# Managerial competencies in the framework of the circumplex model of personality metatraits

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## Abstract

**Purpose** – The study sought to fit managerial competencies in the metatraits of the Circumplex Personality Metatraits Model (CPM) by Strus, Cieciuch and Rowinski (2014). The authors assumed that managerial competencies would be located in the sector of personality metatraits, specifically, the plus poles: Integration (Gamma-Plus) through Stability (Alpha-Plus) and Self-restraint (Delta-Plus) to Plasticity (Beta-Plus).

**Design/methodology/approach** – A group of 327 managers took part in this study. Managerial competencies related to social skills, problem-solving, management and goal striving, openness to change and employee development were evaluated via the assessment center (AC).

**Findings** – The results revealed a negative relationship between all managerial competencies and negative metatraits of Disharmony (Gamma-Minus) and Passiveness (Beta-Minus). On the other hand, Integration (Gamma-Plus) and Plasticity (Beta-Plus) appeared to be positively related to two competencies only: openness to change and problem-solving.

**Originality/value** – All managerial competencies fitted well in the CPM pattern with adequate degrees of fit. The discussion indicates the role of managerial competencies and personality assessment in the selection process.

**Keywords** Managers, Personality, Competency, The Circumplex Personality Metatraits Model (CPM)

**Paper type** Research paper

## 1. Introduction

Carlyle (1841) in his book *On Heroes, Hero Worship and the Heroic in History*, indicates that in society, there are individuals with special talents, skills and physical characteristics, treating leaders as the ones chosen by gods. Although we are fascinated with people and their traits and attributes are often the basis of our classifications and choices, Stogdill's meta-analysis (1948) of the most significant 124 studies presents compelling evidence for the lack of a universal model in this regard. Certainly, human attributes have always intrigued us, albeit today the issue is defined differently. Organizations are looking for traits that are useful in a managerial position and help managers in achieving the best results. Future research on the relationship between traits and behaviors should explore which one of them could be

considered a supportive power in effective managerial work and which might block that process. Furthermore, the relationship between personality, competencies and behavior is not unequivocally confirmed in the literature (Meriac, Hoffman, Woehr, & Fleisher, 2008; Jansen, Lievens, & Kleinmann, 2011); therefore, there is still a knowledge gap concerning this connection.

Personality is an important factor in evaluating managerial behavior as are competencies (Thornton & Byham, 2013). We assumed that both positive and negative features affect management effectiveness, and thus, we used in the following study used a new model of personality, namely the Circumplex Personality Metatraits Model (CPM) described by Strus, Cieciuch and Rowiński (2014), which assumes that there are light and dark areas in the personality. The study aims to determine whether there is a relationship between positive characteristics and a high level of competencies presented by a manager and whether there is a relationship between negative characteristics and a low level of a manager's competencies.

### 1.1 Personality and its many faces

There is no single agreed-upon definition of personality. However, most theories focus on motivations and psychological interactions with the environment, including other people (Sadock, Sadock, & Ruiz, 2017). Many personality theories distinguish individual traits that can help predict future behavior. The so-called behavior-based approach perceives personality as relatively stable (Zinbarg *et al.*, 2008). Some define personality as a set of behaviors, cognitive processes and emotional patterns which evolve from biological and environmental factors (Corr & Matthews, 2009). There are many approaches to personality in the literature, which are especially interested in the fact that the management field has been dominated by the five-factor model (FFM) of personality (McCrae, Costa, Paul, & Martin, 2005), consisting of five basic traits: extraversion, conscientiousness, agreeableness, openness to experience and neuroticism. Despite its popularity, the model has been criticized in recent years (Borsboom, 2006; Block, 2010). Digman (1997) was one of the first researchers to postulate that the FFM should have a hierarchical structure with two higher-order traits: Alpha, which includes characteristics linked to neuroticism, agreeableness and conscientiousness, and Beta, which closely relates to openness and extraversion. DeYoung, Peterson, and Higgins (2002) followed the idea by defining the higher-order Alpha as "Stability" and the higher-order Beta as "Plasticity." Other studies attempted to distinguish the general factor of personality (the g-factor; Strus *et al.*, 2014).

Strus *et al.* (2014) developed the CPM, which enables scholars to assess personality from a wider perspective than the FFM. The CPM combines the positive and negative sides of personality. The authors define metatraits as "the dimensions of personality referring to individual differences in thinking, feelings, and behaviors" (Strus *et al.*, 2014, p. 7). Thus, they broaden the Alpha and Beta traits by two further higher-order metatraits, Gamma and Delta, which integrate all functional qualities of personality. These appear in other orthogonal circumplex models (Schwartz, 2012; Watson & Tellegen, 1985). Strus *et al.* (2014) assumed that the metatraits represent the real dimensions of personality and compiled the Big Five personality traits. Therefore, as shown in Figure 1, the model identifies the following eight poles:

*Stability (Alpha-Plus)* refers to social adaptation, dutifulness, honesty, and reliability. Alpha-Plus individuals are patient, determined in pursuing their goals, highly self-motivated, able to defer gratification, and highly tolerant of frustration.

