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Integrating the approach/avoidance framework with multidimensional persistence: Identifying novel mediating effects and outcomes

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ABSTRACT

Persistence was recently identified to have three dimensions: persistence despite difficulties (PDD), persistence despite fear (PDF), and inappropriate persistence (IP). To promote the study of multidimensional persistence, we integrate the approach/avoidance framework with PDD, PDF, and IP. We assess the relations of these three dimensions with both known and novel outcomes, and we also test whether approach and avoidance motivations mediate these effects. From a time-separated study, our results show that PDD and PDF produce beneficial work and well-being outcomes, whereas IP produces detrimental work and well-being outcomes. Approach motivations also mediated the relations of PDD with outcomes, whereas avoidance motivations mediated the relations of PDF and IP with outcomes. These results support that the approach/avoidance framework is a viable perspective to understand the outcomes of persistence. We recommended that future researchers should assess the broader proposals of the approach/avoidance framework regarding persistence, and we also suggest that future researchers can now link persistence with other outcomes previously associated with approach and avoidance motivations.

Many individual differences describe the general tendency to persist through hardships, including ambition, work ethic, tenacity, and grit (Baum & Locke, 2004; Duckworth et al., 2007; Serpell et al., 2009). Howard and Crayne (2019) recently synthesized these constructs to create a three-dimensional conceptualization of persistence, which they define as, “the personal tendency to endure through hardships to achieve goals” (p. 77). The first dimension is persistence despite difficulties (PDD), defined as the tendency to remain goal-directed despite perceived adversities. The second is persistence despite fear (PDF), defined as the tendency to remain goal-directed despite the emotional experience of fear. The third is inappropriate persistence (IP), defined as the tendency to remain goal-directed towards worthless goals. Via a six-study process, Howard and Crayne (2019) supported their conceptualization and provided a three-dimensional scale with sound psychometric and validity evidence. The authors recommended that these three dimensions should be studied separately to identify their distinct effects, as the authors' results showed that PDD and PDF relate to beneficial outcomes but IP relates to detrimental outcomes.

Due to the recency of this conceptualization, two immediate steps should be taken to encourage its future study. First, prior findings should be replicated and extended to ensure that these dimensions of

persistence indeed relate to important work (e.g., employee behaviors) and well-being outcomes (e.g., depression, anxiety, stress, and life satisfaction). While research has provided initial support for these relations (Howard & Crayne, 2019), further empirical evidence is needed before these relations can be considered robust. Second, a theoretical framework should be integrated with this multidimensional perspective to explain observed effects and detect other relations. Doing so would associate the persistence dimensions with prior research using the theoretical framework, which could subsequently be used to identify further outcomes, boundary conditions, and explanatory mechanisms. Therefore, achieving these two goals can produce a broader field of study and a better understanding of persistence and its dimensions.

In the current article, we integrate the approach/avoidance framework with the three persistence dimensions (Elliot, 2006, 2013; Elliot & Church, 1997; Howard & Crayne, 2019). We suggest that approach and avoidance motivations mediate the relations of these dimensions with work and well-being outcomes, thereby explaining *how* persistence relates to these important outcomes. Specifically, we suggest that PDD positively relates to approach motivations, PDF negatively relates to avoidance motivations, and IP positively relates to avoidance motivations. We then present a time-separated study that tests whether

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approach and avoidance motivations mediate the relations of PDD, PDF, and IP with both previously discovered and novel outcomes. Based on these results, we suggest that the differing associations of persistence dimensions are partially explained by their links with approach and avoidance motivations, and we use these observations to propose broader effects.

Together, the current article provides evidence that persistence merits future study, links the construct to a broader theoretical framework, and produces implications for research and practice. We not only identify how the dimensions of persistence impact outcomes by integrating the approach/avoidance framework, but we also provide justification for future researchers to apply broader tenets the framework as well as link PDD, PDF, and IP with constructs associated with approach and avoidance motivations. Likewise, persistence has been proposed to be important to work and well-being, but research on PDD, PDF, and IP is still in its infancy. We provide evidence that persistence is pivotal to both work and a non-work life. Such findings draw the interest of both researchers and practitioners, including businesses as well as practicing therapists. Thus, the current article addresses uncertainties surrounding Howard and Crayne's (2019) conceptualization of persistence and creates clear paths for future research.

1. Background

Howard and Crayne's (2019) multidimensional perspective of persistence was closely adapted from prior constructs that describe the tendency to remain goal-directed. Their created multidimensional persistence scale was empirically distinct from but significantly related to scales measuring these prior constructs, supporting the validity of their conceptualization and operationalization. We briefly discuss their three included dimensions: PDD, PDF, and IP.

