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Development and validation of the General Risk Propensity Scale (GRiPS)

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Abstract

Despite the widespread interest in understanding and identifying risk takers by psychologists, clinicians, and economists, the risk literature currently lacks consensus regarding the nature of risk taking and its measurement. Existing measures of risk taking are predominantly domain-specific despite emerging support for risk taking as a domain-general disposition. In the present paper, we examine the nature of risk taking as a domain-general personality disposition and develop a concise measure: the General Risk Propensity Scale (GRiPS). Data from 1,523 participants across five studies provided evidence for its construct validity. The GRiPS converged with other self-report measures of risk taking and provided incremental prediction of work, academic, and life outcomes over and above the five-factor model of personality and the Domain-Specific Risk Taking Scale.

KEYWORDS

DOSPERT, individual differences, personality, risk propensity, scale development

1 | INTRODUCTION

Risk taking as a disposition has long captured the imagination of psychologists, clinicians, and lay people. The lay perception of risk takers is personified by entrepreneurs such as Steve Jobs or Elon Musk who attained exceptional career achievement by, among other things, taking risks, whereas the clinical perspective associates risk taking with harmful behaviors such as drug use, unprotected sex, or problem gambling. Despite the widespread interest in understanding and identifying risk takers, the literature currently lacks consensus regarding the nature of risk taking as a general disposition (Fox & Tannenbaum, 2011; Mata, Frey, Richter, Schupp, & Hertwig, 2018).

Risk researchers have traditionally considered risk taking as a domain-specific phenomenon (Figner & Weber, 2011; Hanoch, Johnson, & Wilke, 2006). Hanoch et al. (2006), for example, stated that "the current zeitgeist among decision researchers seem to include a domain-specific approach to risk" (p. 300). The Domain-Specific Risk Taking (DOSPERT) Scale (Weber, Blais, & Betz, 2002), one of most widely used measure of risk propensity, exemplifies this perspective. Several recent studies, however, challenged this long-standing position by showing that despite domain differences is risk preference, there exist a *general risk factor* that accounts for shared variance across domains (Frey, Pedroni, Mata, Rieskamp, & Hertwig, 2017; Highhouse, Nye, Zhang, & Rada, 2017). Others have found that risk taking shares many characteristics with general personality dispositions, such as developmental stability, genetic determinants, and neurological correlates (Josef et al., 2016; Zyphur, Narayanan, Arvey, & Alexander, 2009).

Despite emerging evidence in support of a general risk factor, existing measures of risk taking are either domain-specific (e.g., business, Sitkin & Weingart, 1994) or assess risk taking across multiple domains (e.g., DOSPERT Scale, Blais & Weber, 2006). Although many researchers use a summated DOSPERT scale score to assess general risk taking, the measure was not explicitly designed for that purpose. Moreover, based on psychometric theory, summing across narrow facets does not result in the same construct as a direct assessment of the higher order factor (Ironson, Smith, Brannick, & Gibson, 1989). Therefore, a direct measure is more appropriate for assessing a person's general disposition toward taking risks. Such a measure would better reflect the general factor of risk propensity and better predict risk taking across situations (Highhouse et al., 2017).

The purposes of the present research are fourfold. First, we review the theories and supporting evidence for the domain-general perspective of dispositional risk taking. Second, we develop and

validate a general risk propensity measure (General Risk Propensity Scale [GRiPS]). The GRiPS measures one's general propensity for risk taking, rather than risk taking in specific domains (e.g., recreation or health). Third, we establish the predictive validity of the GRiPS in organizational and academic settings for predicting broad outcomes such as satisfaction, performance, and subjective well-being (SWB) in those settings. And we examine the incremental predictive power of GRiPS over the five factors of personality and the general risk score derived from summing across the DOSPERT dimensions. Finally, we use multisource ratings of the GRiPS and the Big Five personality to investigate its convergent and divergent validity with existing personality traits.

1.1 | Defining risk taking

The *Oxford English Dictionary* defines risk as (a) the possibility of loss, injury, or other adverse or unwelcome circumstance and (b) a chance or situation involving such a possibility. The two definitions reflect the psychometric and decision-theoretic perspectives in the operationalization of risk (Bromiley & Curley, 1992; Fox, Erner, & Walters, 2015; Pennings & Smidts, 2000; Schonberg, Fox, & Poldrack, 2011; Yates & Stone-Romero, 1992).

