare of others.	PCO: <i>no study available</i> BCO: positive (boundaryless mindset; Segers <i>et al.</i> 2008)	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
Associates	Bringing one in to contact with fellow workers whom he/she likes.	PCO: <i>no study available</i> BCO: positive (boundaryless mindset; Segers <i>et al.</i> 2008)	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Creativity	Permitting one to invent new things, design new products, or develop new ideas.	PCO: <i>no study available</i> BCO: <i>no study available</i>	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset)
Economic returns	Work that pays well and enables one to have the things he/she wants.	PCO: negative (values-driven; Segers <i>et al.</i> 2008) BCO: positive (mobility preference; Segers <i>et al.</i> 2008)	PCO: positive (self-directed and values-driven) BCO: negative (mobility preference)
Independence	Permitting one to work in his/her own way, as fast or as	PCO: positive (self-directed; Segers <i>et al.</i> 2008)	PCO: positive (self-directed and values-driven)

---



	slowly as he/she wishes.	BCO: positive (boundaryless mindset; Segers et al. 2008)	BCO: positive (boundaryless mindset)
Intellectual stimulation	Providing opportunity for independent thinking and for learning how and why things work.	PCO: no study available BCO: no study available	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Management	Permitting one to plan and lay out work for others to do.	PCO: no study available BCO: no study available	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Prestige	Giving one standing in the eyes of others and evokes respect.	PCO: negative (values-driven; Segers et al. 2008) BCO: positive (mobility preference; Segers et al. 2008)	PCO: positive (self-directed) BCO: positive (boundaryless mindset) negative (mobility preference)
Security	Providing one with the certainty of having a job even in hard times.	PCO: no study available BCO: negative (mobility preference; Segers et al. 2008)	PCO: no relationship BCO: negative (mobility preference)
Supervisory relations	Work that is carried out under a supervisor who is fair and with whom one can get along.	PCO: no study available BCO: no study available	PCO: positive (self-directed and values-driven) BCO: no relationship
Surroundings	Work that is carried out under pleasant conditions.	PCO: no study available BCO: no study available	PCO: positive (self-directed) BCO: positive (boundaryless mindset)
Variety	Providing an opportunity to do different types of jobs.	PCO: no study available BCO: no study available	PCO: positive (self-directed and values-driven) BCO: positive (boundaryless mindset and mobility preference)
Way of life	Permitting one to live the kind of life he/she chooses and to be the type of person he/she wishes to be.	PCO: positive (Sargent and Domberger, 2007) BCO: no study available	PCO: positive (self-directed and values-driven) BCO: no relationship

