



# Exploring the impact of personality on performance: How time-on-task moderates the mediation by self-efficacy

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## ABSTRACT

Despite the widely acknowledged impact of dispositional traits on performance, little is known about how personality affects performance. We address this gap by investigating the relationships between the Big Five personality traits, self-efficacy, and academic performance in a moderated mediation model using time-on-task as the moderating variable. Results indicate that self-efficacy partially mediates the conscientiousness–performance relationship and that time-on-task moderates the mediating effect of self-efficacy. Time-on-task moderates the indirect effect of conscientiousness on course performance through self-efficacy such that the indirect effect is not significant at low levels of time-on-task, but becomes significant and stronger at higher levels of time-on-task.

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## 1. Introduction

The dispositional approach to understanding and explaining performance outcomes has recently attracted considerable research attention. Even though meta-analytic reviews providing support for the personality–performance relationship have emerged (Barrick, Mount, & Judge, 2001; Judge, Jackson, Shaw, Scott, & Rich, 2007), further research is clearly needed to investigate the “nature” of the relationship (Judge & Ilies, 2002) and find out how these traits exert their influence (Gerhardt, Rode, & Peterson, 2007; Tay, Ang, & Van Dyne, 2006). If we can answer the “how” question, then we can make sense of why in certain contexts some personality dimensions relate to performance and in others they do not. Our paper attempts to fill in this gap by exploring the relationship between personality and performance through the mediating mechanism of self-efficacy and the conditions under which a mediation effect may vary.

Regarding the conceptualization of personality, impact of the five factor model is widely accepted, and an impressive body of research attests to its influence as an important area of investigation (e.g., Barrick & Mount, 2005). Recently, Judge et al. (2007) explored the relationships between the five factor (Big Five) model personality dimensions and self-efficacy through a meta-analysis providing support that personality differences are at least as important as

self-efficacy in predicting performance, after taking into factor several moderators such as task complexity, feedback, and goal setting among others. Our study contributes to literature in this area by investigating time-on-task as a moderator not included in the Judge et al. (2007) meta-analysis.

## 2. Theoretical framework

The five factor model consists of the personality dimensions of conscientiousness, emotional stability, extraversion, openness to experience, and agreeableness. There is an impressive amount of research examining the relationships between the five factor model personality dimensions and work-related behaviors like performance (e.g., Judge, Bono, Ilies, & Gerhardt, 2002). Researchers have noted that distal predictors of performance like dispositional traits will exert their impact through more proximal mechanisms such as self-management or goal setting (e.g., Gerhardt et al., 2007; Klein & Lee, 2006) which are integral to the concept of self-efficacy.

Self-efficacy, defined as an individual’s perceived ability to perform tasks, has been the focal construct of social-cognitive theory (Bandura, 1997). Individuals with higher levels of self-efficacy initiate and implement strategies designed to enhance their success in reaching their goals (Stajkovic & Luthans, 1998). Meta-analytic support exists for a strong relationship between self-efficacy and job performance (Stajkovic & Luthans, 1998). Hence, prior research evidence and theoretical perspectives associating both self-efficacy

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and the five factor model personality dimensions to performance warrant an investigation of their joint influence on task performance.

Perhaps with the exception of conscientiousness, presently mixed empirical support exists for most of the other dimensions of the five factor model (Martin, Montgomery, & Saphian, 2006). Regarding agreeableness, there is emerging evidence that agreeable individuals spend more time helping supervisors and coworkers (Kamdar & Van Dyne, 2007) and engage in organizational citizenship behaviors (Small & Diefendorff, 2006). Yet, research findings on agreeableness–performance relationship are equivocal at best (Hurtz & Donovan, 2000; Judge & Ilies, 2002; Kamdar & Van Dyne, 2007). Hence, we chose not to hypothesize a relationship between agreeableness, self-efficacy, and performance.

Regarding openness to experience, entailing intellectualism, and imagination, findings of past research is no clearer. Research on the relationships between self-efficacy, openness to experience, and performance has yielded mixed results (Barrick, Parks, & Mount, 2005) and the Judge et al. (2007) meta-analysis reported non-significant correlations between openness to experience, self-efficacy, and performance. Thus, we chose not to hypothesize a relationship between openness to experience, self-efficacy, and performance. Our proposed model as depicted in Fig. 1 is explained below.

