

**FEAR OF FAILURE AS MOTIVATION: A NEW PERSPECTIVE ON FEAR OF
FAILURE, ACHIEVEMENT AND PSYCHOLOGICAL ADJUSTMENT**

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General Abstract

Fear of failure is described by performers as a motivating or handicapping factor. These two ways of approaching fear of failure could explain the inconsistent results of studies looking at fear of failure in domains of achievement. The overarching goal of this dissertation was to propose a novel conceptualization of the fear of failure as a motivational mental representation that mobilizes efforts toward accomplishment and a better psychological adjustment. Study 1 had two objectives. First, I wanted to develop a new measure that captures the motivating aspect of fear of failure. Second, I validated this new measure with university students and athletes. Study 2 relied on a dual-domain framework (i.e., school and sports) that investigates the relationship between the perception of fear of failure as motivation and indicators of achievement by controlling for fear of failure. This cross-sectional study attempted to evaluate intra-domain effects (e.g., perception of fear of failure in sports is related to goal progress in sports) and inter-domain effects. Finally, Study 3, used a daily-diary design that gathered multiple accounts of student-athletes' fear of failure as motivation, goal progress, satisfaction, anxiety, and depression to investigate the association between fear of failure as motivation, achievement and, psychological adjustment at both the between and the within-person levels. More precisely, I wanted to investigate if student-athletes were able to progress more on their goals and were more satisfied if they were generally able to perceive fear of failure as a source of motivation (i.e., between-person level). Also, I aimed to evaluate what happens to goal progress, satisfaction, and mental health on the days a student-athlete is more motivated by fear of failure than their usual (within-person level), but has a high level of fear of failure in general (cross-level interaction).

Understanding why some individuals succeed despite their fear of failure is essential for deepening our understanding of how this emotion can operate in adaptive ways. The findings from this dissertation suggest that when fear of failure is represented in a motivational way, as captured by the FOFAMS, it is associated with greater goal progress, satisfaction, and psychological adjustment, as well as weaker associations with emotional distress. These correlational links indicate that perceiving fear of failure as a source of motivation may be functionally distinct from perceiving it as a paralyzing threat. While the present studies do not establish causality, they open avenues for reflection on how practitioners, teachers, and coaches might help students and athletes reframe their fear of failure in more constructive ways. Future research using experimental or longitudinal designs will be needed to test whether such reframing can indeed foster adaptive functioning and achievement.

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Statement of Co-Authorship

The three studies included in this doctoral dissertation were prepared in collaboration with my thesis supervisor, Dr. Patrick Gaudreau and other of my colleagues. The first article, entitled “Fear of Failure as Motivation: a Novel Conceptualization and Measure”, was published in the *Journal of Personality Assessment*, and all materials are available on OSF (<https://osf.io/7pvd8/>). The second study entitled “Fear of Failure as Motivation: Testing Domain-Specific Consistency and Predictive Validity Across Academic and Sport Contexts” has been submitted for peer review in *Psychology of Sport and Exercise* and is also available in Pre-print on OSF (https://osf.io/preprints/osf/74a5w_v1.) The third study, entitled “Daily Dynamics of Fear of Failure as Motivation”, has not yet been submitted for peer review.

As a first author on all three manuscripts, my role consisted of developing the studies and conceptualizing the research questions and method, reviewing the literature, preparing and submitting ethical applications, recruiting participants and conducting longitudinal follow-ups, collecting data, managing and preparing the databases for analyses, analyzing and interpreting the data, and writing the manuscripts and preparing them for publication. As second author of Studies 1 and 3 and third author of Study 2, my thesis supervisor, Dr. Patrick Gaudreau, provided guidance throughout all stages of the research projects. His contributions were especially instrumental in refining the research questions, developing the theoretical rationale and methodological approach, supporting the statistical analyses and their interpretation, and offering critical feedback during the revision of all three manuscripts.

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My thesis is dedicated to my father. His memory and spirit continue to inspire and guide me every day.

CHAPTER 1—General introduction

General introduction

Statement of the Problem: The Dual Role of Fear of Failure

Due to their high levels of competition and the predominance of worries about success and failure, sports and school serve as significant domains where achievement can be paramount. Students and athletes must meet and maintain specific academic requirements to be eligible to compete in sports teams and to receive scholarships. Despite their successes and diligent efforts, the expectations placed on them remain high, and failure is costly. From a young age, individuals in these environments are often taught that failure must be avoided at all costs (Haimovitz & Dweck, 2016). However, failures—such as losing a match or failing an exam—are inevitable and often lead to detrimental effects such as anxiety (Cassady, 2022; Jones & Sheffield, 2007), a reduction in perceived competence (Pekrun et al., 2017), decreased well-being (Steinmayr et al., 2016), and symptoms of depression (Benson et al., 2022). Moreover, the frequent experience of failure coupled with societal messages emphasizing its negative consequences can intensify the fear associated with it. This heightened fear of failure is a significant reason some students and athletes choose to disengage from challenging tasks (Sagar et al., 2007; Schwinger et al., 2022). When the perceived likelihood of success is low, disengagement becomes a protective strategy to avoid the emotional and psychological costs of failure. This avoidance is often manifested through self-sabotaging behaviors such as procrastinating or investing a minimal effort, which are rooted in uncertainties about the outcomes (Martin & Marsh, 2003).

Nevertheless, the impact of fear of failure is not homogeneous across all individuals; some can remain engaged and even thrive in the face of this fear (Conroy,

2001; Bélanger et al., 2013; Chong & Chong, 2022). It is this variability in how individuals experience fear of failure that suggests it may also have a motivational dimension, contrary to its typical portrayal as solely detrimental. Anecdotal evidence from celebrated figures like Michael Jordan (the best basketball player of his era, if not of all time), who remarked, “I know fear is an obstacle for some people, but it is an illusion to me. Failure always made me try harder next time,” underscores the potential of fear of failure to serve as a powerful motivator. However, the empirical investigation of this motivational aspect of fear of failure remains scant, representing a significant gap in the literature. There is still a need to refine how this construct is conceptualized and measured in order to capture its potential adaptive facets more accurately. Such refinement would allow future research to accumulate stronger empirical evidence and to better understand the diverse ways in which fear of failure can operate, thereby adding crucial nuance to its traditional portrayal as uniformly detrimental.

Research Goals

The overall aim of my doctoral research program is to deepen our understanding of the role of fear of failure as a key psychological factor influencing student-athletes¹ achievement in their academic and sports goals. My dissertation is divided into three main sections. The first section (Chapter 1) presents the theoretical backbone of my doctoral research, which integrates classical and contemporary theories to explore fear of failure as both a barrier and a motivator in high-performance settings. This section sets

¹The term “student-athlete” in the context of my thesis refers to a student who plays sports. The word sport implies participating in activities in which the person takes part in sport activities (practice and/or competition) by facing opponents in the context of a competition of a certain level. This definition includes an individual who is, for example, a university student who also is a provincial swimmer who trains at a civilian club in Ottawa.

the stage for the empirical studies I conducted, by detailing the dual nature of fear of failure and its potential effects on performance and well-being. The second section (Chapters 2-4) comprises three studies designed to investigate fundamental questions about the role of fear of failure in the achievement domains of academics and sports. These studies build on the newly developed Fear of Failure as Motivation Scale (FOFAMS) and employ a dual-domain framework to assess how fear of failure is associated with various outcomes. More specifically, Study 1 focuses on the development and validation of the FOFAMS, which measures the motivational aspects of fear of failure. This study aims to assess the reliability and construct validity of the scale among university students and athletes, laying the groundwork for its application in future studies. Study 2 employs a cross-sectional design to explore the relationship between fear of failure perceived as a motivator and different indicators of achievement in both academic and athletic settings. This study examines both intra-domain and inter-domain effects, providing insights into how fear of failure in one area of performance can impact another. Finally, Study 3 uses an intensive longitudinal design in which data were collected from student-athletes on multiple occasions across an 8-day period, assessing their fear of failure, achievement, and psychological adjustment. This study aims to investigate how daily fluctuations in the motivational aspects of fear of failure interact with general levels of fear and their impact on achievement and psychological adjustment. In the final chapter (Chapter 5), I discuss the key findings of my studies and their implications for practitioners, educators, and coaches as well as their contributions to the advancement of knowledge and theory.. This chapter also addresses the limitations

of the current research and proposes future research directions to further explore and use the motivational aspects of fear of failure.

Fear and Failure

Fear is a primary human emotion that affects everyone and alters both physiology and behavior. Humans experience fear when they perceive a threat, and it serves to warn them of potential bodily or psychological harm (Ohman, 2005). It might occur in anticipation of a forthcoming event or in response to a specific stimulus in the present (Adolph, 2013). There are two types of fears: those that are learned through experience or observation, and those that are innate and stem from our evolutionary past (Marks, 2013; Ohman, 2009). From an evolutionary perspective, humans who were able to manage their fear when facing dangerous situations were the ones that most likely survived and transmitted their genes (Ohman & Mineka, 2001). For example, when our ancestors had to hunt for food and they were facing life threatening dangers, their bodies rapidly reacted by activating the fight or flight response (McCarty, 2016). They either ran away from a charging animal or were fighting against it. Not only were they afraid of the animal they were hunting, but they were also afraid of failing. Repetitive failure to secure and bring food to their group meant that they would be undervalued and even rejected by their community. You are a threat to the group's resources if you are thought to be incompetent because the acquisition of resources represents survival and protection (Powers & Heatherton, 2012). To put it another way, we are afraid of the social cost of failure (i.e., whether real or perceived) just as much as the failure itself because it threatens one of our core human needs: the need to belong (Bowlby, 1969; Baumeister & Leary, 1995).

Although we no longer live in the woods and caverns, fear is still an adaptive characteristic of our emotional makeup. The contemporary challenges we face daily are less frequently a question of life or death. Today's fears are often triggered by failure – or the fear thereof – which happens when we do not achieve an ideal, an intended goal, or a desired level of success. Failure, often characterized as the antithesis of success (Webster, 2015), frequently sets the stage for phenomenologically different cognitive, motivational, and self-regulatory processes.

Success and failure play a key role across many theories of self-regulation and emotions (for a review, see Graham & Weiner, 2012). For example, Bandura's social-cognitive theory posits that mastery experiences are the strongest determinants of self-efficacy, followed by vicarious experiences of success and failure (Bandura, 1986). The self-concept theory of Marsh et al. (2012) similarly outlines the mutually building reciprocal associations between achievement and judgments about one's capacities. The causal attribution theory of Weiner (2010), the self-regulation theory of Carver and Scheier (1998), and the cognitive-motivational-relational theory of Lazarus (1991) each assert that success and failure automatically trigger positive and negative emotions, respectively, which in turn prompt attributional, self-regulatory, and coping processes. Many motivational theories also position goal-related success or failure (e.g., Heckhausen & Gollwitzer, 1987; Locke & Latham, 2013) and the fulfillment of one's need for competence (e.g., Ryan & Deci, 2017) as foundational to the development and maintenance of one's quality of motivation and optimal functioning. Overall, theories that emphasize success and failure are prevalent in the social sciences.

In achievement domains such as school and sport, failure is relatively common (e.g., poor grades, failed exams, losing a match, not attaining a goal) and is mainly associated with negative outcomes. For example, students experiencing a failure are more likely to drop out of their classes (e.g., Ajjawi et al., 2020), experience a decrease in their motivation (e.g., De Castella et al., 2013), and reduce their effort (e.g., Jevons & Lindsay, 2018). These consequences of failure can lead to a downward spiral, where students become less motivated and put in less effort, which in turn leads to more failures and decreased performance. For example, one study found that people who experience failure are more likely to give up on a task, even when they are close to succeeding (e.g., Lucas et al., 2015). In sport, losing a match can result in transient yet significant emotional impairment. For example, losing a match has been linked to increased feelings of depression, anxiety, unpleasant emotional changes, and a reduction in arousal (e.g., Fessi & Moalla, 2018; Jones & Sheffield, 2007; Wilson & Kerr, 1999). Additionally, researchers found that athletes who experience failure are more likely to experience physical symptoms such as increased heart rate and cortisol level, muscle tension, and decreased testosterone (e.g., Ayuso-Moreno et al., 2021; Kamarauskas & Conte, 2022; Villafaina et al., 2022). Failure to make a team after a selection camp or being deselected can result in reduced self-esteem and motivation (e.g., Milne & Neely, 2022). Overall, failure can have several negative effects on people's behavior, emotions, and performance.

While failure is often felt as a negative experience, some studies have found that it can have positive effects. Studies have found that students who experience failure are more likely to learn from their mistakes and improve their performance on future tasks

(e.g., Ellis et al., 2014; Palominos et al., 2022). This suggests that failure can be an important learning opportunity by providing feedback on what did not work and what can be improved. Other studies found that individuals who can redefine failure exhibit remarkable resilience even in the face of disappointments and were able to reach their goals. (e.g., Cox, 2009). Failure can be appraised in a way that allows people to persist and continue trying, even in the face of obstacles. Additionally, it has also been demonstrated that failure can lead to increased creativity and innovation (e.g., Blankschaen, 2013; Dauten & O'Donnell, 2013). In other words, after experiencing failure, individuals are more likely to generate new ideas, find creative solutions, and think outside the box. In sum, results of studies have shown that failure can foster learning, personal growth, and eventual success, as well as help individuals overcome challenges.

These contradictory results about failure could suggest that fear is a complex emotion that can be appraised differently across individuals. While some people may experience fear as a negative and overwhelming emotion, others may see it as a motivator or a sign of caution. Fear activates people to plan and prepare, so it can be used as a motivator of effort and persistence. The way that we appraise fear can have a significant impact on how we respond to it and how it affects our behavior (e.g., Maddux & Rogers, 1983).

Conceptual Frameworks of Fear of Failure

Fear of failure has mainly been conceptualized using two distinct theoretical frameworks: The classic achievement motivation theory (e.g., Atkinson, 1957; Covington, 2000) and the multidimensional model of fear of failure (e.g., Conroy et al.,

2002; Taylor et al., 2021). The classic achievement motivation theory suggests that fear of failure is a personality disposition conceptualized through a need for achievement perspective. This need for achievement captures cognitively represented self-concepts and goals (McClelland et al., 1989) and consists of two components: an approach and an avoidance tendency (Atkinson, 1957; Elliot & Church, 1997). These tendencies are operationalized as hope for success and fear of failure (Elliot, 2006), which are antagonist forms of need for achievement and are related to differentiated achievement-related behaviors. In this approach, hope for success and fear of failure are conceived as motivational tendencies that energize individuals and orient them toward positive or negative possibilities. Individuals are posited to vary in terms of their motives to avoid failure and approach success (Atkinson 1957; McClelland, 1965). Accordingly, students can be success oriented, failure accepting, or failure avoidant (i.e., fear of failure). Success-oriented students tend to be optimistic and adopt task-oriented strategies, while failure-accepting students (i.e., very minimal hope for success) are generally disengaged from tasks and lack motivation because they have given up to the point of not trying to avoid failure (Martin & Marsh, 2003). Students who fear failure are labeled failure avoidant; they experience self-doubts and lack confidence about their ability to achieve success. To protect themselves, these individuals often use self-handicapping (e.g., Elliot & Church, 2003) and counterproductive strategies such as procrastination or making minimal effort so that they have an excuse to justify themselves if they fail.

The cognitive-motivational-relational theory of emotion (Conroy, 2001; Lazarus, 1991) has also been proposed to conceptualize fear of failure. This multidimensional and hierarchical model integrates previous conceptualizations of fear of failure, holding that

fear of failure results when cognitive schemes about aversive consequences of failing are activated by situations in which failure is possible (Birney et al., 1969; Conroy, 2001). This model proposes that fear of failure consists of five sets of beliefs or threatening appraisals about the consequences of failure. Conroy (2001) developed the Performance Failure Appraisal Inventory (PFAI) to measure each of these five cognitive-motivational-relational appraisals, which can be organized in a higher-order factor that captures fear of failure.

The first factor of the PFAI includes items that characterize the fear of experiencing shame and embarrassment upon failure. Atkinson (1957) proposed that shame is the core of fear of failure. Shame is conceptualized as the reproach we feel for ourselves when we fail to meet our own standards (Lewis, 1971). The second factor is the fear of having an uncertain future, which has an evolutionary significance. When we fail, we don't know what our future holds and what consequences this entails (e.g., losing a certain status). The third factor is closely related to ego threat as it captures the fear of losing one's self-esteem. More bluntly, this is the fear of losing one's face or self-respect after a failure. The fourth factor is the fear that significant others will lose interest in them. Achievement situations typically involve social evaluations from significant others such as coaches, teachers, parents, peers, or teammates that can be stressful if anticipating failing and receiving negative feedback. Finally, the last factor relates to the fear of disappointing significant others. Accountability is important in interpersonal and intragroup relationships. Actors in achievement situations are often codependent, and the success of others partially depends on the success of everyone in a group—including the weakest link. Letting other people down has consequences not only for oneself but also

for other members of a group. Therefore, it is natural for people to fear that their failure could compromise and tarnish the success and reputation of others.

The two conceptual frameworks of fear of failure offer different yet complementary perspectives on what it means to be afraid of failing. On the one hand, fear of failure can be seen as a need to avoid failure that orients the person to make decisions about the type and nature of tasks to pursue. On the other hand, fear of failure entails a series of apprehensions about the potential personal and social consequences of failing. Together, these fears about what could happen because of failure can distract the person from the task at hand and debilitate their capacity to execute, memorize, coordinate, learn, or perform to the best of their potential. Both approaches made a valuable contribution to this literature and will therefore inform the development of my doctoral thesis research.

Fear of Failure, Psychological Outcomes, and Achievement

The psychological outcomes of fear of failure have been widely studied (Taylor et al., 2021). In fact, in the sports domain, fear of failure has been positively associated with perfectionism, burnout, shame, embarrassment, bad perception of oneself, and a reduced sense of achievement (e.g., Conroy et al., 2007, Gustafsson et al., 2017; Sagar et al., 2007). In the academic domain, it has been positively associated with procrastination, school disengagement, negative reaction to failure, self-handicapping, anxiety, and lower self-esteem (e.g., Elliot & Church, 2003; Flett et al., 1992; Haghbin et al., 2012; Martin & Marsh, 2003; Neff et al., 2005; Sagar & Stoeber, 2009; Solomon & Rothblum, 1984). In contrast, it has been negatively associated with self-compassion, intrinsic motivation, and perceived competence (Neff et al., 2005). Furthermore, studies also showed that fear of

failure is associated with increased levels of worry, cognitive disruption, somatic anxiety (Correia & Rosado, 2018), and perceived tension (De Muynck et al., 2020). Some studies have also associated fear of failure with doubts and fearing challenges that represent a chance of failure (Martin, 2002; Covington & Omelich, 2015).

Although fear of failure has been mostly associated with negative consequences, its relationship with achievement remains a major interest for researchers because the results have been largely inconsistent. Accordingly, some studies have shown that fear of failure has a negative impact on performance (e.g., Cock & Halvari, 1999), while others have shown that this is only true for challenging tasks (e.g., Lang & Fries, 2006), and yet others have claimed that fear of failure is only weakly related to performance (e.g., Elliot & Church, 1997). For example, results from a cross-sectional study involving 548 university students revealed that students who experience fear of failure had lower academic achievement (measured by their GPA; Alkhazaleh & Mahasneh, 2016). Furthermore, a study from Deneault et al. (2020) showed that fear of failure was significantly and moderately negatively associated with academic achievement ($\beta = -.22$), school satisfaction ($\beta = -.14$), and goal progress ($\beta = -.20$). More precisely, this relationship indicated that people who are afraid of failing avoid risky or challenging situations, which prevent them from reaching their goals.

Despite these negative associations, psychologists are also beginning to believe that fear of failure can function as a positive force. On the theoretical side, the theory of fear appeals (Maddux & Rogers, 1983) offers empirical support on how fear can be used to motivate people to initiate actions. It suggests that people are more likely to take action to avoid a negative outcome if they are presented with a fear-inducing message that is

relevant to them and that they believe they can do something about (for a review see Tannenbaum et al., 2015). Questionnaires measuring fear appeals in education entail asking students if they will work harder if their teacher tells them that they will fail their exams if they do not study enough (Putwain & Symes, 2014). Results of studies, examining fear appeals in the education domain, revealed that, when students appraise the situation as a challenge, more frequent fear appeals predicted better performance because students are engaging themselves more in the task (Putwain & Symes, 2016; Putwain et al., 2017). In other words, motivating students with fear (i.e., the scare tactic; Flintcroft et al., 2017) allows them to engage more in the task to avoid failure.

On the empirical side, evidence suggests the possibility of both motivating and inhibitory responses to fear of failure, meaning that the relationship of fear of failure and performance could be positive for some individuals, under certain circumstances. For example, a study conducted with the participants of a very popular cooking TV show revealed that fear of failure was associated with an increase of two to four positions in the final ranking of the competition (Chong & Chong, 2022). A study conducted by Bélanger and colleagues (2013) also demonstrated that fear of failure is positively correlated to performance for people who are obsessively passionate about an activity. Additionally, a study conducted in the workplace revealed that fear of failure can indeed be motivating when an individual's standards for success are high (Morgan & Sisak, 2016). These results suggest that fear of failure may motivate people to engage and perform well in important tasks when the stakes are high. Overall, the relationship between achievement and fear of failure is complex and varies depending on a wide range of factors, such as the nature of the goal, the individual's coping strategies, and the individual's mindset.

The inconsistent results may mask an underlying mechanism in which fear of failure can be motivating for some people.

Mindset About Failure

Fear of failure is made of two constituents: fear and failure. Despite being aversive, fear can be motivating. It can help to initiate actions (e.g., move from inaction to action) while orienting actions to reduce the discrepancy between current and desired states. Similarly, failure can be stimulating. It can initiate a process of self-reflection and logical analysis designed to orient actions toward self-improvement. Making mistakes and failing at a task can provide valuable feedback to inform the learning process. Given their inherent interrelations, fear and failure can interact in ways that reshape one another, giving rise to mental representations about the potential usefulness of fearing failure. Such a dialectic can transform the meaning attached to fear of failure, creating novel mental representations about its motivating properties. As a result, fear of failure could be perceived as stimulating by some individuals under certain circumstances.

The idea that a negative property (e.g., anxiety, shyness) can be reappraised or mentally reconstrued into of more positive mindset or mental representation is not limited to fear of failure. Irvin Sarason (1984) proposed a pioneering conceptualization in which anxiety symptoms could be reappraised or reconstrued as facilitative rather than debilitating. Based on more contemporary development in mindset research, scholars have more recently studied lay beliefs or mental representations about other negative experiences, such as stress (e.g., Crum et al., 2017; Crum et al., 2020; Jamieson et al., 2018), anger (Ray et al., 2008), and failure experience (e.g., Haimovitz & Dweck, 2016). Our capacity to reappraise, reconstrue, and re-channel our negative emotions and

experiences is now considered a hallmark of human adaptation, resilience, and optimal functioning (Yeager & Dweck, 2012).

This Doctoral Dissertation

In today's achievement-focused society, a negative connotation is usually attached to the fear of failure construct. Fear of failure needs to be viewed not only as having an inhibiting effect on achievement behavior, but also as potentially having a motivational effect. Mental representations about fear of failure have yet to be explored. In my dissertation, my general goal was to understand whether perceiving fear of failure as a motivation could help achieve success and better psychological adjustment. This is important because it could reconcile the divergent viewpoints about fear of failure and unpack the potential of fear of failure to be rechanneled into a motivational force. To attain this goal, I conducted three studies. In Study 1, I developed a new measure that captures the motivating aspect of fear of failure. Secondly, I validated this measure with university students and athletes. In Study 2, I explored a dual-domain framework (i.e., school and sports) that investigated the relationship between the perception of fear of failure and indicators of achievement. This cross-sectional study evaluated intra-domain effects (e.g., perception of fear of failure in sports influences goal progress in sports) and inter-domain effects (e.g., perception of fear of failure in sports influences goal progress at school) of the main variables of my doctoral thesis. Finally, in Study 3, I used a daily diary design to collect multiple data points on student-athletes' experiences of fear of failure, achievement, and well-being. This approach allowed for the examination of how fear of failure as motivation relates to achievement and psychological adjustment at both the between-person and within-person levels. Specifically, at the between-person level, I

aimed to determine whether student-athletes who generally perceive fear of failure as a source of motivation exhibit greater progress towards their goals, higher levels of satisfaction, and lower levels of anxiety and depression. Additionally, at the within-person level, I investigated whether daily variations in fear of failure as motivation were associated with daily measures of goal progress, satisfaction, anxiety, and depression. Furthermore, I explored a cross-level interaction to examine whether a general fear of failure moderates the relationship between daily fear of failure as motivation and these dependent variables within my model. The specific hypotheses and methods of each study will be presented in the following sections of my thesis.

CHAPTER 2

Fear of Failure as Motivation: A Novel Conceptualization and Measure

Laurence Boileau, Patrick Gaudreau & Philippe Pétrin-Pomerleau

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Author's Contributions Statement CRediT

Laurence Boileau: Conceptualization (equal); data curation (equal); formal analysis (lead); investigation (lead); methodology (equal); project administration (lead); software (lead); validation (lead); visualization (lead); writing- original draft (lead); writing- review editing (equal).

Patrick Gaudreau: Conceptualization (equal); data curation (equal); formal analysis (supporting); investigation (supporting); methodology (equal); project administration (supporting); software (supporting); validation (supporting); visualization (supporting); writing- original draft (supporting); writing- review editing (equal).

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Abstract

The Fear of Failure as Motivation Scale (FOFAMS) addresses the motivational role of fear of failure, which existing measures typically overlook in favor of its negative effects. FOFAMS was developed using a rational-theoretical approach to fill this gap, offering a new tool for examining this aspect in achievement contexts. Two studies examined the scale's psychometric properties. Study 1 involved item development and an exploratory factor analysis, refining the scale by removing conceptually and psychometrically weaker items. Study 2, with samples of students ($N = 385$) and sports participants ($N = 382$), supported the unidimensional structure through confirmatory factor analysis and contributed evidence supporting the scale's construct validity. FOFAMS showed significant correlations with other constructs hypothesized to relate to fear of failure as motivation. This questionnaire provides a unique perspective, enhancing the understanding of fear of failure's positive influences on goal pursuit and achievement, and contributing to the broader nomological network of this construct.

Keywords: Fear of failure, motivation, development, validation

Fear of Failure as Motivation

Humans possess the capacity to transform negative emotions and experiences into motivational drivers (e.g., Crum et al., 2020; Lench et al., 2023). Fear, a universal emotion, often triggers actions and preparedness, serving as a critical source of motivation (e.g., Tannenbaum et al., 2015). Specifically, the concept of fear of failure has been recognized by some psychologists as a positive force (e.g., Cacciotti et al., 2016; Gupta et al., 2021; Vealy, 2008), with its potential for motivation aligning with broader psychological theories that emphasize the role of perceptions and beliefs in shaping behavior, such as those proposed by Bandura (1986) in his discussions on self-efficacy and by Haimovitz and Dweck (2016) in their work on mindsets. Despite its theoretical acknowledgment, the motivational dimensions of fear of failure have been empirically neglected, primarily due to the absence of an appropriate measurement tool.

To address this gap, we developed a questionnaire that captures mental representations of four closely interrelated motivational properties of fear of failure, each inspired by a different stage of the goal striving process in achievement contexts. These properties include volitional control (i.e., how this mental representation increases effort and determination to pursue goals; e.g., Sagar et al., 2010); learning from mistakes (i.e., how setbacks foster reflective thinking and improved strategies; Kapur, 2008); performance (i.e., how this representation enhances preparation and striving for excellence; Hunter et al., 2021); and overcoming/coping (i.e., how it builds resilience to cope with challenges and setbacks; Galli & Vealy, 2008). These four properties represent distinct yet complementary ways in which fear of failure can function as a motivational driver throughout the goal-striving process. While they encompass both cognitive and

behavioral elements, these properties are unified under by the idea that the mental representation of fear of failure can facilitate adaptive functioning in achievement settings.

This study seeks to fill this gap by developing and validating the Fear of Failure as Motivation Scale (FOFAMS), designed to operationalize the concept as a dynamic mental representation, specifically, a way of mentally framing fear of failure as a source of motivation for goal pursuit. Across two studies involving three distinct samples, we explored the psychometric properties of FOFAMS, situating it within the broader nomological network of fear of failure (see Figure 1 for hypothesized model). External criteria for this study were selected based on their theoretical link to fear of failure and their prevalent use in achievement-related research. These measures capture various facets of motivation and performance that are either directly influenced by or related to fear of failure and are commonly used in academic (e.g., Alkhazaleh & Mahasneh, 2016; Elliot & McGregor, 2001) and sports contexts (e.g., Sagar et al., 2010). These external measures were chosen to provide robust evidence for the scale's convergent and discriminant validity, contributing to the ongoing validation of the idea that the facilitative perception of fear of failure is distinct from the extent to which an individual experiences fear of failure. This distinction is critical as it underscores the unique contribution of FOFAMS to understanding how fear of failure can be reinterpreted as motivational rather than an inhibitive force.

Current Conceptual Frameworks of Fear of Failure

Fear of failure has mainly been conceptualized from two distinct theoretical frameworks: classical achievement motivation theory (Atkinson, 1957; Covington, 2000)

and the multidimensional model of fear of failure (Conroy et al., 2002). The classical theory of achievement motivation suggests that the need for achievement, as conceptualized by McClelland et al. (1989), involves self-concepts and goals that individuals mentally represent. This need comprises two facets: an approach orientation and an avoidance orientation. The approach orientation reflects a tendency to strive for success and positive outcomes, while the avoidance orientation reflects a concern with avoiding failure and its negative outcomes (Atkinson, 1957; Elliot & Church, 1997). These two orientations can co-exist within the same individual and interact in complex ways, illustrating how people may be simultaneously driven by the pursuit of success and the desire to avoid failure. Within this framework, hope for success fuels optimism and proactive efforts towards achieving desired outcomes, while fear of failure instigates anxiety and avoidance behaviors to prevent negative consequences (Lang & Fries, 2006). This model highlights the dynamic interplay between motivational forces and suggests that individuals vary in the degree to which they are explicitly motivated to strive for success versus avoid failure.

A second model, the cognitive-motivational-relational theory of emotion, (Conroy, 2001; Lazarus, 1991) has more recently been introduced as a different way to conceptualize fear of failure. This comprehensive and hierarchical model brings together earlier understandings of fear of failure and suggests that fear arises when cognitive patterns concerning the negative outcomes of failing are triggered by situations where failure is a possibility (Birney et al., 1969; Conroy, 2001). According to this model, fear of failure comprises five sets of beliefs or evaluations about the potential consequences of failure. Conroy (2001) developed the Performance Failure Appraisal Inventory (PFAI) to

assess each of these five cognitive-motivational-relational evaluations (e.g., fear of experiencing shame and embarrassment, fear of having an uncertain future, fear of losing one's self-esteem, fear that important others will lose interest, and fear of disappointing significant others), which can be organized into a higher-order dimension that represents fear of failure.

The two research traditions on fear of failure offer distinct yet complementary viewpoints on what it means to fear failure. On the one hand, fear of failure can be viewed as a desire to steer clear of failure, influencing an individual's choices regarding the types and characteristics of tasks they pursue. For example, people with elevated fear of failure have been shown to prefer easy tasks (i.e., failure is less probable) and very difficult tasks (i.e., everyone will likely fail) to protect themselves from the aversive consequences of failing. On the other hand, a cognitive approach sees fear of failure as a set of concerns related to the potential personal and social consequences of failing. Each of these concerns about the potential outcomes of failure can divert a person's attention away from the current task and hinder their ability to effectively carry out, remember, coordinate, learn, or perform to the best of their abilities. Despite their differences, a rallying point of these two traditions is the view that fear of failure is predominantly debilitating.

Fear of Failure and Achievement

Fear of failure is often seen as part of a conundrum of self-handicapping through which people withdraw their efforts to protect themselves against the negative consequences of failure (Schwinger et al., 2022). While these negative impacts are well established, it is also assumed that fear of failure is a strong and consistent negative

predictor of achievement in sports (for review see Taylor et al., 2023) and in school (e.g., Alkhazaleh & Mahasneh, 2016; Elliot & McGregor, 2001; Hulleman et al., 2010).

However, a closer look at this literature reveals that the association between fear of failure and achievement is far more complex than initially envisioned. Negative associations have been found between fear of failure and performance (Cock & Halvari, 1999; Kollmann et al., 2017). Nevertheless, this negative relationship has not been consistently observed. Null and negligibly small associations (i.e., $r < .10$) have been reported more frequently than expected (e.g., Deneault et al., 2020; Tu et al., 2023).

Some research also suggested that fear of failure's detrimental effect is primarily evident in challenging tasks (e.g., Lang & Fries, 2006), while others revealed a weak association between fear of failure and performance (e.g., Elliot & Church, 1997). This variability in findings has spurred growing interest in the possibility that fear of failure may not universally impede performance. Recent investigations (e.g., Cacciotti et al., 2016; Gupta et al., 2021) found that under certain circumstances, fear of failure might serve as a positive motivator. To challenge the prevailing assumption that fear of failure uniformly has a negative impact, a more precise examination of these circumstances is needed.

The exploration of fear of failure's multifaceted impact on performance dovetails with theoretical frameworks such as the theory of fear appeals (Maddux & Rogers, 1983), which offer both theoretical grounding and empirical insights into the motivational potential of fear. While existing research demonstrated the varied effects of fear of failure, theoretical perspectives like fear appeals shed light on how fear can serve as a motivational force, particularly in educational settings (Putwain & Symes, 2014; Putwain et al., 2016, 2017). The theory of fear appeals offers theoretical and empirical support for

the idea that fear can motivate individuals to take action and enhance their performance. It suggests that when individuals are presented with a fear-inducing message that is personally relevant and they believe they have the ability to do something about it, they are more likely to take proactive actions. Instead of simply avoiding negative outcomes, individuals are driven to excel and achieve better outcomes. This perspective suggests that fear can be harnessed as a catalyst for improvement rather than solely as a means of evasion (for review, see Tannenbaum et al., 2015). Questionnaires measuring fear appeals in education consist of asking students if they will work harder if the teacher tells them that they will fail their exams if they don't study enough (Putwain & Symes, 2014). Results of studies that looked at fear appeals in the education domain revealed that when students appraise the situation as a challenge, more frequent fear appeals predicted better performance because students are engaging themselves more in the task (Putwain & Symes, 2016; Putwain et al., 2017). In other words, motivating students with fear (Flintcroft et al., 2017) allows them to engage more in the task to maximize the likelihood of success.

From an empirical standpoint, available evidence indicates that fear of failure can elicit both motivational and inhibitory responses. This implies that the connection between fear of failure and performance may be positive for specific individuals in particular circumstances. To illustrate, a recent study found that fear of failure was linked to a rise of two to four positions in the final rankings of a highly popular cooking show (Chong & Chong, 2022). Furthermore, research conducted by Bélanger and colleagues (2013) demonstrated a positive relationship between fear of failure and performance, particularly among individuals who are passionately dedicated to an activity.