PDD was developed from the largest collection of prior constructs, but the most closely associated were conceptualizations of general persistence (Serpell et al., 2009) and the perseverance of effort dimension of grit (Duckworth et al., 2007). Prior conceptualizations of general persistence were solely conceptualized as the tendency to work through difficult goals, and persistent people are believed to be better employees and have greater life satisfaction (Baum & Locke, 2004; Serpell et al., 2009). Likewise, Duckworth et al. (2007) identified that people produce better work and well-being outcomes when they can persevere through difficult goals. Howard and Crayne (2019) recognized that persevering through difficulties may only be one dimension of persistence, but it is the dimension of persistence most frequently studied.

Next, PDF was developed from early conceptualizations of courage. These early conceptualizations speculated that courage is "persistence or perseverance despite having fear" (Norton & Weiss, 2009, p. 213). More recent research began to question whether the definition of courage should include noble or prosocial elements, which led to the widespread adoption of Rate's (2010) definition. While these early definitions are recognized to not describe courage (Detert & Bruno, 2017; Koerner, 2014), Howard and Crayne (2019) suggested that they describe a distinct dimension of persistence. Some people demonstrate the habitual tendency to persist through fear, and these individuals are believed to produce beneficial outcomes. For instance, some research has suggested that persisting through fear may allow individuals to better regulate their emotions and reduce anxiety, and many authors have suggested that persisting despite fear is necessary for many tasks with widespread social importance (e.g., whistleblowing; Detert & Bruno, 2017; Koerner, 2014).

Lastly, IP was developed from the concept of perseverance in clinical psychology (Hamachek, 1978; Serpell et al., 2009). Researchers in this domain recognize that some people repeatedly perform behaviors with little or no benefit. For instance, those with obsessive compulsive disorder are unable to disengage from certain goals, even when their behaviors are clearly ineffective. Repeatedly performing these behaviors precludes more effective behaviors, which can stunt work benefits (e.g.,

completing assignments) and personal development (e.g., overcoming disorders). Howard and Crayne (2019) believed it was important to distinguish the tendency to persist towards worthless goals from other dimensions of persistence, as the other dimensions tend to produce beneficial outcomes whereas IP produces detrimental outcomes. They considered worthless goals to be either unobtainable or unrewarding.

From this conceptualization, Howard and Crayne (2019) recommended that researchers should study the three dimensions separately rather than a single aggregated construct of general persistence. The authors provided initial evidence that these dimensions relate differently to outcomes, and studying the overall construct of persistence may fail to recognize these nuances. They also recommended that future researchers should integrate modern theory into the study of persistence to identify the constructs' nuanced relations. Therefore, we study these dimensions separately when integrating the approach/avoidance framework.

1.1. Hypothesis development

1.1.1. Approach/avoidance framework

The approach/avoidance framework proposes that humans have two temperaments: one that relates to approaching desirable stimuli and one that relates to avoiding undesirable stimuli (Elliot, 2006, 2013; Elliot & Church, 1997). These two temperaments operate independently, as research has supported that approach-oriented stimuli activate different neurological processes than avoidance-oriented stimuli (Bach et al., 2014). This finding suggests that neither temperament, one temperament, or both temperaments can be active at a given time.

Traits are known to be associated with these temperaments, causing them to approach- or avoidance-oriented (Elliot, 2006, 2013). For example, extraversion is associated with approach tendencies, as extraverted people value and are drawn towards social situations, whereas neuroticism is associated with avoidance tendencies, as neurotic people are overly sensitive to negative information and avoid relevant stimuli. People with greater approach- or avoidance-oriented traits habitually experience greater approach- or avoidance-oriented motivations (Elliot, 2006, 2013). That is, people habitually have temporary sensitivities positive or negative stimuli (i.e., motivations) based on their traits. Using the examples above, extraverted people more frequently experience approach motivations, whereas neurotic people more frequently experience avoidance motivations (Elliot & Church, 1997; Howard, 2021). Research has also robustly supported this casual effect, such that individual differences are well-supported to produce approach and/or avoidance motivations (Kelley et al., 2017; Wimmer et al., 2018).

We suggest that each of the three persistence dimensions differently relate to approach or avoidance motivations. First, approach motivation produces a sensitivity towards positive information and a drive towards desirable stimuli. Those high in PDD may habitually strive through their difficulties because they particularly value the positive outcomes of their goals. While others may disengage from these goals because they do not believe that the ends are worth the means, those high in PDD may believe otherwise because they particularly value the ends. Such arguments align with prior research on constructs used to conceptualize PDD, such as grit (Howard, 2021; Howard & Crayne, 2019). Specifically, ample prior research has supported that those high in grit are more likely to remain motivated and approach their goals over great periods of time, and these studies have applied methodological designs that can strongly support causality (Credé et al., 2017; Duckworth et al., 2007). Therefore, we predict that PDD positively relates to approach motivation.