Decision theorists define risk as the variability in outcomes, holding expected value constant (Kahneman & Tversky, 1979; Mishra, 2014). A gamble with a 50% chance of winning $100 and 50% chance of winning $200, for example, is considered riskier than a sure win of $150. Unlike the decision-theoretic perspective, the psychometric perspective—in addition to outcome variability—also takes into account the severity and likelihood of loss and harm as a result of the behavior (e.g., Byrnes, Miller, & Schafer, 1999; Furby & Beyth-Marom, 1992; Steinberg, 2008). Furby and Beyth-Marom (1992), for instance, explicitly assumed that a risky choice is one that entails some *chance of loss*. In a managerial setting, executives revealed that they consider not *only* the distribution of outcomes when assessing riskiness of business decisions but also the *losses* (March & Shapira, 1987). Baird and Thomas (1985) defined strategic managerial risk as "strategic moves that cause returns to vary, that involve venturing in to the unknown, and that may result in corporate ruin" (p. 231). Indeed, the prospect of a loss (physical, financial, or psychological) is an integral component of naturalistic risk taking (Fox et al., 2015).

All human endeavors have inherent risk, defined as both the variability of outcomes and prospect of loss or harm. Riding a bicycle, for example, can range from relatively riskless (i.e., riding with protective gear on the sidewalk at a slow speed) to extremely risky (i.e., riding rapidly down a busy intersection with no protective gear). A person's day is filled with situations and decisions where he or she could make a risky choice, where the outcome has greater variability and high potential for harm, or a safe choice, where the outcome is more certain and has little potential for harm. General risk taking propensity, therefore, is a person's *cross-situational tendency to engage in behaviors with a prospect of negative consequences such as loss, harm, or failure*.

1.2 | Nature of dispositional risk taking

Risk researchers have long debated the merit of assessing risk taking as a general disposition (Figner & Weber, 2011; Mata et al., 2018; Schoemaker, 1990). Figner and Weber (2011), for instance, concluded in their review that "… risk taking is neither a unitary phenomenon nor a single personality trait" (p. 211). The person-situation debate has its roots in personality research, which dates back to the early 1900s (Allport, 1937; Fleeson, 2004; Mischel & Peake, 1982). It is beyond the scope of this paper to review the person-situation debate, but we should point out some main objections to dispositional risk taking.

Many scholars have argued that risk taking is situational and is influenced by environmental characteristics such as framing and individual characteristics such as aspiration levels (Larrick, 1993; Scholer, Zou, Fujita, Stroessner, & Higgins, 2010; Tversky & Kahneman, 1986). Kahneman and Tversky's work on prospect theory famously showed the asymmetry of risk taking in gain versus loss frames (Kahneman & Tversky, 1979): People tend to be more risk averse for gains and risk seeking for losses. Similarly, the motivational perspective shows that people tend to be more risk seeking when striving to reach a goal and risk averse when avoiding failure (Schneider & Lopes, 1986). Framing studies are usually conducted in lab settings and are examples of "strong" situations (Meyer, Dalal, & Hermida, 2010), where respondents have limited decision latitude. Strong situations also limit the effects of dispositional differences on the criterion (Meyer et al., 2014). An aggressive person, for example, is more likely to engage in violence in a dark alley than in a public library. Still, Zickar and Highhouse (1998) found that framing effects were attenuated for people with extremely high- and low-trait risk taking tendencies.

Others have argued that risk taking is domain-specific and that there are no cross-domain consistencies (Figner & Weber, 2011; Hanoch et al., 2006). For example, a person may be risk seeking in the financial domain (e.g., speculative investing) and risk averse in recreational domains (e.g., sky diving). According to the risk–return framework, domain-specific differences in risk taking arise from the perceived risk and benefit of different activities (Weber et al., 2002). Variation in risk preferences across domains, however, does not discount the existence of a domain-general disposition. Although manifestation of a trait may vary across situations such as at home or work, there remains substantial cross-situational consistency in rank order when behaviors are aggregated (Fleeson & Jayawickreme, 2015). In other words, risk seekers could vary in the absolute degree of risk preference across situations, but still be more risk taking *in general* than someone who is risk averse.

The domain generality of risk taking is supported in several psychometric studies (Blais & Weber, 2006; Frey et al., 2017; Highhouse et al., 2017; Knowles, Cutter, Walsh, & Casy, 1973). Blais and Weber (2006) found that domain specificity in risk taking is accounted for by domain-specific perceptions of risk and benefit, whereas general risk propensity remained consistent across situations. The Highhouse et al.'s (2017) investigation of the factor structure of the DOSPERT revealed that a bi-factor model with a domain-general factor is more explanatory than a five-factor model. Frey et al. (2017) also found, across 39 measures of risk preference, evidence for a general factor of risk with a high degree of temporal stability. Similarly, Knowles et al. (1973) found a general motivational component that underlies risk taking across different risky behaviors despite differences in specific risk strategies. The authors concluded that risk taking is a personality trait that "conceptualized as a general willingness to enter or

avoid risk situations" (p. 131). Indeed, psychometric studies of risk taking demonstrated that the mean level differences in situational risky behavior do not discount the existence of a general trait.