Additionally, a study in the work domain revealed that fear of failure can serve as a motivator, particularly when an employee has high standards for success (Morgan & Sisak, 2016). Indeed, studies in the work domain are increasingly pointing to the motivating and facilitating aspects of fear of failure for enhancing performance (Cacciotti et al., 2016). These findings suggest that fear of failure can encourage individuals to engage in and excel at important tasks, especially when the stakes are high and they feel competent (e.g., Rice et al., 2009; Wiggins-Dohlvik et al., 2009). By considering these theoretical underpinnings alongside empirical findings, a more nuanced understanding of fear's role in performance emerges, challenging the conventional view of fear of failure as uniformly inhibiting. In summary, the relationship between fear of failure and achievement is intricate and varies depending on various factors, such as the nature of the goal and an individual's coping strategies. These inconsistencies suggest that past theories and studies may have missed an underlying mechanism where fear of failure can serve as a source of motivation for certain individuals.

Reframing Fear of Failure

Fear of failure is composed of two constituents: fear and failure. Despite being aversive, fear can be motivating. It can help to initiate and guide actions to reduce discrepancy between one's current and desired states (e.g., Elliot & Church, 1997). Similarly, failure can be enhancing. It can initiate a process of self-reflection and logical analysis designed to orient actions toward self-improvement (e.g., Haimovitz & Dweck, 2016). Making mistakes and failing at a task can provide valuable feedback to inform the learning process. Given their constituent associations, fear and failure can form a synergy capable of reshaping each other to produce a set of mental representations about the

usefulness of fear of failure. Such an interaction can reshape the meaning attached to fear of failure to create novel mental representations about its motivating properties. As a result, fear of failure could be perceived as enhancing by some individuals under certain circumstances.

The notion that a negative attribute (e.g., anger, anxiety, doubts, shyness) can be reframed or mentally reinterpreted in a more positive context extends beyond the realm of fear of failure. In the early 1970s, Hans Selye introduced the idea that stress could be positive (i.e., eustress) and would stimulate an individual to feel happy or motivated. Alpert and Harber (1960) also introduced an early conceptualization in which symptoms of anxiety could be reevaluated or reconstructed to be viewed as helpful rather than debilitating. Drawing from contemporary developments in mindset research, more recent investigations have explored individuals' lay beliefs or mental representations concerning other adverse experiences like stress (e.g., Crum et al., 2017; Crum et al., 2020), anger (Ray et al., 2008; Lench et al., 2023), bullying (e.g., Burke et al., 2016; Ravelo et al., 2022), trauma (Jayawickreme et al., 2021), and encounters with failure (e.g., Haimovitz & Dweck, 2016). Inspired by this research tradition, we established a research program aimed at developing and validating a questionnaire. This tool is designed to measure the extent to which individuals recognize and leverage the motivational benefits of fear of failure. Our study's goals included (a) the creation of a questionnaire to assess this facilitating perception, and (b) the validation of the tool through two distinct samples: students and sports participants.

Aims of the Present Studies

Fear of failure assessment tools have traditionally focused on the aversive feelings about the adverse consequences an individual might encounter following a failure. Additionally, these fear of failure questionnaires lack items that explore the mental representations of motivating role that fear of failure can exert in achievement contexts. The first objective of our research was to develop a scale assessing the perception of fear of failure as motivating in achievement domains. In Study 1, we recruited a sample of students to evaluate this concept using the newly developed FOFAMS. We had three specific goals: (a) developing a pool of items to measure fear of failure as motivation (see Table 2.1), (b) conducting exploratory factor analysis to determine the factor structure and internal consistency of the FOFAMS, and (c) estimating correlations between the FOFAMS and external criteria.

In Study 2, two samples were recruited to evaluate the validity of the FOFAMS. Our evaluation involved several steps. First, we used confirmatory factor analysis (CFA) to evaluate the factor structure of the scale. Second, we examined the associations of the FOFAMS with (a) similar constructs (i.e., convergent validity), (b) concepts that can be antecedents, processes, or consequences related to fear of failure as motivation (i.e., concurrent validity), and (c) constructs that should be more weakly associated or unrelated to the measure (i.e., discriminant validity). Finally, we assessed incremental validity to examine whether the FOFAMS remains significantly associated with achievement outcomes after controlling for a more general measure of fear of failure. The FOFAMS was developed to be applicable across different achievement domains and all these analyses were replicated in samples of students and sports participants.

Ethics Statement. Each study in this manuscript was approved by the Health Science and Science Ethic Research Board of the University of Ottawa (Project H11-22-8681 for Study 1, Sample 1; and Project H-04-23-9040 for Study 2, Samples 1 and 2). All participants provided informed consent. All measures and any participant exclusions have been disclosed. All data, codes, syntax, and materials such as questionnaires and recruitment texts are available on the Open Science Framework (<https://osf.io/7pvd8/>).

Study 1

Development of the FOFAMS

In Study 1, we used a top-down theory-based approach to develop the FOFAMS. We created items that matched our theoretical definition of the motivational properties of fear of failure, inspired by various aspects of the goal-striving process in different achievement domains (Hill et al., 2022; Simms, 2008; Lee et al., 2003; Ntoumanis et al., 2014; Sheldon & Elliot, 1999). Items were designed to be concise and clear, suitable for a sixth-grade reading level as recommended by the American Medical Association (Weiss, 2015) and adhering to a Flesch-Kincaid grade level of 4.10 (Flesch, 1948), avoiding double-barreled items and colloquial language. Initially, 16 items were generated, allowing for extensive conceptual coverage (see Table 2.1).

Six experts in personality/social psychology reviewed these items for clarity and instructional quality, providing feedback to enhance readability and conceptual specificity. These items were categorized into four conceptual domains: volitional control/effort, learning, performance, overcoming/coping ensuring comprehensive representation of the construct (Simms, 2008). All feedback was considered, but no items were removed at this exploratory stage.

Correlations with external criteria—academic satisfaction, goal progress, and mindset about failure—were estimated to validate the FOFAMS. These criteria were chosen due to their relevance to motivational dynamics in academic and achievement settings, reflecting the scale's efficacy in capturing essential educational outcomes and the ways in which individuals manage challenges, which aligns with the broader literature on achievement motivation (Elliot & McGregor, 2001). These measures provide evidence for the scale's validity by demonstrating its ability to capture related but distinct constructs.

Method

Participants

This study was part of a larger project (Project H11-22-8681) in which half of the participants ($N = 149$ university students recruited on Prolific Academic)² were randomized into a leg of the survey in which they completed the FOFAMS. They were between 18 and 46 years old ($M = 22.54$; $SD = 4.88$) and 56.9% described themselves as female (42.4% male, 0.7% other gender identity). They identified their ethnic background as European/White (53.7%), Black (4.7%), East Asian (13.4%), South Asian (14.1%), Middle Eastern (0.7%), Hispanic/Latino (6%), mixed (6.7%) and other (.7%). A small monetary compensation (1.80£) was offered to participants for approximately 10-12 minutes of their time.

Measures

Participants answered socio-demographic questions and completed the FOFAMS. Items followed the order indicated in Table 2.1. Participants responded to each item of

² For factor analysis, a common rule of thumb is 5 to 10 respondents per item (Goretzko et al., 2021), which suggests that a sample size between 80 and 160 is appropriate for 16 items.

the 16 items after reading the following instruction: “It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fear of failure. On a scale from 1 (*not at all*) to 7 (*totally*), please rate how much you agree with each of the following statements about fear of failure”. Items were preceded with the stem “My fear of failure motivates me to ___”. All items were rated on the following seven-point agreement scale. In this study, the instructions were tailored to capture the motivating aspect of fear of failure in general. However, the instructions can be tailored to a specific context (e.g., academic, sport).

Academic Satisfaction

Academic satisfaction was assessed with the 8-item school satisfaction subscale of the Multidimensional Students’ Life Satisfaction Scale (SLSS; Huebner et al., 2002). Each participant rated the extent to which items corresponded to how they feel about school on a scale from 1 (*not at all*) to 7 (*totally*). This measure contains three negatively worded items whose scores were reversed to create positively valanced scores of academic satisfaction. Evidence supporting the factor structure of the academic satisfaction subscale has been reported in prior research (e.g., Gaudreau, et al., 2015). Previous studies have also demonstrated excellent reliability for this scale ($\omega = .96$) (e.g., Boileau et al., 2021).

Goal Progress

Perceived goal progress for academic and sport were respectively measured with five items on a scale from 1 (*Not at all*) to 7 (*Totally*). Sample items are as follows: Please rate the extent to which “*you progressed on your goals*” and “*you came closer to*

reaching your goals” (e.g., Carraro & Gaudreau, 2015; Dugas et al., 2012). Previous studies showed excellent reliability for this scale (e.g., Gaudreau et al., 2012) with standardized factor loadings ranging from .90 to .94 ($\omega = .97$) for academic (Chamandy & Gaudreau, 2022) and sports goal progress ($\alpha = .90$) (Kinoshita et al., 2022).

Mindset About Failure

Mindset about failure was assessed using a six-item scale (e.g., “Failure has positive effects on me, and it should be used as a motivation”). Participants rated the extent to which each item corresponded to their perception of failure on a scale from 1 (not at all) to 6 (totally). Two composite scores were created: one reflecting a “failure-is-enhancing” mindset and the other reflecting a “debilitating” view of failure. For the “failure-is-enhancing” score, the responses were averaged. Items related to the debilitating view of failure were reverse-scored, with higher scores indicating a stronger perception of failure as harmful to learning and performance. The scale demonstrated reliable internal consistency (Cronbach’s $\alpha = .88$).

Results

Distribution characteristics (*M*, *SD*, *skewness*, *kurtosis*) of each item are presented in Table 2.2. All items showed acceptable skewness (i.e., < 1) and kurtosis (i.e., < 1.5), thus indicating that they were all amenable to factor analysis despite their small deviation from a normal distribution (e.g., Cain et al., 2017). Composite reliability (Omega, ω) was calculated in SPSS. Results provided evidence for the internal consistency of the score (FOFAMS $\omega = .93$). These results supported the hypothesis that the FOFAMS can produce internally consistent scores.

Factor Analyses

An exploratory factor analysis (EFA) was conducted in JASP (version 14) to determine the optimal number of factors for the FOFAMS model. We primarily used the weighted least squares mean and variance adjusted (WLSMV) estimator to examine the FOFAMS scores, treating them as ordinal to align with recommendations for categorical data analysis (Barendse et al., 2015)³ We tested models with two, three, and four factors, applying an oblique rotation (i.e., oblimin) to allow for correlations between factors. New factors were retained only if they explained a substantial amount of unique variance (greater than 5%). The results showed that a one-factor model best explained the correlations between the 16 FOFAMS items. Specifically, the one-, two-, three-, and four-factor models explained 75%, 77%, 79%, and 80% of the variance, respectively. Both the scree plot and the 95th quantile of simulated eigenvalues supported a one-factor solution (see Figure 2.2). All primary loadings were above .65⁴, with item 8 showing the lowest loading (.65) and a uniqueness of .57, suggesting that this item might be tapping into a different construct (see Table 2.2). We also examined the inter-item correlation matrix and identified items with correlations greater than .85, which were removed to reduce redundancy (Clark & Watson, 2019; Rosenbusch et al., 2020). After removing items 6, 8, 9, 11, 13, 14, and 15, we reran the analysis. The one-factor model now explained 75.3% of the variance, with all loadings exceeding .80. Overall, these results supported the hypothesized one-factor structure for the FOFAMS. The nine items retained for subsequent validation are shown in Table 2.3.

³ Principal axis factoring (PFA) was also conducted as a robustness check, treating FOFAMS scores as continuous. This was done to assess whether the factor structure held across different estimation approaches. The results were consistent across both PFA and WLSMV estimators, meaning they produced the same one-factor solution with similar loading patterns.

⁴ For guidelines on factor loadings in scale development, refer to Flora and Flake (2017), who discuss the interpretation of loadings above .60 as indicative of strong factor associations in psychological research

Correlation Analyses—External Criteria

We estimated the correlations between the FOFAMS and external criteria selected for the pilot study. The results supported our construct validity hypothesis, with FOFAMS scores positively and significantly correlated with failure as facilitative ($r = .43, p < .001$) and negatively correlated with failure as debilitating ($r = -.27, p < .001$). According to commonly used interpretive cutoffs (e.g., Fritz et al., 2012), the correlation between FOFAMS and failure as facilitative reflects a moderate effect size, while the correlation with failure as debilitating represents a small-to-moderate effect size. Additionally, FOFAMS was positively correlated with academic satisfaction ($r = .37, p < .001$) and goal progress ($r = .50, p < .001$), which show large effect sizes (e.g., Johnson & Boynton, 2008). The correlation between FOFAMS and general fear of failure was not significant ($r = .07, p = .384$).

Brief Discussion

Study 1 provided initial evidence supporting the factorial structure and reliability of scores from the FOFAMS—the first questionnaire specifically designed to assess the mental representation of fear of failure as motivation. The results of the exploratory factor analysis (EFA) supported the unidimensional model, with all 16 items loading onto a single factor. Based on item redundancy (inter-item correlations $> .85$), seven items were removed, resulting in a refined 9-item scale. Despite being grounded in four interrelated motivational properties, the data supported a cohesive, single-factor model, aligned with our conceptualization of fear of failure as a unified motivational representation. The scale, now consisting of nine items, maintains a balanced representation of the four domains, with two items allocated to three of the domains, and

three items allocated to the coping domain (see Table 2.3 for items allocation). The 9-item version of the FOFAMS was found to have strong factor loadings and a high composite reliability, making it suitable for subsequent validation endeavours.

Study 2

We developed the FOFAMS to be applicable across many achievement domains (e.g., school, sports, work, art). Our goal in Study 2 was to pursue and extend the validation of the FOFAMS using confirmatory factor analysis (CFA) across two life domains: school and sports. First, we wanted to replicate the unidimensional factor structure of the FOFAMS using CFAs with university students (Sample 1) and sports participants (Sample 2). Second, we examined the construct validity of the scale. We hypothesized that perceiving fear of failure as motivating would be positively correlated with failure as facilitative (i.e., mindset about failure subscale), hope for success, and worry as motivation. Overall, the effect of perceived fear of failure as motivating should be stronger when predicting scales that are conceptually linked with fear of failure as facilitative. These findings would support the convergent validity of the new scale (Lambert & Newman, 2023). Conversely, in our test of discriminant validity, we hypothesized that the FOFAMS would be weakly associated with the extent to which someone fears failing measured by the Performance Failure Appraisal Inventory (Conroy, 2001) and the subscale of fear of failure in the Achievement Motives Scale (Lang & Fries, 2006). As for the concurrent validity hypothesis, being motivated by fear of failure should be positively related to goal progress, satisfaction, optimism, passion, autonomous motivation, and resilience (see Figure 1 for hypothesized model). Finally, we tested incremental validity by examining whether fear of failure as motivation predicts goal

progress and satisfaction after controlling for fear of failure. This approach supports the hypothesis that the motivational functions captured by FOFAMS are distinct from, and add predictive value over, the extent to which an individual experiences fear of failure. Similar results should be found in both the samples of students and sports participants.

Method

Participants

Sample size

Two samples were recruited to validate the FOFAMS with students (sample 1) and sports participants (sample 2). Two aspects were considered to select the appropriate sample size. First, we considered the required sample size for the construct validity hypotheses (e.g., correlations). Based on our first study, a medium to strong correlation ($r = .25$) was expected and required to support hypotheses of concurrent validity. We used the G*Power software to estimate the required sample size given statistical power of .80, two-tailed statistical significance ($p < .05$), and effect size ($r = .25$; $f^2 = .026$) in a linear regression (i.e., FOFAMS as a predictor). A sample of at least 125 participants was needed to avoid false negative effects (i.e., type II errors). We also expected that 5-10% of the sample may respond to the survey in a lenient manner, which is the typical number of participants excluded from statistical analyses in online studies (Fleischer et al., 2015). Second, we considered the needed sample size to conduct factor analyses on the scores on the FOFAMS. As a rule of thumb, a sample size of $N = 200-400$ can produce trustworthy estimates in CFAs (e.g., Lambert & Newman, 2023). We recruited two samples of 400 participants (i.e., university students and sport participants). Each sample completed

socio-demographic questions, the FOFAMS, and measures assessing mindsets about failure, goal progress, and satisfaction. Once this section of the questionnaire was completed, participants (50%; $n = 200$) were randomized in one of two independent legs of the survey in which they respectively completed additional questionnaires. This approach reduced participants' burden (keeping the survey shorter; 10-12 minutes), maximized quality responding, and allowed us to test all our hypotheses. Overall, the full sample size was sufficiently large for the factor analyses, and the two subsamples were adequately powered to examine associations relevant to the construct validity of the FOFAMS.

Sample 1

We recruited university students on Prolific Academic. A total of 400 students participated in the study but 15 multivariate outliers were removed from our analyses (Mahalanobis $\chi^2 > 27.92$, $df = 9$, $p < .001$). A final sample of 385 participants was analyzed. They were between 18 and 70 years old ($M = 26.40$; $SD = 9.16$) and 52.7% described themselves as female (45.7% male, 1.3% other). They identified their ethnic background as European/White (64.9%), Black (6.5%), East Asian (7%), South Asian (9.6%), Middle Eastern (1.8%), Hispanic/Latino (3.6%), African (.8%), mixed (4.9%) and other (.8%). A small monetary compensation (1.80£) was offered to participants for approximately 10-12 minutes of their time.

Sample 2

We recruited a sample of 400 sports participants on Prolific Academic, but we removed six participants who failed to correctly answer one of our five attention checks and 12 multivariate outliers (Mahalanobis $\chi^2 > 31.75$, $df = 9$, $p < .001$). A final sample of

382 participants was analyzed. They were between 18 and 70 years old ($M = 37.50$; $SD = 12.38$) and 62.6% described themselves as male (37.2% female, 0.3% other). They identified their ethnic background as European/White (80.4%), Black (4.2%), East Asian (4.7%), South Asian (5.2%), Middle Eastern (.8%), Hispanic/Latino (1.3%), African (.5%) or mixed (2.6%) and other (.3%). Most participants were engaged in recreational-level sports (72.8%). A small monetary compensation (1.80£) was offered to participants for approximately 10-12 minutes of their time.

Measures

Fear of failure as motivation was measured using the FOFAMS. A total of 11 variables were assessed using reliable and valid instruments to evaluate the convergent, discriminant, and concurrent validity of the FOFAMS (see Figure 1). These measures are summarized in Table 2.4 and more detailed descriptions are presented in Appendix B. For the nine items selected for validation of the FOFAMS, see Table 2.3⁵. The items and instructions were tailored to both sports and academic settings to ensure contextual relevance and clarity, with specific adaptations made where necessary to reflect the nuances of each domain.

Plan of Analysis

First, we assessed the reliability of the measure and tested the measurement model with CFA. We cautiously evaluated the hypothesized model using commonly fit indices. The Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of

⁵ Item 9 in the validation version was slightly modified from its original form as item 12 in the exploratory version, based on insights gained during the pilot study.

Approximation (RMSEA)⁶, and Standardized Root Mean Square Residual (SRMR) were considered. We employed the mean- and variance-adjusted weighted least squares (WLSMV) estimator, which treats scores as ordinal. This approach is highly recommended for analyzing Likert scales, offering more appropriate handling of ordinal data than other methods (e.g., Bovaird & Koziol, 2012; Sellbom & Tellegen, 2019). We also tested the construct validity of the FOFAMS with bivariate correlations. Finally, we tested the incremental validity of the FOFAMS using a multiple regression. Analyses were performed in Mplus 8.5 (Muthén & Muthén, 1998-2021).

Results

Confirmatory Factor Analysis

Sample 1: Students

The fit of the one-factor model was acceptable (e.g., TLI = .949; see Table 2.5). The standardized factor loadings were strong and ranged from .773 to .917, indicating that all items were good indicators of the FOFAMS latent variable. The χ^2 was significant, and we explored potential sources of model misspecifications. Based on the modification indices, the model could be improved by correlating the residuals of four pairs of adjacent items (item1-2, item2-3, item7-8, item8-9; see Table 2.6). However, we erred on the side of prudence and did not make post hoc modifications to this model before determining if similar modifications were suggested in our second sample⁷.

Sample 2: Athletes

⁶ While RMSEA is reported, interpret with caution as it may favor models with smaller loadings and can indicate weak measurement quality (McNeish et al., 2018).

⁷ A revised model would provide an improved fit: $\chi^2 = 125.617$, $df = 23$, $p < .001$, CFI = .990, TLI = .984, RMSEA .108, 90% CI = [.090, .126], SRMR = .017

The fit of the one-factor model was acceptable (e.g., TLI = .972; see Table 2.5). The standardized factor loadings were strong and ranged from .777 to .885, indicating that all items were good indicators of the FOFAMS latent variable. The χ^2 was significant, and we explored potential sources of model misspecifications. The model could be improved by correlating the residuals of one pair of adjacent items (item 8-9; see Table 2.6).

Model Optimization: Sample 1 and Sample 2

Only one pair of correlated residuals (i.e., item 8-9) emerged as a potential area of model improvement in both samples. Allowing this correlation would improve the fit of the model in the sample of students (fit indices) and the sample of athletes (see Table 2.5). The size of the correlated residuals was substantial in both samples (students, $r = .125$; athletes, $r = .130$). Allowing these items to correlate could indicate that these items are too similar (e.g., more similar to one another than with other items). Alternatively, this correlation could be a methodological nuisance due to their adjacent positioning in the questionnaire. We decided to delete item 9 because responses to this item (i.e., the last of the questionnaire) could not influence the responses to earlier responses to other items from the FOFAMS. The fit of the 8-item one-factor model was acceptable in the student sample (e.g., TLI= .978; see Table 2.5). The standardized factor loadings were strong and ranged from .775 to .918 (see Table 2.5), indicating that all items were good indicators of the FOFAMS latent variable. The fit of the 8-item one-factor model was acceptable in the sport sample (e.g., TLI= .958; see Table 2.5). The standardized factor loadings were strong and ranged from .781 to .886, indicating that all items were good indicators of the FOFAMS latent variable. The composite reliability (Omega, ω) for the scores of the 8-

item one-factor model of the FOFAMS was excellent ($\omega = .93$). The 8-item one-factor model was retained as the final model for the FOFAMS. The 8-item final version of the FOFAMS is shown in Appendix A.

Descriptive's statistics and correlations

All descriptive statistics of the scales used for this study, including the mean and standard deviation of the FOFAMS are presented in Table 2.7. Composite reliability (Omega, ω) were calculated in SPSS. Results provided evidence for the internal consistency of the scores of each subscale used in this study. Correlations between the FOFAMS and the external criteria are presented in Table 2.8.

Convergent Validity

Correlations were estimated in each sample, but results are discussed together because of their similarity in the samples of students (sample 1) and sports participants (sample 2). Positive mindset about failure and hope for success had a strong and positive correlation with FOFAMS in both samples. Although the size of these associations was strong, it was not strong enough to suggest that FOFAMS and these two constructs are redundant constructs. Worry as motivation was positively and moderately correlated with FOFAMS in both samples. Overall, these results support most of our initial hypothesis for convergent validity.

Concurrent Validity

Goal progress was positively and strongly correlated with FOFAMS in both samples. Autonomous motivation and harmonious passion were also positively and strongly correlated with fear of failure as motivation. Satisfaction, optimism, and resilience were positively and moderately correlated to FOFAMS. All correlations were

very similar across both samples meaning that the correlates of FOFAMS are comparable across different samples. Overall, these results support our initial hypothesis for concurrent validity.

Discriminant Validity

We expected FOFAMS to be non-significantly or weakly associated with two measures of fear of failure. First, the FOFAMS was not significantly associated with cognitive evaluations of fear of failure in the sample of students (sample 1). In contrast, we found a positive and significant but rather small correlation between these two variables in the sample of sports participants (sample 2). Second, the FOFAMS was negatively and significantly associated with the subscale of fear of failure from the AMS (Lang & Fries, 2006) in the students' sample. In contrast, the two variables were not significantly correlated in the sample of sports participants. These correlations (even if some reached statistical significance) were the lowest among all the constructs measured in this study. Overall, these findings provided some support for our discriminant validation hypothesis.

Incremental Validity

We tested incremental validity to evaluate whether the FOFAMS remains significantly associated with achievement outcomes (i.e., goal progress and satisfaction) after controlling for a previous measure of fear of failure. Because of the previous significant correlation obtained when we tested discriminant validity (see Table 5), we decided to use the fear of failure subscale from the achievement motivation scale (Lang & fries, 2006). In the academic sample, FOFAMS showed a moderate-to-large positive association with goal progress and a moderate positive association with academic

satisfaction. After controlling for fear of failure, both relationships remained significant (goal progress: $\beta = .48, p < .001$; academic satisfaction: $\beta = .24, p = .002$), indicating that FOFAMS incrementally predicts these outcomes beyond the influence of fear of failure.

In the sports participant sample, FOFAMS showed a large positive association with goal progress and a moderate positive association with sports satisfaction. After controlling for fear of failure, both relationships remained significant (goal progress: $\beta = .47, p < .001$; sports satisfaction: $\beta = .27, p < .001$), further supporting FOFAMS as a significant incremental predictor of achievement in both academic and sports domains.

Brief Discussion

In Study 2, we accomplished two main objectives. Firstly, we validated the unidimensional model of the FOFAMS across both student and athlete samples, achieving acceptable model fit. The correlation of items 8 and 9 significantly improved the fit, suggesting either item redundancy or effects due to their proximity in the questionnaire. Consequently, the removal of item 9 led to a more robust model. The refined 8-item one-factor model demonstrated strong factor loadings and excellent reliability ($\omega = .93$), substantiating its use for assessing the FOFAMS latent variable. Secondly, we provided robust evidence for the convergent and concurrent validity of the FOFAMS, confirming that it uniquely captures cognitive and behavioral aspects of fear of failure that are not thoroughly addressed by traditional measures.

General Discussion

The Fear of Failure as Motivation Scale (FOFAMS), inspired by the stress mindset model (e.g., Selye, 1976), was developed to operationalize the mental representation of fear of failure as a motivational resource. Although it draws on four

interrelated domains—volitional control/effort, learning, performance, and overcoming/coping—FOFAMS reflects a unidimensional construct. These domains capture distinct yet complementary ways in which individuals can mentally frame fear of failure as supporting goal pursuit. By assessing this integrated representation, FOFAMS offers insight into how fear of failure can be experienced as a facilitator of motivation and achievement. The present research, which includes two empirical studies across three distinct samples, provides the first full validation of this novel measure.

Study 1 provided evidence supporting the proposed factor structure and reliability of the FOFAMS scores, establishing it as the only available questionnaire specifically measuring the motivating aspect of fear of failure. A one-factor model was found to be preferable, reflecting the scale's cohesive conceptual basis.

Study 2 further strengthened the validity evidence for the scale, providing strong support for its convergent, concurrent, and discriminant validity. The Fear of Failure as Motivation Scale was positively correlated with constructs such as failure as facilitative, hope for success, and worry as motivation in both samples. It also significantly predicted goal progress and satisfaction, underscoring its unique contribution to understanding motivational dynamics distinct from other fear of failure questionnaires.

Validation Phase and Scale Refinement

During the validation phase of the Fear of Failure as Motivation Scale (FOFAMS), we conducted a meticulous examination of the representation of key domains (i.e. volitional control/effort, learning, performance, overcoming/coping) that were conceptually distinct but not intended to produce separate empirical factors. Initially, 16 items were crafted to cover these domains comprehensively. However,

empirical data and theoretical alignment led us to refine this to an optimized set of 8 items. This process ensured that each domain was represented without redundancy, enhancing the scale's focus and efficiency.

Notably, the distribution of items across domains was not uniform; the coping domain was disproportionately represented due to the adaptation of one item from the exploratory phase (item 12), which persisted as item 9 in the validation version. This item was retained for initial testing based on pilot study findings. Its inclusion led to minor yet significant residual correlations between it and item 8, indicative of shared variances not fully captured by the main factor structure. This scenario, potentially stemming from unmeasured factors or measurement errors, was found to impact model fit.

Our analysis revealed that residual correlations significantly influenced model fit, particularly within the student sample where they were more prevalent and led to poorer fit compared to the sports participants' sample. Including these correlations in the model, however, substantially improved the fit, suggesting the value of recognizing these minor correlations for a more accurate data representation.

After extensive reviews of prior CFAs, we decided to exclude item 9. The enhanced residual correlation between items 8 and 9 detrimentally affected the overall model fit. Consequently, the scale was finalized with eight items, ensuring a robust representation of the motivational aspects of fear of failure across diverse achievement domains such as school, sport, work, and art (see Appendix A). This comprehensive approach not only adheres to rigorous methodological standards but also positions the FOFAMS as a valuable tool that complements existing measures, overcoming their theoretical and operational limitations, and providing broad utility and relevance.

Validation of the FOFAMS

The validation of the Fear of Failure as Motivation Scale (FOFAMS) supports the conceptual framework that fear of failure can be reinterpreted as a motivational driver, aligning with current research that reassesses the role of traditionally negative emotions (e.g., Burke et al., 2016; Crum et al., 2020; Lench et al., 2023; Ray et al., 2008). The correlations between FOFAMS and various external criteria, as presented in Table 5, offer valuable insights into the scale's validity. Accordingly, convergent validity was supported by strong and positive correlations between FOFAMS and constructs such as positive mindset about failure, hope for success, and worry as motivation across both student and sports participant samples. While these correlations do not establish causal relationships, they highlight the proximity of FOFAMS to adaptive aspects of motivation, suggesting that fear of failure may serve dual functions depending on the situation. This also suggests that while these constructs are related, they are not redundant.

Moreover, the concurrent validity of FOFAMS was supported through its strong positive correlations with goal progress, autonomous motivation, and harmonious passion, as well as moderate correlations with satisfaction, optimism, and resilience, consistent across both samples. The strong and significant correlations of FOFAMS with goal progress and satisfaction across diverse contexts suggest that it closely relates to key achievement outcomes. These findings reinforce the notion that FOFAMS captures a unique aspect of motivational dynamics that traditional fear of failure measures might miss, emphasizing its relevance in understanding how fear influences performance and satisfaction.

Discriminant validity was supported by the nonsignificant or weak associations between FOFAMS and other fear of failure measures, with some variability across samples. While we expected similar patterns in both contexts, FOFAMS showed a positive correlation with the PFAI in the sport sample but not in the academic sample. These findings suggest that FOFAMS captures a distinct construct, particularly in academic settings where it appears to diverge from traditional measures of fear of failure, thereby reinforcing its discriminant validity. These observed differences might reflect the distinct dynamics of these environments. The immediate consequences and feedback inherent in sports could make the motivational aspects of fear more salient, suggesting a closer link between fear of failure and motivational outcomes in these contexts compared to education, where outcomes and feedback are often more delayed (Martin & Marsh, 2003). Finally, despite these differences, FOFAMS emerged as a unique and significant predictor of satisfaction and progress in both areas, demonstrating its incremental validity. This incremental validity is crucial because it shows that FOFAMS adds value by capturing aspects of motivation related to fear of failure that are not fully measured by other existing tools. The findings support our evolving conceptualization of fear of failure as a distinct construct, useful for understanding motivation across various achievement contexts.

Contributions

Beyond validation, our research also contributes to the literature in three main ways. First, we contribute theoretically by providing a new conceptualization of fear of failure as being potentially motivating. In doing so, we elaborate on the duality of an individual's mental representation about fear of failure in the process of goal

achievement. Second, we contribute methodologically by developing and validating a scale for future research in achievement domains that complements existing measures of fear of failure, while also overcoming the theoretical and operational limitations of these measures. Third, we contribute empirically by demonstrating the motivating nature of fear of failure and providing evidence that the perception of fear of failure can potentially be beneficial and help some individuals achieve good performance. This questionnaire allows obtaining a representative judgment of the evaluations carried out by the same individual about their perception of the usefulness of fear of failure.

Limitations and Future Research

While this study provided initial validity and reliability evidence for our scale, there are important limitations to note. First, self-reports, while useful for measuring constructs like fear of failure, can introduce common method bias (Podsakoff et al., 2003). This bias occurs when the measurement method itself influences the results, potentially inflating the relationships between variables (Richardson et al., 2009). In our study, the reliance on self-reports may have skewed the correlations observed, impacting the validity testing of the FOFAMS. This limitation suggests that the associations between FOFAMS and other constructs could be artificially enhanced. Future research should consider alternative data collection methods, such as behavioral observations or peer reports, to mitigate these effects and provide a more accurate assessment. Additionally, due to the cross-sectional nature of this study, we cannot make conclusions about the test-retest stability of FOFAMS over time. Future research could employ longitudinal designs, such as daily diaries, to examine whether fear of failure as a

motivation is more trait-like or state-like, and to assess its stability and influence on various criterion variables.

Second, the present studies utilized convenience samples from a crowdsourcing platform (i.e., Prolific Academic). Although participants were recruited from different countries, future research should investigate the scores of the FOFAMS in individuals from various achievement domains. This would help ensure that the scale is a valid and stable measurement instrument across diverse populations. Additionally, it is important to examine the factorial invariance of the FOFAMS across different ages, genders, countries, and cultures, which will require translating the scale into various languages. Lastly, future studies should also assess the stability of the scale's discriminant validity across different populations, and investigate the underlying mechanisms involved in the test-retest stability of the scale over longer time intervals to fully understand its utility and applicability.

Conclusion

In these studies, we developed and validated the Fear of Failure as Motivation Scale (FOFAMS) to investigate how fear of failure, traditionally viewed as a detrimental trait, can act as a motivator for some individuals. Our findings provide robust initial evidence supporting the validity of this concise 8-item questionnaire, while recognizing that validity is an ongoing process that benefits from continued investigation. FOFAMS introduces a novel perspective on the motivational dynamics of fear of failure, offering researchers and practitioners a unique tool for assessment. This innovative measure addresses a crucial gap in the existing literature, showing that individuals can transform their perception of fear of failure into a positive force that significantly enhances their

progress towards goals and overall satisfaction. By elucidating the complex relationship between fear of failure and achievement, FOFAMS not only contributes to academic discourse but also delivers practical value. It equips practitioners with insights to assist individuals in reinterpreting fear and failure as constructive elements in their goal attainment processes. Ultimately, FOFAMS empowers both researchers and practitioners to better understand and leverage the motivational potential of fear in achieving personal and professional success.