*Plasticity (Beta-Plus)* refers to openness to change and new cognitive and behavioral experiences. Beta-Plus individuals are keen to explore and discover, showing openness and a positive attitude to
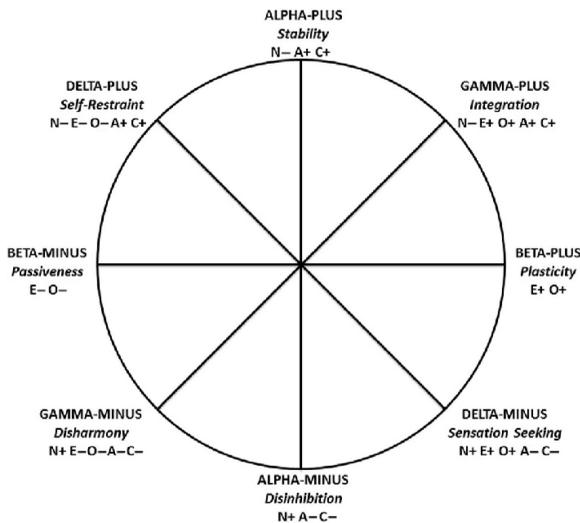
**Note(s):** N = Neuroticism; E = Extraversion; O = Openness to
Experience; A = Agreeableness; C = Conscientiousness; + means
positive pole of the trait; – means negative pole of the trait

**Source(s):** Strus *et al*. (2014, p. 26)

change; moreover, they show initiative, invention, and leadership tendencies, and they are strongly
oriented toward personal development.

*Integration (Gamma-Plus)* refers to maturity and mental health, which entails high levels of mental
well-being and optimism, along with internal and interpersonal harmony. Gamma-Plus individuals
trust people, and they are friendly, sincere, and pro-social, not to mention stable, adapted, flexible,
and open to new experiences.

*Self-Restraint (Delta-Plus)* refers to the tendency to conform to social norms, high self-control,
caution, conformism, and conventionalism. Delta-Plus individuals are stable, orderly, and compliant,
but not active, not sociable, and relatively not open to new experiences.

*Disinhibition (Alpha-Minus)* refers to antisocial behavior, lack of impulse control, and low frustration
tolerance. Alpha-Minus individuals may sometimes show aggression and negative attitudes toward
others.

*Passiveness (Beta-Minus)* refers to an inclination to display passive behavior, apathy, and stagnation.
Beta-Minus individuals are somewhat dependent and submissive; they display high change
tolerance.

*Disharmony (Gamma-Minus)* refers to an inclination to low mood (depression), pessimism, and lack
of energy, with a low sense of mental and physical well-being. Gamma-Minus individuals may be
unapproachable, mistrustful, cold, and distant, especially in interpersonal relations.

*Sensation-seeking (Delta-Minus)* refers to high impulsivity, risk-taking inclination, excitement, and to
seeking hedonistic and unconventional thinking. These individuals are sometimes self-centered,
dominating, and competitive.

The CPM model is more comprehensive than FFM, and it was built on the foundation of
research results and knowledge of the Big Five paradigm. However, the CPM provides a

broader perspective and offers wide theoretical integration. First, the CPM creates the basis for integrating models of personality, temperament, emotions and motivation. Second, the CPM allows us to link the two traditions of describing personality in terms of traits and types. Third, the CPM facilitates the coherent connection of the trait (dispositional) approach to personality with personality theories by using dynamic and explanatory theoretical constructs (DeYoung, 2010; Digman, 1997). Of course, these statements are only hypotheses for the time being and research is required to empirically verify the CPM model (Strus *et al.*, 2014; Struś & Cieciuch, 2017).

*1.1.1 Personality measurement.* Personality measurement is an essential element in human resource (HR) management processes such as recruitment or career development planning (Armstrong, 2010). Relatively stable traits of the self – based on experiences and knowledge of humanity – help researchers to understand, explain and foresee behaviors. According to numerous psychological theories, personality provides the basis for effective managerial performance and makes managers predictable (Bono & Judge, 2004). Guion and Gottier (1965) conducted a meta-analysis on the link between managers' personality and performance, which led them to contest the validity and usefulness of personality tests in the HR processes. This discovery came as a blow to the application of personality tests in recruitment for over a quarter of a century. However, this changed when two other meta-analyses by Barrick and Mount (1991) and Tett, Jackson, and Rothstein (1991) revealed the importance of the personality scale in selecting employees. Since then, psychological personality tests have gained more attention from researchers. A PsycINFO query for "personality and selection" proves the change: for 1965–1991, the record shows 1,387 reviewed articles on the subject, while for 1991–2016, there appeared 4,775 related articles published in scientific journals. Given this rise in interest, we may conclude that personality has gained considerable significance in the selection process in the last three decades. Thus, there is a need for a new generation method for the personality assessment process, such as CPM.,