In addition to psychometric studies of risk taking, there is now ample developmental, neurological, and genetic evidence for the existence of risk taking as a disposition. Josef et al. (2016) examined the rank order stability—a defining feature of a psychological trait—of risk taking propensity across the life span. Their findings revealed stable developmental trajectories of trait risk taking across domains, and the patterns of change in risk propensity followed that of other personality traits, rather than situational influences such as change in income. In a twin study, Zyphur et al. (2009) found that risk preferences were two thirds genetically determined, which suggests that risk preferences may be dispositional in nature. Moreover, risk preference has also been linked to neurological processes such as dopamine and serotonin transmission (Dreber et al., 2009; Kuhnen & Chiao, 2009; Stanton et al., 2011). The genetic influence on risk taking mirrors that of personality research, where gene expression has been attributed to the development of many stable personality traits (Loehlin, McCrae, Costa, & John, 1998).

In sum, despite the situational and contextual influences on risk taking, there is evidence for a domain-general disposition, and we can trace the source of the general risk disposition to neurological processes and personality correlates that are shown to be developmentally stable and biologically determined.

1.3 | Risk taking measures

Risk propensity measures can be broadly categorized as lab-based tasks and self-report questionnaires. In lab-based tasks, participants make decisions or choices in specific scenarios, often involving gamble-like games (e.g., Iowa Gambling Task, Balloon Analogue Risk Task [BART], and Angling Task) or hypothetical situations (e.g., Choice Dilemma Questionnaire; Buelow & Suhr, 2009; Kamalanabhan, Sunder, & Vasanthi, 2000; Lejuez et al., 2003; Pleskac, 2008). In these tasks, risk taking is operationalized as the preference for choices with higher volatility (e.g., choosing a 50% chance of losing $100 rather than losing $90 for sure). To be sure, there are a variety of ways in which risky behavior is elicited. In the BART, for instance, the participant has to digitally pump up a balloon in order to win points and risks the chance of losing if the balloon pops. Lab-based tasks, however, are most susceptible to situational influences and framing effects (e.g., Highhouse & Yüce, 1996) and only weakly relate to naturalistic risk taking (Erner, Klos, & Langer, 2013) and risk preferences (Frey et al., 2017). Pedroni et al. (2017) examined six popular behavioral measures of risk taking and found substantial variation in risk preferences across tasks. The authors concluded that "the observed inconsistencies across different elicitation methods may be relatively unique to this class of measures rather than an inherent characteristic of the construct risk preference."

Risk taking propensity is also measured with self-report questionnaires. In our review, a majority of them either measure risk taking in a single domain (e.g., business, Sitkin & Weingart, 1994) or examine risk taking across several domains such as health and finance (e.g., Blais & Weber, 2006; Kruger, Wang, & Wilke, 2007; Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005). One notable exception is the single-item measure of general risk taking used by Dohmen et al. (2011). Single-item measures, however, are psychometrically problematic and are discouraged for measuring psychological constructs (Wanous & Hudy, 2001). Although not explicitly stated, the risk taking subscale of the Jackson Personality Inventory (JPI) consists of a large number of items that describe domain-specific risky behaviors (e.g., "The thought of investing in stocks excites me"; "When in school, I rarely took the chance of bluffing my way through an assignment"; Jackson, 2004). And because the JPI is proprietary, there has been very little research on its validity. Similarly, Nicholson et al's (2005) Risk Taking Inventory contains risk taking across six domains, and the authors explicitly define general risk taking as "a summation of the reported risk taking behavior of an individual across situations and time" (p. 160). The DOSPERT also generates an overall risk taking score by summing across the individual dimensions.

The process of summing across domain-specific risk behaviors as a measure of general risk propensity poses several issues (Ironson et al., 1989). First, there is no theoretical reason to measure risk taking in only the domains covered in any particular scale. The DOSPERT, for instance, has been supplemented with risk taking dimensions not present in the original version (e.g., medical, Butler et al., 2012). The Risk Taking Inventory also included a career dimension of risk taking (Nicholson et al., 2005). Therefore, it is uncertain whether the underlying construct of general risk taking is adequately measured with the existing domains of a scale. Also unclear is whether these scales are theoretically equivalent in measuring general risk taking when new domains are included. Second, risky behaviors may not be an equivalent class (Byrnes, 1998). In other words, not all risky behaviors are equal representations of a person's underlying risk propensity. A DOSPERT social risk item, such as "admitting that your tastes are different from those of a friend," poses very little threat or danger. But the DOSPERT health risk items "engaging in unprotected sex" or "riding a motorcycle without a helmet" have very clear potential for physical harm. Third, measures using risky behaviors may be capturing variance attributed to other latent constructs. For example, "taking a skydiving class" may reflect a person's sensation seeking tendencies, whereas "taking some questionable deduction on your income tax return" is an indicator of honesty or integrity.