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Table 2.1*Study 1. FOFAMS 16 generated items for exploration*

	Items	Loadings	Unicity
1.	... be more productive	0.829	0.312
2.	... to practice/study more	0.851	0.275
3.	... have good performances	0.797	0.364
4.	... face the challenge	0.837	0.299
5.	... pursue goals that are important for me.	0.881	0.225
*6.	... learn from my previous mistakes.	0.854	0.272
7.	... achieve my most difficult goals	0.910	0.172
*8.	... reach out for feedback	0.656	0.570
*9.	... strive for success.	0.902	0.186
10.	... seek out additional training/knowledge	0.809	0.345
*11.	... focus on achieving success.	0.898	0.193
12.	... overcome obstacles.	0.915	0.163
*13.	... give my best effort.	0.922	0.150
*14.	... learn even more.	0.917	0.159
*15.	... reach high expectations.	0.913	0.167
16.	... confront the difficulties.	0.889	0.210

Notes. * = item that were removed after careful observation of the results from the Exploratory Factorial Analysis conducted in study 1 as well as the inter-item correlations. Items 2 and 10 are domain specific (sport and school), here are presented both wordings, but in data collection only “practice and training” or “study and knowledge” were presented to the participants in the appropriate context.

Table 2.2

Study 1. Standardized Factors Loadings for 16-item Versions and Descriptive Statistics of the 9-item Version (N=149)

Items	<u>16 items</u>		<u>9 items</u>				
	Loadings	Uniqueness	Loadings	Mean	SD	Skewness	Kurtosis
FOFAMS1	.829	.312	.86	4.60	1.652	-.320	-.540
FOFAMS2	.851	.275	.86	4.93	1.475	-.447	-.178
FOFAMS3	.797	.364	.81	4.97	1.548	-.530	-.254
FOFAMS4	.837	.299	.87	4.52	1.659	-.253	-.729
FOFAMS5	.881	.225	.89	4.74	1.544	-.334	-.558
FOFAMS6	.854	.272	—	—	—	—	—
FOFAMS7	.910	.172	.90	4.67	1.621	-.293	-.669
FOFAMS8	.656	.570	—	—	—	—	—
FOFAMS9	.902	.186	—	—	—	—	—
FOFAMS10	.809	.345	.80	4.94	1.552	-.426	-.523
FOFAMS11	.898	.193	—	—	—	—	—
FOFAMS12	.915	.163	.89	4.93	1.469	-.508	.170
FOFAMS13	.922	.150	—	—	—	—	—
FOFAMS14	.917	.159	—	—	—	—	—
FOFAMS15	.913	.167	—	—	—	—	—
FOFAMS16	.889	.210	.88	4.81	1.509	-.371	-.296

Note. Estimated with an oblimin rotation.

Table 2.3*Study 1. FOFAMS 9 selected items for validation*

Items	Loadings	Mean	SD	Skewness	Kurtosis
1. ...be more productive	.86	4.60	1.652	-.320	-.540
2. ...to practice/study more	.86	4.93	1.475	-.447	-.178
3. ...have good performances	.81	4.97	1.548	-.530	-.254
4. ...face challenges	.87	4.52	1.659	-.253	-.729
5. ...pursue goals that are important for me.	.89	4.74	1.544	-.334	-.558
6. ... achieve my most difficult goals	.90	4.67	1.621	-.293	-.669
7. ... seek out additional training/knowledge	.80	4.94	1.552	-.426	-.523
8. ...confront the difficulties.	.88	4.81	1.509	-.371	-.296
9*. ...see obstacles as an opportunity.	.89	4.93	1.469	-.508	-.170

Notes. * = item was removed for the final version of the FOFAMS that is publicly available in the original validation paper. It was removed for reasons presented in the validation paper, but in short it overlapped too significantly with item 8 and was not contributing to the assessment while reducing model fit. Items 2 and 7 are domain specific (sport and school), here are presented both wordings, but in data collection only “practice and training” or “study and knowledge” were presented to the participants in the appropriate context. Items 1 and 5 represent volitional control/effort, 2 and 7 represent learning, 3 and 6 represent performance/outcomes and items 4, 8 and 9 represents overcoming/coping.

Table 2.4*Study 2. Summary of Questionnaires for the Validation Study*

Constructs	Measures	Examples
Fear of failure as motivation	Fear of Failure as Motivation Scale; (Boileau et al., 2025), 8 items, 1-7 scale.	School: <i>“My fear of failure motivates me to study more.”</i> Sport: <i>“My fear of failure motivates me to practice more.”</i>
Convergent validity		
Mindset about failure	Mindset about failure (Haimovitz & Dweck, 2016), 6-item, 1-6 scale	<i>“Failure has positive effects on me and it should be used as a motivation.”</i>
Hope for success	Achievement Motives Scale (Lang & Fries, 2006), subscale of hope for success, 5-items. 1-4 scale.	<i>“I like situations, in which I can find out how capable I am.”</i>
Worry as motivation	Why Worry-II (Hebert et al., 2014), Subscale of the WW-II, 5-items. 1-5 scale.	<i>“It is by worrying that I finally undertake the work that I must do.”</i>
Concurrent validity		
Goal Progress	Goal progress (Carraro & Gaudreau, 2015; Dugas et al., 2012), 5-item, 1-7 scale.	School: Please rate the extent to which you... <i>“progressed on your academic goals”</i> Sport: Please rate the extent to which you... <i>“progressed on your sport goals”</i>
Satisfaction	Multidimensional Students’ Life Satisfaction Scale (Huebner & Gilman, 2002), subscale of 8-item, scale 1-7	School: <i>“I like being in school.”</i> Sport: <i>“I like doing my sport.”</i>

Motivation	Self-determination scale (Gaudreau et al., 2018), 10 items. Scale 1-7 subscale of 2-items of intrinsic, integrated, identified, introjected, external regulation.	School: <i>"I study at school because...I truly love it."</i> Sport: <i>"I am participating in my sport because ... I truly love it."</i>
Passion	Passion scale (Vallerand, 2010), a 16-item questionnaire 6- item harmonious, 6-item obsessive passion, 4-item the passion criteria	School: <i>"School is in harmony with the other activities in my life."</i> Sport: <i>" My sport is in harmony with the other activities in my life."</i>
Dispositional optimism and pessimism	Life Orientation Test-Revised (Scheier et al., 1994, 10 items, 1-5 scale.	<i>"In uncertain times, I usually expect the best."</i>
Resilience	Connor Davidson Resilience Scale (Connor & Davidson, 2003), short version, 10 items, 1-5 scale	<i>"I am not easily discouraged by failure."</i>
Discriminant validity		
Fear of failure	Performance Failure Appraisal Inventory, (Conroy, 2001), 25-item, 1-5 scale, 5-item shame and embarrassment, 5-item, uncertain future, 5-item losing one's self-esteem, 5-item others will lose interest and 5-item disappointing significant others	School: <i>"When I am failing in school, I am afraid that I might not have enough talent."</i> Sport: <i>"When I am failing in my sport, I am afraid that I might not have enough talent."</i>
Fear of failure	Achievement Motives Scale (Lang & Fries, 2006), subscale of fear of failure, 5-item. 1-7 scale.	<i>"I feel uneasy to do something if I am not sure of succeeding."</i>

Table 2.5

Study 2. Fit Indices for the Unidimensional Model: Comparison of 9-Item and Final 8-Item Versions Across Both Samples

	CFA	CFA (Residual correlation included)	CFA (Final version 8- items)
Sample 1-Students N=385			
CFI	.962	.990	.970
TLI	.949	.984	.958
RMSEA	.194	.108	.191
SRMR	.031	.017	.027
Item1	.823	.802	.825
Item2	.847	.781	.856
Item3	.803	.774	.813
Item4	.855	.870	.848
Item5	.880	.890	.884
Item6	.917	.931	.918
Item7	.773	.761	.775
Item8	.840	.780	.817
Item9	.797	.776	-
Sample 2-Sport participant N = 382			
CFI	.979	.984	.984
TLI	.972	.978	.978
RMSEA	.159	.141	.148
SRMR	.026	.023	.022
Item1	.855	.859	.861
Item2	.814	.816	.823
Item3	.848	.851	.857
Item4	.885	.890	.883
Item5	.882	.885	.884
Item6	.885	.889	.886
Item7	.777	.781	.781
Item8	.876	.848	.848
Item9	.855	.823	-

Notes. WLSMV = Weighted Least Square with Mean and Variance adjusted.

Table 2.6*Study 2. Residuals Item Correlations-Modification Indices*

	FOFAMS1	FOFAMS2	FOFAMS3	FOFAMS4	FOFAMS5	FOFAMS6	FOFAMS7	FOFAMS8	FOFAMS9
FOFAMS1	—	.088	.088	-.002	-.012	-.006	-.054	-.038	-.038
FOFAMS2	.143	—	.064	-.030	-.027	-.031	.082	-.018	-.068
FOFAMS3	.046	.153	—	.019	.010	.028	-.070	.072	-.084
FOFAMS4	-.031	-.003	-.046	—	.045	-.028	-.018	-.011	.014
FOFAMS5	-.005	-.080	-.022	-.017	—	0.031	-.036	-.041	-.004
FOFAMS6	.006	-.055	.014	-.006	.074	—	0.006	-.005	.003
FOFAMS7	.070	.045	.023	.031	-.024	-.056	—	.088	.021
FOFAMS8	-.062	-.030	-.074	.046	-.015	-.036	.125	—	.130
FOFAMS9	-.029	-.064	-.068	.049	-.021	.001	.014	.116	—

Notes. The results at the top of the diagonal represent the residual correlations between items for the sample of sport participants. The results at the bottom of the diagonal represent the residual correlations between items for the student sample. Flagged inter-item correlations are highlighted, item 8 and 9 had correlated residuals in both samples further justifying the removal of item 9 from the final version of the FOFAMS.

Table 2.7*Study 2. Descriptives statistics of both samples of questionnaires for validation study*

Variables	Sample 1—Students				Sample 2—Sport participants			
	<i>N</i>	<i>Mean</i>	<i>SD</i>	Omega ω	<i>N</i>	<i>Mean</i>	<i>SD</i>	Omega ω
Fear of failure as motivation	385	4.56	1.32	.93	382	4.87	1.15	.95
Mindset failure positive	385	3.88	1.16	.87	382	4.33	.99	.90
Goal progress	385	5.01	1.18	.95	382	4.69	1.18	.96
Satisfaction	385	4.77	1.20	.89	382	5.94	.79	.82
Autonomous motivation	190	4.14	1.25	.85	187	4.80	1.16	.85
Controlled motivation	190	2.47	1.29	.88	187	1.70	.92	.81
Harmonious passion	190	3.59	1.37	.88	187	4.83	1.15	.87
Obsessive passion	190	2.09	1.24	.87	187	2.67	1.38	.85
Worry as motivation	190	1.03	.96		187	2.43	.95	.91
Fear of failure (Conroy, 2001)	190	2.52	.83	.95	187	1.96	.79	.96
Hope for success	195	3.12	.49	.82	195	5.26	1.05	.91
Optimism	195	3.12	.99	.77	195	3.48	.85	.73
Pessimism	195	3.00	1.13	.87	195	2.89	1.01	.83
Resilience	195	3.46	.69	.89	195	3.70	.64	.89
Fear of failure (Lang & Fries, 2006)	195	2.85	.71	.86	195	3.60	1.54	.92

Table 2.8

Study 2. Correlation between the Fear of Failure as Motivation Scale and validation variables

	Fear of Failure as Motivation (Students)	Fear of Failure as Motivation (Sport participants)
Convergent validity		
Mindset failure positive	.47*	.47*
Worry as motivation	.27*	.30*
Hope for success	.36*	.50*
Concurrent validity		
Goal progress	.49*	.50*
Satisfaction	.30*	.35*
Autonomous motivation	.43*	.53*
Controlled motivation	-.04	.11
Harmonious passion	.37*	.50*
Obsessive passion	.27*	.35*
Optimism	.14*	.28*
Pessimism	-.03	-.04
Resilience	.28*	.41*
Discriminant validity		
Fear of failure (Conroy, 2001)	-.05	.18*
Fear of failure (Lang & Fries, 2006)	-.12*	-.03

Notes. * $p < .001$

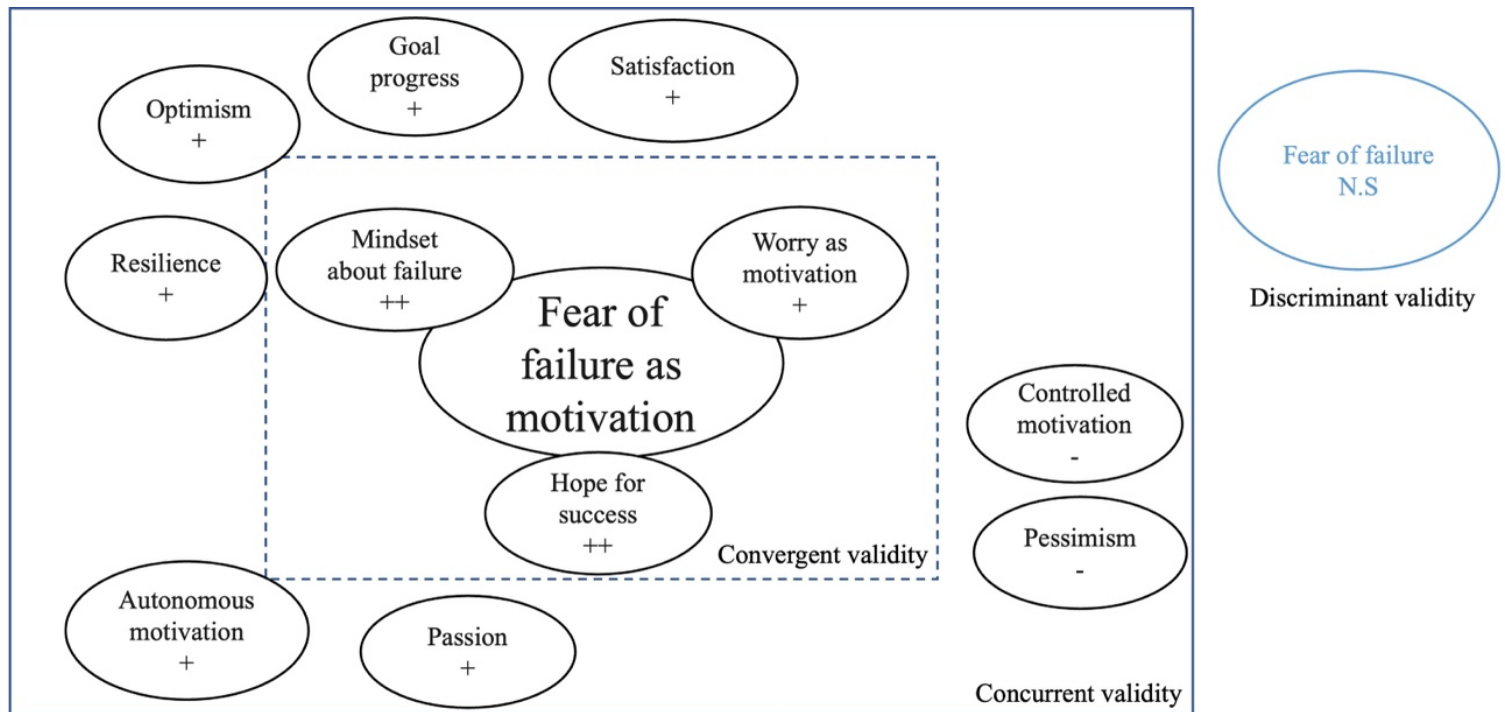
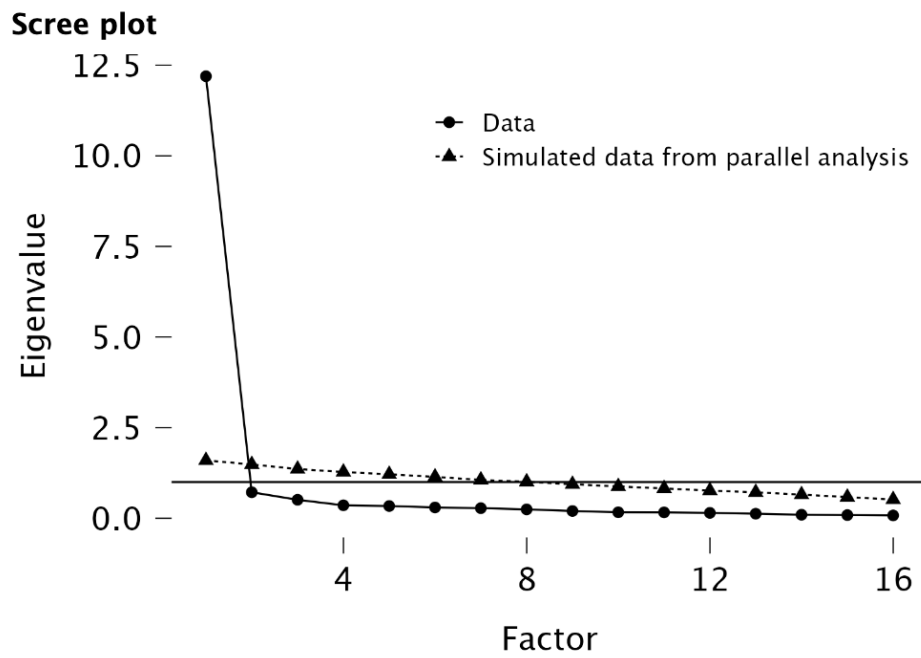


Figure 1. Variables that overlap the center are those that are conceptually closest to the construct (i.e., convergent validity). Variables near the center are those variables that are generally predicted by the construct (i.e., concurrent validity). Variables with a farther higher than the center are those that are not significantly related to the construct (i.e., discriminant validity).

Figure 2.2

Scree plot of the one-factor solution based on Eigenvalue



Appendix A

It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure.

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure (**in school/in sport**)

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
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My fear failure motivates me to...

1. ... be more productive.
2. ... practice/study more.
3. ... have good performances.
4. ... face the challenge.
5. ... pursue goals that are important for me.
6. ... achieve my most difficult goals.
7. ... seek out additional training/ knowledge.
8. ... confront the difficulties.

Alternative contextual instructions

Example for academic:

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure **in school**

Item 2: want to study more

Item 7: seek out additional knowledge

Example for sport:

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure **in sports**

Item 2: want to practice more

Item 7: seek out additional training

Appendix B

Detailed descriptions of the questionnaires used in our study are provided here, as referenced in the main manuscript. This document outlines comprehensive information about the purpose, scale structure, items, and scoring methodology for each measure. These details are intended to support the transparency and replicability of our research methods and to enhance the understanding of the tools used to assess the various constructs within our study. The inclusion of this extended information serves as a complement to the summarized presentation in the main manuscript's tables, ensuring that readers have full access to the specifics of the measures that underpin our findings. Please note that some measures have been adapted to specific contexts in school and sports settings, as detailed in the main manuscript.

Fear of Failure as Motivation

The FOFAMS is comprised of 8 items (e.g., “My fear of failure motivates me to have good performances.”, “My fear of failure motivates me to practice/study more.”). Each participant rated the extent to which they perceive fear of failure as motivation using a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*totally*) with higher scores representing a stronger perception of fear of failure as motivating. The same measure was completed twice, in reference to school and sport by adapting items 2 and 7 (see Appendix A).

Mindset about failure

Mindset about failure was assessed using a six-item scale (e.g., “Failure has positive effects on me, and it should be used as a motivation”). Participants rated the extent to which each item corresponded to their perception of failure on a scale from 1

(*not at all*) to 6 (*totally*). Two composite scores were created: one reflecting a "failure-is-enhancing" mindset and the other reflecting a "debilitating" view of failure. For the "failure-is-enhancing" score, the responses were averaged. Items related to the debilitating view of failure were reverse-scored, with higher scores indicating a stronger perception of failure as harmful to learning and performance. The scale demonstrated reliable internal consistency (Cronbach's $\alpha = .88$).

Hope for Success and Fear of Failure

A 10-item version of the Achievement Motivation Scale (Lang & Fries, 2006) was used to measure the need to approach success (i.e., hope for success; e.g., "I like situations, in which I can find out how capable I am") and the need to avoid failure (e.g., "I feel uneasy to do something if I am not sure of succeeding"). All items were rated on a scale from 1 (*not at all agree*) to 7 (*totally agree*).

Worry as Motivation

Worry as motivation was assessed with a 5-item subscale from the *Why Worry-II* (WW-II) (Hebert et al., 2014) to measure positive beliefs about worry. More specifically, participants had to report on a scale from 1 (*Not at all true*) to 5 (*Absolutely true*) if they perceive that worry enhances motivation (e.g., it is by worrying that I finally undertake the work that I must do).

Goal Progress

Perceived goal progress for academic and sport were respectively measured with five items on a scale from 1 (*Not at all*) to 7 (*Totally*). Sample items are as follows: Please rate the extent to which "*you progressed on your goals*" and "*you came closer to reaching your goals*" (e.g., Carraro & Gaudreau, 2015; Dugas et al., 2012). Each item

was adapted to school or sport by adding the words “academic” or “sport” (e.g., “*You came closer to reaching your academic goals*”). Previous studies showed excellent reliability for this scale (e.g., Gaudreau et al., 2012) with standardized factor loadings ranging from .90 to .94 ($\omega = .97$) for academic (Chamandy & Gaudreau, 2022) and sport goal progress ($\alpha = .90$) (Kinoshita et al., 2022).

Satisfaction

Satisfaction was assessed with the 8-item school satisfaction subscale of the Multidimensional Students’ Life Satisfaction Scale (SLSS; Huebner et al., 1998). Each participant rated the extent to which items corresponded to how they feel about school on a scale from 1 (*not at all*) to 7 (*totally*). This measure contains three negatively worded items whose scores were reversed to create positively valanced scores of academic satisfaction. Validity evidence has been reported for the factor structure of the academic satisfaction subscale (e.g., Gaudreau et al., 2015). Previous studies showed excellent reliability for this scale ($\omega = .96$) (e.g., Boileau et al., 2021).

Motivation

Motivation was assessed using a 10 items self-report questionnaire. The five regulations of SDT were represented with two items per regulations: intrinsic, integrated, identified, introjected, and external. Participants were asked to respond to which extent each item corresponds to the reason they pursue academic or sport activities (e.g., It is part of who I am as a person) on a scale of 1 (*not at all*) to 7 (*totally*).

Passion

Passion was evaluated using the 16-item Passion Scale by Vallerand et al. (2010). The scale includes two six-item subscales measuring harmonious passion (HP) and

obsessive passion (OP), as well as a four-item passion criteria subscale. Participants expressed their level of agreement with each statement on a 7-point Likert scale, from 1 (*Do not agree at all*) to 7 (*Very strongly agree*). Example items are "My sport is in harmony with other activities in my life" (HP) and "I am having difficulty withdrawing from my sport" (OP).

Optimism and Pessimism

Optimism and pessimism were assessed using the Life Orientation Test-Revised (LOT-R), which comprises 10 items. Three items (Items 1, 4, and 10) target optimism (e.g., "In uncertain times, I usually expect the best"), three items (Items 3, 7, and 9) measure pessimism (e.g., "If something can go wrong for me, it will."), and four items serve as fillers (e.g., "It's easy for me to relax."). Participants rated their agreement with each statement using a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Resilience

The Connor–Davidson Resilience Scale (i.e., CD-RISC-10) was used to assess resilience (Connor & Davidson, 2003; Campbell-Sills & Stein, 2007). The CD-RISC-10 comprises 10 items that capture individuals' perceived ability to cope with adversity (e.g., *I am not easily discouraged by failure*). Participants had to answer each question using a Likert scale ranging from 1 (Never) to 5 (Almost always), with higher scores representing higher levels of resilience.

Fear of failure

The Performance Failure Appraisal Inventory (i.e., PFAI) was used to assess fear of failure (Conroy et al., 2002). The PFAI short version comprised of 5 items that are

tapping 5 underlying factors. Participants had to answer each question using a Likert scale ranging from 1 (*Do not believe at all*) to 5 (*Believe 100% of the time*), with higher scores representing higher levels of fear of failure. Participants will be asked to answer all items while keeping in mind their personal characteristics and traits at school and in sport. Researchers have provided support for the factor structure of responses to this scale (Conroy et al., 2002). The PFAI has acceptable internal consistency and construct validity with regard to related constructs ($\alpha = .74$ to $.81$). (Conroy et al., 2002; Sagar & Jowett, 2010).

CHAPTER 3

Fear of Failure as Motivation: Testing Domain-Specific Consistency and Predictive Validity Across Academic and Sport Contexts

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Author's Contributions Statement CRediT

Laurence Boileau: Conceptualization (equal); data curation (lead); formal analysis (lead); investigation (lead); methodology (equal); project administration (lead); software (lead); validation (lead); visualization (lead); writing- original draft (lead); writing- review editing (equal).

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Abstract

Success in academic and sports domains is often driven by high standards, instilling a fear of failure. Traditionally viewed as debilitating, recent studies suggest it can also motivate individuals. This study (N = 305) used a dual-domain approach to explore how fear of failure motivates goal progress and satisfaction in academic and sports contexts. Using Confirmatory Factor Analysis (CFA), we validated the unidimensional factor structure of the Fear of Failure as Motivation Scale (FOFAMS) within each domain, with excellent model fit observed in both academic and sport contexts. Path analyses using observed composite scores revealed significant within-domain associations between fear of failure as motivation and both goal progress and satisfaction. These associations remained robust even when controlling for general fear of failure, supporting the incremental validity of FOFAMS. Cross-domain relationships were negligible, suggesting that the motivational function of fear of failure is domain-specific. These findings support the validity of the FOFAMS and underscore the importance of assessing fear of failure within specific performance contexts to better understand its adaptive potential.

KEYWORDS: Fear of failure, Motivation, Goal progress, Satisfaction, Student-athletes

Fear of Failure as Motivation: Testing Domain-Specific Consistency and Predictive Validity Across Academic and Sport Contexts

Traditional metrics of success, such as winning a game in sports or achieving high scores on assignments in school, create a high-pressure environment where the risk of failure is omnipresent. Such environments frequently foster a fear of failure, which has been traditionally regarded as a detrimental influence to be avoided (e.g., Taylor et al., 2021). Fear of failure originates from the anticipation of adverse outcomes resulting from failing to achieve set goals. The classic achievement motivation theory (Atkinson, 1957; Covington, 2000) and other foundational theories have described it as a complex psychological disposition that is deeply influenced by both genetics and environmental factors (e.g., Conroy, 2001). Throughout life, individuals learn to generalize which emotions are safe and which are not, figuring out what they can tolerate and what emotions they need to regulate, reduce, and avoid (e.g., Sagar & Lavalley, 2010). When people are conditioned to avoid the uncomfortable feelings associated with failure, they internalize that fear, leading to a lifelong pattern of fearing and avoiding failure (e.g., Elliot, 2006) instead of coping with it or using it as a motivation. This traditional approach has often emphasized the limitations imposed by fear, seeing it as an obstacle to personal and professional growth.

Recent research suggests that fear of failure, when properly managed, can enhance success in academic and athletic fields (e.g., Gupta et al. 2021; Thuany et al., 2024; Tseng et al., 2022). For example, Cai and Jiang's (2024) longitudinal study of over 500,000 students worldwide found that moderate fear of failure led students to improve preparation, refine their learning strategies, and boost academic outcomes. Similarly,

Hardy et al. (2017) noted that elite athletes who acknowledged and managed their fear exhibited increased focus and resilience, enhancing performance. This growing body of evidence indicates that fear of failure can energize individuals to enhance learning, performance, and persistence across various domains. Yet, while evidence increasingly supports the adaptive role of fear of failure within specific domains, little is known about whether this motivational interpretation transfers across contexts, such as from athletics to academics, underscoring the need to examine the domain-specific versus cross-domain functioning of fear of failure as motivation.

A New Perspective on Fear of Failure

Several models of self-regulation emphasize the pivotal role of perceiving emotions as having utility (e.g., Carver & Scheier, 1998; Mischel et al., 1996). Indeed, individuals possess both explicit and implicit representations of emotional utility in the pursuit of their goals (e.g., Tamir & Ford, 2009). As demonstrated in an experimental study conducted by Tamir and Ford, (2009), individuals are willing to embrace unpleasant emotions, more particularly fear, if they perceive them as instrumental in achieving their objectives, harnessing these negative emotions as sources of motivation. Furthermore, in line with this recognition of emotion utility, recent research in the field of mindset has indicated a growing acknowledgment of the potential for positive reinterpretation and reappraisal of negative emotional states such as anxiety, depression (e.g., Dryman & Heimberg, 2018), and stress (e.g., Riepenhausen et al., 2022). In academic and athletic settings, individuals may interpret the discomfort linked to fear of failure as a prompt to channel their focus, refine their strategies, and pursue their goals with heightened determination.

Fear of failure as motivation refers to a mental representation in which fear is viewed as a signal to engage more deeply with one's goals. This conceptualization is grounded in theories of emotion appraisal (e.g., Lazarus, 1991), stress mindset (e.g., Crum et al., 2017; Selye, 1976), and growth mindsets (Dweck, 2006) and suggests that individuals can cognitively reframe fear of failure as a motivational resource. Within this perspective, fear of failure is seen as a dynamic mindset that, under certain conditions, can activate persistence, focus, and growth rather than avoidance. The Fear of Failure as Motivation Scale (FOFAMS; Boileau et al., 2025), operationalizes this construct and assesses how individuals mentally represent fear of failure in a motivational light. Although the scale is unidimensional, it captures four interrelated psychological processes that contribute to this reappraisal: effort regulation, perceived performance outcomes, learning orientation, and coping strategies. Specifically, fear of failure as motivation involves the belief that fear can trigger enhanced volitional control, leading to greater effort toward goals; that it sharpens focus and improves performance outcomes; that it can be used as a prompt for learning and growth; and that individuals can manage the emotional and cognitive challenges of failure through adaptive coping. Together, these components capture distinct yet interrelated facets of the mental framework through which fear of failure is experienced as motivating. As such, the FOFAMS offers a research-based framework for exploring the circumstances under which fear of failure may be associated with adaptive outcomes, particularly in high-pressure domains such as sport and education.

Results of factor analytic analyses provided support for the construct validity of the FOFAMS (Boileau et al., 2025). In a first study, the results of exploratory factor

analysis showed that FOFAMS can be reliably measured using nine interrelated self-reported items (e.g., *My fear of failure motivates me to be more productive, my fear of failure motivates me to face the challenge*). In the second study, the unidimensional structure of the FOFAMS was further examined using confirmatory factor analysis. The model yielded acceptable fit indices (CFI = .970; TLI = .958; RMSEA = .191, 90% CI [.152, .233]; SRMR = .027), although the RMSEA was above conventional cut-off values. Given the strong performance of the other indices and the interpretability of the model, this solution was retained. Item 9 was removed to improve reliability and model parsimony, yielding the final 8-item version of the scale. Overall, the psychometric properties of the unidimensional model were satisfying.

Moreover, FOFAMS is a novel construct that can nonetheless be situated within a network of similar but distinct mental representations about other emotions. Past studies have found that people can hold different mental representations about failures (Haimovitz & Dweck, 2016), anxiety (Alpert and Harber, 1960), anger (Lench et al., 2024), worries (Hebert et al., 2014), and stress (Crum et al., 2017). Each of these mental representations is distinct yet converges on the idea that perceiving negative emotions as facilitative may function as a protective factor, showing negative associations with psychological distress and symptoms of psychopathology. In a study with 385 students and 382 sport participants (Boileau et al., 2025), fear of failure as motivation was found to be positively associated with a positive mindset about failure ($r = .47, p < .001$ for both sample) and worries as motivation (students; $r = .27, p < .001$; sport participants; $r = .30, p < .001$). The strength of these associations indicated that fear of failure as motivation is similar but distinct from all these mental representations. On the one hand, the concept is

similar because it entails a capacity to reframe negative emotions into their motivational properties. On the other hand, it is different because it entails the unique mental representations that are specific to the reappraisal of fear of failure as something that can be motivating.

Finally, the validation process of the FOFAMS revealed strong psychometric properties that support its broader applicability. The scale demonstrated concurrent validity, evidenced by moderate to strong correlations with key indicators of psychological adjustment (e.g., satisfaction, $r = .30, p < .001$; optimism, $r = .14, p < .001$; resilience, $r = .28, p < .001$; autonomous motivation, $r = .43, p < .001$) and success (e.g., goal progress; $r = .49, p < .001$). Additionally, discriminant validity analyses confirmed that the FOFAMS assesses a unique construct, clearly differentiating it from related but distinct factors such as fear of failure (students, $r = -.05, ns$; sport participants, $r = .18, p < .001$). These results highlight the utility of the FOFAMS as a unique tool for capturing the multifaceted role of fear of failure in enhancing both achievement and psychological adjustment.

Aims of the present study

Despite these advances, the literature has yet to determine whether perceiving fear of failure as motivation varies across contexts or reflects a more stable dispositional trait. This gap raises important questions about the universality and context-specificity of this motivational construct, necessitating further research. The current study addresses this gap by extending prior validation work on the FOFAMS (Boileau et al., 2025), examining whether the scale shows consistent structure and relationships within domains (academic and athletic) and invariance across these distinct contexts. Drawing upon

Gaudreau and Miranda's (2010) conceptual framework, which highlights the importance of distinguishing stability (similarity of responses over time or within contexts) and consistency (similarity across different contexts), we examined whether fear of failure as motivation operates uniformly or differently in sport and academic settings.

Conceptually, the fear of failure as motivation construct was defined as a unidimensional representation that can manifest across distinct life domains. However, because fear of failure may be experienced differently in academic and sport contexts, it was necessary to examine whether this representation functions similarly across these domains. To do so, we compared a one-factor model, representing a general and domain-independent structure, with a two-factor model, representing parallel but domain-specific factors (academic and sport). This comparison allowed us to test whether the construct operates as a single overarching dimension or as two distinct yet correlated manifestations of the same underlying concept. In addition, we examined the consistency of FOFAMS across contexts by assessing rank-order correlations, that is, whether individuals who perceive high motivational benefits of fear of failure in one domain also tend to perceive similarly high benefits in another (e.g., Fryer & Elliot, 2007).

Our second goal was to examine how fear of failure as motivation relates to goal progress and satisfaction within each domain, using path analysis with observed variables as part of a structural equation modeling (SEM) approach (see Figure 3.1). Examining these outcomes is pivotal for evaluating the unique contribution of the fear of failure as motivation construct, as it can demonstrate whether the motivational aspects of fear distinctly contribute to both goal attainment and psychological adjustment beyond the general experience of fear of failure. Specifically, we hypothesized that fear of failure as

motivation would positively be associated with goal progress and satisfaction within corresponding domains. Critically, these intra-domain effects were expected to remain statistically significant even when controlling for general fear of failure, highlighting the unique explanatory power and potential value-added of FOFAMS as a motivational construct. Should these hypotheses be supported, the findings would help clarify how fear of failure as motivation fits within the broader nomological network of achievement motivation and psychological adjustment. Conversely, we expected weaker or non-significant cross-domain effects, such that fear of failure as motivation measured in one domain (e.g., sport) would show limited associations with outcomes in another domain (e.g., academic achievement or satisfaction). This pattern would align with prior findings highlighting the context-specific nature of motivational constructs (e.g., Chamandy & Gaudreau, 2019).