Table II

*Descriptive Statistics*

Measure	M	SD	$\alpha$	1	2	3	4	5	6	7	8	9	10	11	12
<b>Dawis and Lofquist's work values</b>															
1. Autonomy (I)	3.87	.66	.68	1											
2. Internal comfort (I)	3.38	.67	.38	<b>.54***</b>	1										
3. Achievement (I)	4.32	.52	.60	<b>.48***</b>	<b>.42***</b>	1									
4. Status (S)	3.43	.64	.61	<b>.43***</b>	<b>.47***</b>	<b>.42***</b>	1								
5. External comfort (E)	4.15	.54	.58	.05	.22**	.26***	<b>.32***</b>	1							
6. Altruism (R)	3.89	.62	.50	.27***	.19**	.22**	.16*	<b>.30***</b>	1						
7. Safety (E)	4.30	.57	.78	.09	.22**	<b>.38***</b>	<b>.37***</b>	<b>.57***</b>	<b>.32***</b>	1					
<b>Super's work values</b>															
8. Independence (I)	3.78	.69	.56	<b>.62***</b>	<b>.39***</b>	<b>.38***</b>	<b>.34***</b>	.04	.13*	.03	1				
9. Creativity (I)	3.97	.77	.88	<b>.69***</b>	<b>.38***</b>	<b>.50***</b>	<b>.41***</b>	.06	.21**	.19**	<b>.57***</b>	1			
10. Way of life (S)	4.48	.48	.71	.19**	.10	.28**	.10	<b>.40***</b>	<b>.33***</b>	<b>.42***</b>	.21**	.28***	1		
11. Intellectual stimulation (I)	3.65	.76	.74	<b>.49***</b>	<b>.32***</b>	<b>.41***</b>	<b>.33***</b>	-.04	-.01	.03	<b>.45***</b>	<b>.51***</b>	-.01	1	
12. Variety (I)	4.07	.67	.74	<b>.51***</b>	<b>.46***</b>	<b>.49***</b>	<b>.37***</b>	.07	.20**	.21**	<b>.46***</b>	<b>.60***</b>	<b>.32***</b>	<b>.47***</b>	1
13. Achievement (I)	4.09	.62	.68	<b>.43***</b>	<b>.45***</b>	<b>.57***</b>	<b>.47***</b>	.29***	.22**	<b>.44***</b>	<b>.36***</b>	<b>.43***</b>	.25***	<b>.33***</b>	<b>.32***</b>
14. Management (S)	2.74	.98	.87	<b>.34***</b>	<b>.32***</b>	.25**	<b>.62***</b>	.09	.02	.08	<b>.48***</b>	<b>.42***</b>	-.01	<b>.48***</b>	<b>.31***</b>
15. Prestige (S)	3.73	.68	.63	<b>.36***</b>	.27***	<b>.38***</b>	<b>.65***</b>	.28***	.21**	<b>.37***</b>	<b>.31***</b>	<b>.45***</b>	.26***	.28***	<b>.46***</b>
16. Economic returns (E)	4.01	.63	.68	.13*	.15*	.25***	<b>.39***</b>	<b>.51***</b>	.02	.27***	.16*	.16*	.23***	.20**	.23***
17. Surroundings (E)	4.19	.58	.70	.17**	.18**	.28**	.24**	<b>.58***</b>	<b>.36***</b>	<b>.56***</b>	.16*	.28***	<b>.55***</b>	.10	.23***
18. Security (E)	3.95	.76	.70	-.01	.13*	.07	.19**	<b>.57***</b>	.23***	<b>.31***</b>	.02	-.01	<b>.30***</b>	-.02	-.06
19. Supervisory relations (E)	4.47	.52	.81	.12	.14*	<b>.33***</b>	.25***	<b>.34***</b>	.27***	<b>.62***</b>	.10	.19**	<b>.42***</b>	.02	.19**
20. Altruism (R)	4.07	.73	.86	.18**	.11	<b>.31***</b>	.09	.21**	<b>.55***</b>	<b>.32***</b>	.21**	<b>.32***</b>	<b>.31***</b>	.09	<b>.30***</b>
21. Associates (R)	4.04	.64	.68	.09	.06	.23***	.20**	.20**	<b>.52***</b>	<b>.34***</b>	.02	.24***	<b>.30***</b>	.09	.27***
22. Aesthetics (R)	3.38	.86	.60	<b>.34***</b>	.24***	.29***	.24***	.23***	<b>.40***</b>	<b>.32***</b>	<b>.40***</b>	<b>.49***</b>	<b>.33***</b>	.21**	<b>.33***</b>
<b>Protean and Boundaryless career orientations</b>															
23. Self-directed	3.86	.59	.76	<b>.46***</b>	<b>.32***</b>	<b>.42***</b>	.24***	.11	.20**	.13*	<b>.41***</b>	<b>.39***</b>	.27***	.28***	<b>.34***</b>
24. Values-driven	3.83	.65	.71	.27***	.12	.24***	.00	.01	.11	.07	.29***	.24***	<b>.28***</b>	.12	.18**
25. Boundaryless mindset	3.58	.80	.90	<b>.32***</b>	.21**	<b>.32***</b>	<b>.30***</b>	.00	.17**	.14*	.29***	<b>.42***</b>	.10	<b>.40***</b>	<b>.48***</b>
26. Mobility preference	3.26	1.0	.87	.11	-.06	.08	-.08	-.29***	-.11	-.12	.10	.11	.03	.12	.20**
27. Overall protean orientation	3.85	.55	.82	<b>.43***</b>	.26***	.28***	15*	.07	18**	.12	.41***	<b>.38***</b>	<b>.31***</b>	.24***	<b>.30***</b>
28. Overall boundaryless orientation	3.46	.71	.87	.27***	.11	.27***	16*	-.16*	.05	.02	.26***	<b>.36***</b>	.08	<b>.35***</b>	<b>.46***</b>