Hypothesis 1. PDD positively relates to approach motivations.

Second, avoidance motivation causes people to possess a sensitivity towards negative information and withdraw from negative stimuli. Research has supported the fear has an avoidance orientation, which serves an important evolutionary purpose (Rinck & Becker, 2007).

Things that invoke fear are often physically dangerous, such as snakes and spiders, and people are more likely to survive interactions with such things if they tend to withdraw from them. Such a phenomenon has also been shown in experimental designs, strongly supporting the link between fear and avoidance motivations (Elliot, 2013; Rinck & Becker, 2007). PDF, being the tendency to persist through fear, would logically relate to a reduced avoidance motivation, as individuals high in PDF are habitually less likely to withdraw from things that are frightening. Thus, we predict that PDF negatively relates to avoidance motivations.

Hypothesis 2. PDF negatively relates to avoidance motivations.

Third, when people inappropriately persist, they disengage from more fruitful behaviors. We propose that these individuals may be diverting their attention to these behaviors because they are actively avoiding these other behaviors. For instance, a person may procrastinate and continue performing behaviors with little reward (e.g., watching television despite disinterest) because they are actively avoiding more fruitful yet taxing behaviors (e.g., cleaning house). Therefore, we predict that those who persist towards inappropriate behaviors may habitually have greater avoidance motivation in their daily lives.

Hypothesis 3. IP positively relates to avoidance motivations.

1.1.2. Work and well-being outcomes

Prior research has repeatedly supported that approach and avoidance motivations predict differing sets of outcomes, and these motivations have also been supported to mediate the relations of individual differences with important outcomes using designs that can support causality (Corr & McNaughton, 2012; Elliot, 2006). Due to this prior support, the current article associates the three dimensions of persistence with work and well-being outcomes via their relations with approach and avoidance motivations. The included work outcomes are effort, organizational citizenship behaviors (OCBs), and counterproductive work behaviors (CWBs). The included well-being outcomes are life satisfaction, depression, anxiety, and stress.

Those with approach-oriented tendencies are more sensitive to positive aspects of their environment, and prior research has shown that approach-oriented individuals are better work performers because they continuously strive towards and achieve their desired work goals (Elliot, 2006, 2013). This disposition typically causes those with an approach motivation to remain motivated and extend extra effort towards their jobs. Further, many work activities produce difficulties, such as determining the best approach to complete a task. Individuals that see the positives of their work and persist through these difficulties are more likely to accomplish their work duties. In some cases, these individuals may even go above and beyond to perform OCBs, which are unrequired activities that benefit the organization. In such cases, it is again believed that those who are more sensitive to the positive aspects of their environments – those with approach motivation – would be more likely to perform these behaviors. Due to continuously achieving goals and having positive perspectives, approach-oriented people have been shown to have greater life satisfaction (Briki, 2018; Updegraff et al., 2004). Thus, approach motivations are associated with effort, OCBs, and life satisfaction.

On the other hand, those with avoidance-oriented tendencies are more sensitive to negative aspects of their environment. They are more likely to take note of their organization's and coworkers' detrimental actions, which often causes them to have negative organizational perceptions (Elliot, 2006, 2013). In some cases, these individuals may even lash out against their organization (e.g., CWBs) as a form of retaliation due to their heightened attention to negative aspects of their work. Likewise, those with increased attention to negatives typically have worse well-being. They are continuously striving to not fail rather than succeed, causing them to be more disappointed when they do fail and less pleased when they succeed (Briki, 2018; Updegraff et al., 2004). They also simply notice negative events more often, giving them a

poorer personal frame of reference. These factors cause them to experience greater depression, anxiety, and stress. Thus, avoidance motivations are associated with CWBs, depression, anxiety, and stress.

Together, we predicted that PDF positively relates to approach motivations, PDD negatively relates to avoidance motivations, and IP positively relates to avoidance motivations. We also predicted that approach motivations relate to effort, OCBs, and life satisfaction; whereas avoidance motivations relate to CWBs, depression, anxiety, and stress. Given these linkages, we ultimately predict that PDD positively relates to the outcomes of effort, OCBs, and life satisfaction via the mediating effect of approach motivations; PDF negatively relates to the outcomes of CWBs, depression, anxiety, and stress via the mediating effect of avoidance motivations; and IP positively relates to the outcomes of CWBs, depression, anxiety, and stress via the mediating effect of avoidance motivations.