### 1.2 Competencies

Competencies are essential attributes in managing human resources in contemporary organizations. Competency analysis provides the foundation for evaluating a job positions, assigning them to the appropriate level in the organizational structure, performing employee assessment and other functions. Competency assessment is equally fundamental to the modern selection process for vacant posts or promotions. Competencies are associated with skills, because the former are connected rather with procedural knowledge (how?) than declarative knowledge (what?). However, competencies extend beyond simple skills and may include complex behavioral and interpersonal skills such as leadership and management (Baczyńska, 2018).

Competencies are defined in many ways. The National Scottish Vocational Qualifications program (NSVQ) and the Management Charter Initiative (MCI) initiated one approach to defining competencies as "the ability of people in management roles to perform work according to standards set by the organization employing them". Other definitions focus on complex behavioral descriptions. The behavioral approach assumes that the occurrence of behaviors can only be ascertained through observation.

This article defines competencies as a set of complex skills acquired in the course of training and based on the knowledge, experience and predispositions manifested in patterns of behavior that determine the effective performance of work duties (Baczyńska, 2015). Therefore, we posit that individuals do not possess competencies permanently; they can change with age, experience and work environment, which may act as enhancers or suppressors. Almost every competency manifests in many diverse behaviors. For example, many understand teamwork as the ability to work in a group to achieve a common objective,

which entails conscious team co-creation (Wood & Payne, 2006). Thus, we may observe teamwork via behaviors in the following areas: positive relations with co-workers, consistent pursuit of goals, self-motivation, motivating others, effective two-way communication, cooperation in performing tasks and coping with difficulties and conflicts.

Usually, researchers attempt to link competencies with effectiveness, efficiency and performance. Thus, modern organizations often sort competencies into sets called competency models. Kurz, Bartram, and Baron (2004) conducted a meta-analysis of 20 different competency models to develop "the Great Eight" of competencies important for leadership performance: leading and deciding, supporting and cooperating, interacting and presenting, analyzing and interpreting, creating and conceptualizing, organizing and executing, adapting and coping and enterprising and performing.

For this study, we selected five competencies, which provide content related to the "Great Eight" and were particularly appropriate for our research setting (Baczyńska, 2015; Baczyńska & Thornton, 2017).

*Social skills*: supporting, cooperating, interacting, and presenting are manifested in effective communication (verbal and non-verbal), assertiveness, teamwork support, along with conscious and intentional influence on others without manipulation.

*Problem-solving*: analyzing, interpreting, creating, and conceptualizing are understood as the ability to analyze a situation, actively seek the best solutions, as well as accurately diagnose the cause and effects of problems as they appear.

*Management and goal striving*: leading and deciding, organizing and executing, enterprising and performing are understood as striving to manage the course of work or people, organizing the actions of individuals and teams, striving for high results (planning, organizing, controlling), taking initiative, and pursuing goals despite encountering setbacks.

*Openness to change*: adapting and coping is understood as taking responsibility for decision-making and implementing new solutions, representing the company strategy with workers, and being flexible in changing situations.

*Employee development*: supporting, cooperating, enterprising, and performing are understood as striving to develop the competencies and motivations of employees, seeking to create conditions that help to improve workers' effectiveness.

*1.2.1 Managerial competencies measurement.* Assessment centers (AC) have been used for decades because they provide insights into behavioral competencies and evidence of individuals' potential and foster the development of employee effectiveness (International Taskforce on Assessment Center Guidelines, 2015). An AC provides complex simulations of specific professional situations and can employ skill tests, personality questionnaires and interviews. Usually, sessions last from one to three days. Tested individuals act individually or in groups. All testing techniques are designed to reflect – as closely as possible – real-life situations that occur at work in a particular environment. Each competency is assessed in at least two simulations. Typically, several candidates take part in an assessment center session simultaneously. A team of trained assessors watches different participants in different simulations. They observe, record and rate candidates' behaviors during each session. Ratings can be integrated by statistical combination or discussion among the assessors. Typically, they determine ratings on competencies and an overall rating. The AC method greatly differs from that of a personality questionnaire.

*1.3 Personality vs managerial competencies measurement and studies on performance*
For many years, psychologists have collected and elaborated upon a list of personality characteristics that can support managerial work. Studies in this area have led modern

theorists to evaluate how personality traits correspond to specific situational requirements and measures of success (Tokarski, 1998). Scholars revealed that managerial failures and the lack of promotion relate rather to "nasty" traits demonstrated by particular managers, which contrasts with reasons for the lack of success in achieving objectives (Schultz & Schultz, 2015).