Ethics Statement. This study was approved by the health science and science ethic research board of the University of Ottawa (Project H-08-23-9412). All participants provided informed consent. We disclosed all measures and exclusions.

Method

Participants

We relied on Bosco et al. (2015) correlational effect size benchmark of .16 (i.e., 50th percentile of the distribution of 147,328 correlations published between 1980 and 2010 in two leading applied psychology journals) and used the G*Power software to estimate the required sample size given for statistical power of .80, two-tailed statistical significance ($p < .05$), and effect size ($r = .16$; $f^2 = .026$) in a multiple regression (i.e., fear

of failure as motivation at school and in sport) with two predictors⁸. A sample of 300 participants is needed to avoid false negatives. We also expected that 5-10% of the sample may respond to the survey in a lenient manner, which is the typical number of participants excluded from statistical analyses based on online studies (Fleischer et al., 2015). Based on these considerations, we recruited a sample of 330 student-athletes.

Student-athletes⁹ were recruited from Prolific Academic. To participate, participants had to be a student-athletes from Canada, USA, or UK to avoid potential cross-cultural effects that could happen if we were to recruit in countries with more collectivist values and different schooling systems. Student-athletes were participating in a competitive sport at a recreational, regional, provincial, national, or international level from a wide range of different sports (e.g., hockey, basketball, track and field, swimming). In addition, they participated in their sport at least 120 minutes per week. No specific years of experience were required. No restrictions were placed on academic programs. Participants completed an online questionnaire that took approximately 10-12 minutes. Participants received a payment of £1.80 and provided consent before the beginning of the study.

Procedure

The questionnaire contained two sections (sports and academic) presented in a counterbalanced order. Before completing each section, participants had to describe an

⁸ Given the small correlation between fear of failure and fear of failure as motivation in Boileau et al. (2025), we expected to have sufficient statistical power to include Fear of Failure as a control variable in the selected model, without compromising the likelihood of rejecting the null hypothesis.

⁹ The term “student-athlete” in this article refers to a student who plays sports. The word sport implies participating in activities in which the person takes part in sport activities (practice and/or competition) by facing opponents in the context of a competition of a certain level. This definition includes an individual who is, for example, a university student who also is a provincial swimmer who trains at a civilian club.

activity that they were currently pursuing in each of the academic and sports domains. Asking participants to describe an activity that they are pursuing ensured consistency throughout the questionnaire by allowing to assess domain-specific perception about fear of failure as motivation and domain-specific goal progress and satisfaction. Thinking about an activity that they were currently pursuing in each domain acted as a priming effect to make sure that participants did not answer the questions generally.

Participants were 305 student-athletes (66.4% male, 33.2% female, 0.3% other) from the United Kingdom (52%), United States (34.5%), and Canada (13.5%). They were between 18 and 67 years old ($M = 30.44$; $SD = 11.24$). Participants were practicing a team (64.5%) or individual (35.5%) sport at a recreational level (47.9%), regional (31.8%), provincial (12.1%), or national level (7.5%), and had 8 years or more of experience in their sport. They were enrolled in college or university full-time (67.4%) or part-time (32.6%). They identified their ethnic background as European/White (50.2%), Black (18%), East Asian (4.6%), South Asian (8.5%), African (6.6%), Middle Eastern (3%), Hispanic/Latino (5.2 %), or mixed (3.9%). This study was approved by the Research Ethics Board of the University of Ottawa. The study was conducted on Prolific Academic during the fall semester of 2023. All participants provided their informed consent to participate in this study. A small monetary compensation (1.80£) was offered to participants for approximately 10-12 minutes of their time.

Measures

Demographic variables

At the beginning of the survey, participants were asked to report (a) their gender, (b) their age, (c) their cultural background, (d) their current occupation (i.e., full-time

student, part-time student), and (e) their country of residence. Participants also reported their (a) sport, (b) level of practice, (c) number of days and hours of practice per week, and (d) their years of experience.

Fear of failure as motivation

The FOFAMS assessed participants' perceptions of fear of failure as motivation (Boileau et al., 2025) using an 8-item questionnaire (e.g., "*My fear of failure motivates me to perform well*," "*My fear of failure motivates me to practice/study more*").

Participants rated each item on a 7-point Likert scale from 1 (*not at all*) to 7 (*totally*), after reading the following instruction: "*It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure*". The questionnaire was originally developed and validated specifically for use in both school and sports contexts, with robust psychometric evidence supporting its application in these domains (Boileau et al., 2025). In the current study, items 2 and 7 were contextually phrased to reflect either school or sport, depending on the assessment setting. The FOFAMS demonstrated high reliability in sports ($\omega = .95$) and school ($\omega = .93$), with factor loadings ranging between .78 and .92 (Boileau et al., 2025), thus justifying its selection as an appropriate and psychometrically sound measure for this study.

Goal Progress

Perceived goal progress for academic and sport were respectively measured with five items on a scale from 1 (*Not at all*) to 7 (*Totally*). Sample items are as follows: Please rate the extent to which "*you progressed on your goals*" and "*you came closer to*

reaching your goals” (e.g., Carraro & Gaudreau, 2015). Each item was adapted to school or sport by adding the words “academic” or “sport” (e.g., “*You came closer to reaching your academic goals*”). Previous studies showed excellent reliability for this scale (e.g., Gaudreau et al., 2012) with standardized factor loadings ranging from .90 to .94 ($\omega = .97$) for academic (Chamandy & Gaudreau, 2019) and sport goal progress ($\alpha = .90$) (Kinoshita et al., 2022).

Satisfaction

Academic and sport satisfaction were measured using the 8-item subscale of the Multidimensional Students’ Life Satisfaction Scale (SLSS). Developed by Huebner et al. (1998), the academic satisfaction subscale asks students to assess their school-related feelings on a 7-point scale from 1 (*not at all*) to 7 (*totally*), with three items reverse-scored. This subscale has shown high reliability ($\omega = .96$) and strong factor validity (Boileau et al., 2021). For sports, the scale was adapted to reflect athletic satisfaction, with modifications like changing “*School is interesting*” to “*Sport is interesting*.” This sports adaptation has demonstrated good internal consistency ($\alpha = .78$) and confirmed factor validity (Gaudreau et al., 2016).

Fear of failure (control variable)

The short version of the Performance Failure Appraisal Inventory (PFAI; Conroy et al., 2002) was used to measure fear of failure. This version includes five items, each reflecting a distinct but related dimension of fear of failure. Participants rated the extent to which they agreed with each item on a 5-point Likert scale ranging from 1 (*Do not believe at all*) to 5 (*Believe 100% of the time*), with higher scores indicating greater fear of failure. They completed the measure twice, once for the academic context and once for

the sport context by responding based on their personal characteristics in each domain.

The PFAI has demonstrated a stable factor structure, acceptable internal consistency ($\alpha = .74$ to $.81$), and good construct validity (Conroy et al., 2002; Sagar & Jowett, 2010).

Plan of Analyses

Following data screening, composite internal consistency (Omega, ω) was calculated for each variable, treating constructs as manifest variables. The FOFAMS was designed for broad applicability across achievement domains such as school, sport, work, and art. This study aimed to further validate the FOFAMS through Confirmatory Factor Analysis (CFA) in school and sports domains. We sought to replicate its unidimensional structure among student-athletes, utilizing the WLSMV estimator for CFA (DiStefano et al., 2021). Fit indices were examined to assess the overall fit of each model. The Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were considered.

We tested three structural models using path analysis with observed (manifest) variables. This analytic strategy was chosen over latent variable modeling to prioritize model parsimony and efficiency given our sample size ($N = 305$), and because all constructs were assessed using composite mean scores that demonstrated strong internal consistency and unidimensionality. When each construct is clearly defined, reliably measured, and theoretically coherent, path analysis with composite indicators is a well-supported and statistically valid alternative to full latent variable modeling (Kline, 2016; Hoyle, 2012). This approach reduces model complexity and estimation burden while preserving the substantive relationships of interest (e.g., Cole & Preacher, 2014;

MacCallum & Austin, 2000). Model 1 evaluated a dual-domain structure in which the paths from FOFAMS in school and sport to their respective goal progress and satisfaction outcomes were freely estimated, while between-domain effects were constrained to zero. Model 2 explored cross-domain effects by assessing the contribution of school-based FOFAMS on sport-related outcomes. Conversely, Model 3 tested the role of sport-based fear on school-related outcomes. Nested models were compared using the Satorra-Bentler scaled chi-square difference test (Satorra & Bentler, 2001), with calculations performed via an online tool. After selecting the best-fitting model, we conducted additional analyses to assess the incremental validity of the FOFAMS by testing whether it explained unique variance in goal progress and satisfaction above and beyond fear of failure in each domain. These analyses were designed to determine whether fear of failure as motivation provides added predictive value when controlling for traditional measures of fear of failure.

Results

Preliminary analyses

The initial sample of 332 student-athletes was screened for outliers on the main variables in both domains, namely fear of failure as motivation, satisfaction, goal progress, and fear of failure for a total of 8 variables. Mahalanobis distance was computed and participants with a score above the critical value (Mahalanobis $\chi^2 > 28.129$, $df=8$, $p < .001$) were considered as multivariate outliers. Based on the screening results, six participants were found to be outliers, twenty-five did not answer attention check questions correctly, and one participant did not correspond to the criteria of the

study. Descriptive statistics and bivariate correlations are presented in Table 3.1 for our final sample ($N = 305$).

CFA of the FOFAMS

The two-factor model, comprising academic and sport FOFAMS, each measured by eight items, demonstrated an overall good fit to the data, as indicated by key fit indices (see Table 3.2). Although the RMSEA value exceeded conventional cut-off criteria, other indices (CFI, TLI, SRMR) indicated a satisfactory model fit. This pattern should be interpreted with caution, as the RMSEA can overestimate misfit in highly saturated models with few degrees of freedom (Kenny & McCoach, 2003), and recent recommendations suggest that fixed thresholds may not be appropriate across all modeling conditions (McNeish & Wolf, 2023). All items loaded strongly onto their respective latent factors, supporting the construct validity of the scale within both domains. A statistically significant positive correlation was observed between the academic FOFAMS and sport FOFAMS latent factors (see Table 3.2), indicating that while the two domains are strongly related, they maintain distinct conceptual structures.

Structural model

Three structural equation models (SEMs) were examined to investigate the relationships between fear of failure as motivation (FOFAMS), goal progress, and satisfaction in both academic and sport domains among student-athletes (see Figure 3.1).

Model 1 assessed within-domain effects. School fear of failure as motivation was positively and significantly related to academic goal progress and academic satisfaction, while sport fear of failure as motivation was positively and significantly associated with sport goal progress and sport satisfaction (see Figure 3.2). Model 2 explored cross-

domain effects from school to sport. In this model, school fear of failure as motivation remained positively and significantly associated with academic outcomes but did not significantly predict sport-related goal progress or satisfaction. Model 3 tested the reverse pattern, examining cross-domain effects from sport to school. Sport FOFAMS continued to predict sport outcomes significantly but did not significantly predict academic goal progress or satisfaction.

To compare the fit of these nested models, we conducted chi-square difference tests (see Table 3.3). Results indicated no statistically significant differences in model fit across the three models. However, Model 1 was more parsimonious and provided a clearer, domain-specific understanding of the relationships under investigation. Given the lack of substantial improvement in fit in the more complex models (Models 2 and 3), we retained Model 1 as the best-fitting model. This model also served as the basis for complementary analyses in which we controlled for general fear of failure to test the incremental validity of the FOFAMS.

Complementary Analyses

Once Model 1 was identified as the best-fitting model, we conducted complementary analyses to examine whether fear of failure as motivation contributes unique predictive value beyond fear of failure in both academic and sport contexts. Specifically, we included context-specific measures of fear of failure as control variables to assess whether FOFAMS still predicted goal progress and satisfaction when accounting for more traditional conceptualizations of fear of failure. Results supported the added value of the motivational framing: fear of failure as motivation in school and sport remained positively and significantly associated with their respective outcomes

even when controlling for fear of failure. In contrast, fear of failure, in both contexts, was negatively and significantly related to goal progress and satisfaction, consistent with its more aversive nature. These findings underscore the unique contribution of FOFAMS in capturing the motivational role of fear of failure in supporting goal pursuit and psychological adjustment. Standardized path coefficients are presented in Figure 3.2.

Discussion

This study examined the role of fear of failure as motivation within academic and sport contexts by evaluating the factorial structure, contextual distinctiveness, and predictive utility of the Fear of Failure as Motivation Scale (FOFAMS). Using a dual-domain design, we tested whether fear of failure as motivation functions as a domain-specific or global construct and explored its associations with goal progress and satisfaction. Fear of failure is widely acknowledged as a complex motivational phenomenon that can either undermine or enhance goal-directed behavior, depending on how it is cognitively appraised and regulated (e.g., Conroy, 2001). Our findings demonstrate that the FOFAMS captures meaningful variation in how individuals experience fear of failure across different life domains, suggesting that its links to goal progress and satisfaction are shaped by contextual factors. Specifically, fear of failure as motivation was positively associated with goal progress and satisfaction within each domain, even when controlling for general fear of failure. These results contribute to a growing body of evidence suggesting that, when framed as a motivational driver, fear of failure can play an adaptive role in achievement-related outcomes. This domain-based perspective underscores the importance of assessing fear of failure within specific

contexts to better understand its potential to support goal pursuit and psychological adjustment.

Domain-Specific Validation of the FOFAMS

Results of our CFAs supported the unidimensional factor structure of the FOFAMS in both academic and sports contexts. The analysis revealed a robust two-factor model, with items of academic and sport fear of failure as motivation each demonstrating strong item loadings on their respective factors. A statistically significant, strong correlation between the two factors suggests some shared variance in how fear of failure is perceived as motivational, while also supporting their distinction and reinforcing the domain-specific validity of the measure. This distinction reflects the broader understanding that psychological constructs can simultaneously display intra-individual consistency and contextual differentiation (e.g., Gaudreau & Miranda, 2010). It also aligns with achievement motivation research (e.g., Fryer & Elliot, 2007), which posits that individuals adapt their goal regulation strategies to meet the demands of different performance environments. The distinct manifestations of fear of failure as motivation in academic and sport contexts underscore the importance of tailored motivational assessments and interventions that account for the unique cognitive, emotional, and social dynamics inherent to each domain.

Our results further supported the domain specificity of mental representations of fear of failure. Perceiving fear of failure as motivational in sport positively related to goal progress and satisfaction within the sport context. Similarly, fear of failure as motivational in school correlated positively with goal progress and satisfaction within the academic domain. Alternative models allowing cross-domain relationships did not

improve model fit compared to this original, domain-specific model, suggesting no meaningful cross-domain associations. Therefore, the retained model indicates that interpreting fear of failure as a constructive force primarily enhances goal-directed behaviors and satisfaction within, rather than across, specific life domains. This domain-specific differentiation aligns closely with the internal/external (I/E) frame of reference model (Marsh, 1986; Marsh et al., 2008), which proposes that individuals develop their self-concepts through both external (social comparisons) and internal (dimensional comparisons across domains) frames of reference. According to this model, perceptions of competence and associated motivational processes tend to be compartmentalized by domain: excelling in one domain can even negatively affect perceptions in another domain through dimensional comparison effects (Marsh et al., 2008). Extending this reasoning to fear of failure, it is plausible that students compartmentalize their motivational perceptions and associated emotions in academic and sport contexts, given their distinct evaluation criteria and feedback structures. Consequently, student-athletes may tailor their self-regulatory strategies based on perceived competence derived separately from their experiences in each domain (Möller et al., 2016). Future research might benefit from applying the generalized internal/external frame of reference model (Möller et al., 2016) to explore complex interactions and reciprocal effects between academic and sport domains. For instance, studies could examine whether high motivational perceptions related to fear of failure in sport inadvertently undermine academic self-perceptions, or vice versa, via dimensional comparison processes. Understanding these cross-domain dynamics could provide valuable insights into how student-athletes navigate the dual demands of academics and sports, ultimately informing

tailored interventions aimed at maintaining balanced motivational profiles and psychological adjustment across both areas.

Finally, the incremental validity demonstrated by the Fear of Failure as Motivation Scale (FOFAMS) highlights that motivational aspects of fear of failure predict meaningful outcomes, such as goal progress and satisfaction, beyond what traditional measures of general fear of failure can explain. Traditionally, fear of failure has been viewed primarily as maladaptive, associated with negative outcomes such as anxiety, avoidance behaviors, and decreased performance (Conroy et al., 2001). However, our findings underscore the complexity of fear of failure, positioning it as a critical motivational driver that, when appraised adaptively, can enhance rather than hinder achievement-oriented behaviors (Gupta et al., 2021). Indeed, fear of failure occupies a central role in motivational theories, acting as a dual-faceted construct capable of both impeding (e.g., Gustafson et al., 2017) and facilitating performance (e.g., Gupta et al. 2021; Thuany et al., 2024; Tseng et al., 2022). The capacity of fear of failure as motivation to predict additional variance beyond the widely established general fear of failure construct underscores its conceptual and practical importance. Effect sizes observed were moderate to strong. Notably, the strength of these effects varied between academic and sport contexts, reflecting the importance of a domain-specific approach when interpreting motivational constructs. The present findings call for a more differentiated understanding of fear of failure. While often portrayed as maladaptive, our results indicate that perceiving fear of failure as motivational can relate to adaptive indicators such as goal progress and satisfaction. Recognizing this variability may help researchers and practitioners better understand how individuals' appraisals of fear shape

their motivational experiences, without assuming that fear can be directly transformed or that it inherently protects against distress.

Limitations and Future Directions

While this study significantly enhances our understanding of fear of failure as motivation, it faces several limitations. First, the reliance on self-report measures may introduce response biases, such as social desirability (Paulhus & Vazire, 2007). Although self-reports provide valuable insights into participants' subjective experiences, they may not fully capture the observable behavioral manifestations of fear of failure and fear of failure as motivation. To address this limitation, future research should prioritize the triangulation of assessment methods by combining self-report data with objective indicators (e.g., Semmer et al., 2003) to provide a more comprehensive understanding of how mental representations of fear of failure function in real-world settings. Potential objective measures include observable effort (e.g., task persistence, practice duration; Horvers et al., 2024), physiological markers (e.g., cortisol levels, heart rate variability; Ayuso-Moreno et al., 2021), and performance-based outcomes (e.g., competition rankings; Chong & Chong, 2023). Integrating multiple assessment methods would provide a richer perspective on the behavioral, physiological, and performance consequences of fear of failure across educational, sport, and achievement contexts.

Second, although this study examined the cross-domain consistency of fear of failure as motivation, it did not address its temporal stability. Consistency refers to the extent to which a construct operates similarly across different domains, whereas stability pertains to its persistence or fluctuation over time. While the demonstration of cross-domain consistency suggests that fear of failure as motivation may be a robust construct

across academic and sport contexts, it remains unclear whether it is temporally stable or susceptible to change in response to situational demands, high-stakes events, or major transitions. Longitudinal research, including intensive approaches such as daily diaries (e.g., Bolger & Laurenceau, 2013; Iida et al., 2023), would be particularly valuable to capture short-term fluctuations and, over longer time spans, to determine whether fear of failure as motivation reflects a stable disposition or a dynamic process that evolves with experience. Clarifying these temporal dynamics would advance our understanding of how fear of failure evolves in achievement settings and how it may alternately function as a source of vulnerability or resilience depending on changing circumstances.

In addition to exploring temporal dynamics, future research should investigate the psychological mechanisms underlying the domain-specific functionality of fear of failure as motivation. Emotion regulation capacities may play a critical role in determining whether fear of failure is managed adaptively or becomes a source of vulnerability. Individuals with stronger emotion regulation skills are more likely to manage fear-related emotions constructively, whereas difficulties in regulation may lead to maladaptive outcomes such as procrastination (Haghbin et al., 2012), burnout (Gustafsson et al., 2017), or disengagement (De Castella et al., 2013). Perfectionism may further moderate these dynamics, with rigid perfectionistic standards exacerbating vulnerability to fear, while flexible striving for excellence promotes adaptive motivation (Gaudreau et al., 2022). Investigating how these regulatory processes interact with domain-specific demands could deepen understanding of why fear of failure fosters motivation in some situations but impairs it in others.

While both contexts reflect fear of failure as a motivating factor, individuals' interpretations of failure-related situations can vary considerably depending on their regulatory focus and motivational orientation (Higgins, 1997; Conroy & Elliot, 2004). Students who are oriented toward personal growth and achievement might perceive fear of failure as an opportunity or challenge to overcome, particularly in academic settings where learning from mistakes can lead to improvement and mastery (Higgins, 1997). Conversely, individuals driven by security and the desire to avoid mistakes might experience fear of failure as an anxiety-provoking signal prompting cautious behaviors or avoidance strategies, especially in high-stakes sport contexts characterized by public performance evaluation and immediate consequences (Gomez-Lopez et al., 2020; Conroy & Elliot, 2004). These domain-specific motivational orientations have implications for how failure is anticipated, experienced, and ultimately coped with, further supporting the notion that fear of failure is a multidimensional and context-sensitive construct rather than a uniform trait (Conroy, 2001; Poczwardowski & Conroy, 2002).

Finally, investigating cross-cultural differences in the motivational aspects of fear of failure is essential. Cultural norms deeply shape how individuals perceive, experience, and respond to fear of failure (Heine et al., 1999). In collectivistic cultures, personal failures are often experienced not solely at an individual level but also as reflections on one's family and broader community (Wang et al., 2020). Consequently, the mental representations underlying fear of failure may carry different emotional and motivational significance in collectivist contexts compared to individualistic ones. It remains uncertain whether fear of failure serves a similarly adaptive motivational function across cultures or whether it is more likely to evoke feelings of shame and disengagement in collectivistic

societies. Future research should thus examine mean levels of fear of failure as motivation across diverse cultural groups, to determine whether the prevalence and motivational role of fear of failure observed in this study generalize beyond individualistic populations. Comparative studies could provide crucial insights into whether fear of failure operates as a universal motivational construct or whether its adaptive potential is culturally contingent. Addressing these points will not only refine theoretical models of fear of failure but also aid in crafting interventions that enhance motivation and resilience in high-stakes environments.

Conclusion

This study advances the understanding of fear of failure as a motivational construct by demonstrating its contextual consistency across academic and sports domains and its predictive role in goal progress and satisfaction. Using CFA to validate the measurement model and SEM to examine predictive relationships, we provide evidence that fear of failure as motivation operates as a domain-specific construct. Importantly, we demonstrated that fear of failure as motivation predicts satisfaction above and beyond general fear of failure, highlighting its distinct and incremental contribution to goal progress and satisfaction within domains. Taken together, these findings support a more balanced perspective on fear of failure, indicating that it is not necessarily maladaptive but can, in some contexts, accompany adaptive striving and psychological adjustment.

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Table 3.1*Descriptive statistics and bivariate correlations (N=305)*

Variables	Means	SD	Omega (ω)	R ²	2	3	4	5	6	7	8
1. FOFAM academic	5.26	1.39	.95		.45	.71	.01	.60	.26	.48	.02
2. Academic satisfaction	4.97	1.29	.88	.23		.52	-.14	.28	.33	.22	-.10
3. Academic goal	5.32	1.12	.94	.51			-.11	.43	.30	.48	-.07
4. FF academic	2.65	0.92	.83					.05	-.13	-.02	.63
5. FOFAM sport	5.28	1.27	.94						.39	.69	.11
6. Sport satisfaction	5.87	.74	.82	.24						.30	-.25
7. Sport goal	5.05	1.31	.94	.47							.06
8. FF sport	2.35	.93	.87								

Notes. FOFAM= Fear of Failure as Motivation; FF= Fear of Failure (PFAI); SD= Standard deviation; R²= the proportion of the variance for the dependent variables.

Table 3.2*Fit indices and factor loadings of FOFAMS academic and sport*

CFI	.972
TLI	.967
RMSEA	.117
SRMR	.033
FOFAMS ACADEMIC (F1)	Factor loadings
Item1	.878
Item2	.849
Item3	.891
Item4	.839
Item5	.902
Item6	.897
Item7	.834
Item8	.896
FOFAMS SPORT (F2)	Factor loadings
Item1	.876
Item2	.888
Item3	.873
Item4	.876
Item5	.889
Item6	.858
Item7	.803
Item8	.884
F1 with F2	.54, $p < .001$

Note. WLSMV = Weighted Least Square with Mean and Variance adjusted; F1= Factor 1; F2= Factor 2; F1 with F2= correlation between factor 1 and factor 2.

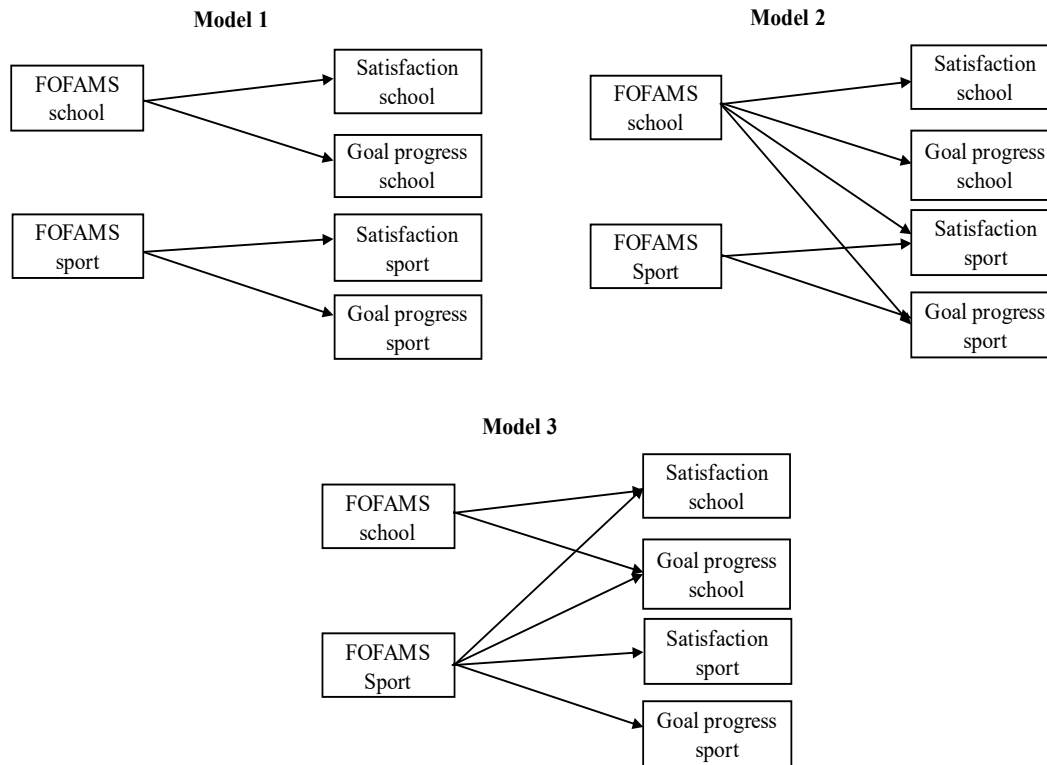
Table 3.3*Results of the Structural Equation Model (N=305)*

Models	χ^2	df	CFI	TLI	SRMR	RMSEA 90% CI	Constrast	Δ df
Model 1	3.916	4	1.00	1.00				
Model 2	0.033	2	1.00	1.00	.003	.000-.000	1 vs. 2	2
Model 3	4.254	2	.995	.967	.025	.000-.142	1 vs. 3	2

Note. Model 1= within-domain effect estimated; Model 2=spillover paths from school FOFAMS to sport goal progress and to sport satisfaction; Model 3= spillover paths from school FOFAMS to sport goal progress and to sport satisfaction.

Figure 3.1

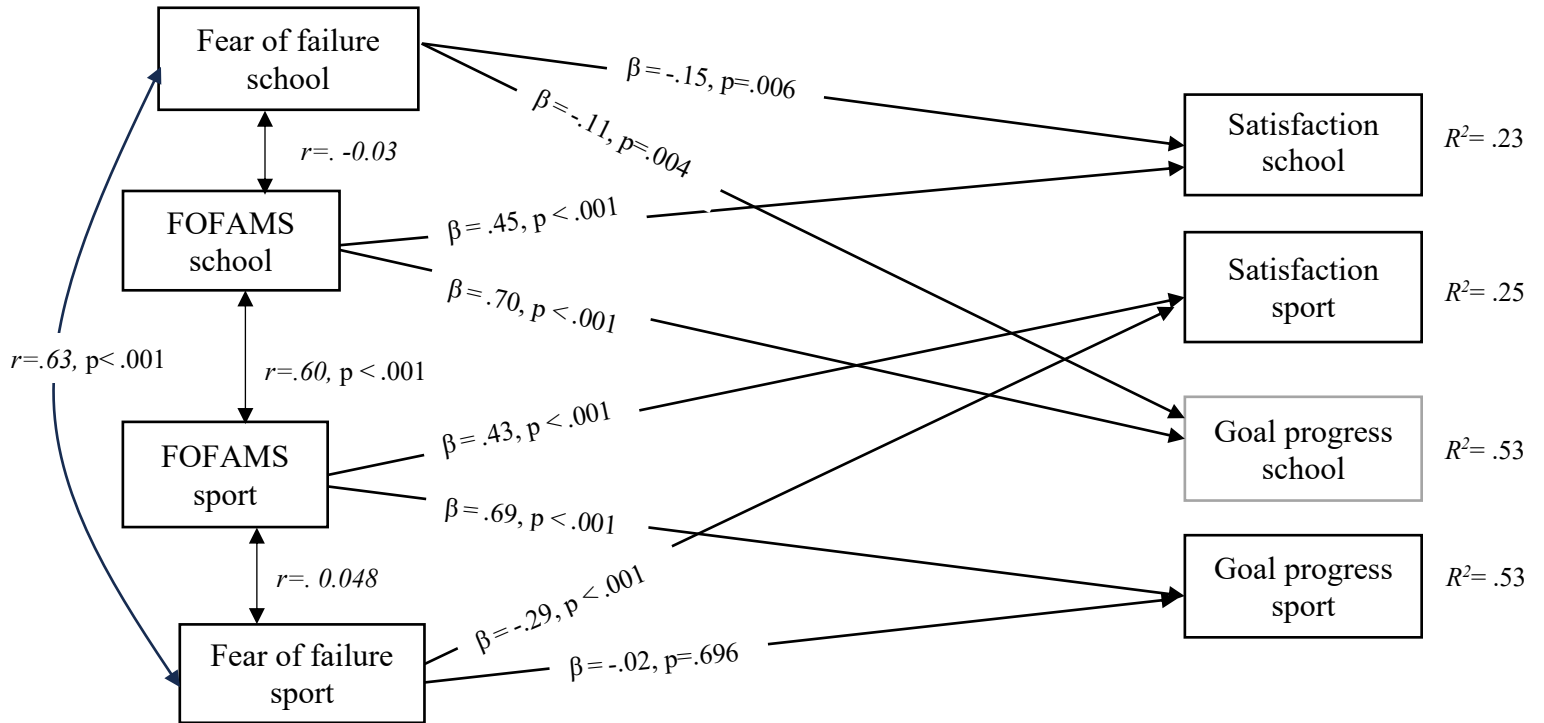
Conceptual model of the dual-domain study of fear of failure as motivation, goal progress and satisfaction with student-athletes



Note. Model 1= within-domain effect estimated; Model 2=spillover paths from school FOFAMS to sport goal progress and to sport satisfaction; Model 3= spillover paths from school FOFAMS to sport goal progress and to sport satisfaction.

Figure 3.2

Standardized Estimates from the Within-Domain Structural Model Controlling for Fear of Failure



CHAPTER 4

Daily Dynamics of Fear of Failure as Motivation

Laurence Boileau & Patrick Gaudreau

Author's Contributions Statement CRediT

Laurence Boileau: Conceptualization (equal); data curation (lead); formal analysis (lead); investigation (lead); methodology (equal); project administration (lead); software (lead); validation (equal); visualization (lead); writing- original draft (lead); writing-review editing (lead).

Patrick Gaudreau: Conceptualization (equal); data curation (supporting); formal analysis (supporting); investigation (supporting); methodology (equal); project administration (supporting); software (supporting); validation (equal); visualization (supporting); writing- original draft (supporting); writing- review editing (supporting).

Abstract

Using the Fear of Failure as Motivation Scale (FOFAMS), this study explores the role of fear of failure as motivation in the daily lives of student-athletes. Specifically, it examines how day-to-day mental representations of fear of failure as motivation relate to goal progress and psychological adjustment. A total of 268 student-athletes from the United States and Canada, competing across diverse sports and levels, participated in an eight-day daily diary study. The design allowed us to capture both within-person fluctuations and between-person differences in fear of failure as motivation. At the within-person level, increases in daily fear of failure as motivation were significantly associated with greater goal progress and satisfaction, and lower levels of depression. In contrast, at the between-person level, higher overall fear of failure predicted lower goal progress and satisfaction, and higher levels of depression and anxiety. Notably, when conceptualized as a motivational driver, fear of failure (i.e., FOFAMS) was associated with higher levels of general adjustment, as reflected in aggregated daily reports. These findings support the idea that fear of failure as motivation captures both stable, trait-like tendencies and dynamic, state-like fluctuations shaped by everyday experiences.

KEYWORDS: Fear of Failure, Student-Athlete, Goal-Progress, Psychological Adjustment, Daily-Diary, Multilevel modeling

Daily Dynamics of Fear of Failure as Motivation

The pursuit of goals in both academic and athletic contexts plays a central role in shaping individuals' satisfaction and psychological adjustment. These outcomes are influenced not only by external demands, but also by how individuals interpret and respond to daily challenges and emotional experiences (e.g., Ciarrochi et al., 2007; Nezlek & Plesko, 2001). Among the most impactful emotional experiences in these domains is fear of failure (i.e., Atkinson, 1957; Conroy, 2001; Elliot & Church, 1997; Lang & Fries, 2006). Traditionally seen as a maladaptive state, fear of failure has been related to diminished motivation (e.g., Michou et al., 2014), slower goal progress due to reduced sense of achievement (e.g., Conroy et al., 2007; Covington & Omelich, 2015; Gustafsson et al., 2017; Sagar et al., 2007), and poorer psychological adjustment (e.g., De Muynck et al., 2020; Martin & Marsh, 2003; Neff et al., 2005; Sagar & Stoeber, 2009). However, a growing body of research suggests that this emotion can also be experienced and interpreted as a motivational resource (e.g., Boileau et al., 2025; 2025), especially when individuals adopt a mindset that views stress and failure not as threats, but as opportunities for learning and growth (e.g., Crum et al., 2017; Crum et al., 2020; Haimovitz & Dweck, 2016). This mindset shift is particularly relevant in daily life, where student-athletes frequently encounter emotionally charged situations requiring quick adaptation (e.g., Doorley & Kashdan, 2021). The ability to interpret negative emotions, such as fear of failure, on a day-to-day basis may be a key factor in sustaining engagement, protecting well-being, and achieving goals in both academic and athletic settings. Tools like the Fear of Failure as Motivation Scale (FOFAMS), developed by Boileau et al. (2025), provide an innovative framework for capturing how individuals

mentally represent and engage with fear of failure as a motivational force. Anchored in the stress mindset literature (e.g., Jamieson et al., 2018; Lench et al., 2023), fear of failure as motivation moves beyond trait-based assessment to capture how fear of failure functions dynamically in daily life.