Hypothesis 4. Approach motivation mediates the relations of PDD with (a) effort, (b) OCBs and (c) life satisfaction.

Hypothesis 5. Avoidance motivation mediates the relations of PDF with (a) CWBs, (b) depression, (c) anxiety, and (d) stress.

Hypothesis 6. Avoidance motivation mediates the relation of IP with (a) CWBs, (b) depression, (c) anxiety, and (d) stress.

2. Methods

To test our hypotheses, we perform a time-separated study with the predictors, mediators, and outcomes measured at separate timepoints. By doing so, we partially address concerns with common method bias and obtain proper temporal separation between our variables of interest.

2.1. Participants

Participants ($Age_{mean} = 33.33$; $Age_{std.dev.} = 9.37$; 45% Female; 54% Caucasian) were recruited via MTurk in return for monetary compensation. Results obtained via MTurk samples are valid when taking the present precautions (Aguinis, Villamor, & Ramani, 2021; Cobanoglu et al., 2021). We required that all participants be currently employed and fail no more than one of six attention checks (16 participants failed one attention check). Sample sizes reported below reflect the sample after removing participants that did not fulfill these criteria (14 participants removed).

2.2. Procedure

Participants enrolled in the study via the MTurk platform. They immediately completed the first survey, which included demographic items alone (T1, $n = 370$). One week after T1, they completed a second survey, which included the persistence scale (T2, $n = 188$). One week after T2, they completed a third survey, which included the approach and avoidance motivations scale (T3, $n = 153$). Lastly, one week after T3, they completed a fourth survey, which included scales of work effort, OCBs, life satisfaction, CWBs, depression, anxiety, and stress (T4, $n = 134$).

2.3. Measures

The measures applied in the current study are fully reported in Supplemental Material A.

3. Results

Correlations and Cronbach's alphas are provided in Supplemental Material B. Two regression analyses were conducted in which the three dimensions of persistence predicted approach and avoidance motivations (Table 1). PDD predicted approach motivations ($\beta = 0.43$, $t = 4.01$,

df = 149, $p < .01$); PDF predicted avoidance motivation ($\beta = -0.29, t = -2.62, df = 149, p = .01$); and IP predicted avoidance motivation ($\beta = 0.20, t = 2.71, df = 149, p = .01$). These results support [Hypotheses 1, 2, and 3](#).

Supplemental Material C presents the results of regression analyses in which the three dimensions of persistence alone predicted each workplace and well-being outcome, whereas Supplemental Material D present the results of regression analyses in which the three dimensions of persistence as well as approach and avoidance motivations predicted each outcome. These analyses do not test our hypotheses, but we provide them for reference.

To test our remaining hypotheses, we calculated a series of bootstrapped indirect effects and confidence intervals using Hayes's PROCESS macro, which provide an estimate of the predictor's effect on outcomes via specified mediating variables. For each of these analyses, we designated either PDD, PDF, or IP as the predictor, the other two dimensions of persistence as covariates, both approach and avoidance motivations as the dual mediators, and a single variable as the outcome. Each analysis was able to account for the variance explained by each dimension of persistence and both types of motivations while estimating the indirect effects. The results of these analyses are provided in [Tables 2, 3, and 4](#).

PDD had significant indirect effects through approach motivations on effort, OCBs, and life satisfaction (all 95%*C.I.* excluded 0). These results support [Hypotheses 4a, b, and c](#). PDF had significant indirect effects through avoidance motivations on CWBs, depression, anxiety, and stress (all 95%*C.I.* excluded 0). These results support [Hypotheses 5a, b, c, and d](#). IP had significant indirect effects through avoidance motivations on CWBs, depression, anxiety, and stress (all 95%*C.I.* excluded 0). These results support [Hypotheses 6a, b, c, and d](#). A visual representation of our findings can be found in [Fig. 1](#).

To support the robustness of our findings, we replicated all results using structural equation modeling, both covariance-based and partial least squares (Supplemental Material E). The findings largely replicated those reported in the primary text, and all inferences remained consistent between the two sets of analyses. These replicated results indicate that our results were not driven by our analytic method, and they strongly support the robustness of our findings.

4. Discussion

The primary goals of the current article were to (a) associate PDD, PDF, and IP with the approach/avoidance framework as well as (b) assess the relations of these dimensions with both novel and previously supported outcomes. We drew from prior research that supported casual effects for some of our proposed relations and relations of similar outcomes, and we performed a time-separated study to test our proposals. The results of our study show that PDD positively relates to approach

Table 1
Regression results of persistence predicting approach and avoidance motivations.