In times of globalization and management complexity, there is no doubt that individual traits such as personality are essential resources for managers, which can be observed in both research and practice (examples include the research of Lord, De Vader, & Alliger, 1986; Barrick & Mount, 1991; Judge, Colbert, & Ilies, 2004; Judge, LePine, & Rich, 2006).

Simonenko *et al.* (2013) suggest we should assess the relationship between competencies and personality in two steps. First, specific competencies should be connected to specific traits, and then, the various traits should be combined to provide an overall view. It is also essential to distinguish between the measurement method and the measured content. The literature review shows that the relationship between personality traits and the AC dimension should be analyzed from three perspectives: connection traits with overall assessment rating (OAR), dimensional performance and overall exercise performance.

*1.3.1 Assessment and personality traits.* Researchers assumed that the AC should be connected with personality because (a) many commonly identified AC performance dimensions – such as "planning and organizing," "team orientation," and "willingness to learn" – appear to represent distinctly trait-like constructs (e.g. Thornton & Byham, 1982; Haaland & Christiansen, 2002) and (b) the performance of OAC – and simulations – correlated with managerial performance and should correlate with manager-relevant personality traits (e.g. Collins *et al.*, 2003; Hoeft & Schuler, 2001).

Researchers attempted to define the individual personality characteristics that would distinguish effective managers (Bass & Stogdill, 1990). Meanwhile, studies on competencies focused on managerial performance by analyzing their predispositions and predicting their future behaviors (Pulakos, O'Leary, Farr, & Tippins, 2010; Scott & Reynolds, 2010). Many studies on competencies established that ACs are a reliable method to measure competencies, which enables analysts to directly foresee individuals' behavior (Thornton, Rupp, & Hoffman, 2014). Many personality theorists agree that behavior is a function of both a person and a situation; thus, behavior is consistent in a given situation and across situations with similar demands (Tett & Burnett, 2003).

Studies found some meta-analyses regarding the relationship between OAR and the FFM dimensions. First, research by Collins *et al.* (2003) showed significant correlations between personality traits of FFM and OAR to be low and middle correlated with extraversion as the strongest FFM predictor of OAR. Second, Hoeft and Shuler's (2001) study showed a minus and low plus correlation. Third, a meta-analysis showed the OAR rating tended to correlate weakly with FFM (Scholz & Schuler, 1993). Fourth, Meriac *et al.* (2008) describe the ambiguous results of their meta-analysis of the relationship between individual differences and final dimension ratings, which employed Arthur, Day, McNelly, and Edens (2003)'s seven-dimensional taxonomy as an organizing framework to reveal weak and inconsistent relationships between AC dimensions and personality.

Christiansen, Hoffman, Lievens, and Speer (2013) explain the above results with four arguments. First, the narrow personality traits we connected to OAR results are much broader than traits. Second, each team reviewed a different literature base. Third, some meta-analyses could include data wherein the OAR was based on information achieved from AC simulations and other sources like personality inventories (cf. Collins *et al.*, 2003). Fourth, they criticized the OAR for containing performance aspects across dimensions and exercises (cf. Arthur *et al.*, 2003).

In turn, studies of overlapping personality constructs and AC dimension assessments provide ambiguous results. Basic research led to different conclusions and the most significant

existing meta-analysis provided only modest support. A possible explanation for these findings is that the labels applied to some AC dimensions did not correspond to the actual structures under scrutiny (Arthur & Villado, 2008). However, despite considering the taxonomy of the theoretical approach, AC showed better results in some studies (Shore, Thornton, & Shore, 1990; Dilchert & Ones, 2009) than others (Meriac *et al.*, 2008). Thus, we should pay more attention to the constructs that underlie broad factors in existing conceptual taxonomies.

*1.4 Hypothesis testing*

As shown in the literature review above, personality traits are linked to competencies. This article aims to show a wider association between personality metatraits and managerial competencies by demonstrating the link and establishing the localization of the managerial competencies in the CPM (Strus *et al.*, 2014). First, we wanted to check whether managerial competencies are linked to personality metatraits, so we introduced the following hypothesis:

*H1.* Managerial competencies are positively related to positive poles in the CPM: Integrity (Gamma-Plus), Self-Restraint (Delta-Plus), Stability (Alpha-Plus) and Plasticity (Beta-Plus).

Some personality characteristics can be perceived as blockers in the manifestation of important competencies in terms of managerial promotions and changes in an organization (e.g. Lipman-Blumen, 2006; Hogan, Hogan, & Kaiser, 2010; Kaiser & Hogan, 2011), so we hypothesized that

*H2.* Managerial competencies are negatively related to negative poles in the CPM: Disharmony (Gamma-Minus), Sensation-seeking (Delta-Minus), Disinhibition (Alpha-Minus) and Passiveness (Beta-Minus).