Table II (continued)

Measure	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
13. Achievement (C)	1														
14. Management (C)	<b>.41***</b>	1													
15. Prestige (C)	<b>.39***</b>	<b>.45***</b>	1												
16. Economic returns (E)	<b>.23***</b>	<b>.25***</b>	<b>.50***</b>	1											
17. Surroundings (E)	<b>.32***</b>	.07	<b>.42***</b>	<b>.34***</b>	1										
18. Security (E)	<b>.19***</b>	<b>.14*</b>	.21	<b>.35***</b>	<b>.35***</b>	1									
19. Supervisory relations (S)	<b>.34***</b>	-.01	<b>.34***</b>	<b>.22***</b>	<b>.54***</b>	<b>.26***</b>	1								
20. Altruism (S)	<b>.24***</b>	.05	<b>.21**</b>	.08	<b>.31***</b>	<b>.17**</b>	<b>.30***</b>	1							
21. Associates (S)	<b>.25***</b>	.10	<b>.34***</b>	.12	<b>.41***</b>	<b>.19**</b>	<b>.31***</b>	<b>.41***</b>	1						
22. Aesthetics (S)	<b>.25***</b>	<b>.24***</b>	<b>.29***</b>	.09	<b>.41***</b>	<b>.16*</b>	<b>.28***</b>	<b>.44***</b>	<b>.32***</b>	1					
23. Self-direction	<b>.34***</b>	<b>.17**</b>	<b>.24***</b>	<b>.14*</b>	<b>.16*</b>	-.06	<b>.14*</b>	<b>.29***</b>	<b>.16**</b>	<b>.18**</b>	1				
24. Values-Driven	<b>.18**</b>	.05	.03	.02	.11	-.05	<b>.16*</b>	<b>.23***</b>	.09	<b>.23***</b>	<b>.54***</b>	1			
25. Boundaryless mindset	<b>.17**</b>	<b>.26***</b>	<b>.29***</b>	.06	<b>.16*</b>	-.08	.11	<b>.21**</b>	<b>.33***</b>	<b>.26***</b>	<b>.36***</b>	<b>.22**</b>	1		
26. Mobility preference	-.05	-.11	-.15*	-.15*	-.11	<b>-.46***</b>	-.09	-.05	-.03	-.11	<b>.15*</b>	.12	<b>.24***</b>	1	
27. Overall protean orientation	<b>.30***</b>	<b>.13*</b>	<b>.17*</b>	.09	<b>.16*</b>	-.07	<b>.17**</b>	<b>.30***</b>	<b>.15*</b>	<b>.23**</b>	<b>.90***</b>	<b>.85***</b>	<b>.34***</b>	<b>.15*</b>	1
28. Overall boundaryless orientation	.09	.12	.11	-.05	.05	<b>-.32***</b>	.02	.12	<b>.21**</b>	.12	<b>.34***</b>	<b>.22**</b>	<b>.83***</b>	<b>.74***</b>	<b>.32***</b>

**Note.** In bold correlations equal or greater than .30 in absolute magnitude; I = Intrinsic work values; E = Extrinsic work values; R = Social/Relational work values; S = Status work values.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table III

*Pattern structure matrix of Principal Axis Factoring and Promax Rotation among Work Values Variables, Correlation among Factors, and Loadings among Factors and Protean and Boundaryless Extension Variables*