	B	Std. Err.	β	t
Approach motivation				
Constant	2.74	0.47		5.83**
1.) PDD	0.47	0.12	0.43	4.01**
2.) PDF	0.03	0.10	0.03	0.32
3.) IP	0.03	0.06	0.04	0.54
Avoidance motivation				
Constant	6.39	0.62		10.26**
1.) PDD	-0.30	0.16	-0.21	-1.92
2.) PDF	-0.34	0.13	-0.29	-2.62*
3.) IP	0.21	0.08	0.20	2.71**

Note: PDD = Persistence Despite Difficulty; PDF = Persistence Despite Fear; IP = Inappropriate Persistence.

* $p < .05$.
** $p < .01$.

Table 2
Bootstrapped estimates for indirect effect of persistence despite difficulty.

Outcome	Mediator	Effect	Std. Err.	95% C.I.
1.) Effort	1a.) Approach	0.17	0.07	0.06, 0.35 ^a
	1b.) Avoid	-0.00	0.02	-0.06, 0.04
2.) OCBs	2a.) Approach	0.10	0.05	0.02, 0.23 ^a
	2b.) Avoid	0.02	0.02	-0.01, 0.08
3.) CWBs	3a.) Approach	0.01	0.04	-0.06, 0.10
	3b.) Avoid	-0.08	0.05	-0.22, -0.00 ^a
4.) Life Satisfaction	4a.) Approach	0.31	0.11	0.13, 0.57 ^a
	4b.) Avoid	0.01	0.03	-0.04, 0.11
5.) Depression	5a.) Approach	-0.14	0.08	-0.33, -0.02
	5b.) Avoid	-0.08	0.05	-0.22, -0.00 ^a
6.) Anxiety	6a.) Approach	-0.08	0.05	-0.22, -0.00 ^a
	6b.) Avoid	-0.06	0.04	-0.16, -0.00 ^a
7.) Stress	7a.) Approach	-0.04	0.08	-0.22, 0.09
	7b.) Avoid	-0.09	0.06	-0.23, -0.00 ^a

Note: Approach = Approach Motivation; Avoid = Avoid Motivation; OCBs = Organizational Citizenship Behaviors; CWBs = Counterproductive Work Behaviors.

^a Confidence interval excludes zero.

Table 3
Bootstrapped estimates for indirect effect of persistence despite fear.

Outcome	Mediator	Effect	Std. Err.	95% C.I.
1.) Effort	1a.) Approach	0.03	0.04	-0.05, 0.13
	1b.) Avoid	-0.00	0.03	-0.06, 0.05
2.) OCBs	2a.) Approach	0.02	0.03	-0.03, 0.08
	2b.) Avoid	0.02	0.03	-0.02, 0.09
3.) CWBs	3a.) Approach	0.00	0.01	-0.01, 0.04
	3b.) Avoid	-0.10	0.05	-0.23, -0.03 ^a
4.) Life Satisfaction	4a.) Approach	0.05	0.08	-0.09, 0.22
	4b.) Avoid	0.01	0.04	-0.07, 0.10
5.) Depression	5a.) Approach	-0.02	0.04	-0.14, 0.04
	5b.) Avoid	-0.09	0.05	-0.23, -0.02 ^a
6.) Anxiety	6a.) Approach	-0.01	0.02	-0.08, 0.02
	6b.) Avoid	-0.07	0.04	-0.18, -0.01 ^a
7.) Stress	7a.) Approach	-0.01	0.02	-0.09, 0.02
	7b.) Avoid	-0.10	0.06	-0.25, -0.02 ^a

Note: Approach = Approach Motivation; Avoid = Avoid Motivation; OCBs = Organizational Citizenship Behaviors; CWBs = Counterproductive Work Behaviors.

^a Confidence interval excludes zero.

Table 4
Bootstrapped estimates for indirect effect of inappropriate persistence.

Outcome	Mediator	Effect	Std. Err.	95% C.I.
1.) Effort	1a.) Approach	0.01	0.03	-0.04, 0.08
	1b.) Avoid	0.00	0.02	-0.03, 0.04
2.) OCBs	2a.) Approach	0.01	0.02	-0.02, 0.05
	2b.) Avoid	-0.01	0.02	-0.05, 0.01
3.) CWBs	3a.) Approach	0.00	0.01	-0.01, 0.02
	3b.) Avoid	0.06	0.03	0.02, 0.15 ^a
4.) Life Satisfaction	4a.) Approach	0.02	0.05	-0.08, 0.14
	4b.) Avoid	-0.01	0.03	-0.06, 0.05
5.) Depression	5a.) Approach	-0.01	0.03	-0.07, 0.04
	5b.) Avoid	0.06	0.03	0.01, 0.14 ^a
6.) Anxiety	6a.) Approach	-0.00	0.02	-0.04, 0.03
	6b.) Avoid	0.04	0.03	0.01, 0.12 ^a
7.) Stress	7a.) Approach	-0.00	0.01	-0.05, 0.01
	7b.) Avoid	0.07	0.03	0.02, 0.16 ^a

Note: Approach = Approach Motivation; Avoid = Avoid Motivation; OCBs = Organizational Citizenship Behaviors; CWBs = Counterproductive Work Behaviors.