Simonenko *et al.* (2013) claim that specific competencies are related to specific traits. Furthermore, the literature presented above suggests that competencies depend on interactions' quality, which is closely related to social skills. Therefore, social skills should be linked to metatraits, which include the dominance of Extraversion, Agreeableness or Conscientiousness, which are found in the Gamma-Plus dimension. Consequently, we posited the following:

*H3.* Social skills and employee development competencies are positively related to the Integration (Gamma-Plus) metatrait.

*H4.* Problem-solving and openness to change and competencies are positively related to the Plasticity (Beta-Plus) metatrait.

Since Stability (Alpha-Plus) consists of N−, A+ and C+ and refers to social adaptation, dutifulness, honesty and reliability, we may assume that individuals with a high level of stability are patient, determined in the pursuit of goals, highly self-motivated, able to defer gratification and highly tolerant of frustration. Therefore, we hypothesized that

*H5.* Management and goal striving competencies are positively related to the Stability (Alpha-Plus) metatrait.

## 2. Method
*2.1 Participants and procedure*

The total number of the 327 participants who took part in this study was aged 25–51 ($M = 33.30$; $SD = 4.56$), of which 54% were men. The AC method was used to collect data on managerial competencies. We conducted 42 one-day AC sessions at Kozminski University in

Poland. As shown in Table 1, five managerial competencies were assessed by two trained assessors in four simulations.

## 2.2 Measures

*2.2.1 Competencies.* Five individual competencies were assessed: social skills, problem-solving, management and goal striving, openness to change and employee development. These competencies can be observed on the behavioral level, and they were all assessed in four simulations: group discussion without a leader (simulation 1), group discussion with assigned roles (simulation 3), individual meeting with an accountant (simulation 2) and individual meeting with an employee (simulation 4). Each competency was assessed in at least two simulations. The AC performance was calculated as an aggregate of assessors' consensus ratings on each managerial competency. Such consensus – or "staff meeting" judgments – represents conventional AC performance criteria (Thornton & Byham, 1982).

*2.2.2 Personality.* We used the CPM to assess the personality metatraits related to differences between people in terms of thinking, behavior and emotions (Strus *et al.*, 2014) (Strus & Cieciuch, 2017). We constructed the questionnaire around eight poles: Stability (Alpha-Plus), Disinhibition (Alpha-Minus), Plasticity (Beta-Plus), Passiveness (Beta-Minus), Integration (Gamma-Plus) Disharmony (Gamma-Minus), Self-Restraint (Delta-Plus) and Sensation-seeking (Delta-Minus), as presented in Figure 1. The questionnaire consisted of 54 items and the responses were scored on a seven-point Likert-type scale ranging from 1 "not similar to me at all" to 7 "very similar to me." Cronbach's alpha for all scales was above 0.70.

## 2.3 Data analysis

The hypotheses were tested by investigating the correlational pattern of relationships between personality metatraits and managerial competencies. Moreover, we examined the location of competencies in the CPM with the structural summary method (Zimmermann & Wright, 2017). To check the CPM's circumplex character, we used a specialized R-package called CircE, which is dedicated to evaluating circumplex models using structural equation modeling (Grassi, Luccio, & Di Blas, 2010). In the model evaluation, we used standard criteria, namely CFI > 0.90 and SRMR < 0.08 (Byrne, 1994).

# 3. Results

## 3.1 Descriptive statistics

First, we organized the data. The results related to descriptive statistics included minimum and maximum scores, means and standard deviations of personality metatraits (measured via a questionnaire) and leadership competencies (measured in ACs). These data are

| | Simulation 1 Discussion without a leader | Simulation 2 Meeting with an accountant | Simulation 3 Discussion with assigned roles | Simulation 4 Meeting with an employee |
|---|---|---|---|---|
| Social skills | √ | √ | √ | |
| Problem-solving | √ | √ | √ | – |
| Management and goal striving | √ | – | √ | √ |
| Openness to change | – | – | √ | √ |
| Employee development | √ | √ | – | √ |

**Source(s):** Own elaboration

presented in Table 2. Moreover, we checked the mean scores of various competencies measured in four simulations (see Table 3).

### 3.2 Relationship between personality metatraits and managerial competencies

We observed significant correlations between the study variables. As shown in Table 3, the strongest positive correlations occurred between three competencies – problem-solving, openness to change, and employee development – and the Plasticity (Beta-Plus) metatrait. Problem-solving and openness to change correlated slightly weaker but still significantly with the Integration (Gamma-Plus) metatrait. All five types of competencies correlated negatively with two personality metatraits, namely Disharmony (Gamma-Minus) and Passiveness (Beta-Minus).