	Factor 1	Factor 2	Factor 3	Factor 4
<b>Dawis and Lofquist's work values</b>				
Autonomy	<b>.87</b>	-.09	-.05	-.03
Internal comfort	<b>.58</b>	.15	-.17	.08
Achievement	<b>.64</b>	.27	-.08	-.05
Status	.22	.17	-.02	<b>.64</b>
External comfort	-.15	<b>.86</b>	-.10	.11
Altruism	-.07	.05	<b>.72</b>	-.00
Safety	.02	<b>.73</b>	.07	-.03
<b>Super's work values</b>				
Independence	<b>.71</b>	-.13	-.02	.07
Creativity	<b>.76</b>	-.13	.18	.04
Way of life	.18	<b>.51</b>	.16	-.24
Intellectual stimulation	<b>.61</b>	-.18	-.08	.21
Variety	<b>.64</b>	-.04	.12	.05
Achievement	<b>.46</b>	.30	-.05	.13
Management	.23	-.20	.06	<b>.70</b>
Prestige	.13	.20	.19	<b>.52</b>
Economic returns	-.01	<b>.50</b>	-.19	.36
Surroundings	.04	<b>.65</b>	.19	-.04
Security	-.26	<b>.53</b>	.05	.21
Supervisory relations	.09	<b>.59</b>	.10	-.13
Altruism	.06	.02	<b>.65</b>	-.07
Associates	-.20	.03	<b>.73</b>	.20
Aesthetics	.27	.04	<b>.45</b>	.00
Initial eigenvalues	7.13	3.10	1.86	1.10
Variance explained	32.38%	14.10%	8.45%	4.99%
<b>Work values factors</b>				
Factor 1: Intrinsic work values	1			

Factor 2: Extrinsic work values	.18**	1		
Factor 3: Social/Relational work values	.34***	.42***	1	
Factor 4: Status work values	.45***	.24***	.05	1
<b>Extension variables</b>				
Self-directed	<b>.58</b>	.08	.01	-.13
Values-driven	<b>.46</b>	.06	.05	-.30
Boundaryless mindset	.31	-.21	.32	.18
Mobility preference	<b>.42</b>	-.20	-.12	-.35

**Note.** In bold loadings above .40 in absolute value. Loadings of PCO and BCO dimensions on work values factors are also presented from the factor extension analysis.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .00$

# WORK VALUES AND PROTEAN AND BOUNDARYLESS CAREERS

**Table IV**

*Multiple Regression Analyses from Work Values to Protean and Boundaryless Career Orientations*

	Self-directed	Values-driven	Boundaryless mindset	Mobility preference	Overall protean orientation	Overall boundaryless orientation
<b>Dawis and Lofquist's work values</b>						
Autonomy	.32***	.28***	.15	.15	.34***	.19*
Internal comfort	.06	-.03	-.03	-.10	.02	-.08
Achievement	.24***	.18*	.19*	.16*	.25***	.22**
Status	-.04	-.20	.19*	-.08	-.13	.09
External comfort	.02	-.02	-.17*	-.29***	.00	-.28***
Altruism	.05	.01	.10	-.09	.04	.02
Safety	-.01	.06	.05	.04	.02	.06
R <sup>2</sup>	.27***	.12**	.18***	.13**	.24***	.16**
<b>Super's work values</b>						
Independence	.27***	.21**	.04	.10	.28***	.08
Creativity	.08	.04	.10	.06	.07	.11
Way of life	.19**	.25***	-.07	.15*	.24***	.04
Intellectual stimulation	.10	.05	.20**	.10	.09	.19**
Variety	-.02	-.06	.26***	.17*	-.04	.28***
Achievement	.17*	.07	-.11	-.01	.15*	-.09
Management	-.10	-.04	.06	-.01	-.08	-.01
Prestige	.04	-.14	.03	-.19*	.04	-.09
Economic returns	.06	.04	-.08	.01	.05	-.05
Surroundings	-.05	-.10	.04	.02	-.08	.04
Security	-.16*	-.14*	-.08	-.43***	-.17*	-.29***
Supervisory relations	-.03	.08	.02	-.01	.02	.01
Altruism	.18**	.12	.01	-.03	.17*	-.01
Associates	.04	.01	.24***	.07	.03	.21**
Aesthetics	-.12	.07	.02	-.17*	-.04	-.09
R <sup>2</sup>	.31***	.20***	.35***	.32***	.30***	.36***
<b>Work values factors</b>						
Factor 1: Intrinsic	.53***	.37***	.32***	.33***	.52***	.41***
Factor 2: Extrinsic	.06	.03	-.18*	-.21**	.05	-.24***
Factor 3: Social/Relational	.03	.06	.29***	-.10	.05	.15
Factor 4: Status	-.12	-.29***	.14	-.27***	-.20**	-.06
R <sup>2</sup>	.27***	.15***	.26***	.15***	.26***	.21***