This study uses FOFAMS to address a significant gap in the literature by investigating both the day-to-day variability and overall stability of fear of failure as motivation among student-athletes. Using an intensive longitudinal design (i.e., daily-diary) and multilevel modeling, this research investigates whether fear of failure as motivation should be understood as a stable trait, a fluctuating state, or a combination of both. By examining these fluctuations, this study aims to deepen our theoretical and practical understanding of how perceiving fear of failure as motivating can guide behavior toward goal attainment, satisfaction, and psychological adjustment.

The Interplay of Goals, Satisfaction, and Well-Being in Student-Athletes

Student-athletes are uniquely positioned at the intersection of academic and athletic demands, which uniquely shape their daily lives and long-term well-being (e.g., Jiang & Wang, 2025). The pursuit of excellence in both domains presents constant challenges that require not only physical and cognitive effort, but also effective emotional regulation, particularly the ability to understand, tolerate, and adaptively engage with potentially negative emotions such as stress (e.g., Crum et al., 2013), frustration (e.g., Tamir et al., 2007), and fear of failure (e.g., Taylor et al., 2021). As they navigate this dual-role landscape, their progress toward goals in both domains is essential not only for achievements but also for fostering better satisfaction in their activities and psychological well-being (e.g., Gaudreau et al., 2015; Healy et al., 2020). Achieving goals in either

domain, such as setting a personal best in competition or excelling on an exam, has been consistently related to better positive affect, self-worth, and overall well-being (e.g., Cosh & Tully, 2015; Lundqvist, 2011).

However, the path leading to goal fulfillment is rarely a smooth one. Although this dual role has been demonstrated to be beneficial for some student-athletes because of the potential of skills transferability, better well-being and mental health (e.g., Lefebvre DuGrosriez, 2024; Porto Maciel et al., 2023), systematic reviews and empirical studies underscored the frequent conflict between athletic and academic demands. For example, training sessions, travel, and competitions often interfere with coursework and vice versa, leading to heightened stress and reduced well-being when mismanaged (e.g., Gray et al., 2023; Steele et al., 2020). The emotional consequences of dual role conflict may be exacerbated when athletes struggle to reappraise stressors or negative emotions constructively. This highlights the importance of emotion-focused coping strategies (i.e., Baker & Berenbaum, 2007), including mindfulness (i.e., Khoury et al., 2013), cognitive reframing (e.g., Hughes et al., 2011; Lambert et al., 2012), and adaptive emotion regulation (e.g., Hoorelbeke et al., 2016; Tamir et al., 2020), which have been shown to improve resilience in high-pressure contexts (Doorley & Kashdan, 2021). Beyond these strategies, however, individuals may also differ in how they mentally represent fear itself particularly whether they perceive it as a threat or as a motivational force.

Fear of Failure: Trait and State Dynamics

Among the emotional challenges student-athletes regularly face, fear of failure stands out as a particularly pervasive and potentially debilitating force (Conroy et al., 2001; Taylor et al., 2021). However, emerging research suggests that this fear, when

mentally represented as motivational, can also become an asset (Boileau et al., 2025). Understanding how fear of failure operates both as a trait (i.e., a stable disposition) and as a state (i.e., a situational reaction) is important for identifying when and how it can support rather than hinder achievement and psychological adjustment (Conroy et al., 2002; Elliot & Church, 1997; 2003).

Dispositional fear of failure tends to manifest across contexts, shaping long-term behavioral patterns such as risk avoidance (e.g., Caraway et al., 2003; Conroy et al., 2004; De Castella et al., 2013) or perfectionistic striving (e.g., Sagar & Stoeber, 2009). In contrast, state-like fear of failure fluctuates with daily challenges (e.g., an upcoming game or midterm exam) and may produce momentary spikes in anxiety or motivation depending on how it is experienced and interpreted in context (e.g., Jackson, 2017; Martin & Marsh, 2003). Nezelek and Plesko (2001) demonstrated that such emotional and motivational states can vary meaningfully from day to day, impacted by minor successes, setbacks, or perceived competence. For student-athletes, the perception that fear of failure can serve as a motivator may fluctuate from one day to the next, sometimes fostering engagement and goal pursuit even as it coexists with feelings of pressure or anxiety, depending on how failure-related cues are emotionally experienced.

People may hold the view that a fear of failure can be motivating (Boileau et al., 2025; Boileau et al., 2025). However, it remains uncertain whether this mental representation is generally stable over time or if it fluctuates from day to day as student-athletes face different situational demands. If unregulated, fear of failure can impair decision-making (e.g., Nelson et al., 2019), increase rumination (Haghbin et al., 2012), and contribute to long-term psychological distress (e.g., Sagar et al., 2007; Sagar &

Lavallee, 2010). However, when fear is interpreted as a signal of investment or readiness, similar to how a stress-is-enhancing mindset reframes stress as a potential performance aid, it may be more likely to fuel constructive action (e.g., Crum et al., 2020; Haimovitz & Dweck, 2016; Jamieson et al., 2018). In this light, perceiving fear of failure as motivational (as captured by FOFAMS) could reflect a more adaptive engagement with challenging situations, without implying the activation of deliberate regulatory strategies.

The FOFAMS, used in this study, offers a promising approach to explore potential state–trait interactions through a daily diary design. This methodology offers a granular view of how motivational fear fluctuates over time and across contexts (i.e., sport and school). It also enables an empirical test of whether fear of failure as motivation operates more as a stable disposition or a dynamic, context-sensitive state. These insights are critical for tailoring future interventions: individuals with chronically low levels of FOFAMS—who do not perceive fear of failure as motivating—may benefit from longer-term cognitive restructuring to reshape their beliefs about fear, whereas those with more state-like variability might respond well to in-the-moment strategies such as mindfulness or cognitive reappraisal to harness fear adaptively in high-stakes situations.

Aims of the present study

Methodological advancements such as intensive longitudinal design (i.e., daily diary designs; e.g., Bolger & Laurenceau, 2013; Gunthert & Wenzel, 2012; Nezlek, 2020) have enabled researchers to capture how emotional and psychological processes unfold in real-time, including the interplay between stable traits and dynamic states. These approaches are particularly valuable for examining fluctuations in affect, cognition, and behavior across time and contexts. Building on this approach, the present study adopted a

within-person perspective to examine how daily variations in fear of failure as motivation (Boileau et al., 2025) relate to student-athletes' goal progress, satisfaction, and psychological adjustment (see Figure 4.1). We tracked daily levels of FOFAMS, goal progress, satisfaction, depression, and anxiety to assess whether FOFAMS predicts meaningful day-to-day outcomes. Additionally, we investigated whether FOFAMS functions more as a state-like or trait-like construct by examining its variability across individuals and across days. Within this intensive longitudinal design, FOFAMS provides a novel lens for understanding how motivational mindsets interact with daily contextual factors to predict achievement and psychological adjustment in high achievement domains.

In line with these considerations, we propose five hypotheses. Specifically, fear of failure as motivation will exhibit significant within-person variability (H1); more precisely, we anticipate that on days when student-athletes reported higher-than-usual levels of fear of failure as motivation, they will experience greater goal progress, higher satisfaction, and lower levels of anxiety and depression (H2). At the between-person level, we expect that individuals generally high in dispositional fear of failure as motivation will report greater overall goal progress and satisfaction, along with lower depression and anxiety (H3). Conversely, we hypothesize that higher general fear of failure will be negatively associated with goal progress and satisfaction and positively related to anxiety and depression (H4). Lastly, we hypothesize a cross-level interaction (H5), such that general fear of failure (Level 2) moderates the within-person (Level 1) associations between daily fear of failure as motivation (FOFAMS) and daily outcomes. Specifically, we expect that the beneficial associations of daily FOFAMS on satisfaction

and goal progress, as well as its negative effects on depression and anxiety, will be attenuated among individuals with higher levels of general fear of failure.

Ethics Statement. This study was approved by the health science and science ethic research board of the University of Ottawa (Project H-02-24-9780). All participants provided informed consent. We disclosed all measures and exclusions.

Method

Participant

A priori power estimation for multilevel modeling is inherently complex, as it depends on several interrelated parameters, including intraclass correlations (ICC), the number of level-1 observations per participant, and the expected effect sizes (Snijders & Bosker, 2012; Nezlek, 2020). To inform our recruitment strategy, we conducted simulation-based power analyses using the *mlmpower* package in R (Keller, 2024), which allows researchers to specify multilevel models with fixed and random effects and evaluate statistical power under varying sample sizes. We simulated an 8-day daily diary model including daily FOFAMS (Level 1), general fear of failure (Level 2), and their cross-level interaction, with goal progress as the outcome. Parameters reflected small-to-moderate effect sizes ($\beta_{\text{within}} = .26$; $\beta_{\text{between}} = .22$; $\beta_{\text{interaction}} = .16$), and random slopes were specified for the level-1 predictor. Each condition was replicated 1,000 times.

According to a meta-analysis, ICC for achievement-related outcomes have been reported to vary between .10 and .25 (Hedges & Hedberg, 2007; 2014). To account for this uncertainty, we examined both ICC values in our simulations, following recommendations by Keller (2024). Power estimates for detecting fixed within- and between-person effects, as well as their interaction, were consistently high across all

conditions (e.g., power $\geq .99$ at $N = 300$). However, the power to detect random slopes remained below conventional thresholds (i.e., ranging from .38 to .54 at $N = 200$ and from .52 to .72 at $N = 300$), depending on the ICC. To further examine the detectability of a smaller cross-level interaction effect ($\beta = .10$), we conducted an additional power analysis using the same model specifications. Results indicated that power to detect this smaller fixed interaction remained high (.96 at $N = 200$, .98 at $N = 250$, and .99 at $N = 300$). As before, however, power to detect the random slope term remained modest (.38 to .52 across sample sizes), underscoring the challenge of reliably estimating individual differences in within-person slopes.

The current power simulations were conducted for a single outcome variable¹⁰. However, our integrative model involves testing within- and between-person effects across four outcome variables (goal progress, satisfaction, depression, and anxiety). We acknowledge that outcome-specific variance and the accumulation of multiple hypothesis tests may require a larger sample size to detect effects consistently across models. Accordingly, our decision to recruit 300 participants was also guided by the need to ensure adequate statistical power across these multiple outcomes. Taken together, these simulations demonstrate that fixed effects, both within and across levels, can be detected with high power using a sample of 200–300 participants in a daily diary design. However, detecting random slope variability requires considerably more power. Based on these findings and considering the ecological validity and intensive nature of daily diary studies (Bolger & Laurenceau, 2013; Curran & Bauer, 2011), we adopted a conservative

¹⁰ Consistent with the primary analytic structure and the current capabilities of the *mlmpower* package, which is designed to simulate one dependent variable at a time rather than multivariate outcomes (Keller, 2024).

recruitment strategy. We enrolled 300 student-athletes to ensure sufficient power to detect fixed within- and between-person effects, allow for partial noncompliance and missing data, and maximize our ability to examine individual variability in daily motivational dynamics. We also anticipated that approximately 5–10% of the sample might respond in a lenient or inattentive manner, a rate consistent with exclusion rates typically observed in online survey research (Fleischer et al., 2015).

Student-athletes were recruited from Prolific Academic. To participate, participants had to be a student-athletes from Canada or United States. They had to participate in sport at a recreational, regional, provincial, national, or international level from a wide range of different sports (e.g., hockey, basketball, track and field, swimming). In addition, they had to participate in their sport for at least two hours per week. No specific years of experience were required. No restrictions were placed on participants' age and academic programs. Other countries were not included in this study to reduce any issues brought on by the different time zones.

Participants were 268 student-athletes (55.9% of participants identified as men, 42.8% as women, and 1% identified with another gender identity, and .3% were missing) that were between 18 and 70 years old ($M = 32.46$; $SD = 12.21$). Participants were practicing a team (58.9%) or individual (41.1%) sport at a recreational (67.3%), regional (17.5%), provincial (8.8%), national (6.1%), or international level (.3%), and they were practicing between 2 and 20 hours per week ($M = 6.83$, $SD = 4.56$). They were enrolled at university (83.5%), college (13.1%), or other (3.4%). They identified their ethnic background as European/White (39%), Black (26.2%), East Asian (10.8%), South Asian

(8.4%), African (2.7%), Middle Eastern (2.7%), Hispanic/Latino (5.7 %), or mixed (4.5%).

Data was collected for 8 consecutive days during the winter semester 2024. Participants completed an online questionnaire that took approximately 10 minutes on the first day of the daily diary (i.e., baseline) and approximately 5-7 minutes on the other days (i.e., Monday to Sunday weekly report). Participants received a payment of £1.80 on the first day of the daily diary because the questionnaire included demographic questions and longer versions of questionnaires (i.e., Sunday), and received 1.10£ every other day of the week (i.e., Monday to Sunday). Participants were asked to complete the daily surveys at any time between 7:00 pm and 3:00 am. To improve compliance, participants were sent daily reminders to complete their daily diaries.

Procedure

A time-contingent (i.e., end of each day) daily diary design (e.g., Gunthert & Wenzel, 2012; Moskowitz et al., 2009) was used, in which participants completed surveys at the end of each day over a period of eight days. A baseline questionnaire was completed on Monday and included demographic questions, FOFAMS (Boileau et al., 2025), and Performance Failure Appraisal Inventory to assess baseline of fear of failure (Conroy et al., 2002). Participants completed a daily diary survey from Monday to Sunday about their fear of failure as motivation, goal progress, satisfaction, feelings of depression, and anxiety. In order to ensure that the participants were answering the questionnaire according to the specific day of the week, the instructions of each questionnaire contained the day of the week to which the participants had to refer to answer the questions (e.g., *“Please refer to the things you have experienced today on*

MONDAY). All questionnaires were completed online on a secure website. Before completing the first questionnaire (i.e., Monday), participants were informed of their ethical rights that their responses will be confidential, and that they could withdraw at any point during the study without penalty of any kind.

Participants completed on average 5.55 ($SD = 1.79$) daily surveys, with completion rates of one (5.2%), two (3.7%), three (6%), four (9.7%), five (11.6%), six (19%) or seven daily diaries (44.8%). We performed attrition analyses to examine if there were any differences between students who completed 7 daily diaries and those who completed six or fewer. Independent-sample t-tests revealed no statistically significant difference ($p > .05$) for FOFAMS, fear of failure, satisfaction, goal progress, and psychological adjustment. We therefore included all participants who completed at least one daily survey in our analyses.

Measures

Fear of failure as motivation scale (Baseline and Daily)

The FOFAMS (Boileau et al., 2025) consists of 8 items (e.g., “My fear of failure motivates me to have good performances,” “My fear of failure motivates me to practice/study more”), rated on a 7-point Likert scale from 1 (*not at all*) to 7 (*totally*), with higher scores indicating a stronger perception of fear of failure as motivational. Two versions were administered: a general version assessing typical responses to fear of failure as motivation and a daily version capturing situational experiences. Instructions were adapted accordingly. For the general version, participants rated how they *generally* feel when experiencing fear of failure. For the daily version, they rated how they felt *that day* when experiencing fear of failure (e.g., “On Monday, when I

experienced fear of failure, it motivated me to...”). The scale demonstrated high internal consistency across domains, with $\omega = .95$ in sports and $\omega = .93$ in academics, and factor loadings ranging from .78 to .92 (Boileau et al., 2025).

Fear of Failure (Baseline)

The short version of the Performance Failure Appraisal Inventory (PFAI; Conroy et al., 2002) was used to assess general fear of failure. This version includes five items, each reflecting a core belief associated with the aversive consequences of failure (e.g., fear of devaluing one’s self-estimate, social esteem, or upsetting important others). Participants were instructed to indicate the extent to which they believed each statement was true for them, using a 5-point Likert scale: 1 (*Do not believe at all – 0% of the time*), 2 (25%), 3 (*Sometimes believe – 50% of the time*), 4 (75%), and 5 (*Believe 100% of the time*). Higher scores reflect greater fear of failure. The short PFAI has demonstrated a stable factor structure, acceptable internal consistency ($\alpha = .74-.81$), and good construct validity across performance contexts (Conroy et al., 2002; Sagar & Jowett, 2010).

Goal Progress (Daily)

Goal progress was assessed using three items adapted from validated scales (Carraro & Gaudreau, 2015; Dugas et al., 2012). Participants were asked to reflect on their day (e.g., “Please take a moment to reflect on your Monday”) and rate the extent to which they: (1) *progressed on their goals*, (2) *moved forward in the pursuit of their goals*, and (3) *came closer to reaching their goals*. Responses were recorded on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Totally*). This scale has demonstrated excellent reliability in past research, with standardized factor loadings ranging from .90 to .94 and internal consistency coefficients of $\omega = .97$ in academic contexts (Chamandy &

Gaudreau, 2022) and $\alpha = .90$ in sport contexts (Kinoshita et al., 2022).

Satisfaction (Daily)

Daily satisfaction with life was measured using five items adapted from the Satisfaction with Life Scale (Diener et al., 1985; Pavot & Diener, 1993). Participants were instructed: *“Please think about the thoughts and feelings that you had today and rate the extent to which you agree with each statement. Today, on Monday...”* Items included: *“In most ways, my day was close to my ideal,” “The condition of my day was excellent,” “I am satisfied with my day,”* and *“I have gotten the important things I wanted in my day.”* Responses were recorded on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Totally*). This daily adaptation has demonstrated strong internal consistency in both sport ($\alpha = .86$) and academic ($\alpha = .90$) contexts (Gaudreau & Verner-Filion, 2012; Morinville et al., 2013).

Depression symptoms (daily)

Depression feelings were assessed using a short version of the Short Mood and Feelings questionnaire (SMFQ; Costello & Angold, 1988). The questionnaire used in this study is comprised of 6 items designed to assess state-level depressive affect on a specific day. Participants rated the intensity of their feelings today (e.g., *“Today, on Monday...”*) across six descriptors: Unhappy, Miserable, Depressed, Downhearted, Sad, and Gloomy. Each item was rated on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Totally*). The SMFQ has consistently shown good reliability across a range of populations and contexts (e.g., $\alpha = .91$; Thabrew et al., 2018).

Anxiety symptoms (daily)

Anxiety feeling was assessed with a 7-item self-report measure designed to

capture state anxiety on a specific day. This scale is grounded in affective science and daily assessment literature and closely resembles items found in the State-Trait Anxiety Inventory (STAI; Metzger, 1976) adapted for daily experience. Participants reported how strongly they felt each of the following emotions today: Worried, nervous, anxious, panicky, on edge, tense, *and* stressed. Items were rated on the same 7-point Likert scale from 1 (*Not at all*) to 7 (*Totally*). Prior studies adapting similar anxiety items for daily assessment have reported acceptable to strong internal consistency (e.g., alphas ranging from .85 to .91; Neff & Vonk, 2009; Nezlek, 2005).

Plan of Analyses

Multilevel analyses were conducted to simultaneously test the within- and between-person hypotheses specified in our integrative model (see Figure 4.1). Analyses were performed using Mplus Version 8.0 (Muthén & Muthén, 1998–2017), using a two-level random-effects modeling approach. To appropriately partition variance and facilitate interpretation, Level 1 predictor (daily fear of failure as motivation) was group-mean centered, isolating within-person variability, while Level 2 predictors (general fear of failure and general fear of failure as motivation) were grand-mean centered (Enders & Tofighi, 2007; Raudenbush & Bryk, 2002). Random slopes were estimated for each within-person relationship (daily goal progress, satisfaction, depression, and anxiety regressed on daily fear of failure as motivation), allowing these relationships to vary freely across individuals (Bolger & Laurenceau, 2013; Nezlek, 2020). Cross-level interactions were subsequently tested by regressing these random slopes on general fear of failure, thus examining whether individual differences in general fear of failure moderated the strength of the daily within-person relationships.

Results

Preliminary analyses

The initial sample of 298 student-athletes was screened for outliers. Participants (N=22) were excluded from the analysis because they failed 40% of the attention check included in the questionnaires (e.g., “*If you read this question attentively, please answer "Totally agree"*”) and only completed the baseline questionnaire. From the 275 participants remaining at this step, 7 multivariate outliers were identified. Mahalanobis distance was computed, and participants with a score above the critical value ($\chi^2 > 18.571$, $df=5$, $p < .001$) were considered outliers and excluded from our analysis. Bivariate correlations and descriptive statistics for between- and within-person level variables are shown in Table 4.1. Multilevel composite reliability for each scale was calculated using the approach of Geldhof and his colleagues (2014). Intraclass correlations (ICCs) indicated that 43%, 49%, 50%, 38%, and 47% of the variance in daily FOFAMS, goal progress, satisfaction, depression, and anxiety, respectively, was attributable to between-person differences, leaving substantial within-person variability (i.e., $1 - \text{ICC}$). These findings justify the use of multilevel structural equation modeling (MSEM; Preacher et al., 2011) to disentangle these effects.

Between-Level Effects (Level 2)

At the between-person level, the study identifies statistically significant relationship between fear of failure, its motivational aspects (FOFAMS), and various psychological outcomes across individuals (see Figure 4.1). Specifically, a higher general level of fear of failure had a negative and statistically significant relationship with goal progress ($B = -.14$, $p = .04$) and satisfaction ($B = -.23$, $p = .001$), and a positive and

statistically significant relationship with feelings of depression ($B = .46, p < .001$) and anxiety ($B = .68, p < .001$). These results indicate that individuals with pervasive fear of failure tend to report lower achievement and satisfaction, alongside heightened emotional distress. Conversely, higher levels of FOFAMS are associated with more favorable outcomes: there is a positive relationship with both goal progress ($B = .52, p < .001$) and satisfaction ($B = .49, p < .001$), and a negative relationship with feelings of depression ($B = -.18, p = .001$) and anxiety ($B = -.18, p = .002$). This pattern suggests that individuals who generally perceive fear of failure as motivating experience better overall goal attainment and satisfaction, and lower levels of depression and anxiety. Thus, these between-person differences highlight that while a general predisposition towards fear of failure can lead to poorer mental health and performance outcomes, framing this fear as a motivational force can yield considerable psychological and performance benefits.

Within-Person Level

At the within-person level, analysis indicates a positive relationship between daily FOFAMS and goal progress ($B = .73, p < .001$), demonstrating that on days when individuals report higher than average FOFAMS, they also achieve more progress toward their goals. Similarly, there is a noteworthy positive association between daily FOFAMS and satisfaction ($B = .42, p < .001$), suggesting that motivation from fear of failure correlates with higher satisfaction. Conversely, daily FOFAMS shows a negative relationship with feelings of depression; on days with elevated FOFAMS, individuals report lower levels of depression ($B = -.16, p < .001$). However, the relationship between FOFAMS and anxiety, while negative, does not reach statistical significance ($B = -.08, p = .075$), indicating that higher daily FOFAMS is unrelated to daily anxiety levels. These

findings highlight that, within individuals, days marked by a heightened perception of fear of failure as motivating are generally associated with better performance and mood outcomes, although the relationship with anxiety remains unclear. Overall, this pattern indicates that fear of failure as motivation relates positively to both daily goal progress and well-being, highlighting its potential adaptive function.

Cross-level interaction

We tested a cross-level interaction where fear of failure was the moderator of the relationships between FOFAMS and the level 1 dependent variables. The interaction term was not statistically significant in any of the relationships (goal-progress; $B = .057, p = .115$; satisfaction; $B = .011, p = .801$; depression; $B = .045, p = .303$; anxiety; $B = .036, p = .439$) meaning that the level of fear of failure in general is unrelated to how daily fluctuations in FOFAMS relate to the tested variables. The general level of fear of failure does not moderate the within-person relationships between FOFAMS and the outcomes (progress, satisfaction, depression, and anxiety).

Discussion

This study examined the dynamic role of mental representation about fear of failure among student-athletes by investigating both its trait-like stability and state-like variability, using FOFAMS. By adopting an intensive longitudinal design, the study offered a nuanced understanding of how fear of failure as motivation functions not only as a stable disposition but also as a context-sensitive motivator that fluctuates in response to daily challenges. Our findings revealed meaningful associations with consequential outcomes at both the within-person and between-person levels, highlighting that while some individuals consistently interpret fear of failure as a motivational force, others

experience day-to-day shifts in how this emotion predicts their goal progress, satisfaction, and psychological well-being.

Within-Person: Daily Mood

At the within-person level, our results revealed that on days when student-athletes perceived fear of failure as more motivating than usual, they reported greater goal progress and higher satisfaction, as well as reduced depressive symptoms. These findings align with theories suggesting that motivational appraisals of fear can energize behavior, increase task engagement, and promote a sense of meaningful progress (e.g., Elliot & Thrash, 2004; Martin & Marsh, 2003). They also echo broader research showing that adaptive motivational frameworks such as interpreting fear as a source of energy rather than threat are linked to better emotional functioning and academic or athletic adjustment (e.g., Tamir & Ford, 2012; Dweck, 2006). In this sense, daily fear of failure as motivation appears to function as a beneficial mindset that promotes both performance-related and psychological outcomes, offering individuals a productive lens through which to face daily challenges.

In contrast, the association between daily fear of failure as motivation and anxiety, while negative in direction, did not reach statistical significance. This null finding may reflect the complex and context-sensitive nature of anxiety as an achievement-related emotion. Conceptual frameworks in the field of achievement emotions suggest that state anxiety can, in some instances, signal high personal investment and the presence of valued goals (Pekrun, 2006). Moreover, under specific conditions such as when stressors are perceived as controllable or as challenges rather than threats anxiety may be appraised as facilitative or performance-enhancing (Jamieson et al., 2018; Moore et al., 2019). In

this context, the daily contribution of fear of failure as motivation to anxiety may not be linear; rather, its effects could depend on how individuals appraise the situation and on the regulatory resources available to them. When fear is experienced in a context perceived as controllable and supported by sufficient coping resources, it may be associated with adaptive arousal, whereas in more threatening or depleting circumstances, it may relate to heightened distress. Additionally, the relatively high intraclass correlation observed for anxiety ($ICC = .62$) suggests that a considerable proportion of variance is attributable to stable, between-person differences, thereby reducing the potential for detecting statistically significant within-person associations. This further underscores the role of dispositional factors and long-standing emotion regulation strategies in shaping daily anxiety experiences, beyond the role of momentary motivational appraisals.

Between-Person: Dispositional Patterns

At the between-person level, this study revealed that general fear of failure and its motivational reinterpretation via FOFAMS are related to different psychological outcomes. Individuals who reported high levels of general fear of failure tended to experience lower goal progress and satisfaction, along with heightened symptoms of depression and anxiety. These findings are consistent with prior research showing that dispositional fear of failure is often accompanied by maladaptive outcomes, including avoidance behaviors, cognitive interference, and emotional distress (e.g., Conroy et al., 2002; Elliot & Thrash, 2004; Sagar & Lavalley, 2007; Taylor et al., 2021). This suggests that when fear of failure becomes a chronic trait, it may inhibit goal-directed engagement and lead to poorer psychological adjustment.

In contrast, individuals who generally endorsed higher levels of fear of failure as

motivation reported significantly greater goal progress and satisfaction, as well as reduced levels of depression and anxiety symptoms. This suggests that appraising fear of failure as a motivating driver may support more adaptive functioning over a short period of time. These trait-level benefits likely stem from the way individuals cognitively frame challenges using fear as a signal to prepare, persist, or adapt, rather than withdraw (e.g., Maddux & Rogers, 1983). This aligns with theories of cognitive reappraisal (i.e., Jamieson et al., 2018; Ray et al., 2008; Riepenhausen et al., 2022) and echoes the broader message of mindset research (Dweck, 2006), which emphasizes the power of mental representations in which a person interprets difficulty and challenges as an opportunity for growth (i.e., a growth mindset) rather than as a determined quality (i.e., a fixed mindset).

The robustness of the FOFAMS construct across individuals may hold meaningful implications for practice. While the present study did not directly examine whether this motivational representation can be altered, the results suggest that individuals who perceive fear of failure as energizing rather than debilitating tend to invest more effort and experience better psychological adjustment. These associations point to the potential value of future research exploring how such representations might evolve or be supported in applied settings.

Trait-State Distinction: Multilevel Perspective

The findings support a dynamic conceptualization of fear of failure as motivation, wherein daily situational cues can amplify or attenuate its expression, even as some individuals consistently report elevated levels. The intraclass correlation coefficient indicates that 57% of the total variance in fear of failure as motivation is attributable to

stable between-person differences. In comparison, the remaining 43% reflects meaningful within-person fluctuations. This partitioning of variance underscores the importance of modeling both trait-like and state-like components when examining the motivational role of fear of failure in everyday contexts. This interplay between stability and variability holds important theoretical implications. It aligns with emerging views in motivation theories that emphasize the contextual malleability of emotions like fear and their potential to fuel adaptive behavior (e.g., Quoidbach et al., 2015; Tamir & Ford, 2012). When individuals experience a sense of control or positive affect, they may reframe fear of failure as a driving force, using it to channel effort and persistence. This capacity to reinterpret threat-based emotions is consistent with Dweck's (2006) growth mindset and the stress-is-enhancing mindset framework (Crum et al., 2017; Selye, 1976), which emphasize viewing adversity as a catalyst for development rather than a sign of inadequacy. In this context, fear of failure as motivation offers a complementary perspective by illustrating how negative affect, when perceived through a motivational lens, can support achievement and psychological adjustment. Interestingly, the fact that FOFAMS scores are slightly higher at the general ($M = 5.44$) than the daily level ($M = 4.88$) may also reflect individuals' retrospective interpretation of their motivation or a broader self-narrative shaped by accumulated experience. This suggests that trait-level assessments tap into more integrated, generalized self-perceptions. At the same time, daily reports offer a closer view of immediate affective-motivational processes that can be influenced by situational ups and downs in the flow of daily living.

This conceptualization of fear of failure as motivation has practical implications. For example, cognitive-behavioral strategies, such as mindset intervention (Yeager et al.,

2022) could be used to reframe momentary fear responses in high-stakes situations such as competitions or exams. Meanwhile, deeper psychological work (e.g., cognitive behavioral therapy) might focus on changing long-standing beliefs from the childhood about failure (e.g., Sagar & Lavalley, 2010) that perpetuate trait-level avoidance and anxiety. Overall, recognizing the interplay between state and trait components also strengthens the case for personalized support. Individuals with higher trait levels of fear of failure as motivation may benefit from strategies that help them sustain adaptive interpretations over time. In contrast, those whose motivation fluctuates more in response to situational cues may require context-sensitive interventions that target daily regulation and coping.

Cross-Level Considerations

The initial hypothesis was that the positive daily effects of FOFAMS would be attenuated among individuals with higher dispositional fear of failure, indicating a potential cross-level interaction. However, no significant interactions were observed for satisfaction, anxiety, or depression, and although a small trend emerged for goal progress, it did not reach statistical significance.

From an empirical standpoint, one plausible explanation is that the moderating effect of dispositional fear of failure may only emerge at more extreme levels of the construct. In this sample, the mean score on the general fear of failure scale was relatively moderate ($M = 2.86$, $SD = .93$), which may have limited the variability necessary to detect an interaction. It is therefore possible that moderation effects would become more salient in populations characterized by heightened performance anxiety or clinically elevated fear of failure. Future studies could specifically recruit such individuals to

examine whether fear of failure as motivation remains a viable motivational resource when avoidance tendencies become more rigid.

Theoretically, the absence of moderation may also reflect the chronic avoidance and rumination tendencies associated with dispositional fear of failure, which can interfere with emotion regulation and goal-directed behavior (Conroy & Elliot, 2004; Elliot & Thrash, 2004). Even if individuals have developed a more adaptive representation of fear, these entrenched cognitive–emotional patterns may blunt the energizing potential of fear of failure in daily contexts. Accordingly, the present findings suggest that FOFAMS operates as a relatively stable positive predictor of functioning across individuals, except perhaps in extreme cases where dispositional fear is overwhelming.

Limitations and Future Directions

Despite the valuable insights offered by this study, several limitations must be acknowledged. First, the reliance on self-report measures introduces potential biases such as social desirability, recall inaccuracies, and subjective interpretation of emotional states (Ellingson et al., 1999; Podsakoff et al., 2003). In addition, using a single measurement method for all constructs raises the possibility of shared method variance, which may inflate observed associations among variables. Although daily diary methods help mitigate retrospective bias by capturing real-time data (e.g., Bolger & Laurenceau, 2013), they still rely on participants' introspective abilities. In this study, all outcome variables were assessed via self-report. Future research could enrich this approach by incorporating objective indicators of psychological adjustment such as physiological measures (e.g., heart rate variability, salivary cortisol; Mosley & Laborde, 2024) or behavioral

assessments (e.g., task persistence, performance metrics) to triangulate self-report data (Pekrun, 2020) and provide a more comprehensive understanding of how motivational fear of failure operates in real-world contexts.

Second, the sample was limited to student-athletes, primarily from Western academic and sports environments. While this population is suited for exploring the dual pressures of academic and athletic success, it restricts the generalizability of findings. Cultural norms shape how individuals interpret and respond to fear and failure (e.g., Heine et al., 2001; King & McInerney, 2019). Therefore, future research should extend to non-athlete populations and include participants from more diverse cultural backgrounds to examine potential cross-cultural variations in the functioning of the FOFAMS, as well as the generalizability of the trait–state dynamics of motivational fear.

Differences in the time frame of measurement may help explain the discrepancy observed between daily and general levels of anxiety. As shown in previous daily diary research (e.g., Boileau et al., 2021; Carraro & Gaudreau, 2015; Tamminen et al., 2019), daily assessments tend to reflect short-term, situation-dependent experiences, while general measures capture more stable, trait-like tendencies. These differences highlight the importance of considering the temporal frame when interpreting psychological constructs across multiple levels of analysis. In this study, FOFAMS demonstrated a moderate intraclass correlation, suggesting that the construct captures both trait-like stability (i.e., between-person differences) and state-like variability (i.e., within-person fluctuations across days). This interplay between stable tendencies and daily fluctuations may account for the stronger association between FOFAMS and anxiety at the general level compared to the daily level. These findings underscore the importance of using

multilevel approaches to better understand how fear of failure operates across time scales and contexts. They also highlight the value of developing interventions that are sensitive to both enduring motivational patterns and the dynamic, situational factors that shape daily experience (e.g., Linnenbrink-Garcia & Pekrun, 2011).