### 2.1. Conscientiousness, self-efficacy, and performance

Conscientiousness refers to being dependable, hardworking, and persistent (Barrick & Mount, 1991). The relationship between conscientiousness and performance has been consistently shown to be positive and significant (e.g., Judge & Ilies, 2002). Most arguments as to how conscientiousness affects performance center on the role of motivation (Biderman, Nguyen, & Sebren, 2008; Judge & Ilies, 2002) indicating a choice to expend a certain amount of effort and persist at that level. Motivation is also a common mechanism for how self-efficacy leads to higher levels of performance. Self-efficacy was found to be a mediator between individual characteristics and performance in previous research (Burr & Cordery, 2001). In particular, research evidence suggests that conscientiousness is positively related to self-efficacy (Judge et al., 2007), and self-efficacy is positively related to performance (Chen, Casper, & Cortina, 2001). Self-efficacy concept and the resultant behaviors are consistent with those of highly conscientious individuals, who are, by definition, persevering, and hardworking indicating a clear goal orientation. Individuals who believe in their ability to complete a task will be more engaged in initiating and implementing strategies predicting higher levels of performance (Gerhardt et al., 2007).

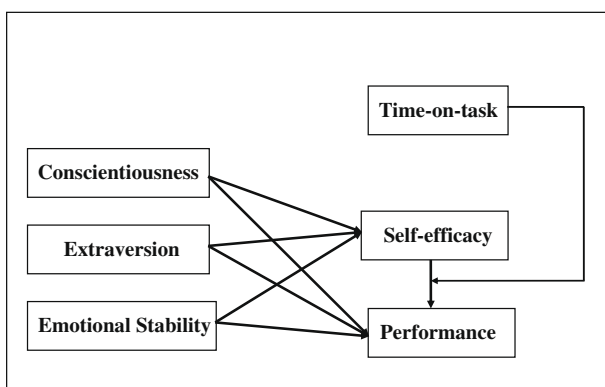


Fig. 1. A moderated mediation model of the roles of self-efficacy and time-on-task on the relationship between personality and performance.

We can expect the self-efficacy–performance relationship to be stronger if more resources are allocated to goal accomplishment. Time spent on goal accomplishment is one such resource (Biderman et al., 2008). For example, even though a person with high levels of self-efficacy may be expected to perform at a high level, illness or other commitments that demand time may interfere with the time actually spent on accomplishing the task. Hence, we predict that conscientiousness will be positively related to performance, and this relationship will be mediated by self-efficacy. We also predict that time-on-task will moderate the relationship of self-efficacy and performance such that the impact of self-efficacy as a mediator between conscientiousness and performance will vary as a function of time-on-task.

### 2.2. Extraversion, self-efficacy, and performance

Extraverts are talkative, dominant, and effective in leadership (Judge et al., 2002). There is also evidence that extraversion is related to task performance (McManus & Kelly, 1999), even though this relationship may be positive but small (Judge & Erez, 2007). Extraverted individuals tend to be determined, open, and assertive, expressing their ideas and feelings more openly. They are more likely to have built positive prior experiences in taking initiative and completing tasks, which is one of the sources of self-efficacy. Since high self-efficacy behavioral patterns include being active, selecting opportunities, and managing the situation, extraversion aligns with higher levels of self-efficacy (Bandura, 1991). An extravert will be more likely to visualize success and monitor the situation. Further, there is empirical evidence that links extraversion and self-efficacy (Judge et al., 2007).

Extraverts may or may not allocate resources such as time and effort to task accomplishment. If an extraverted personality performs highly through the mediating mechanism of self-efficacy, sufficient time allocated to the task will certainly enhance performance, and likewise, lack of time spent on task should negatively affect performance even if there is a significant indirect effect of extraversion on performance through self-efficacy. Hence, we hypothesize that extraversion will be positively related to performance, and this relationship will be mediated by self-efficacy. We also hypothesize that time-on-task will moderate the relationship of self-efficacy and performance such that the impact of self-efficacy as a mediator between extraversion and performance will vary as a function of time-on-task.

### 2.3. Emotional stability, self-efficacy, and performance

Emotional stability refers to being relaxed, secure, unworried, and less prone to stress and anxiety. The opposite end of this continuum is labeled neuroticism describing individuals' tendencies to be stressed, worried, anxious, and even depressed. Neuroticism is negatively associated with job performance (Barrick et al., 2001). Higher levels of performance do not seem to be consistent with maintaining an anxious and worried state, as people choose to avoid certain situations and spend more time in others that are compatible with their personalities (Emmons, Diener, & Larsen, 1986). Emotionally stable as opposed to neurotic people tend to obtain higher scores on ability tests and have higher performance in college courses (e.g., Chamorro-Premuzic & Furnham, 2003).

There is empirical support that individuals with higher levels of emotional stability will tend to believe in their abilities to accomplish tasks and perform highly (Judge et al., 2007). Time spent on task accomplishment should strengthen this relationship in that availability of resources such as time can be expected to contribute positively to the impact of perceptions of capability on performance. High levels of self-efficacy combined with an adequate amount of time spent on preparing should lead to a higher level

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