### 3.3 Personality metatraits as predictors of managerial competencies

We ran analyses of a linear regression, which showed that only two personality metatraits were significant predictors of competencies: *Disharmony* (Gamma-Minus) was a negative predictor of openness to change $b = -0.16$, $p < 0.05$ and $R^2 = 0.08$, whereas *Passiveness* (Beta-Minus) negatively predicted social skills $b = -0.19$, $p < 0.05$ and $R^2 = 0.03$ and problem-solving $b = -0.21$, $p < 0.05$ and $R^2 = 0.08$.

### 3.4 Managerial competencies in the circular space of personality metatraits

When examining the circumplex model, we applied a two-step approach adopted from Rogoza *et al.* (2019), including the testing of the circumplex structure with structural equation modeling and testing the possibility to locate an external variable in the empirical circumplex.

First, it was tested whether the CPM structure in the data remained circular. The results confirmed that the analyzed model of personality metatraits maintained the circumplex structure (CFI = 0.928; SRMR = 0.071).

The structural summary model (SSM) estimates were

(1)  model fit ($R^2$), for which values of > 0.70 represent an adequate fit and > 0.80 indicate a good fit (Wright, Pincus, Conroy, & Hilsenroth, 2009; Wright *et al.*, 2012; Zimmermann & Wright, 2017);

|  | Minimum | Maximum | M | SD |
|---|---|---|---|---|
| *Personality Metatraits* | | | | |
| Stability (Alpha-Plus) | 2.17 | 7.00 | 5.39 | 0.67 |
| Disinhibition (Alpha-Minus) | 1.00 | 6.17 | 1.96 | 0.76 |
| Plasticity (Beta-Plus) | 2.83 | 7.00 | 5.22 | 0.84 |
| Passiveness (Beta-Minus) | 1.00 | 5.00 | 2.31 | 0.83 |
| Integration (Gamma-Plus) | 2.17 | 7.00 | 5.44 | 0.69 |
| Disharmony (Gamma-Minus) | 1.00 | 5.00 | 1.98 | 0.75 |
| Self-Restraint (Delta-Plus) | 1.83 | 6.60 | 4.45 | 0.87 |
| Sensation-seeking (Delta-Minus) | 1.33 | 6.83 | 3.49 | 0.99 |
| *Managerial competencies* | | | | |
| Social skills | 2.17 | 9.00 | 5.59 | 1.23 |
| Problem-solving | 2.17 | 8.83 | 5.13 | 1.35 |
| Management and goal striving | 1.88 | 8.75 | 4.88 | 1.39 |
| Openness to change | 2.00 | 9.00 | 5.11 | 1.29 |
| Employee development | 1.83 | 8.67 | 4.88 | 1.45 |

**Note(s):** $N = 327$
**Source(s):** Own elaboration

Table 2.
Ranges of scores, means, and standard deviations of personality and averaged managerial competencies

| | Stability Alpha-Plus | Disinhibition Alpha-Minus | Plasticity Beta-Plus | Passiveness Beta-Minus | Integration Gamma-Plus | Disharmony Gamma-Minus | Self-Restraint Delta-Plus | Sensation-Seeking Delta-Minus |
|---|---|---|---|---|---|---|---|---|
| Social skills | 0.06 | −0.06 | 0.07 | −0.14* | 0.05— | −0.12* | −0.03 | −0.02 |
| Problem-solving | 0.09 | −0.02 | 0.18*** | −0.22** | 0.12* | −0.19*** | 0.00 | −0.00 |
| Management and goal striving | 0.04 | −0.03 | 0.07 | −0.11* | 0.04 | −0.12* | 0.02 | −0.03 |
| Openness to change | 0.02 | 0.01 | 0.22** | −0.22** | 0.17** | −0.21** | −0.03 | 0.08 |
| Employee development | 0.05 | .004 | 0.17** | −0.17** | 0.09 | −0.13* | −0.01 | 0.06 |

**Source(s):** Own elaboration

**Table 3.**
Correlations between personality scales and managerial competencies

(2) the elevation is the average correlation between an external variable and all circumplex variables for which values of 0.15 or more are notable and reflect differentiation or specificity of content, so elevation represents the size of the general factor, sometimes observed in circumplex models (Tracey, 2000);

(3) amplitude (i.e. vector length) is the distance between an external variable's mean and peak correlation to the circumplex variables; it represents the distinctiveness of the profile, namely how much it is peaked (i.e. is it more specifically related to one of the circumplex variables?) vs flat (i.e. is it similarly related to all circumplex variables? Zimmermann & Wright, 2017);

(4) angular displacement is the angle at which the profile reaches its highest point; hence, angular displacement represents the empirical location of the variable within the empirical circumplex found in the data.