Another limitation concerns the study's statistical power. Although daily diary designs offer strong ecological validity, they often involve modest sample sizes due to the intensive nature of data collection (Bolger & Laurenceau, 2013; Curran & Bauer, 2011). In this study, cross-level interaction analyses revealed no statistically significant moderation effects of general fear of failure on the within-person associations between daily FOFAMS and psychological outcomes. Given the modest sample size and the small magnitude of the estimated coefficients, it is possible that the study was underpowered to detect subtle cross-level effects. Detecting such interactions typically requires larger samples than those available in most intensive longitudinal studies (Mathieu et al., 2021; Nezlek, 2020).

Future research with larger samples would help clarify whether these effects emerge more clearly under conditions of greater statistical power. Finally, although the daily diary design allows for the examination of temporal covariation, its correlational nature precludes strong causal conclusions. Future studies using experimental or cross-lagged longitudinal designs could clarify the directionality of these effects.

These findings open several avenues for applied research. Before designing interventions, it will be important to establish whether perceiving fear of failure as motivating indeed facilitates goal attainment or performance—an effect that remains to be empirically confirmed. Future studies should also identify the personal and contextual

factors that foster or hinder this motivational interpretation of fear, as understanding these antecedents is a necessary step before developing targeted interventions.

Once these foundations are established, applied efforts could explore strategies aimed at helping individuals adopt a more constructive engagement with fear in achievement settings—particularly for those who struggle to mobilize it productively in daily life. Such approaches might include growth mindset training (Dweck, 2006; Yeager et al., 2022), cognitive-behavioral techniques, or mindfulness-based strategies (e.g., Hofmann & Asmundson, 2008) designed to enhance emotion regulation and channel fear toward goal-directed action. Importantly, future interventions should be sensitive to fluctuations in motivational states, allowing for adaptive, context-specific support across academic and athletic domains.

Conclusion

In conclusion, this study contributes to the growing literature on fear of failure as motivation by illustrating its dual role as both a stable trait and a fluctuating state. Using a daily diary approach, the findings show that when fear of failure is appraised as motivational, it is associated with greater goal progress, higher satisfaction, and lower depressive symptoms at both the daily and general levels. While its contribution to anxiety emerged more clearly at the stable level, the overall pattern supports an appraisal framework in which fear can fuel adaptive behavior. These insights underscore the value of fear of failure as motivation in capturing daily motivational dynamics and suggest practical applications for educators, coaches, and mental health professionals. Interventions that foster positive interpretations of fear may help student-athletes transform this emotion into a resource for performance and well-being across time.

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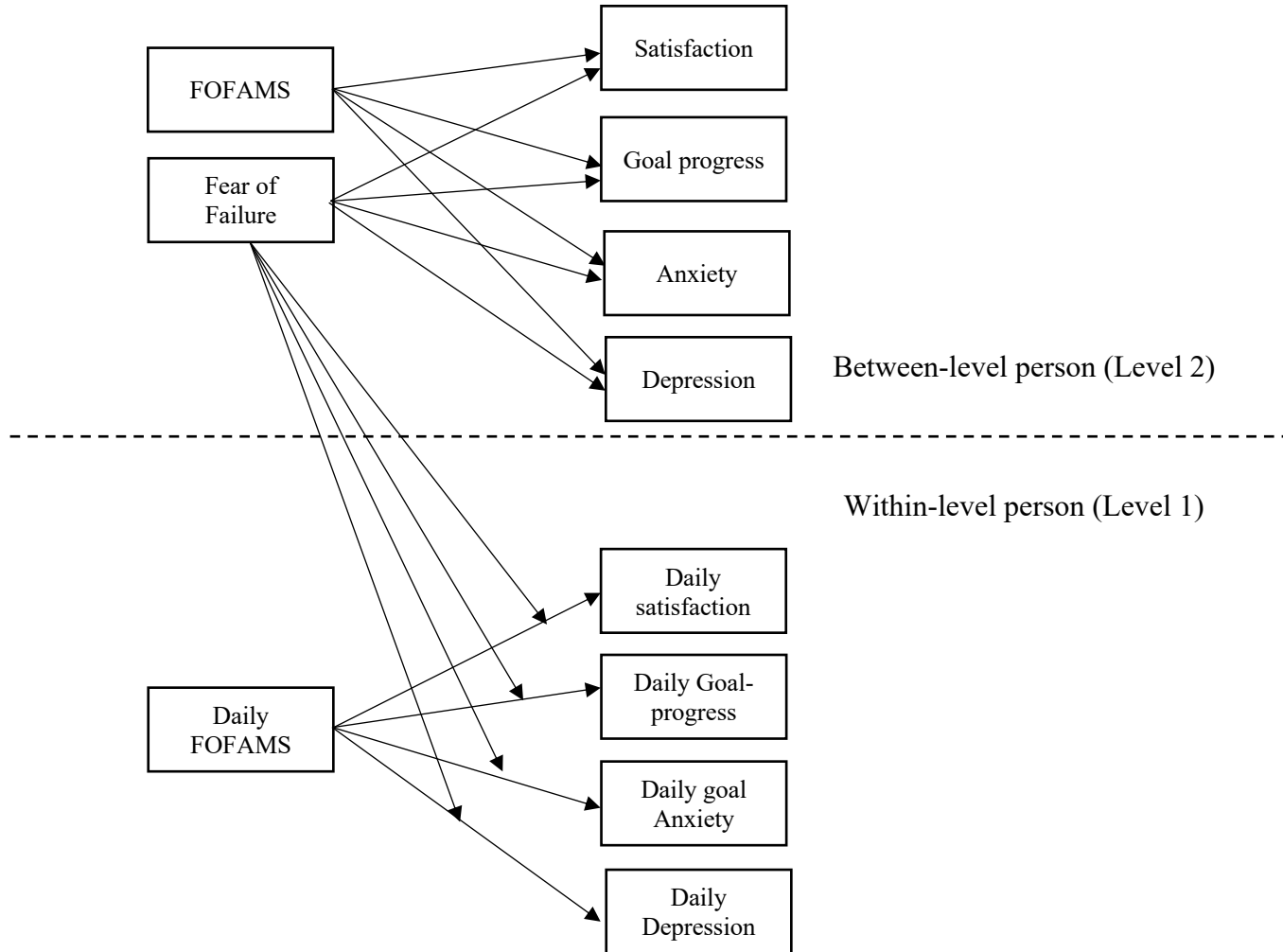
Table 4.1*Descriptive statistics, ICC and bivariate correlations of Level 1 and Level 2 variables*

Level 1	<i>M</i>	<i>SD</i>	ICC	ω	1	2	3	4	5
1. FOFAMS daily	4.88	1.42	.57	.92					
2. Satisfaction daily	4.88	1.40	.51	.88	.61*				
3. Daily goal progress	4.79	1.51	.50	.92	.73*	.66*			
4. Anxiety daily	2.41	1.44	.62	.91	-.16*	-.39*	-.18*		
5. Depression daily	2.02	1.31	.53	.92	-.18*	-.39*	-.20*	.79*	
Level 2	<i>M</i>	<i>SD</i>		ω	1	2	3	4	5
1. Fear of failure	2.86	.93		.84					
2. FOFAMS	5.48	1.06		.94	.01				
3. Satisfaction	4.84	1.11		.98	-.22*	.42*			
4. Anxiety	2.47	1.26		.98	.54*	-.11	-.39*		
5. Depression	2.05	1.07		.98	.44*	-.12*	-.35*	.83*	
6. Goal progress	4.74	1.19		.98	-.12*	.44**	.79*	-.22*	-.19*

Note. * $p < .05$; $N = 1,483$ at level 1; $N = 268$ at level 2; ω = reliability coefficient; ICC = intra-class correlation coefficient, which represents the amount of variance attributable to between-person differences. Between-level Omega values for dependant variables were consistently high ($\geq .98$), reflecting strong internal consistency of person-level aggregates. This is likely due to highly consistent responding across individuals, high standardized factor loadings, and reduced random error in between-person estimates (e.g., person means). These values are not uncommon in multilevel models when between-person variance is low but reliable. See Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods*, 19(1), 72–91. <https://doi.org/10.1037/a0032138>

Figure 4.1

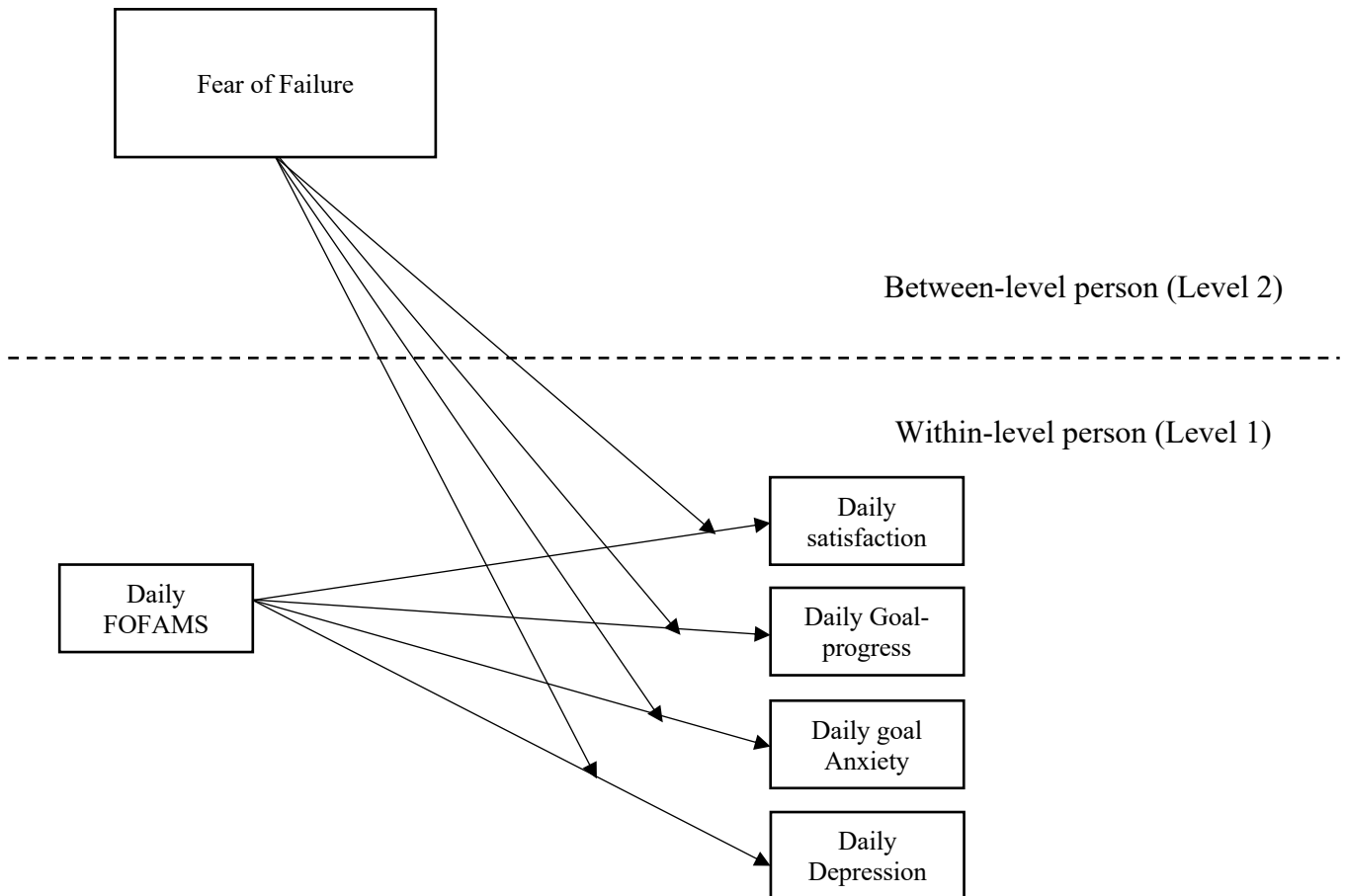
Conceptual model of the multilevel model of FOFAMS, fear of failure, goal progress, satisfaction, anxiety and depression with student-athletes



Note. Variables are tested as manifest constructs. Paths from level 2 to the relationships between daily fear of failure and daily dependent variables represent cross-level interactions.

Figure 4.2

Cross-level interaction of the multilevel model of FOFAMS, fear of failure, goal progress, satisfaction, anxiety and depression with student-athletes



CHAPTER 5

General Discussion

General Discussion

Fear of failure is a concept that straddles personal experience and scientific inquiry. Often spoken of with caution and linked to avoidance (e.g., Conroy et al., 2002), stress (e.g., Gustafsson et al., 2017), and underperformance (e.g., Alkhazaleh & Mahasneh, 2016), fear of failure is also, paradoxically, harnessed by some individuals as a source of motivation. This duality has shaped both cultural discourse and my academic curiosity. From inspirational media (e.g., TED Talks, self-help books) to sports psychology and performance science, fear of failure is increasingly acknowledged as complex: potentially harmful, but not inherently so. Yet despite growing attention, empirical efforts to rigorously define and measure the motivational dimension of fear of failure remain limited.

My doctoral dissertation aimed to address that gap by conceptualizing fear of failure as a potential motivational resource that can help individuals sustain effort, pursue goals, experience satisfaction, and better psychological adjustment. To that end, I developed the Fear of Failure as Motivation Scale (FOFAMS), the first instrument specifically designed to capture the belief that fear of failure can act as a motivating force. The concept of fear of failure as motivation reflects a cognitive-affective stance or mindset through which fear is construed as energizing, which aligns with theoretical perspectives emphasizing how individuals' beliefs about emotions shape adaptive functioning in achievement contexts (e.g., Tamir & Ford, 2012; Dweck, 2006). This measure opens new avenues for examining how fear, when appraised constructively, may serve as a psychological resource rather than a threat.

To bring this idea to life, imagine two student-athletes, Alex and Jordan, both preparing for a major sport competition while managing final exams. Alex, while feeling the pressure, interprets their fear of failure not as a warning sign to back away, but as a cue to engage. They respond by doubling down on their efforts choosing to study with more structure and train with more intention. *“If I put in the work, I’ll feel more in control,”* they tell themselves (volitional control). When things don’t go as planned, Alex doesn’t shut down. Instead, they look for what can be learned from the setback, asking questions like, *“What can this teach me? How can I do better next time?”* (learning). Although they care about outcomes, their focus is not only on winning or getting top grades, but also on showing up prepared and giving their best (performance outcomes). And when anxiety hits, Alex uses simple strategies to stay grounded, taking deep breaths, reaching out to a teammate, or shifting their perspective to see the bigger picture (coping/overcoming).

Jordan, in contrast, experiences the same pressure but does not typically view fear of failure as a motivating force, reflecting a lower level on the FOFAMS. This does not mean that fear of failure is inherently negative or debilitating for Jordan, but rather that it is not appraised as a source of energy or direction. As a result, fear of failure quickly turns into avoidance and self-doubt. Instead of pushing forward, Jordan feels stuck. Procrastinating, overthinking, and questioning whether they’re even cut out for this. Rather than learning from setbacks, they take them as signs to pull away. The fear becomes overwhelming, leaving them disengaged from both academics and sport. This contrast reflects a core insight of the FOFAMS: fear of failure is not inherently harmful or helpful; its motivational value lies in how it is mentally represented and appraised.

The main objectives of my doctoral dissertation were to develop a new questionnaire that captured the nuanced mental representations associated with fear of failure, to gain deeper insights into how fear of failure as motivation is related to achievement and psychological adjustment in academic and sport contexts, and to challenge the prevailing assumption that fear of failure necessarily leads to negative subjective experiences. While fear of failure has traditionally been linked to avoidance and maladaptive functioning, my dissertation focused on a specific mental representation in which fear of failure is seen as motivating; a perspective that, as demonstrated across three studies, was associated with more favorable variables such as greater perceived goal progress, higher satisfaction, and reduced depressive symptoms.

Findings from the three studies addressed the core research questions of my dissertation, providing robust empirical and theoretical support for the psychometric properties of the FOFAMS. Each study incrementally built upon the previous one, carefully addressing distinct yet interconnected questions that underpin the theoretical and practical utility of this new measure. Below, the key findings from the three studies are summarized, followed by a schematic overview of the main results (see Table 5.1).

Key Findings from Article 1—*Fear of Failure as Motivation*

Article 1 of my doctoral thesis comprised two studies and three independent samples focused on the development and validation of the FOFAMS. The development process began with a phase of item generation (see Appendix C for the initial 16-item version), expert review panel, and empirical testing to ensure theoretical and content validity. The scale was informed by four interrelated motivational functions of fear of failure drawn from the literature: (1) volitional control, reflecting increased effort and

determination in the face of failure (e.g., Sagar et al., 2010); (2) learning from mistakes, whereby failure facilitates reflection and adaptive strategy use (e.g., Kapur, 2008); (3) performance preparation, where fear motivates high standards and thorough preparation (e.g., Hunter et al., 2021); and (4) overcoming/coping, representing resilience and psychological endurance (e.g., Galli & Vealey, 2008). While these domains shaped the conceptual foundation of the measure, the FOFAMS was intentionally developed and empirically validated as a unidimensional scale, aiming to capture an integrated mental representation of fear of failure as motivational rather than assessing separate subscales.

In Study 1, a sample of university students completed the initial item pool. EFA (Kline, 2013) supported a unidimensional structure, and item refinement based on empirical (e.g., factor loadings, inter-item redundancy) and theoretical criteria led to a 9-item version. In Study 2, two additional independent samples (students and sports participants) completed the refined scale. CFA provided further support for the one-factor model, with excellent model fit across both contexts. One item was subsequently removed due to residual correlation concerns, resulting in a final 8-item version of the scale with excellent psychometric properties. The final version demonstrated high internal consistency ($\omega = .93$) and was retained as the final version of the instrument, supported by evidence of adequate reliability and validity.

Convergent validity was supported through strong positive correlations with failure as facilitative, hope for success, and worry as motivation, suggesting that individuals who perceive fear of failure as motivational are more likely to interpret challenges as growth opportunities and remain engaged with their goals (e.g., Crum et al., 2020; Lambert & Newman, 2023). Discriminant validity was demonstrated through weak

or statistically nonsignificant associations with traditional fear of failure measures (e.g., Conroy, 2001; Lang & Fries, 2006), indicating that the FOFAMS captures a distinct motivational appraisal rather than the intensity of fear itself. Importantly, the FOFAMS also demonstrated incremental validity, predicting perceived goal progress and academic satisfaction above and beyond traditional fear of failure constructs in both academic and athletic contexts.

While the theoretical orientation of this work aligns with broader frameworks such as self-regulation theory (Carver & Scheier, 1998) and stress mindset theory (Crum et al., 2017), the FOFAMS was specifically developed to reflect a unified conceptualization of fear of failure as a potentially motivating force in goal pursuit. This conceptualization was supported across two independent samples (i.e., university students and sport participants) underscoring the scale's robustness, internal consistency, and applicability across distinct achievement contexts. Overall, the results from both studies provided a strong empirical and theoretical foundation for understanding fear of failure as more than a performance inhibitor. The FOFAMS offers a conceptually grounded, psychometrically sound, and contextually versatile measure that advances the literature by capturing the motivational potential of fear of failure, shifting the narrative away from a solely maladaptive interpretation (e.g., Atkinson, 1957; Birney et al., 1969; Conroy, 2001; Taylor et al., 2021). These findings opened new avenues for research on how individuals may experience and interpret fear of failure in ways that support perceived goal progress and psychological adjustment.

Key Findings from Article 2— *Fear of Failure as Motivation: Exploring Its Impact on Goal-Progress and Satisfaction in Student-Athletes*

Building on the previous findings, Article 2 explored the domain-specific dynamics of fear of failure as a motivational construct by examining its relationship with perceived goal progress and satisfaction in both academic and athletic settings. A confirmatory factor analysis (CFA) was conducted to assess whether the FOFAMS displayed comparable psychometric properties across domains. Results supported a two-factor model (academic FOFAMS and sport FOFAMS), each measured by the same eight items. The model demonstrated good fit to the data, with all items loading strongly onto their respective latent factors. These results supported the construct validity of the FOFAMS in both domains and indicated that, although academic and sport-related representations of fear of failure as motivation were strongly correlated, they remained conceptually distinct. CFA further supported the stability of the scale's four interrelated dimensions—volitional control, perceived performance outcomes, learning orientation, and coping strategies—within each domain, reinforcing the scale's theoretical coherence. Administering the FOFAMS in both academic and athletic contexts thus enabled an evaluation of its structural integrity and applicability beyond the original validation sample.

These findings underscored that the way fear of failure is mentally represented as a motivational force is likely shaped by the specific achievement context in which it is experienced. They aligned with existing research emphasizing the domain-specific nature of motivational processes and beliefs. Previous studies indicated that achievement-related constructs (e.g., passion, coping, and self-concept) generally function within their specific performance contexts and rarely transfer across domains such as academics and sport (e.g., Chamandy & Gaudreau, 2022; Chanal et al., 2005; Marsh et al., 2013; Möller et al.,

2020; Schellenberg & Bailis, 2016). This pattern is consistent with Eccles and Wigfield's (2020) expectancy-value theory, which posits that individuals' motivation, task engagement, and emotional responses are influenced by domain-specific expectations of success and subjective task values. Although the two domain-specific subscales were strongly correlated ($r = .56$), the model fit indices and conceptual distinctions support the interpretation that fear of failure as motivation operates with both shared and domain-specific features. In other words, while a common motivational representation of fear of failure appears to underlie both domains, the way this motivation is expressed, triggered, or regulated may vary depending on the contextual demands of academic versus athletic settings.

Moreover, the absence of cross-domain effects in Study 2 (e.g., fear of failure as motivation in sport not predicting academic satisfaction) reinforced the idea that student-athletes are interpreting and internalizing performance pressures in a domain-specific way (e.g., Chamandy & Gaudreau, 2022; Gustafsson et al., 2017). This finding aligned with the internal/external frame of reference model (Marsh et al., 2008), which posits that self-perceptions and motivational processes are shaped by dimensional comparisons across life domains. At the same time, the strong correlation between academic and sport FOFAMS suggested that while these mental representations are grounded in domain-specific experiences, they also reflect a shared underlying orientation toward fear of failure as a motivational force. This supported conceptualizing the constructs as related but distinct (e.g., Eccles & Wigfield, 2020; Gaudreau et al., 2020; Lee et al., 2022; Sparfeldt & Rost, 2011). Adapting FOFAMS items to reflect the specific performance context—academic or sport—is therefore both theoretically and psychometrically

justified, as it increases sensitivity to context-specific motivational patterns while preserving the coherence of the overarching construct (e.g., Henschel & Iffland, 2021).

Taken together, these findings highlighted the scale's sensitivity to how individuals uniquely construe fear of failure across distinct performance contexts, while confirming a stable unidimensional structure within each domain. They supported the utility of the FOFAMS as a flexible yet conceptually coherent tool for comparative research, enabling nuanced exploration of motivational processes across life domains. Study 2 thus demonstrated that the FOFAMS function as a domain-specific construct, with its adaptive relations varying according to the context in which performance demands were experienced. These results emphasize the importance of fostering context-sensitive mental representations of fear of failure—representations that frame this emotion as a potential source of motivation within, rather than across, life domains. This pattern suggests that motivational benefits in one context are unlikely to compensate for less adaptive appraisals in another.

Key Findings from Article 3—*Daily Dynamics of Fear of Failure as Motivation*

Finally, Article 3 proposed a multilevel model examining the relationships between dispositional and situational fear of failure as motivation, perceived goal progress, and psychological adjustment (i.e., satisfaction, low anxiety and depression symptoms). This study investigated the extent to which fear of failure as motivation reflects stable individual tendencies versus day-to-day fluctuations, providing insight into its trait- and state-like components within a short-term longitudinal framework.

Using an 8-day intensive longitudinal design, this study demonstrated that fear of failure as motivation shows both meaningful day-to-day variability and stable between-

person differences. The intra-class correlation supported this dual conceptualization, indicating substantial between-person stability alongside meaningful within-person variability (e.g., Nezlek, 2012; Podsakoff et al., 2019). This finding aligns with prior research on psychological constructs characterized by both trait-like stability and state-like variability, suggesting that while some individual characteristics remain relatively stable, they can also fluctuate significantly based the context (e.g., Fleeson & Jayawickreme, 2015; Horstmann & Ziegler, 2020; Jayawickreme et al., 2019). For instance, individuals may generally view fear of failure as motivational, but this orientation can be amplified or diminished depending on contextual cues such as goal difficulty, feedback, or stress. This perspective supports an interactionist approach to motivation, where enduring dispositions interact with daily experiences to shape engagement, behavior, and outcomes (e.g., Nezlek, 2012; Podsakoff et al., 2019). As such, fear of failure as motivation is not only a dispositional mindset but also a situationally responsive framework that captures how individuals appraise and mobilize fear of failure in real time.

At the within-person level, higher-than-usual daily FOFAMS was significantly associated with increased perceived goal progress and satisfaction, and decreased depression symptoms, underscoring the adaptive potential of interpreting fear of failure as a motivator. These findings are consistent with Boileau and her colleagues (2021), who demonstrated that emotional coping strategies contribute to day-level academic satisfaction. The lack of relationship between daily fear of failure as motivation and daily anxiety may reflect the theoretical distinction between state and trait anxiety (e.g., Endler & Kocovski, 2001; Spielberger & Reheiser, 2009). State anxiety typically fluctuates with

immediate stressors, such as upcoming academic tests or athletic competitions, thus varying significantly with daily situational demands (e.g., Horikawa & Yagi, 2012; Knowles & Olatunji, 2020). In contrast, trait anxiety captures more enduring predispositions toward experiencing anxiety, shaped by stable personality traits and longer-term vulnerabilities (i.e., Knowles & Olatunji, 2020). These distinctions could explain why general fear of failure as motivation predicted general anxiety levels (trait-like) but not daily anxiety fluctuations (state-like).

At the between-person level, individuals who had a higher general level on the FOFAMS reported higher goal progress and satisfaction and lower depression and anxiety symptoms. These findings support the importance of dispositional appraisal strategies (i.e., mental reframing of fear-inducing emotions as motivational rather than threatening) in fostering enhanced psychological adjustment (e.g., Crum et al., 2017; Jamieson et al., 2018). Regularly interpreting fear of failure through a constructive lens can buffer individuals against negative emotional consequences such as chronic anxiety, depression, or burnout, thereby facilitating performance and psychological well-being in high-stakes environments (e.g., Elliot & Thrash, 2004; Gustafsson et al., 2017; Sagar & Stoeber, 2009). Furthermore, the absence of significant cross-level moderation effects suggested that the daily benefits of fear of failure as motivation hold steady, no matter how much fear of failure someone generally feels. This supports the idea that reinterpreting fear as a source of motivation could help most people, regardless of their baseline tendencies of fear of failure. Aligned with work on adaptive reappraisal (e.g., Crum et al., 2017; Haimovitz & Dweck, 2016; Jamieson et al., 2018), these findings show that seeing fear in a different light can promote well-being and perceived goal

pursuit. Altogether, the results reinforced the view that fear of failure as motivation operates both as a trait-like stability and a dynamic state. This adds to growing evidence that how people feel and act in performance settings is shaped by both their personality and the specific pressures they face (e.g., Martinent & Nicolas, 2016; Tamir & Ford, 2012).

Table 5.1

Summary of Main Goals, Methodological Features, and Key Findings across the Three Articles

Main goal	Methodological features	Key findings
Article 1 – Development and Validation of the FOFAMS		
Study 1: Developed the FOFAMS, a unidimensional scale capturing four interrelated psychological processes underlying the perception of fear of failure as motivating: effort regulation, perceived performance outcomes, learning orientation, and coping strategies. Item development and refining the scale.	Sample: 149 students recruited from Prolific Academic Measures: Participants completed the 16-item FOFAMS Analyses: Exploratory Factor Analysis (EFA)	The results of the EFA supported the unidimensional model. The 9-item version of the FOFAMS was found to have strong factor loadings and a high composite internal consistency.
Study 2: Pursue and extend the validation of the FOFAMS using Confirmatory Factor Analysis (CFA) across two life domains: school and sports. Examine the construct validity of the scale.	Sample: Students (N = 385) and sports participants (N = 382) recruited from Prolific Academic Measures: A total of 11 variables were assessed using reliable and valid instruments to evaluate the convergent, discriminant, and concurrent validity of the FOFAMS (see Figure 2.1 in Chapter 2) Analyses: CFA	The refined 8-item one-factor model demonstrated strong factor loadings and excellent reliability ($\omega = .93$), substantiating its use for assessing the fear of failure as motivation latent variable. We provided robust evidence for the convergent and concurrent validity of the FOFAMS, confirming that this questionnaire uniquely captures cognitive and behavioral aspects of fear of failure, which are not thoroughly addressed by traditional measures.
Article 2 – Dual-Domain Framework		
Dual-domain framework (i.e., school and sports) that investigates the relationship between the perception of fear of failure as motivation and indicators of achievement by controlling for fear of failure.	Sample: 305 student-athletes Measures: Participants completed self-reported questionnaires including the FOFAMS, perceived goal-progress, satisfaction and fear of failure Analyses: Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM).	Confirmatory Factor Analysis (CFA) confirmed the two-factor structure of the Fear of Failure as Motivation Scale (FOFAMS), indicating strong model fit across settings. SEM showed statistically significant predictions of perceived goal progress and satisfaction within domains, even after accounting for general fear of failure, highlighting FOFAMS's predictive power.
Article 3 – Daily-diary of the FOFAMS		
Daily-diary design that gathered multiple accounts of student-athletes' fear of failure as motivation, achievement and well-being indicators to investigate the association between fear of failure as motivation, achievement and well-being at both the between and the within-person levels.	Sample: 268 student-athletes (between-level); 1,525 days (within-level) Measures: Participants completed a daily-diary survey from Monday to Sunday about their fear of failure, fear of failure as motivation, perceived goal progress, and satisfaction. Analyses: Multilevel SEM	Individuals with higher FOFAMS tend to perceive more progress and satisfaction and less depression symptoms on days when their FOFAMS is elevated compared to their average. Fear of failure as motivation can be evaluated as a dynamic and situationally influenced phenomenon.

Implications of Dissertation for Research

My doctoral dissertation makes significant contributions across conceptual, theoretical, and practical levels. It enhanced our understanding of fear of failure by providing a new perspective that contributes to both already existing theoretical frameworks and practical applications. The development of the FOFAMS allows for a nuanced examination of fear of failure by capturing the belief that fear of failure can energize goal pursuit and shedding light on a distinct motivational representation that construes fear as a functional resource. This introduced a new dimension to the academic and athletic discourse on motivation and performance, applicable in various achievement domains and at the center of potential new interventions. When used alongside measures of general fear of failure, FOFAMS offers researchers a dual perspective capturing both the maladaptive tendencies typically associated with fear and a more adaptive motivational representation, thus enriching future research methodologies and theoretical frameworks.

Conceptual Implications

At a conceptual level, my doctoral dissertation advances our understanding of fear of failure by introducing the FOFAMS, a novel instrument that operationalizes fear of failure as a potentially constructive and energizing force. Rather than framing fear of failure as a maladaptive experience, FOFAMS captures a specific mental representation in which fear of failure is perceived as a motivational resource that supports goal pursuit. This unidimensional construct is built around four interrelated psychological processes (i.e., volitional control, performance outcomes, learning orientation, and coping

strategies), that together form a cohesive mindset regarding the motivational utility of fear.

The conceptual framework behind the FOFAMS sees fear and failure not as dispositional or inherently negative, but as dynamic forces that interact in meaningful ways. From this perspective, fear can trigger proactive behavior akin to a motivational “fight response” (McCarty, 2016), and failure can become a powerful opportunity for growth and reflection. This framing challenges one-sided portrayals of fear of failure and invites a more dialectical view of its role in achievement settings. In doing so, it resonates with contemporary models such as stress mindset theory, which highlight the constructive potential of negative emotions when appraised in adaptive ways (e.g., Crum et al., 2017; Jamieson et al., 2018; Lench et al., 2023). The FOFAMS thus introduces a new measurement tool for researchers and practitioners seeking to understand fear as an adaptive resource, and it offers a promising starting point for context-specific interventions targeting performance anxiety and achievement motivation.

Theoretical Implications

At a theoretical level, my doctoral dissertation offers a reconceptualization of fear of failure by situating the FOFAMS within broader motivational frameworks, including mindset theory (e.g., Haimovitz & Dweck, 2016), appraisal theory (e.g., Crum et al., 2020; Jamieson et al., 2018), and dynamic models of self-regulation (e.g., Carver & Scheier, 1998). While traditional views often portray fear of failure as maladaptive and performance-inhibiting (e.g., Atkinson, 1957; Conroy et al., 2002; Elliot & Church, 1997), the perspective advanced in my dissertation challenges this assumption. Indeed,

the FOFAMS captures a specific mental representation in which fear can be harnessed to energize effort, persistence, and goal-directed behavior.

By integrating fear of failure as motivation into the mindset literature (e.g., Haimovitz & Dweck, 2016), this dissertation extends our understanding of how cognitive frames and emotional appraisals jointly shape psychological adjustment and performance outcomes. Study 2 revealed that the mental representation of fear of failure is contextually sensitive, varying between academic and athletic domains. This domain-specificity suggests that motivational mindsets are not uniform but adapt to the unique norms, pressures, and evaluative standards of each context. Such findings parallel research on frame-of-reference effects in the self-concept literature (e.g., Möller & Marsh, 2013), extending it by showing that even emotionally charged constructs like fear can be mentally construed in domain-tuned ways.

Fear of failure as motivation also contributes to nomological clarity by delineating a previously underexplored motivational framing of fear. Whereas classic models emphasize avoidance or anxiety-driven reactions (e.g., Conroy et al., 2002), the FOFAMS assesses a constructive configuration in which fear is viewed as a potential catalyst for growth and self-regulation. This theoretical shift expands the boundaries of achievement motivation research and invites the integration of fear-related experiences into adaptive models of goal striving and emotional functioning.

Importantly, the findings from Study 3 further refine this theoretical contribution by demonstrating that fear of failure as motivation is both trait-like and state-like. The intensive longitudinal design revealed meaningful within-person variability, suggesting that individuals might be flexibly engaging with this motivational frame in response to

daily experiences and demands. This dual nature aligns with dynamic systems theories of motivation that view psychological constructs as both stable and contextually responsive (e.g., Fleeson & Jayawickreme, 2015; Horstmann & Ziegler, 2020) and supports the idea that motivational mindsets fluctuate over time rather than being fixed dispositions.

In addition, the conceptual framework underlying FOFAMS resonates with emerging perspectives such as the stress-is-enhancing mindset (Crum et al., 2017; Jamieson et al., 2018; Lench et al., 2023). These models suggest that emotional responses traditionally considered maladaptive (like fear) can, when appraised positively, promote positive outcomes. Fear of failure as motivation builds on this foundation by articulating four interrelated psychological functions (i.e., volitional control, performance outcomes, learning orientation, and coping strategies) that collectively form a unified motivational representation of fear. This unidimensional framing departs from one-sided portrayals and emphasizes fear's adaptive potential in the pursuit of meaningful goals.