^a Confidence interval excludes zero.

motivations; PDF negatively relates to avoidance motivations, and IP positively relates to avoidance motivations. Approach motivations also mediated the relations of PDD with effort, OCBs, and life satisfaction;

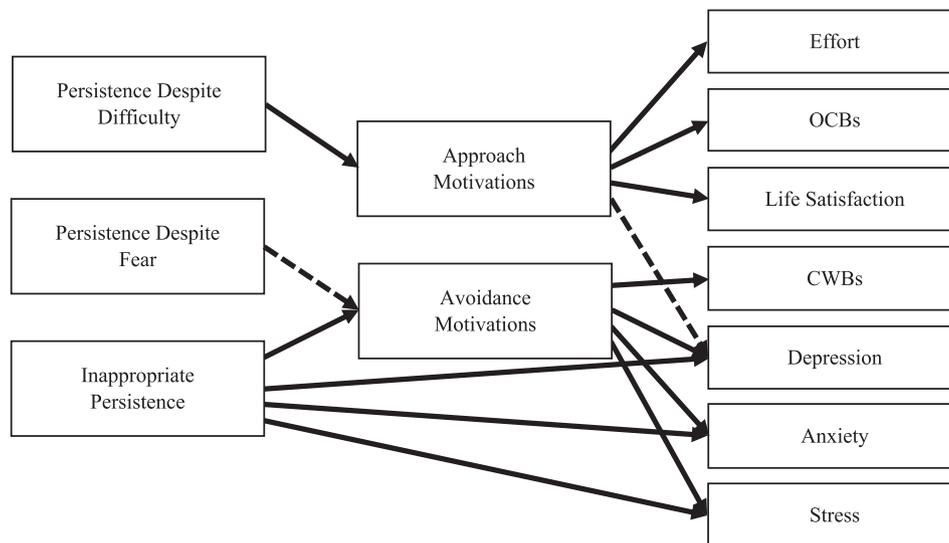


Fig. 1. Visual representation of study results.

Note: Arrows represent statistically significant effects. Solid lines represent positive effects, whereas dashed lines represent negative effects. OCBs = Organizational Citizenship Behaviors. CWBs = Counterproductive Work Behaviors.

whereas avoidance motivations mediated the relations of PDF and IP with CWBs, depression, anxiety, and stress. Our investigation achieved the goals of the current article, which produces many considerations for research.

4.1. Theoretical implications and future research directions

The current article is the first to provide empirical evidence linking Howard and Crayne's (2019) three-dimensional conceptualization of persistence with a theoretical framework. By doing so, we not only show that the effects of persistence can be understood via specific explanatory mechanisms, approach and avoidance motivations, but we also enable future researchers to identify broader linkages of these dimensions. The approach/avoidance framework has also been used to distinguish certain types of goals, such as learning-approach and learning-avoidance goals (Elliot, 2006, 2013). A necessary next step in integrating the approach/avoidance framework would be to investigate the relations between persistence and goal setting. Those high in PDD, PDF, and IP may not only have differing motivations, but they may also have different approaches towards completing their goals. A person high in PDD, for instance, may be more likely to adopt a learning-approach goal, whereas a person high in IP may be more likely to adopt an avoid-performance goal. Future researchers could then better understand how persistence causes goal-directed motivation to initiate and sustain itself.

Approach and avoidance motivations have likewise been linked to an array of other antecedents and outcomes. Associating PDD, PDF, and IP with these motivations produces broader theoretical linkages for the constructs. For instance, Howard (2021) showed that approach and avoidance motivations relate to social courage behaviors. Future research can use these initial links to propose relations between persistence and social courage behaviors. Similarly, the approach/avoidance framework has been repeatedly used to understand the underlying orientations of emotions, such as fear being avoidance oriented and anger being approach oriented (Elliot, 2006; Rinck & Becker, 2007). Future research could use these observations as justifications to investigate links between persistence and emotional outcomes. Doing so could explain why certain individuals are more likely to experience specific emotions, but it could also identify further explanatory mechanisms of PDD, PDF, and IP.