Furthermore, SSM also computes the estimates of distance from X- and Y-axes, corresponding to the basic dimensions of a given circumplex. All the estimates from SSM are provided with their lower and upper confidence intervals.

All the analyzed measures fit the CPM pattern. The amplitudes were moderate for all variables, with the highest variable for openness to change, which thus suggests that it contains most of the *Plasticity* (Beta-Plus) specificity metatrait in the construct. The angular displacement of the managerial competencies was grouped according to their hypothesized locations: social skills, management and goal striving were mostly concentrated around the *Integration* (Gamma-Plus) metatrait; openness to change and employee development were mostly located around the *Plasticity* (Beta-Plus) metatrait and problem-solving was closely related to the *Integration* (Gamma-Plus) and *Plasticity* (Beta-Plus) metatraits. Table 4 presents the results and Figure 2 – the projection of the competencies in the circular space of the CPM.

## 4. Discussion
The main assumption of the study was that there is a connection between a high level of competencies and positive personality traits and that negative traits are related to a low level of observed competencies. Moreover, the research attempted to establish the localization of competencies in the CPM. As assumed, the results indicated that all the analyzed measures fit the CPM pattern thus suggesting that managerial competencies can be placed within this model. Furthermore, model parameters demonstrated sufficient degrees of fit. The findings confirmed the assumptions about the positive relationship between competencies and personality metatraits from the positive pole – from Stability (Alpha-Plus) to Integration (Gamma-Plus) – and the negative relationship with the negative pole, i.e. from Disinhibition (Beta-Minus) to Disharmony (Gamma-Minus).

The study utilized two measurement methods for increased reliability. Managerial competencies were evaluated using the AC method, while a self-report questionnaire was used to measure personality dimensions.

Weak yet significant correlations were found between study variables. Strongest positive correlations were observed between three competencies – problem-solving, openness to change and employee development – and the Plasticity (Beta-Plus) metatrait; therefore, hypotheses 1 and 2 were partly supported. Significant correlations occurred between two competencies – problem-solving and openness to change – and the Integration (Gamma-Plus) metatrait. All five types of competencies correlated negatively with two personality metatraits: Disharmony (Gamma-Minus) and Passiveness (Beta-Minus); therefore, hypotheses 3 and 4 were supported.

| Profile | Elevation | X-value | Y-value | Amplitude | Displacement | Fit |
|---|---|---|---|---|---|---|
| Social skills | −0.02 [−0.06, 0.01] | 0.08 [−0.01, 0.18] | 0.06 [−0.03, 0.15] | 0.10 [0.03, 0.20] | 34.7 [341.9, 102.1] | 0.94 |
| Problem-solving | −0.00 [−0.04, 0.03] | 0.15 [0.06, 0.24] | 0.08 [0.00, 0.16] | 0.17 [0.09, 0.27] | 28.7 [1.7, 57.1] | 0.88 |
| Management and goal striving | −0.01 [−0.05, 0.02] | 0.06 [−0.03, 0.15] | 0.05 [−0.03, 0.15] | 0.08 [0.02, 0.18] | 39.1 [310.0, 130.4] | 0.81 |
| Openness to change | 0.00 [−0.03, 0.04] | 0.20 [0.10, 0.29] | 0.05 [−0.04, 0.15] | 0.20 [0.12, 0.30] | 14.5 [346.2, 42.4] | 0.93 |
| Employee development | 0.01 [−0.02, 0.05] | 0.13 [0.05, 0.22] | 0.03 [−0.07, 0.12] | 0.14 [0.07, 0.23] | 12.3 [324.4, 48.5] | 0.87 |

**Source(s):** Own elaboration

**Table 4.**
Structural summary
statistics with 95%
confidence intervals for
managerial
competencies

Regression results showed that only two personality metatraits were significant predictors of competencies. Disharmony (Gamma-Minus) negatively predicted openness to change, while Passiveness (Beta-Minus) negatively predicted social skills and problem-solving.

After analyzing the results in detail, we found interesting outcomes. The most intriguing was the negative – rather than positive – relationship between certain personality metatraits and competencies. Our study showed that the so-called "dark sides of personality" revealed in Disharmony (Gamma-Minus) and Passiveness (Beta-Minus) had a negative relationship with all competencies that were tested. Therefore, these two personality metatraits can naturally block the manifestation of managerial competencies. These "dark sides of personality" were also indicated in prior studies revealing that negative personality traits may block the manifestation of important competencies in terms of managerial promotions and position changes within organizations (e.g. Lipman-Blumen, 2006; Hogan *et al.*, 2010; Kaiser & Hogan, 2011).