Moreover, fear of failure as motivation is grounded in a dialectical view that treats fear and failure not as fixed liabilities, but as dynamic forces that interact to shape behavior. From this perspective, fear can act as a motivational "fight response" (McCarty, 2016), and failure can offer opportunities for reflection, learning, and psychological growth. This view is consistent with foundational research on test anxiety (Sarason, 1984) and with more recent models highlighting the role of appraisal in emotional and behavioral adaptation (e.g., Crum et al., 2020; Jamieson et al., 2018).

Taken together, these theoretical contributions situate fear of failure as motivation within a broader nomological network and offer a more nuanced account of how fear of failure can support adaptive functioning. Rather than viewing fear as something to avoid

or suppress, my findings encourage a shift in perspective that recognizes fear as a potentially empowering force when approached with the right mindset. Fear of failure as motivation thus provides a conceptual and theoretical foundation for future research and interventions aimed at transforming fear of failure into a source of motivation and resilience.

Practical Implications

The practical implications of my doctoral dissertation are multifaceted and relevant across educational, athletic, and clinical settings. Central to these implications is the development and validation of the FOFAMS, a psychometrically sound tool that allows practitioners to assess how individuals interpret fear of failure in achievement contexts. The scale moves beyond traditional deficit-based views of fear, offering a new lens through which psychologists, educators, and coaches can understand the role of this emotion in motivation, learning, and performance. Rather than proposing specific intervention techniques, my dissertation provides a validated framework that can guide the development of future programs and support systems aimed at fostering constructive motivational patterns.

The dual sensitivity of the FOFAMS to both between-person differences and within-person fluctuations makes it particularly suitable for longitudinal research and for evaluating changes resulting from intervention. Daily diary results from Article 3 revealed meaningful day-to-day variability in FOFAMS scores, suggesting that the measure can sensitively capture short-term dynamics in motivational representations. This capacity to capture temporal variation allows researchers and clinicians to assess the effectiveness of targeted programs and observe how individuals' motivational framing of

fear evolves through psychological or educational interventions (e.g., Bolger & Laurenceau, 2013; Gunthert & Wenzel, 2012; Hamaker et al., 2015; Nezlek, 2020).

In clinical and psychological contexts, the scale can support more personalized approaches to intervention. Individuals who score low on the FOFAMS (i.e., meaning they are less likely to interpret fear of failure as motivating) may be more vulnerable to disengagement, avoidance behaviors, and psychological distress, particularly in high-pressure environments. These individuals could benefit from interventions designed to reframe fear of failure as a useful motivational resource. Cognitive-behavioral frameworks already emphasize the importance of cognitive appraisal in shaping emotional responses (e.g., Crum et al., 2020; Hoffman et al., 2012; Jamieson et al., 2018). The FOFAMS offers a structured way to assess and understand how fear is cognitively construed, allowing practitioners to tailor strategies for clients who struggle with perfectionism or performance anxiety—conditions in which fear of failure often plays a central role. Conversely, high FOFAMS scores are associated with greater perceived goal progress, psychological well-being, and performance satisfaction. Practitioners can use this insight to identify individuals who are more likely to respond positively to performance challenges and who may benefit from environments that allow them to further cultivate their motivational strengths. In this sense, the scale not only helps to identify those at risk but also those with strong potential for growth and resilience when fear of failure is constructively appraised. These insights also have implications for educational and sport-based interventions. For student-athletes navigating dual performance demands, the FOFAMS offers a clear framework to understand and support individual differences. Recalling the example of Alex and Jordan: though both are

exposed to similar pressures, their responses to fear diverge markedly, with one using fear as a catalyst for focused effort and learning, while the other feels overwhelmed and withdraws. The FOFAMS helps to clarify these distinctions across its four dimensions (i.e., volitional control, learning orientation, performance focus, and coping strategies) enabling more individualized and informed guidance.

Beyond the individual level, the FOFAMS has important implications for educational institutions and sports organizations. By integrating its findings into policy and practice, organizations can begin to shift how fear of failure is understood and addressed. Rather than viewing fear solely as an obstacle to be reduced or eliminated, institutional leaders can promote growth-oriented cultures that normalize and validate fear as a natural part of striving toward meaningful goals (e.g., Crum et al., 2020; Haimovitz & Dweck, 2016; Tao et al., 2022). This cultural shift can be supported through psychoeducational efforts aimed at informing students, athletes, parents, teachers, and coaches about the potentially adaptive nature of fear of failure when it is interpreted through a motivational lens. These efforts can help individuals reinterpret their emotional experiences and develop more functional relationships with challenge and uncertainty.

Fear of failure as motivation also provides a conceptual foundation for the development of future preventive and intervention programs. Psychoeducational tools grounded in FOFAMS can be designed to help individuals recognize and strengthen adaptive motivational beliefs related to fear. In particular, “wise interventions” (e.g., Walton & Wilson, 2018) aimed at altering cognitive appraisals and performance mindsets could be developed to support those with low FOFAMS scores, who may not yet perceive fear as a functional resource. Such interventions would be especially relevant for youth in

transitional periods, such as students entering competitive academic or sport programs, where performance pressure and fear of failure are heightened.

Finally, my doctoral dissertation contributes to a broader cultural conversation about fear of failure. The prevailing social narrative often emphasizes fear as a barrier to be avoided or suppressed. However, the findings presented here support a more constructive discourse in which fear is recognized not as inherently harmful, but as a complex emotional signal that can, when mentally construed in adaptive ways, promote focus, growth, and achievement. By reshaping how we talk about fear of failure, these findings have the potential to influence not only individual well-being and performance, but also the cultural norms surrounding achievement and success. In sum, the practical implications of my dissertation extend from individual assessment and support to broader systemic changes in how fear is conceptualized, addressed, and leveraged in education, sport, and clinical practice.

Limitations

Sample

While the findings of my thesis offer important theoretical, conceptual, and practical contributions, several methodological and contextual limitations must be acknowledged to guide the interpretation of results and inform future research directions. First, a strategic decision was made to minimize cross-cultural variations associated with differing academic and athletic systems. Accordingly, the sampling strategy employed in my dissertation involved recruiting participants from Canada, the USA, and the United Kingdom through Prolific Academic. Nonetheless, this approach introduces several limitations that merit consideration. By focusing exclusively on these predominantly

Western countries, the findings may not generalize effectively to regions with markedly different cultural, educational, or competitive norms (e.g., King, 2022; King et al., 2012; Wang et al., 2020). While this controlled sampling helped reduce variability linked to diverse educational systems, it potentially overlooks culturally specific experiences, interpretations, and manifestations of fear of failure in non-Western contexts (e.g., Cheung et al., 2011; Heine & Buchtel, 2009). In Study 3 specifically, recruitment was limited to Canada and the USA due to logistical considerations related to time zone alignment—an important requirement for the accurate administration of daily diary methodologies (Bolger & Laurenceau, 2013; Gunthert & Wenzel, 2012). Although practical and methodologically justified, this choice further narrows the cultural scope, potentially excluding nuanced differences that may arise even among Western populations, such as those from the United Kingdom, where educational pressures and athletic culture may differ subtly.

Second, while Prolific Academic has been empirically recognized for its superior data quality, demonstrating higher levels of participant attention, comprehension, and honesty compared to platforms such as MTurk and SONA (e.g., Douglas et al., 2023; Peer et al., 2021), the platform predominantly attracts individuals already familiar with online research participation. This familiarity could systematically differentiate these participants from the broader population in terms of psychological literacy and response styles, potentially influencing their reactions to self-report instruments like the FOFAMS (e.g., Fleischer et al., 2015; Peer et al., 2021). As a result, this recruitment method may inadvertently constrain the representativeness and external validity of the results.

Third, another important limitation of this thesis concerns the level of athletic involvement represented within the sample. While participants were asked to reflect on performance contexts in both academic and athletic domains, their athletic engagement was not systematically distinguished between competitive and recreational levels. This omission may have introduced unaccounted variability in how fear of failure was experienced, appraised, and reported. Competitive athletes typically encounter heightened evaluative pressures, stricter performance expectations, and more salient achievement goals than recreational athletes—factors likely to explain both the intensity and functional interpretation of fear (e.g., Sagar et al., 2009; Martin & Marsh, 2003). By not differentiating participants based on the competitive stakes of their athletic activity, the study may have obscured meaningful variations in motivational processes and coping strategies. Future research should therefore seek to distinguish explicitly between competitive and recreational athletes to better understand how the level of performance pressure modulates the relationship between fear of failure and motivation.

Lastly, across all three studies, the samples were composed predominantly of young adults, many of whom were either university students or early-career individuals. While this demographic is highly relevant for studying achievement motivation, the developmental origins of fear of failure as motivation remain unexplored. It is currently unknown at what age individuals begin to conceptualize fear of failure as something that can energize goal pursuit. Developmental research could help identify when and how such motivational representations emerge, whether they are shaped by educational, familial, or cultural influences, and how they evolve across the lifespan. Investigating these questions in younger populations such as children and adolescents could provide

valuable insight into the developmental trajectory of fear of failure-related beliefs and inform early intervention or prevention efforts in educational settings.

Design

The design of the studies within my dissertation, while robust in their exploration of the FOFAMS, presented certain limitations that merit further discussion based on empirical insights. First, the cross-sectional nature of studies 1 and 2 restricts the ability to draw causal inferences regarding the directionality between fear of failure as a motivational factor and its link to performance and psychological adjustment (e.g., Kenny, 2019; Spector, 2019). Although cross-sectional designs are valuable for initial exploration of associations, longitudinal studies would provide greater methodological rigor, enabling the examination of temporal sequences and causality (e.g., Rindfleisch et al., 2008). As of now, it remains impossible to determine whether fear of failure as motivation influences satisfaction, if satisfaction influences fear of failure as motivation, or if they reciprocally influence one another.

The daily diary design employed in Article 3 offers valuable insights into the day-to-day fluctuations of fear of failure as motivation (FOFAMS), capturing its dynamic nature within individuals. This approach fits well with the goals of intensive longitudinal methods, which are especially useful for capturing how experiences like fear of failure shift within individuals from one day to the next (Bolger & Laurenceau, 2013). However, the relatively brief duration of data collection in this study assumes that these short-term dynamics are representative of longer-term patterns, an assumption that may not hold across varying academic or athletic contexts. As noted by Seidl et al. (2023), daily variations in motivational constructs can be influenced by immediate contextual factors,

suggesting that longer observation periods may be necessary to fully understand these dynamics. A regular week during the semester might not capture the full picture because motivation and stress can look very different when students are heading into final exams or athletes are gearing up for major competitions (Gaudreau et al., 2012; Martin et al., 2015). Overall, these temporal variations could limit the generalizability of the findings to broader contexts or different stages of the academic or athletic calendar.

While multilevel modeling in Study 3 was essential for capturing both daily shifts and more stable individual differences in fear of failure as motivation, the complexity of this approach can make interpretation less intuitive. Although the model offers a rigorous way to understand how fear of failure as motivation plays out across time and individuals (Bolger & Laurenceau, 2013; Nezlek, 2001), it can be challenging to draw clear conclusions about how this construct functions across different contexts. To build on this work, future research could explore potential moderators such as personality traits or situational stressors or use complementary methods like latent profile analysis to better understand for whom and under what conditions fear of failure becomes most adaptive (e.g., Journault et al., 2022; Parhiala et al., 2018).

To further enhance the robustness and interpretability of future studies, incorporating a mixed-methods design is recommended (Clark et al., 2008), as it allows researchers to capture both the measurable patterns and the personal meaning behind individuals' experiences with FOFAMS. Integrating qualitative methods, such as structured interviews or case studies, alongside quantitative daily diary data could provide richer contextual insights into how individuals experience and describe fear of failure in their own terms (Creswell & Clark, 2017; Clark & Ivankova, 2015). Such

methods would allow researchers to explore the situational and personal factors that shape how fear of failure is mentally represented and acted upon. This complementary approach could deepen our understanding of the mechanisms underlying the quantitative patterns observed with FOFAMS, offering a more nuanced picture of how individuals engage with fear of failure in real-life performance contexts.

Measurement

Several measurement-related limitations also warrant careful consideration within my dissertation. First, fear of failure as motivation, perceived goal progress, satisfaction, anxiety, and depression were assessed using self-report questionnaires, introducing potential biases inherent to subjective reporting. Self-report measures, while practical and widely used, are susceptible to response biases such as social desirability, recall inaccuracies, and participants' self-presentation tendencies, potentially influencing the accuracy and authenticity of the responses (e.g., Podsakoff et al., 2003; Paulhus & Vazire, 2007). Although the FOFAMS was carefully validated using factor analyses and tests for convergent and discriminant validity (e.g., Brown, 2015; Carpenter, 2018), future research could strengthen its reliability by combining self-report data with other sources like performance metrics, physiological measures, or behavioral observations. While the FOFAMS is designed to capture a subjective motivational experience, making self-report the most appropriate method of assessment, future research could still strengthen the scale's external validity by combining self-report data with complementary sources such as performance metrics, physiological indicators, or behavioral observations. Although these cannot replace self-report for measuring fear of failure as motivation itself, they can serve as external criteria to reduce mono-method bias and

provide a more comprehensive picture of how fear of failure as motivation manifests across contexts.

Although the dimensional structure of FOFAMS was validated rigorously, it remains important for future research to evaluate its temporal stability and sensitivity over longer timeframes and across diverse achievement contexts (e.g., Putnick & Bornstein, 2016; Widaman et al., 2010). Repeated assessments over extended periods could provide valuable insights into the trait-versus-state nature of fear of failure as motivation, further confirming its longitudinal reliability and situational sensitivity. Thus, future research is encouraged to integrate multimodal and longitudinal measurement strategies to overcome these limitations, enhancing both the robustness and ecological validity of the findings from the FOFAMS.

Future Research Directions

Future research should examine the cross-cultural generalizability of the FOFAMS. While the present studies recruited participants from Canada, the United States, and the United Kingdom to minimize variability in academic systems, extending this work to non-Western cultural contexts is critical. Cultural dimensions such as individualism–collectivism, power distance, and uncertainty avoidance shape how individuals interpret and respond to failure (e.g., De Castella et al., 2013; Heine et al., 2001; King & McInerney, 2019). For example, in collectivist cultures, fear of failure may be more closely tied to shame (Sheikh, 2014) and social consequences than in individualist societies, where it may relate more to personal inadequacy (Vaswani et al., 2022). Testing for measurement invariance across diverse cultural groups (Putnick &

Bornstein, 2016) and adapting the scale, if necessary, will ensure that FOFAMS retains its validity and interpretability across global contexts.

Another important avenue for research involves identifying the determinants and developmental pathways of fear of failure as motivation. Future studies could investigate the personal, contextual, or cognitive factors that contribute to interpreting fear as a motivational driver rather than a threat. Such investigations may benefit from longitudinal or experimental designs capable of testing causal inferences about the antecedents of FOFAMS.

Building on this foundational knowledge, subsequent research could explore intervention frameworks aimed at strengthening adaptive interpretations of fear. Contemporary approaches such as mindset reappraisal (Jamieson et al., 2018), mindfulness (Khoury et al., 2013), and acceptance-based or cognitive-behavioral techniques (Hofmann & Asmundson, 2008; Haimovitz & Dweck, 2016; Crum et al., 2020) may provide useful starting points. Once the sources and mechanisms of FOFAMS are better understood, these interventions could be adapted to specific populations (e.g., students, athletes, professionals under chronic performance pressure) and tested longitudinally to assess their impact on motivation and well-being.

While the daily diary approach in Article 3 provided valuable insights into the daily fluctuations in fear of failure, there is still much to learn about how this experience evolves over time. Longitudinal research is needed to explore how fear of failure as a source of motivation takes shape and evolves across major life transitions, particularly during adolescence and early adulthood, when motivational beliefs and self-concepts are still developing (e.g., Elliot & Thrash, 2004; Peterson et al., 2025; Sagar & Lavalley,

2010). A growing body of evidence suggests that both fear of failure and related mindsets have their roots in early parent–child relationships (e.g., Conroy, 2003; Haimovitz & Dweck, 2016; Peterson et al., 2025; Teevan, 1983). Understanding how these early socialization experiences shape the mental representation of fear may therefore be just as important as examining how this representation operates in daily life.

Longer time frames (e.g., multiple weeks, years) would allow researchers to explore how FOFAMS scores shift across academic transitions, competition seasons, or life events.

Although fear of failure is often conceptualized as an individual psychological process, its effects within team environments remain underexplored. Group-based research could examine how individual differences in fear of failure as motivation affect collective outcomes such as team cohesion, communication, and shared goal pursuit. This is particularly relevant in sports, performing arts, and work environments where team interdependence is high (Evans et al., 2012; Evans & Eys, 2015). Moreover, leaders and coaches can play a critical role in shaping motivational climates that either buffer or exacerbate fear of failure (e.g., Grugan et al., 2023; Sagar & Jowett, 2012; Weiss et al., 2021). Understanding the social transmission of fear of failure as motivation within groups could inform leadership training and team-based interventions.

Finally, looking ahead, a promising direction for future research is to explore how FOFAMS operates in high-stakes environments where performance pressure is intense and the cost of mistakes can be high. Domains such as elite sport, military operations, surgical training, competitive academic programs, and the performing arts are all shaped by constant evaluation, limited room for error, and heightened consequences of failure (e.g., Barry et al., 2022; Lubert & Gröpel, 2022; Onlock et al., 2023; Rice et al., 2009).

Recent research in areas such as entrepreneurship, medical education, and psychology suggests that fear of failure may take on different forms depending on the stakes, feedback structures, and cultural expectations within each setting (Cacciotti et al., 2016; Barros et al., 2024). Administering the FOFAMS in these environments could offer valuable insights into how fear of failure is experienced and expressed under pressure. Using a multimethod approach that combines self-report data with physiological markers such as heart rate variability or cortisol levels (e.g., Ayuso-Moreno et al., 2021; Kamarauskas & Conte, 2022; Villafaina et al., 2022) could further deepen our understanding of how fear of failure as motivation is related to stress, decision-making, and performance outcomes. Ultimately, these insights could help inform training and support systems designed to build resilience, enhance mental readiness, and promote adaptive coping in the face of failure.

Conclusion

In my doctoral dissertation, I introduced a novel approach to understanding fear of failure by developing and validating the FOFAMS. I developed this tool to more accurately assess how individuals mentally construe fear of failure as a motivational resource. Through this work, I aimed to shed light on a more complex and dynamic picture of fear. One where it does not only hold us back, but can also push us forward and support meaningful goal pursuit.

Across three empirical studies, I demonstrated the factorial validity, internal consistency and contextual adaptability of the FOFAMS in both academic and athletic domains. The findings suggest that fear of failure as motivation encompasses both stable personal tendencies and context-dependent variability. Importantly, my dissertation did

not investigate how this adaptive representation develops, but rather focused on its psychological correlates and outcomes. The key insight is that it is not the presence of fear itself that matters most, but how fear is construed. Individuals who view fear of failure as a motivational force tend to experience more favorable outcomes in terms of perceived goal pursuit and psychological adjustment. This reframes fear of failure not as inherently maladaptive, but as a construct whose correlates depend on its mental representation.

The implications of my research reach beyond psychometric validation. The FOFAMS lays the groundwork for more nuanced and personalized support strategies that enable educators, coaches, and mental health professionals to differentiate between fear that hinders performance and fear that may, in fact, fuel it. This framework opens the door to designing targeted interventions that harness the motivational potential of fear, particularly in high-pressure or evaluative settings. It also sets the stage for future research to explore how these motivational representations develop over time, vary across cultures, and shift through key life transitions and developmental stages.

By situating fear of failure within a stress mindset perspective, my dissertation contributes to a more nuanced and empowering understanding of one of our most universal emotions. Rather than portraying fear as something inherently negative or to be eliminated, it highlights how fear, when mentally represented as a source of motivation, can be harnessed to goal-directed behavior. While it does not investigate how individuals acquire this mindset, it clearly demonstrates the psychological and behavioral benefits of holding it. In doing so, my work suggests that fear is not necessarily an obstacle to be

removed, but a force that, when understood and engaged constructively, can propel individuals forward.

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APPENDICES C-H

APPENDIX C*16-item FOFAMS*

It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure.

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure in general

1	2	3	4	5	6	7
Not at all	Very slightly	Slightly	Moderately	Strongly	Very strongly	Totally

My fear failure motivates me to...

1. ... be more productive
2. ... to practice/study more
3. ... have good performances
4. ... face the challenge
5. ... pursue goals that are important for me.
6. ... learn from my previous mistakes.
7. ... achieve my most difficult goals
8. ... reach out for feedback
9. ... strive for success.
10. ... seek out additional knowledge/training
11. ... focus on achieving success.
12. ... overcome obstacles.
13. ... give my best effort.
14. ... learn even more.
15. ... reach high expectations.
16. ... confront the difficulties.

Alternative contextual instructions

Example for academic:

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure **at school**

Item 2: want to study more.

Item 10: seek out additional knowledge.

Example for sport:

On a scale from 1(not at all) to 7 (totally) please rate the extent to which you perceive fear of failure **in sports**

Item 2: want to practice more

Item 10: seek out additional training

APPENDIX D*Questionnaires used in Article 1 with students***Validation of the fear of failure as motivation scale with students****Demographics (FOR ALL PARTICIPANTS)**

What is your gender?

Male

Female

You don't have an option that applies to me. I am... (please specify):

What is your age

How do you describe yourself in terms of cultural background?

White

Latino/Hispanic

East Asian

Black

South Asian

Middle Eastern

African

Mixed

You don't have an option that applies to me. I am...

What label best describes your current academic level?

University student (graduate degree)

Full-time university student (undergraduate degree)

Part-time university student (undergraduate degree)

Full-time college student

Part-time college student

You don't have an option that applies to me (please specify)

Please describe your highest level of completed/finished education.

Less than high school

High school

2-year college

4-year undergraduate degree

Masters

Doctorate (Ph.D.)

Other

What is your academic status?

Full-time (4 and more classes)

Part-time (3 or less classes)

In what program are you mainly enrolled?

5. ... work very hard until I reach excellence
6. ... be perfect.
7. ... accomplish great things perfectly.
8. ... attain perfection.
9. ... perform perfectly.
10. ... work relentlessly until I reach perfection.

Questions school specific for all participants

We want to know a little bit more about your school. Please briefly describe the activities that you currently do or prepare for at school (e.g., studying, exams, writing papers). Please write them in the following box.

It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure at school.

On a scale from 1(not at all) to 7 (totally) please rate how much you agree with each of the following statements about fear of failure at school.

My fear failure motivates me to...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. ... be more productive
2. ... study more
3. ... have good performance
4. ... face challenges
5. ... pursue goals that are important for me.

6. ... achieve my most difficult goals
7. ... seek out additional knowledge
8. ... confront the difficulties
9. ... see obstacles as an opportunity

At school, when I feel that people around me fear of failure it affects my own fear of failure.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

Please think of the goals that you are pursuing at school. Please rate the extent to which you...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. Progressed on your academic goals.
2. Moved forward in the pursuit of your academic goals.
3. Come closer to reaching your academic goals.
4. Made progress toward the realization of your academic goals.
5. Advanced toward your academic goals.

Please think about the thoughts and feelings that you have about school and rate the extent to which you agree with each statement.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. I look forward to going to school.
2. I like being in school
3. School is interesting.
4. I wish I didn't have to go to school.
5. There are many things about school I don't like.

6. I enjoy school activities.
7. I learn a lot at school
8. I feel bad at school.

Questions school specific for all participants

PARTICIPANTS WILL BE RANDOMIZED FROM HERE TO COMPLETE HALF OF THE REMAINING QUESTIONNAIRES

Questions specific to school (randomized)

Some of the questions of the following section will ask you to describe your thoughts and feelings about school.

Indicate the extent to which each of the following items corresponds to one of the reasons why you student at college or university.

I study at college or university because...

Not at all for this reason	Very slightly for this reason	Slightly for this reason	Moderately for this reason	Strongly for this reason	Very strongly for this reason	Totally for this reason
----------------------------------	--	--------------------------------	----------------------------------	--------------------------------	--	-------------------------------

1. Because I truly love it.
2. In order not to feel ashamed.
3. It is part of who I am as a person.
4. Somebody is putting pressure on me.
5. I feel that it is important for me.
6. I do it, but it is not motivating.
7. It is intrinsically satisfying.
8. Otherwise, I would feel guilty.
9. It clearly defines me as a person.
10. I feel that others are pushing me to do it.
11. In order to pursue goals that are important to me.
12. I do it, without really knowing why I continue.
13. I do it, but for no reason

Please write down the extent to which you believe or not in these statements while keeping school in mind.

Do not believe at all (0% of the time)		(50% of the time)		Believe 100 the time (100% of the time)
---	--	-------------------	--	--

1. When I am failing in school, it is often because I am not smart enough to perform successfully.
2. When I am failing in school, my future seems uncertain.
3. When I am failing in school, it upsets important others.
4. When I am failing in school, I blame my lack of talent.
5. When I am failing in school, I believe that my future plans will change.
6. When I am failing in school, I expect to be criticized by important others.
7. When I am failing in school, I am afraid that I might not have enough talent.
8. When I am failing in school, it upsets my "plan" for the future.
9. When I am failing in school, I lose the trust of people who are important to me.
10. When I am not succeeding in school, I am less valuable than when I succeed.
11. When I am not succeeding in school, people are less interested in me.
12. When I am failing in school, I am not worried about it affecting my future plans.
13. When I am not succeeding in school, people seem to want to help me less.
14. When I am failing in school, important others are not happy.
15. When I am not succeeding in sport, I get down on myself easily.
16. When I am failing in school, I hate the fact that I am not in control of the outcome.
17. When I am not succeeding in school, people tend to leave me alone.
18. When I am failing in school, it is embarrassing if others are there to see it.
19. When I am failing in school, important others are disappointed.
20. When I am failing in school, I believe that everybody knows I am failing.
21. When I am not succeeding in school, some people are not interested in me anymore.
22. When I am failing in school, I believe that my doubters feel that they were right about me.
23. When I am not succeeding in school, my value decreases for some people.
24. When I am failing in school, I worry about what others think about me.
25. When I am failing in school, I worry that others may think I am not trying.

These questions will ask you to describe your feelings toward studying at school. This includes your experiences preparing for exams, attending classes, and completing assignments.

While thinking of your experiences studying at school and using the scale below, please indicate your level of agreement with each item.

Not agree at all	Very Slightly agree	Slightly agree	Moderately agree	Mostly agree	Strongly agree	Very Strongly agree
---------------------	---------------------------	-------------------	---------------------	-----------------	-------------------	---------------------------

1. Studying is in harmony with the other activities in my life.
2. I have difficulties controlling my urge to study
3. The new things that I discover studying allow me to appreciate it even more.
4. I have almost an obsessive feeling for studying.
5. Studying reflects the qualities I like about myself.
6. Studying allows me to live a variety of experiences.
7. Studying is the only thing that really turns me on.
8. Studying is well integrated in my life.
9. If I could, I would only study.
10. Studying is in harmony with other things that are part of me.
11. Studying is so exciting that I sometimes lose control over it.
12. I have the impression that studying controls me.
13. I spend a lot of time studying.
14. I like studying.
15. Studying is important for me.
16. Studying is a passion for me.
17. Studying is part of who I am

While thinking of your experiences at school, please use the scale below to express to what extent each of the following statements corresponds to you.

- 1= Not at all corresponding
- 2= A little corresponding
- 3= Fairly corresponding
- 4= Very corresponding
- 5= Extremely corresponding

- 1- It is by worrying that I finally undertake the work that I must do.
- 2- Worrying stimulates me and makes me more effective.
- 3- The fact that I worry incites me to act.
- 4- By worrying, I do certain things which I would not decide to do otherwise.
- 5- The fact that I worry motivates me to do the things I must do.

Start of Block: Randomized section general

In this section, we are interested about your general feelings in life. Please do not refer specifically to school or other precise activities.

Please rate to what extent the following items describe you.

Not at all agree	Slightly agree	Moderately agree	Agree	Totally agree
------------------	----------------	------------------	-------	---------------

1. I am often confused about what emotion I am feeling
2. It is difficult for me to find the right words for my feelings
3. I have physical sensations that even doctors don't understand
4. I am able to describe my feelings easily.
5. I prefer to analyze problems rather than just describe them.
6. When I am upset, I don't know if I am sad, frightened, or angry
7. I am often puzzled by sensations in my body
8. I prefer just to let things happen rather than to understand why they turned out that way.
9. I have feelings that I can't quite identify
10. Being in touch with emotions is essential.
11. I find it hard to describe how I feel about people.
12. People tell me to describe my feelings more.
13. I don't know what's going on inside me.
14. I often don't know why I am angry
15. I prefer talking to people about their daily activities rather than their feelings.
16. I prefer to watch "light entertainment shows rather than psychological dramas.
17. It is difficult for me to reveal my innermost feelings, even to close friends
18. I can feel close to someone, even in moment of silence.
19. I find examination of my feelings useful in solving personal problems.
20. Looking for hidden meanings in movies or plays distract from their enjoyment.

Please evaluate the extent to which you agree with each of these statements

Strongly disagree	Disagree	Agree	Strongly Agree
-------------------	----------	-------	----------------

1. I like situations, in which I can find out how capable I am.
2. When I am confronted with a problem, which I can possibly solve, I am enticed to start working on it immediately.

3. I enjoy situations, in which I can make use of my abilities.
4. I am appealed by situations allowing me to test my abilities.
5. I am attracted by tasks, in which I can test my abilities.
6. I am afraid of failing in somewhat difficult situations, when a lot depends on me.
7. I feel uneasy to do something if I am not sure of succeeding.
8. Even if nobody would notice my failure, I'm afraid of tasks, which I'm not able to solve.
9. Even if nobody is watching, I feel quite anxious in new situations.
10. If I do not understand a problem immediately I start feeling anxious.

Please indicate the extent to which you agree with each of the following statements by using the following scale

Not true at all	Rarely true	Sometimes true	Often true	True nearly all of the time
-----------------	-------------	----------------	------------	-----------------------------

1. I am able to adapt to change
2. I can deal with whatever comes
3. When I encounter problems, I can see the humorous side of things
4. When I cope with stress, it strengthens me
5. I tend to bounce back after illness or hardship
6. I believe that I will achieve my goals even if there are obstacles
7. I am not distracted under pressure, I focus and think clearly
8. I am not easily discouraged by failure
9. I think of myself as a strong person dealing with life's difficulties
10. I can handle unpleasant feelings

Please evaluate the extent to which you agree with each of these statements

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. You have a certain amount of anxiety and you really cannot do much to change it
2. Your anxiety is something about you that you cannot change very much
3. To be honest, you cannot really change how anxious you are
4. No matter how hard you try, you can't really change the level of anxiety that you have.

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways.

For each item, please answer using the following scale:

1	2	3	4	5	6	7
Strongly disagree			Neutral			Strongly agree

1. When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.

2. I keep my emotions to myself.

3. When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.

4. When I am feeling *positive* emotions, I am careful not to express them.

5. When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.

6. I control my emotions by *not expressing them*.

7. When I want to feel more *positive* emotion, I *change the way I'm thinking about the situation*.

8. I control my emotions by *changing the way I think about the situation I'm in*.

9. When I am feeling *negative* emotions, I make sure not to express them.

10. When I want to feel less *negative* emotion, I *change the way I'm thinking about the situation*.

The 10 statements listed below relate to personal characteristics and traits. Please read each item and rate the extent to which you agree.

I disagree a lot	I disagree a little	I neither agree nor disagree	I agree a little	I agree a lot
1. In uncertain times, I usually expect the best.				
2. It's easy for me to relax.				
3. If something can go wrong for me, it will.				
4. I'm always optimistic about my future.				
5. I enjoy my friends a lot.				
6. It's important for me to keep busy.				
7. I hardly ever expect things to go my way.				
8. I don't get upset too easily.				
9. I rarely count on good things happening to me.				
10. Overall, I expect more good things to happen to me than bad.				

APPENDIX E*Questionnaires used in Article 1 with sport participants***Validation of the fear of failure as motivation scale with sport participants****Start of Block: Demographics (FOR ALL PARTICIPANTS)**

What is your gender?

Male

Female

You don't have an option that applies to me. I am (please specify): _____

What is your age?

How do you describe yourself in terms of cultural background?

White

Latino/Hispanic

East Asian

Black

South Asian

Middle Eastern

African

Mixed

You don't have an option that applies to me. I am...

What label best describes your current occupation?

University student (graduate degree)

Full-time university student (undergraduate degree)

Part-time university student (undergraduate degree)

Full-time college student

Part-time college student

Full-time employee

Part-time employee

Unemployed

You don't have an option that applies to me. I am... _____

Please describe your highest level of completed/finished education.

Less than high school

High school

2-year college

4-year undergraduate degree

Masters

Doctorate (Ph.D.)

Other _____

What is your academic status?

Full-time (4 and more classes)

Part-time (3 or less classes)

In what program are you mainly enrolled?

In which country do you currently live?

Canada

United States of America

United Kingdom

Other _____

Questions for all participants general (2 Questions)

1. Rate the extent to which you disagree or agree with the following questions.

Strongly disagree	Disagree	Slightly disagree	Slightly Agree	Agree
1. Failure has positive effects on me and it should be used as a motivation.				
2. Experiencing failure facilitates my future learning and growth.				
3. Experiencing failure enhances my future performance and productivity.				
4. Experiencing failure is bad for my future learning and growth.				
5. Experiencing failure reduces my future performance and productivity				
6. Failure has negative effects on me and it should be avoided.				

2. Please indicate the extent to which each item represents your goal as a person.

As a person, my goal at in life is to...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
1	2	3	4	5	6	7

1. ... be competent.
2. ... accomplish great things.
3. ... reach excellence.
4. ... perform very well.
5. ... work very hard until I reach excellence
6. ... be perfect.
7. ... accomplish great things perfectly.
8. ... attain perfection.
9. ... perform perfectly.
10. ... work relentlessly until I reach perfection.

Your experience in sport (for all participants)

The following section of the questionnaire will allow us to know a little bit more about your sport.

1. In the space below, please write the main sport you participate in more often.

--

Is it individual or a team sport?

Individual

Team

At which level do you participate in your sport?

Recreational level

Regional level

Provincial level

National level

International level

How many days per week (on a typical week) do you participate in your sport?

1

2

3

4

5

6

7

How many hours per week do you participate in your sport.

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20+

How many years of experience do you have in your sport?

Less than one year
1 year
2 years
3 years
4 years
5 years
6 years
7 years
8 years
9 years
10 years or more

Sport and me

Please report the extent to which your sport defines who you are as a person.

Not at all	Very slightly	Slightly	Moderately	Strongly	Very strongly	Totally
------------	---------------	----------	------------	----------	---------------	---------

Questions for all participants (sport specific)

2. We want to know a little bit more about your sport. Please briefly describe the activities that you currently do or prepare for in sport (e.g., practices, games, tournaments, races, showcases, events, leagues, etc.) and write them in the following box.