**Note.** Standardized regression coefficients; R<sup>2</sup> = Coefficient of determination

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Figure 1: Scree plot

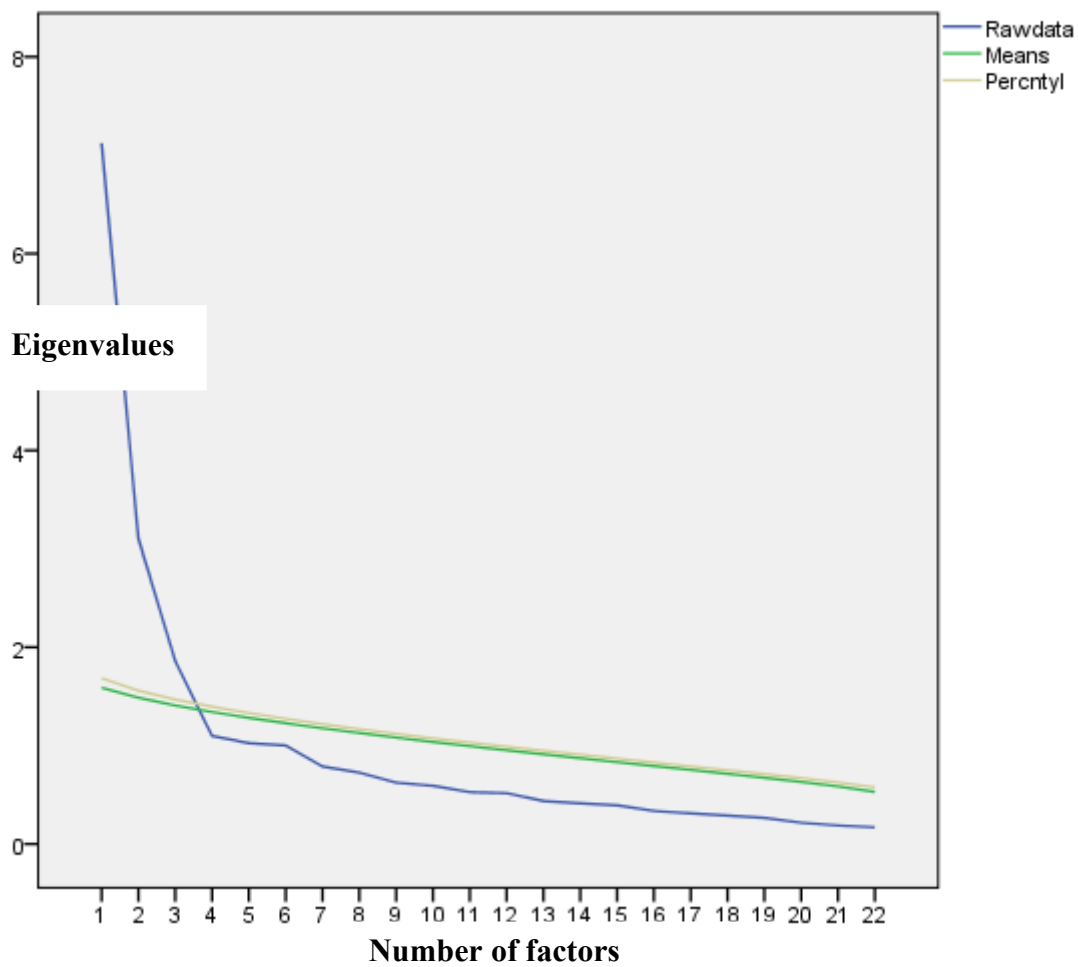


Figure 1. Scree plot of work values parallel analyses. Rawdata = work values components eigenvalues of study original data; Means = mean of eigenvalues generated from random datasets; Percntyl= the 95<sup>th</sup> upper percentile of the distributed eigenvalues from random datasets.