Also, Howard and Crayne (2019) provided initial support that the

three persistence dimensions are unique, and the current results provided further support that they predict unique outcomes. Likewise, we calculated hetero-trait mono-trait ratios, which are among the most robust approaches to assessing discriminant validity (Henseler et al., 2015). These results supported the discriminant validity of all measures. PDD, PDF, and IP should be seen as separate constructs.

While Howard and Crayne (2019) provided initial support that their three dimensions of persistence relate to important work and well-being outcomes, the current article bolsters this notion by studying an even broader range of outcomes. Now that the broad importance of persistence has been established, future research should perform nuanced investigations into the relations of persistence with specific types of outcomes. Notably, researchers often differentiate antecedent effects on OCBs and CWBs towards the organization (i.e., OCB-O, CWB-O) and coworkers (i.e., OCB-I, CWB-I), with which persistence may also differently relate. Because persistence is viewed as a goal-oriented individual difference, it may only relate to organizational-focused work behaviors because these are often more directly associated with completing professional objectives. Similarly, research has shown that the antecedents of depression, anxiety, and stress often differ, but we treated these well-being outcomes as largely the same. Future researchers should determine the causes of PDD's, PDF's, and IP's differential relations with these three well-being outcomes beyond approach and avoidance motivations, such as assessing whether emotions are viable explanatory mechanisms.

The current findings may also advance research on constructs that are similar to PDD, PDF, and IP. Ample research has support that those high in grit are more likely to be motivated over great periods of time (Duckworth et al., 2007), but less research has directly integrated the approach/avoidance framework and grit. The current findings regarding PDD can provide justifications for such an integration, which would broaden the theoretical scope of grit. Similarly, while distinct, PDF and the individual difference of courage share similarities. A prior investigation assessed the relation of approach motivations with behavioral manifestations of courage (Howard, 2021), and we called for the study of persistence and behavioral courage above; however, future research should also test whether the approach/avoidance framework can identify the relations of trait courage.

Furthermore, persisting towards fruitless goals is a topic of interest in many literatures associated with motivation. Notably, Jordan et al. (2019) identified three circumstances in which excessive grit may result

in inappropriate persistence: when (1) falling victim to the sunk cost fallacy, (2) missing favorable opportunities due to resoluteness to original goal(s), and (3) failing to seek help. While all three are possible, the present results may lend support to the occurrence of the third. IP was significantly related to avoidance motivation, which is associated with avoiding undesirable stimuli. Asking for help involves the risk of appearing incompetent, as the help seeker inherently acknowledges that they are unable to perform an activity (Howard, 2021; Howard & Crayne, 2019). A person with elevated IP (and thereby avoidance motivations) may focus on fruitless tasks because they do not want to ask for help and appear incompetent, although asking for help may transform the fruitless tasks into fruitful tasks. Beyond help seeking, those with elevated IP may focus on fruitless tasks because they are afraid of shifting focus to fruitful tasks that could result in failure. Given these considerations, future research should perform event-oriented studies of IP to understand the goal selection and striving process of those high in IP, which could inform modern research on excessive grit (Jordan et al., 2019).

Lastly, alternative frameworks and theories can illuminate the relations of persistence. Expectancy theory is among the most applied theories to understand goal-directed motivation (Van Eerde & Thierry, 1996). It proposes that people become and remain motivated based on expectancy, instrumentality, and valence. Those high in persistence may have heightened expectancy of outcomes because they find themselves more apt at achieving their goals. To test this proposal, researchers would assess whether expectancy, instrumentality, and valence are valid explanatory mechanisms between the relations of persistence and its outcomes. By conducting these initial studies, researchers could provide large insights into the theoretical perspectives that may be valid lenses to understand PDD, PDF, and IP.

4.2. Limitations and replication opportunities

We discuss three present methodological limitations. First, prior research has supported the validity of results obtained via MTurk samples when taking the precautions applied in the current article, but future research should replicate the current results using alternative sampling sources. Second, to achieve appropriate statistical power (0.80) for anticipated moderate effects, our sample size needed to be at least 85 for correlational analyses, 91 for regression analyses, and 78 for analyses of indirect effects (Cohen, 1992; Fritz & MacKinnon, 2007). While we exceeded these cutoffs, future research should replicate the current results using larger sample sizes. Third, our study did not utilize a longitudinal design because no variable was measured on multiple occasions. Future research should replicate our results using panel and experimental designs that can firmly support causality.

Theoretical limitations should also be observed. Our intent was to provide a focused investigation on persistence, but persistence may not relate to the studied outcomes when controlling for other constructs. Persistence may even be a dimension of a broader construct, such as conscientiousness. Future research should study persistence in conjunction with other aspects of personality. Also, many of our measures were specific to the workplace, but relations of PDD, PDF, and IP may differ across contexts. Future research should study behavioral outcomes of persistence beyond the workplace. Lastly, we did not assess boundary conditions. Future research should assess the extent that the relations of persistence weaken as well as the environments that cause them to weaken, which could be guided by trait activation theory.