The results showed a weak but positive relationship between Plasticity (Beta-Plus) and Integration (Gamma-Plus) and managerial competencies. The positive correlations appeared between problem-solving and openness to change in Plasticity (Beta-Plus) and Integration (Gamma-Plus), while employee development was linked only to Plasticity (Beta-Plus). These results are in line with other studies (e.g. Hoeft & Schuler, 2001; Collins *et al.*, 2003; Arthur *et al.*, 2003; Meriac *et al.*, 2008), and they may mean that we should treat personality as an additional source of information. Moreover, our results support Christiansen *et al.*'s (2013) narrative stating that the main results from research on personality and AC dimension relationship are inconsistent. According to the authors, personality traits are much wider constructs than competencies.

On closer examination, we noticed that Plasticity (Beta-Plus) comprises extraversion and openness to experience; thus, it is strongly linked to novelty acceptance, exploration of other perspectives, taking a wider perspective and positive perception of change. Let us keep in mind that scholars link openness to experience with innovativeness (Consiglio, Alessandri, Borgogni, & Piccolo, 2013), presenting an inspirational vision (Guillén & Saris, 2013), overall AC rating (Hoeft & Schuler, 2001), managing innovativeness and emotions (Consiglio *et al.*, 2013) and managing emotions and focus on results (Guillén & Saris, 2013). Competencies such as innovativeness and focus on achievements appeared in behaviors related to the introduction of new, interesting solutions, improvements and efficiency measures. Our study supported this assumption, as Plasticity (Beta-Plus) correlated positively with two
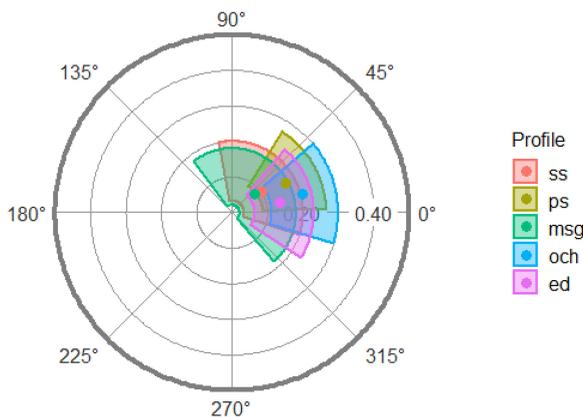


**Source(s):** Own elaboration

competencies, namely openness to change and problem-solving, albeit to a very small percentage of variance.

The absence of a significant association between Integration (Gamma-Plus) and social skills, as well as goal management, was unsurprising. However, it was unexpected that these competencies correlated negatively with Disharmony (Gamma-Minus). As explained earlier, these negative relationships may block the development of competencies and – in this sense – are worth considering in future research.

### 4.1 Practical implications

Personality and competencies are theoretical constructs widely used to predict individual job performance. These predictions are of key importance in management and constitute the core of every selection and promotion process. However, the link between them is unobvious. Personality is a broader concept than behaviors and competencies; hence, the two can be seen as separate but complementary sources.

The study found that the complex model is a better descriptor of personality than single personality traits. Furthermore, the CPM showed that Integration (Gamma-Plus) and Plasticity (Beta-Plus) have the strongest positive connection with managerial competencies. Thus, analysts should investigate if these metatraits can act as positive predictors in the selection of effective managers.

Our research revealed that managerial competencies fit the CPM model. Next, we should verify if high Integration (Gamma-Plus), high Plasticity (Beta-Plus), low Disharmony (Gamma-Minus) and low Passiveness (Beta-Minus) may be important predictors in the managerial selection process.

Moreover, the study drew attention to the "dark sides" of personality, which are related to weak competencies. From the practical perspective, it is advisable that companies conduct personality evaluations to test negative traits and check whether they may be perceived as blockers to the manifestation of managerial competencies. Future research should investigate a wider perspective, namely whether the negative "side" of personality could block the manifestation of management competencies.

### 4.2 Limitations

Although our study provides many interesting findings, it also has limitations. First, our study was limited to a sample of managers engaged in postgraduate and MBA studies at Kozminski University. This is a very specific group of managers who are often open to new experiences, eager to learn and keen to broaden their competencies. Therefore, future research should conduct a similar study on a larger group of managers from various levels and types of organizations.

Second, future studies should examine other variables that may influence the relationship between personality metatraits and managerial competencies, e.g. via moderating effects. Furthermore, the application of different competency models could help define the significance of personality metatraits in management and leadership. Alternative formulas could double-check the link between the "dark sides" of personality and low managerial competencies. Next, the same study conducted in other cultures and countries (cf. Brodbeck *et al.*, 2000) could expand knowledge in this field. Finally, it would be valuable to include in future research other variables that would serve as potential moderators or mediators in the relationship.

All subjects participated voluntarily. The participants provided their written informed content to participate in this study. The Declaration of Helsinki was adequately addressed.

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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