Figure 2: Factor analysis and extension

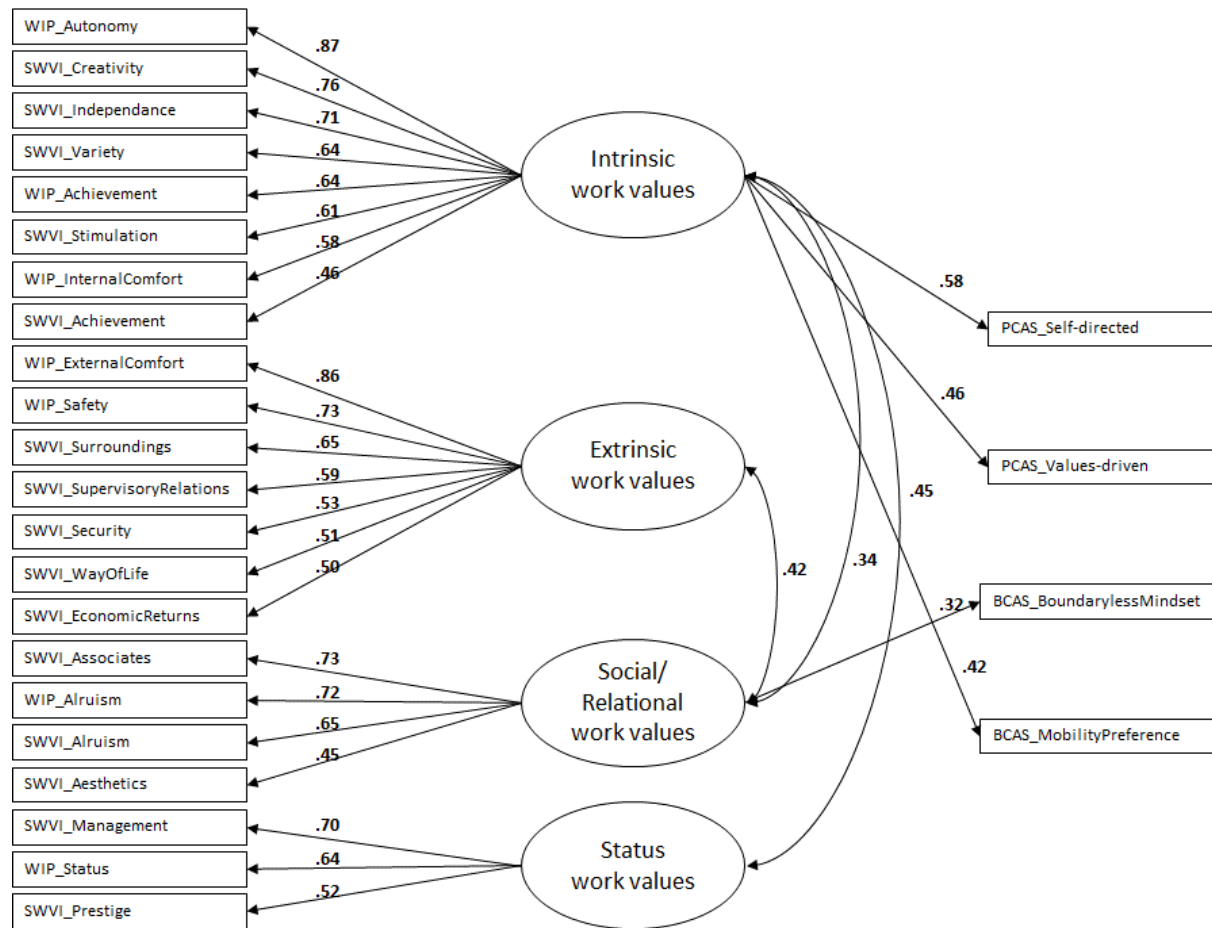


Figure II. Work values factor analysis with PCO and BCO as extension variables. WIP = Work Importance Profiler; SWVI = Super Work Values Inventory; PCAS = Protean career orientation scale; BCAS = Boundaryless career orientation scale; Significant loadings (above .32) and correlations are presented.