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CRedit authorship contribution statement

The primary author completed all aspects of the present work.

References

- Aguinis, H., Villamor, I., & Ramani, R. (2021). MTurk research: Review and recommendations. *Journal of Management*, *47*(4), 823–837.
- Bach, D., Guitart-Masip, M., Packard, P., ... Dolan, R. (2014). Human hippocampus arbitrates approach-avoidance conflict. *Current Biology*, *24*(5), 541–547.
- Baum, J., & Locke, E. (2004). The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of Applied Psychology*, *89*(4), 587.
- Briki, W. (2018). Trait self-control: Why people with a higher approach (avoidance) temperament can experience higher (lower) subjective wellbeing. *Personality and Individual Differences*, *120*, 112–117.
- Cobanoglu, C., Cavusoglu, M., & Turkrtarhan, G. (2021). A beginner's guide and best practices for using crowdsourcing platforms for survey research: The case of Amazon mechanical Turk (MTurk). *Journal of Global Business Insights*, *6*(1), 92–97.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155.
- Corr, P., & McNaughton, N. (2012). Neuroscience and approach/avoidance personality traits: A two stage (valuation-motivation) approach. *Neuroscience & Biobehavioral Reviews*, *36*(10), 2339–2354.
- Crédé, M., Tynan, M., & Harms, P. (2017). Much ado about grit: A meta-analytic synthesis of the grit literature. *Journal of Personality and Social Psychology*, *113*(3), 492.
- Detert, J., & Bruno, E. (2017). Workplace courage: Review, synthesis, and future agenda for a complex construct. *Academy of Management Annals*, *11*(2), 593–639.
- Duckworth, A., Peterson, C., Matthews, M., & Kelly, D. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, *92*(6), 1087.
- Elliot, A. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, *30*(2), 111–116.
- Elliot, A. (2013). *Handbook of approach and avoidance motivation*. Psychology Press.
- Elliot, A., & Church, M. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*(1), 218.
- Fritz, M., & MacKinnon, D. (2007). Required sample size to detect the mediated effect. *Psychological Science*, *18*(3), 233–239.
- Hamachek, D. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior*, *15*(1), 27–33.
- Henseler, J., Ringle, C., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135.
- Howard, M. (2021). Identifying social courage antecedents and mediating effects: Applying the HEXACO and approach/avoidance frameworks. *Personality and Individual Differences*, *173*, Article 110637.
- Howard, M., & Crayne, M. (2019). Persistence: Defining the multidimensional construct and creating a measure. *Personality and Individual Differences*, *139*, 77–89.
- Jordan, S., Ferris, G., Hochwarter, W., & Wright, T. (2019). Toward a work motivation conceptualization of grit in organizations. *Group & Organization Management*, *44*(2), 320–360.
- Kelley, N., Hortensius, R., Schutter, D., & Harmon-Jones, E. (2017). The relationship of approach/avoidance motivation and asymmetric frontal cortical activity: A review of studies manipulating frontal asymmetry. *International Journal of Psychophysiology*, *119*, 19–30.
- Koerner, M. (2014). Courage as identity work: Accounts of workplace courage. *Academy of Management Journal*, *57*(1), 63–93.
- Norton, P., & Weiss, B. (2009). The role of courage on behavioral approach in a fear-eliciting situation: A proof-of-concept pilot study. *Journal of Anxiety Disorders*, *23*(2), 212–217.
- Rate, C. (2010). *Defining the features of courage: A search for meaning*. The psychology of courage: Modern research on an ancient virtue.
- Rinck, M., & Becker, E. (2007). Approach and avoidance in fear of spiders. *Journal of Behavior Therapy and Experimental Psychiatry*, *38*(2), 105–120.
- Serpell, L., Waller, G., Fearon, P., & Meyer, C. (2009). The roles of persistence and perseveration in psychopathology. *Behavior Therapy*, *40*(3), 260–271.
- Updegraff, J., Gable, S., & Taylor, S. (2004). What makes experiences satisfying? The interaction of approach-avoidance motivations and emotions in well-being. *Journal of Personality and Social Psychology*, *86*(3), 496.
- Van Eerde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of Applied Psychology*, *81*(5), 575.
- Wimmer, S., Lackner, H., Papousek, I., & Paechter, M. (2018). Goal orientations and activation of approach versus avoidance motivation while awaiting an achievement situation in the laboratory. *Frontiers in Psychology*, *9*, 1552.