3. It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure in your sport.

On a scale from 1(not at all) to 7 (totally), please rate how much you agree with each of the following statements about fear of failure in your sport.

My fear of failure motivates me to...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. ... be more productive
2. ... practice more
3. ... have good performances
4. ... face challenges
5. ... pursue goals that are important for me.
6. ... achieve my most difficult goals
7. ... seek out additional training
8. ... confront the difficulties.
9. ...see obstacles as an opportunity.

4. Please think of the goals you are pursuing in your sport. Please rate the extent to which you...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

- | |
|--|
| 1. Progressed on your sport goals. |
| 2. Moved forward in the pursuit of your sport goals. |
| 3. Come closer to reaching your sport goals. |
| 4. Made progress toward the realization of your sport goals. |
| 5. Advanced toward your sport goals. |

5. Please think about the thoughts and feelings that you have about your sport and rate the extent to which you agree with each statement.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. I look forward to do my sport.
2. I like doing my sport
3. My sport is interesting.
4. I wish I didn't have to do my sport.
5. There are many things about my sport that I don't like.
6. I enjoy my sport.
7. I learn a lot in my sport.
8. I feel bad doing my sport.

In sport, when I feel that people around me fear of failure it affects my own fear of failure.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

PARTICIPANTS WILL BE RANDOMIZED FROM HERE TO COMPLETE HALF OF THE REMAINING QUESTIONNAIRES

Some of the questions of the following section will ask you to describe your thoughts and feelings toward participating in you sport.

6. Indicate the extent to which each of the following items corresponds to one of the reasons why you participate in your sport.

I am participating in my sport because...

Not at all for this reason	Very slightly this reason	Slightly for this reason	Moderately for this reason	Strongly for this reason	Very strongly this reason	Totally for this reason
----------------------------	---------------------------	--------------------------	----------------------------	--------------------------	---------------------------	-------------------------

1. Because I truly love it.
2. In order not to feel ashamed.
3. It is part of who I am as a person.
4. Somebody is putting pressure on me.
5. I feel that it is important for me.
6. I do it, but it is not motivating.
7. It is intrinsically satisfying.
8. Otherwise, I would feel guilty.
9. It clearly defines me as a person.
10. I feel that others are pushing me to do it.
11. In order to pursue goals that are important to me.
12. I do it, without really knowing why I continue.
13. I do it, but for no reason.

7. While thinking of your experiences in your sport, please indicate your level of agreement with each item.

Not at all agree	Very Slightly agree	Slightly agree	Moderately agree	Mostly agree	Strongly agree	Very Strongly agree
---------------------	---------------------------	-------------------	---------------------	-----------------	-------------------	---------------------------

1. My sport is in harmony with the other activities in my life.
2. I have difficulties controlling my urge to do my sport
3. The new things that I discover participating in my sport allow me to appreciate it even more.
4. I have almost an obsessive feeling for my sport.
5. My sport reflects the qualities I like about myself.
6. My sport allows me to live a variety of experiences.
7. My sport is the only thing that really turns me on.
8. My sport is well integrated in my life.
9. If I could, I would only do my sport
10. My sport is in harmony with other things that are part of me.
11. My sport is so exciting that I sometimes lose control over it.
12. I have the impression that my sport controls me.
13. I spend a lot of time doing my sport.
14. I like my sport
15. My sport is important for me.
16. My sport is a passion for me.
17. My sport is part of who I am

While thinking of your experiences in your sport, please use the scale below to express to what extent each of the following statements corresponds to you.

1= Not at all corresponding	2= A little corresponding	3= Fairly corresponding	4= Very corresponding	5= Extremely corresponding
--------------------------------	------------------------------	----------------------------	--------------------------	-------------------------------

1. It is by worrying that I finally undertake the work that I must do.
2. Worrying stimulates me and makes me more effective.
3. The fact that I worry incites me to act.
4. By worrying, I do certain things which I would not decide to do otherwise.
5. The fact that I worry motivates me to do the things I must do.

8. Please evaluate the extent to which you agree with each of these statements while keeping your sport in mind.

Do not believe at all (0% of the time)		(50% of the time)		Believe 100% of the time (100% of the time)
---	--	-------------------	--	--

1. When I am failing in my sport, it is often because I am not smart enough to perform successfully.
2. When I am failing in my sport, my future seems uncertain.
3. When I am failing in my sport, it upsets important others.
4. When I am failing in my sport, I blame my lack of talent.
5. When I am failing in my sport, I believe that my future plans will change.
6. When I am failing in my sport, I expect to be criticized by important others.
7. When I am failing in my sport, I am afraid that I might not have enough talent.
8. When I am failing in my sport, it upsets my "plan" for the future.
9. When I am failing in my sport, I lose the trust of people who are important to me.
10. When I am not succeeding in my sport, I am less valuable than when I succeed.
11. When I am not succeeding in my sport, people are less interested in me.
12. When I am failing in my sport, I am not worried about it affecting my future plans.
13. When I am not succeeding in my sport, people seem to want to help me less.
14. When I am failing in my sport, important others are not happy.
15. When I am not succeeding in sport, I get down on myself easily.
16. When I am failing in my sport, I hate the fact that I am not in control of the outcome.
17. When I am not succeeding in my sport, people tend to leave me alone.
18. When I am failing in my sport, it is embarrassing if others are there to see it.
19. When I am failing in my sport, important others are disappointed.
20. When I am failing in my sport, I believe that everybody knows I am failing.
21. When I am not succeeding in my sport, some people are not interested in me anymore.
22. When I am failing in my sport, I believe that my doubters feel that they were right about me.
23. When I am not succeeding in my sport, my value decreases for some people.
24. When I am failing in my sport, I worry about what others think about me.
25. When I am failing in my sport, I worry that others may think I am not trying.

Start of Block: General measures (randomized)

In this section, we are interested about your general feelings in life. Please do not refer specifically to sport or other precise activities.

Start of Block: Randomized section general

In this section, we are interested about your general feelings in life. Please do not refer specifically to school or other precise activities.

Please rate to what extent the following items describe you.

Not at all agree	Slightly agree	Moderately agree	Agree	Totally agree
------------------	----------------	------------------	-------	---------------

1. I am often confused about what emotion I am feeling
2. It is difficult for me to find the right words for my feelings
3. I have physical sensations that even doctors don't understand
4. I am able to describe my feelings easily.
5. I prefer to analyze problems rather than just describe them.
6. When I am upset, I don't know if I am sad, frightened, or angry
7. I am often puzzled by sensations in my body
8. I prefer just to let things happen rather than to understand why they turned out that way.
9. I have feelings that I can't quite identify
10. Being in touch with emotions is essential.
11. I find it hard to describe how I feel about people.
12. People tell me to describe my feelings more.
13. I don't know what's going on inside me.
14. I often don't know why I am angry
15. I prefer talking to people about their daily activities rather than their feelings.
16. I prefer to watch "light entertainment shows rather than psychological dramas.
17. It is difficult for me to reveal my innermost feelings, even to close friends
18. I can feel close to someone, even in moment of silence.
19. I find examination of my feelings useful in solving personal problems.
20. Looking for hidden meanings in movies or plays distract from their enjoyment.

Please evaluate the extent to which you agree with each of these statements

Strongly disagree	Disagree	Agree	Strongly Agree
-------------------	----------	-------	----------------

1. I like situations, in which I can find out how capable I am.
2. When I am confronted with a problem, which I can possibly solve, I am enticed to start working on it immediately.
3. I enjoy situations, in which I can make use of my abilities.
4. I am appealed by situations allowing me to test my abilities.
5. I am attracted by tasks, in which I can test my abilities.
6. I am afraid of failing in somewhat difficult situations, when a lot depends on me.
7. I feel uneasy to do something if I am not sure of succeeding.
8. Even if nobody would notice my failure, I'm afraid of tasks, which I'm not able to solve.
9. Even if nobody is watching, I feel quite anxious in new situations.
10. If I do not understand a problem immediately I start feeling anxious.

Please indicate the extent to which you agree with each of the following statements by using the following scale

Not true at all	Rarely true	Sometimes true	Often true	True nearly all of the time
-----------------	-------------	----------------	------------	-----------------------------

1. I am able to adapt to change
2. I can deal with whatever comes
3. When I encounter problems, I can see the humorous side of things
4. When I cope with stress, it strengthens me
5. I tend to bounce back after illness or hardship
6. I believe that I will achieve my goals even if there are obstacles
7. I am not distracted under pressure, I focus and think clearly
8. I am not easily discouraged by failure
9. I think of myself as a strong person dealing with life's difficulties
10. I can handle unpleasant feelings

Please evaluate the extent to which you agree with each of these statements

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. You have a certain amount of anxiety and you really cannot do much to change it
2. Your anxiety is something about you that you cannot change very much

3. To be honest, you cannot really change how anxious you are
4. No matter how hard you try, you can't really change the level of anxiety that you have.

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways.

For each item, please answer using the following scale:

1	2	3	4	5	6	7
Strongly disagree			Neutral			Strongly agree

1. When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.

2. I keep my emotions to myself.

3. When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.

4. When I am feeling *positive* emotions, I am careful not to express them.

5. When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.

6. I control my emotions by *not expressing them*.

7. When I want to feel more *positive* emotion, I *change the way I'm thinking about the situation*.

8. I control my emotions by *changing the way I think about the situation I'm in*.

9. When I am feeling *negative* emotions, I make sure not to express them.

10. When I want to feel less *negative* emotion, I *change the way I'm thinking about the situation*.

The 10 statements listed below relate to personal characteristics and traits. Please read each item and rate the extent to which you agree.

I disagree a lot	I disagree a little	I neither agree nor disagree	I agree a little	I agree a lot
1. In uncertain times, I usually expect the best.				
2. It's easy for me to relax.				
3. If something can go wrong for me, it will.				
4. I'm always optimistic about my future.				
5. I enjoy my friends a lot.				
6. It's important for me to keep busy.				
7. I hardly ever expect things to go my way.				
8. I don't get upset too easily.				
9. I rarely count on good things happening to me.				
10. Overall, I expect more good things to happen to me than bad.				

APPENDIX F*Questionnaires used in Article 2***Demographics**

What is your gender?

Male

Female

You don't have an option that applies to me. I am (please specify): _____

What is your age?

How do you describe yourself in terms of cultural background?

White

Latino/Hispanic

East Asian

Black

South Asian

Middle Eastern

African

Mixed

You don't have an option that applies to me. I am...

What label best describes your current occupation?

University student (graduate degree)

Full-time university student (undergraduate degree)

Part-time university student (undergraduate degree)

Full-time college student

Part-time college student

Full-time employee

Part-time employee

Unemployed

You don't have an option that applies to me. I am... _____

Please describe your highest level of completed/finished education.

Less than high school

High school

2-year college

4-year undergraduate degree

Masters

Doctorate (Ph.D.)

Other _____

What is your academic status?

☐ Full-time (4 and more classes)

☐ Part-time (3 or less classes)

In what program are you mainly enrolled?

In which country do you currently live?

Canada

United States of America

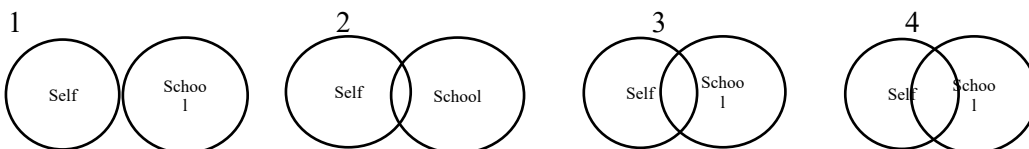
United Kingdom

Other _____

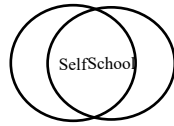
We want to know a little bit more about your school. Please briefly describe the activities that you currently do or prepare for at school (e.g., studying, exams, writing papers). Please write them in the following box.

Please rate the extent to which you consider sport to be a part of who you are as a person.

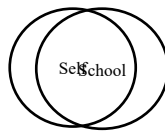
Rate your identification to school by selecting from this series of 7 Venn diagrams ranging from 1 (*low identification*) to 7 (*high identification*), with decreasing distance between the self and school indicating increasing identification with school.



5



6



7



It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure at school.

On a scale from 1(not at all) to 7 (totally) please rate how much you agree with each of the following statements about fear of failure at school.

My fear failure motivates me to...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
1. ... be more productive						
2. ... study more						
3. ... have good performance						
4. ... face challenges						
5. ... pursue goals that are important for me.						
6. ... achieve my most difficult goals						
7. ... seek out additional knowledge						
8. ... confront the difficulties						

On a scale from 1(not at all) to 7 (totally) please rate how much you agree with each of the following statements.

At school...

When I feel that people around me fear of failure it affects my own fear of failure.

Please think of the goals that you are pursuing at school. Please rate the extent to which you...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. Progressed on your academic goals.
2. Moved forward in the pursuit of your academic goals.
3. Come closer to reaching your academic goals.
4. Made progress toward the realization of your academic goals.
5. Advanced toward your academic goals.

Please think about the thoughts and feelings that you have about school and rate the extent to which you agree with each statement.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. I look forward to going to school.
2. I like being in school
3. School is interesting.
4. I wish I didn't have to go to school.
5. There are many things about school I don't like.
6. I enjoy school activities.
7. I learn a lot at school
8. I feel bad at school.

Fear of failure short version school

1= Do not believe at all (0% of the time)

2= 25%

3= sometimes believe (50% of the time)

4= 75%

5= believe 100% of the time (100% of the time)

Please write down the extent to which you believe or not in these statements while keeping school in mind.

1. When I am failing at school, I am afraid that I might not have enough talent.
2. When I am failing at school, it upsets my "plan" for the future.
3. When I am not succeeding at school, people are less interested in me.

4. When I am failing at school, important others are disappointed.
5. When I am failing at school, I worry about what others think about me.

Your experience in sport

The following section of the questionnaire will allow us to know a little bit more about your sport.

9. In the space below, please write the main sport you participate in more often.

10. Is it individual or a team sport?

☐ Individual

☐ Team

11. At which level do you participate in your sport?

☐ Recreational level

☐ Regional level

☐ Provincial level

☐ National level

☐ International level

12. How many days per week (on a typical week) do you participate in your sport?

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

13. How many hours per week do you participate in your sport.

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20+

14. How many years of experience do you have in your sport?

Less than one year

☐ 1 year

☐ 2 years

☐ 3 years

☐ 4 years

☐ 5 years

☐ 6 years

☐ 7 years

☐ 8 years

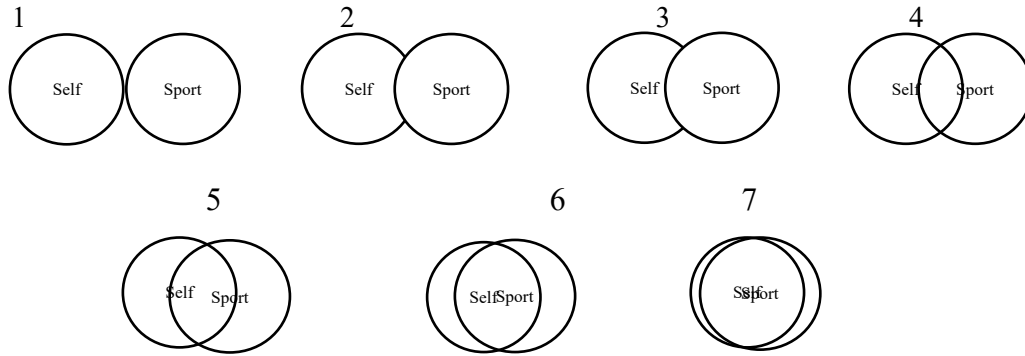
☐ 9 years

☐ 10 years or more

15. We want to know a little bit more about your sport. Please briefly describe the activities that you currently do or prepare for in sport (e.g., practices, games, tournaments, races, showcases, events, leagues, etc.) and write them in the following box.

Please rate the extent to which you consider sport to be a part of who you are as a person.

Rate your identification to sport by selecting from this series of 7 Venn diagrams ranging from 1 (*low identification*) to 7 (*high identification*), with decreasing distance between the self and sport indicating increasing identification with sport.



16. It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure in your sport.

On a scale from 1(not at all) to 7 (totally), please rate how much you agree with each of the following statements about fear of failure in your sport.

My fear of failure motivates me to...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
------------------	---------------------	----------------	------------------	----------------	---------------------	---------------

1. ... be more productive
2. ... practice more
3. ... have good performances
4. ... face challenges
5. ... pursue goals that are important for me.
6. ... achieve my most difficult goals
7. ... seek out additional training
8. ... confront the difficulties.

On a scale from 1(not at all) to 7 (totally) please rate how much you agree with each of the following statements.

In sport...

When I feel that people around me fear of failure, it affects my own fear of failure.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree
---------------------	---------------------------	-------------------	------------------	-------------------	---------------------------

17. Please think of the goals you are pursuing in your sport. Please rate the extent to which you...

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
---------------------	---------------------------	-------------------	---------------------	-------------------	---------------------------	------------------

1. Progressed on your sport goals.
2. Moved forward in the pursuit of your sport goals.
3. Come closer to reaching your sport goals.
4. Made progress toward the realization of your sport goals.
5. Advanced toward your sport goals.

18. Please think about the thoughts and feelings that you have about your sport and rate the extent to which you agree with each statement.

Not at all agree	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
---------------------	---------------------------	-------------------	---------------------	-------------------	---------------------------	------------------

1. I look forward to do my sport.
2. I like doing my sport
3. My sport is interesting.
4. I wish I didn't have to do my sport.
5. There are many things about my sport that I don't like.
6. I enjoy my sport.
7. I learn a lot in my sport.
8. I feel bad doing my sport.

Fear of failure short version sport

Please write down the extent to which you believe or not in these statements while keeping sport in mind.

1= Do not believe at all (0% of the time)

2= 25%

3= sometimes believe (50% of the time)

4= 75%

5= believe 100% of the time (100% of the time)

1. When I am failing in sport, I am afraid that I might not have enough talent.
2. When I am failing in sport, it upsets my “plan” for the future.
3. When I am not succeeding in sport, people are less interested in me.
4. When I am failing in sport, important others are disappointed.
5. When I am failing in sport, I worry about what others think about me.

Questions for all participants general (2 Questions)

Rate the extent to which you disagree or agree with the following questions.

Strongly disagree	Disagree	Slightly disagree	Slightly Agree	Agree	Strongly Agree
-------------------	----------	-------------------	----------------	-------	----------------

1. Failure has positive effects on me and it should be used as a motivation.
2. Experiencing failure facilitates my future learning and growth.
3. Experiencing failure enhances my future performance and productivity.
4. Experiencing failure is bad for my future learning and growth.
5. Experiencing failure reduces my future performance and productivity
6. Failure has negative effects on me and it should be avoided.

2. Please indicate the extent to which each item represents your goal as a person

As person, my general goal in life is to....

Not agree at all	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
---------------------	---------------------------	-------------------	---------------------	-------------------	---------------------------	------------------

1. ... be competent.
2. ... accomplish great things.
3. ... reach excellence.
4. ... perform very well.
5. ... work very hard until I reach excellence
6. ... be perfect.
7. ... accomplish great things perfectly.
8. ... attain perfection.
9. ... perform perfectly.
10. ... work relentlessly until I reach perfection.

19. Please evaluate the extent to which you agree with each of these statements

Not agree at all	Very slightly agree	Slightly agree	Moderately agree	Strongly agree	Very strongly agree	Totally agree
---------------------	---------------------------	-------------------	---------------------	-------------------	---------------------------	------------------

1. I like situations, in which I can find out how capable I am.
2. When I am confronted with a problem, which I can possibly solve, I am enticed to start working on it immediately.
3. I enjoy situations, in which I can make use of my abilities.
4. I am appealed by situations allowing me to test my abilities.
5. I am attracted by tasks, in which I can test my abilities.
6. I am afraid of failing in somewhat difficult situations, when a lot depends on me.
7. I feel uneasy to do something if I am not sure of succeeding.
8. Even if nobody would notice my failure, I'm afraid of tasks, which I'm not able to solve.
9. Even if nobody is watching, I feel quite anxious in new situations.
10. If I do not understand a problem immediately, I start feeling anxious.

APPENDIX G*Questionnaires used in Article 3***BASELINE SURVEY– FIRST DAY ONLY (SUNDAY)****Part 1****Background info**

1. What is your age: _____ (Note: Menu déroulant 18 à 70+)
 2. Please indicate your gender: Male Female
You don't have an option that applies to me. I identify as (please specify): _____.
 3. What label best describes your occupation:
 - a) University student (graduate degree)
 - b) Full-time university student (undergraduate degree)
 - c) Part-time university student (undergraduate degree)
 - d) Full-time college student
 - e) Part-time college student
 - i) Other: _____
 4. In what program are you mainly enrolled?
-

5. How do you describe yourself in terms of cultural background?
 - a) White b) Latino/Hispanic c) East Asian d) Black e) South Asian f) Middle Eastern g) African h) Mixed g)
- You don't have an option that applies to me. I identify as (please specify): _____.
5. Please indicate the country in which you currently live.
Canada, USA, Other

Part 2**Sport info**

20. In the space below, please write the main sport you participate in more often.
-

21. Is it an individual sport or a team sport? Choix multiple (Individual or Team)

22. At which level do you participate in your sport?

- a. Recreational level
- b. Regional level
- c. Provincial level

- d. National level
 - e. International level
23. How many days per week (on a typical week) do you participate in your sport? (Choix multiple 1 à 7 days)
24. How many hours per week do you participate in your sport. (Menu déroulant de 0 à 20+ hours)
25. How many years of experience do you have in your sport?
- a. Less than one year
 - b. 1 year
 - c. 2 years
 - d. 3 years
 - e. 4 years
 - f. 5 years
 - g. 6 years
 - h. 7 years
 - i. 8 years
 - j. 9 years
 - k. 10 years or more

Part 3 Information about You

- 1. Please indicate the extent to which each item represents the goals that you generally pursue in your life.**

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	-----------------------	---------------	-----------------	---------------	-----------------------	--------------

As a person, my general goal in life is to...

1. ... be a competent person.
2. ... accomplish great things.
3. ... reach excellence.
4. ... perform very well.
5. ... work very hard until I reach excellence

As a person, my general goal in life is to...

6. ... be a perfect person.
7. ... accomplish great things perfectly.
8. ... attain perfection.

9. ... perform perfectly.
10. ... work relentlessly until I reach perfection.

2. Rate the extent to which you disagree or agree with the following questions.

1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly Agree	5 Agree	6 Strongly Agree
---------------------------	---------------	---------------------------	------------------------	------------	------------------------

1. Failure has positive effects on me, and it should be used as a motivation
2. Experiencing failure facilitates my future learning and growth.
3. Experiencing failure enhances my future performance and productivity.
4. Experiencing failure is bad for my future learning and growth.
5. Experiencing failure reduces my future performance and productivity
26. Failure has negative effects on me, and it should be avoided.

3. It is normal for people to have fears about failure. From time to time, everyone will have these experiences. In the following section, you will be asked questions about how you generally feel when you experience fears of failure.

On a scale from 1(not at all) to 7 (totally) please rate how much you agree with each of the following statements about fear of failure.

My fear failure motivates me to...

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
1. ... be more productive						
2. ... practice/study more						
3. ... have good performances						
4. ... face challenges						
5. ... pursue goals that are important for me.						
6. ... achieve my most difficult goals						
7. ... seek out additional knowledge/training						
8. ... confront the difficulties.						

4. Please write down the extent to which you believe or not in these statements.

1 Do not believe at all (0% of the time)	2 25%	3 sometimes believe (50% of the time)	4 75%	5 believe 100% of the time (100% of the time)
---	----------	--	----------	---

1. When I am failing, I am afraid that I might not have enough talent.
2. When I am failing, it upsets my “plan” for the future.
3. When I am not succeeding, people are less interested in me.
4. When I am failing, important others are disappointed.
5. When I am failing, I worry about what others think about me.

5. Please rate the extent to which these statements are true to you.

1 Not true to me at all	2 Very slightly true to me	3 Slightly true to me	4 Moderately true to me	5 Strongly true to me	6 Completely true to me
-------------------------------	-------------------------------------	-----------------------------	-------------------------------	-----------------------------	-------------------------------

1. I rarely feel motivated to compete with somebody.
2. There is always something I'd rather do than taking part in a competitive situation.
3. I don't care about competitions.
4. The most important is winning, no matter what.
5. I am willing to do whatever it takes to win.
6. I will do anything to win, even nasty things.
7. I feel distressed in a competitive environment, so I avoid them whenever I can.
8. I feel pressured in competitive situation.
9. Even the smallest competition makes me feel anxious.
10. Competitive situations allow me to bring the best out of myself.
11. I enjoy testing myself in competitive situations.
12. I enjoy competition as it allows me to discover my abilities.

6. In this section, each statement represents goals that students can pursue in their schoolwork. Evaluate the extent to which you agree with each statement.

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	-----------------------	---------------	-----------------	---------------	-----------------------	--------------

In my schoolwork, my goal is to...

1. ...excel in many things compared to others.
2. ...do well compared to others in my classes.
3. ...get good results compared to many other students.
4. ...perform better than many students in several of my classes.
5. ...often achieve good results compared to others.
6. ...be a good performing student compared to others
7. ...get an excellent ranking most of the time.

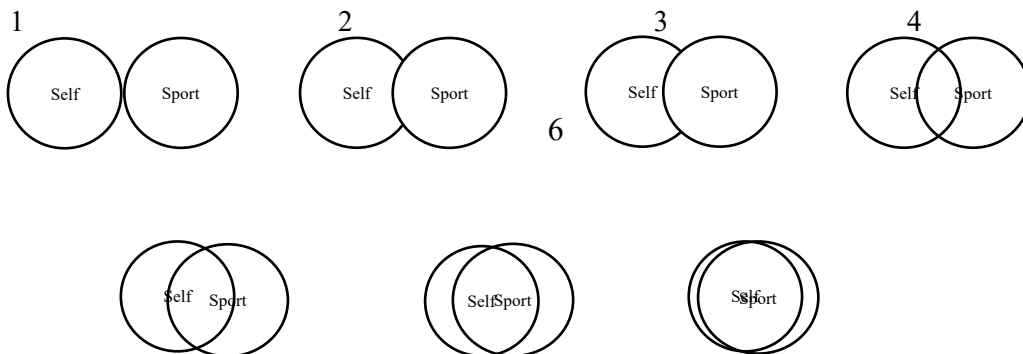
8. ...perform well relative to other students in my classes.
9. ...get results better than a significant portion of my classmates.

In my schoolwork, my goal is to...

10. ...overachieve in everything compared to others.
11. ...do extremely well compared to everyone else in my classes.
12. ...get superior results compared to all other students.
13. ...outperform all other students in all of my classes.
14. ...always attain significantly better results compared to others.
15. ...be an overachiever compared to other students.
16. ...get the highest possible ranking all the time.
17. ...outperform everyone else in my classes.
18. ...get results that exceed everyone else in my classes.

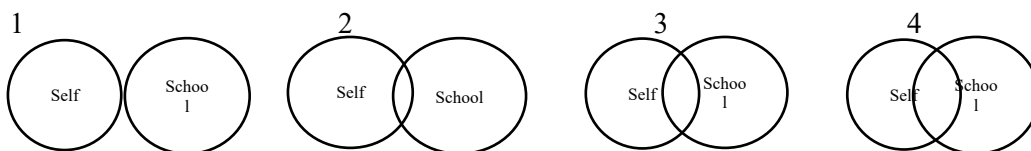
7. Please rate the extent to which you consider sport to be a part of who you are as a person.

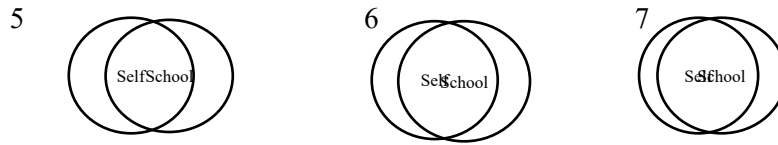
Rate your identification to sport by selecting from this series of 7 Venn diagrams ranging from 1 (*low identification*) to 7 (*high identification*), with decreasing distance between the self and sport indicating increasing identification with sport.



8. Please rate the extent to which you consider sport to be a part of who you are as a person.

Rate your identification to school by selecting from this series of 7 Venn diagrams ranging from 1 (*low identification*) to 7 (*high identification*), with decreasing distance between the self and school indicating increasing identification with school.





9. Lastly, please take a moment to describe (a) one academic goal and (b) one sports goal that you intend to pursue from today (the current day) until the end of the week (Sunday). Your response will help us better understand your upcoming priorities as a student-athletes.

1. Academic:
2. Sport:

END OF THE BASELINE SURVEY (SUNDAY)

Day 1

DAILY QUESTIONNAIRE– EACH of the 7 DAYS (MONDAY TO SUNDAY)

Part 1

It is normal for people to have fears about failure. From time to time during a day, everyone will have these experiences. In the following section, you will be asked questions about how you felt today when you experienced fears of failure.

On a scale from 1 (Not at all) to 7 (Totally), please rate the extent to which you perceived fear of failure.

1	2	3	4	5	6	7
Not at all	Very slightly	Slightly	Moderately	Strongly	Very strongly	Totally

On Monday, when I experienced fear of failure, it motivated me to...

1. ... be more productive
2. ... practice/study more
3. ... have good performances
4. ... face challenges
5. ... pursue goals that are important for me.
6. ... achieve my most difficult goals
7. ... seek out additional knowledge/training
8. ... confront the difficulties.

Part 2

Please take a moment to reflect on your Monday. Please rate the extent to which you...

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Not at all	Very slightly	Slightly	Moderately	Strongly	Very strongly	Totally
------------	---------------	----------	------------	----------	---------------	---------

1. Progressed on your goals.
2. Moved forward in the pursuit of your goals.
3. Came closer to reaching your goals.

Part 3

Please think about the thoughts and feelings that you had today and rate the extent to which you agree with each statement.

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	--------------------	---------------	-----------------	---------------	--------------------	--------------

Today, on Monday...

1. I looked forward to my day.
2. I enjoyed my day.
3. My day was interesting.
4. I enjoyed my daily activities.
5. I learned a lot during my day.

Part 4

1 Not at all agree	2 Slightly agree	3 Moderately agree	4 Strongly agree	5 Totally agree
-----------------------	---------------------	-----------------------	---------------------	--------------------

Please refer to your thoughts and feelings today.

Today, on Monday...

1. I was very concerned about the possibilities of making a mistake.
2. I had doubts about everything I did.
3. I judged myself harshly when I did not do something perfectly.
4. I felt like everyone expected and pressured me to be perfect.
5. The idea of making a mistake frightened me.
6. I felt uncertain about most things I did.
7. I had difficulty forgiving myself when my work was not flawless.
8. I felt people would be disappointed of me if I didn't do something perfectly.

Part 5

Please refer to the things you have experienced on (MONDAY)

Today,

1. I attended how many classes? 0, 1, 2, 3.
2. I had an exam at school. Yes/No
3. I needed to prepare for an upcoming exam at school. Yes/No
4. I had to work on an assignment at school. Yes/No
5. I had a practice in my sport. Yes/No
6. I had a game or a competition in my sport. Yes/No

7. I had to train for my sport (gym, running, stretching). Yes/No
 8. I had extracurricular activities outside of school and sport. Yes/No

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	--------------------	---------------	-----------------	---------------	--------------------	--------------

In relation to the tasks you had to perform today (on Monday) ...

1. I had too much to do.
2. I had to work very fast.
3. I had to do multiple things at once.
4. I had to work very hard.

Part 6

On a scale from 1 to 100, how difficult it was to manage your schoolwork and your sport demands today? - 0 (not difficult at all) 100 (extremely difficult)

Part 7

Please refer to your thoughts and feelings you had today.

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	--------------------	---------------	-----------------	---------------	--------------------	--------------

1. Today, I had a lot of self-esteem.

Part 8

Please refer to your thoughts and feelings you had today.

Today, on Monday have you felt...

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	--------------------	---------------	-----------------	---------------	--------------------	--------------

1. Unhappy
2. Miserable
3. Depressed
4. Downhearted
5. Sad
6. Gloomy

Part 9

Please refer to your thoughts and feelings you had today.

Today, on Monday have you felt...

1 Not at all	2 Very slightly	3 Slightly	4 Moderately	5 Strongly	6 Very strongly	7 Totally
-----------------	--------------------	---------------	-----------------	---------------	--------------------	--------------

1. Worried
2. Nervous
3. Anxious
4. Panicky
5. On edge
6. Tense
7. Stressed

END OF THE DAILY SURVEY

Weekly Report (participant will complete this section only on the last day of the week)

You are now asked to refer to the things you have experienced more generally this week over the last seven days.

Part 1

IN THE PAST WEEK, have you felt:

1 Not at all	2	3	4	5 A lot
-----------------	---	---	---	------------

1...inadequate?
2...swamped by your responsibilities?
3...that the odds were against you?
4...that there wasn't enough time?
5...like nothing was going right?
6...like you were rushed?
7...like there was no escape?
8...like things kept piling up?
9...like just giving up?
10...like you were carrying a heavy load?

Part 2

1 Do not believe at all (0% of the time)	2 25%	3 sometimes believe (50% of the time)	4 75%	5 believe 100% of the time (100% of the time)
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Please write down the extent to which you believed or not in these statements **this week**.

1. When I was failing, I was afraid that I might not have enough talent.
2. When I was failing, it upset my "plan" for the future.
3. When I was not succeeding, people were less interested in me.
4. When I was failing, important others were disappointed.
5. When I was failing, I worried about what others were thinking about me.

Part 3

How would you rate your week?

A complete failure ----- A
complete success

Part 4

4.1 Overall, how would you rate your performance this week?

Very poor, Poor, Fair/average, Good, Very good

4.2 How would you rate your level of mental fatigue?

Not at all tired ----- Totally exhausted

4.3 How would you rate your level of physical fatigue?

Not at all tired ----- Totally exhausted

APPENDIX H

Research Ethics Board Approval

Certificate of Ethics Approval Study 1

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

15/06/2023

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-04-23-9040
Titre du projet / Project Title	Is fear of failure your ally or your enemy?
Type de projet / Project Type	Recherche de professeur / Professor's research project
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	15/06/2023
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	14/06/2024

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Certificate of Ethics Approval Study 2

Université d'Ottawa

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University of Ottawa

Office of Research Ethics and Integrity

28/09/2023

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-08-23-9412
Titre du projet / Project Title	Fear of failure as motivation: dual-domain study with student-athletes
Type de projet / Project Type	Thèse de doctorat / Doctoral thesis
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	28/09/2023
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	27/09/2024

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Certificate of Ethics Approval Study 3

Université d'Ottawa
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26/03/2024

University of Ottawa
Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-02-24-9780
Titre du projet / Project Title	A Weekly Exploration of Student-Athletes' Lives.
Type de projet / Project Type	Thèse de doctorat / Doctoral thesis
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	26/03/2024
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	25/03/2025

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