A direct measure of general risk taking would overcome some of the limitations of summing across domain-specific risk behaviors. In addition, such a measure can be administered in a shorter period of time and is more efficient than measuring multiple domain-specific behaviors only to aggregate scores across domains. Finally, a general measure directly assesses people's attitudes toward risk across situations without any domain-specific influences, which is consistent with the conceptualization of the general risk factor.

1.4 | Predictive validity

A general measure of risk taking may be useful for predicting a variety of broad life and work outcomes such as SWB and counterproductivity (Highhouse et al., 2017). Risk taking behaviors have been shown to negatively predict SWB in several specific domains. Strine, Chapman, Balluz, Moriarty, and Mokdad (2008), for

example, found that health-related risky behavior such as smoking and drinking were associated with lower SWB. A similar pattern of results were found for adolescents (Zullig, Valois, Huebner, Oeltmann, & Drane, 2001). Other risky behaviors such as problem gambling and risky sexual behaviors are also related to worse mental health and life outcomes (Dickson-Swift, James, & Kippen, 2005; Valois, Zullig, Huebner, Kammermann, & Drane, 2002). Given that risk taking is associated with behaviors that expose the decision maker to possible harm or loss, it is reasonable to expect risk taking to be negatively related with SWB and mental health outcomes in work and school settings (e.g., job stress and depression).

Many counterproductive work behaviors can be conceptualized as risky acts, such that the behaviors have an uncertain outcome (e.g., possibility of being caught stealing) and potential for loss (e.g., fired for stealing). Existing measures of risk taking often contain items that are associated with aspects of counterproductivity at work (e.g., "passing off someone else's work as your own," DOSPERT; "Know how to get around the rules," JPI). And most instances of CWB can be conceptualized as a form of social (e.g., "acted rudely toward someone at work") or ethical risk (e.g., "taken property from work without permission"). Some CWBs encompass multiple risk domains: the item "used an illegal drug or consumed alcohol on the job," for example, is a combination of both ethical and health risk taking; "discussed confidential company information with an unauthorized person" could be categorized as social and ethical risk. Given the broad nature of CWBs and its similarities with risk taking, we expect risk propensity will positively predict CWBs.

It is generally agreed that narrow predictors should be matched with narrow criteria, and general predictors are best matched with broad criteria (Campbell, 1990; Epstein, 1980; Hulin, Roznowski, & Hachiya, 1985). We therefore included several related narrow outcomes such as safety behaviors (health related), job application fabrication (ethics related), and risk tolerance (gambling related) for comparison purposes. We expect the associations between GRiPS and the narrow outcomes to be weaker than with broad outcomes. Finally, for exploratory purposes, we will examine broad attitudinal outcomes such as job and career satisfaction as well as performance outcomes such as college grades and dropout intentions.

1.5 | Relations to the big five personality

The position of risk taking within the FFM of personality is not well established. Some have argued that risk taking is distinct from the Big Five (Paunonen, Haddock, Forsterling, & Keinonen, 2003; Paunonen & Jackson, 2000; Zuckerman, Kuhlman, Joireman, Teta, et al., 1993), whereas others have argued that it shares substantial variance with the FFM of personality (Costa & McCrae, 1992). Some researchers found emotional stability and openness to experience as primary predictors of risk taking (Lauriola & Levin, 2001), whereas others found risk taking to be associated with openness to experience and extraversion (Aluja, García, & García, 2003; Dahlen & White, 2006; Zuckerman et al., 1993). The inconsistencies may be attributed to how risk is measured. Lauriola and Levin (2001), for example, used an economic risk taking task; Dahlen and White (2006) measured risk taking in a single domain (driving). In the present study, we will examine the relations between general risk taking and the FFM of personality. By using a psychometrically appropriate measure of dispositional risk taking, we are able to shed light on its relations to the five factors of personality.

2 | OVERVIEW OF STUDIES

We conducted five studies across three phases to address the primary goals of the present investigation. Phase 1 describes the construction and validation of the GRiPS. In Study 1, a 14-item measure was created. Individual items were analyzed for internal consistency, factor loadings, item content, and discrimination to determine their quality. In Study 2, we validated the factor structure of the final eight-item GRiPS using confirmatory factor analysis and examined its convergent validity with two popular measures of risk taking (i.e., risk subscale of the JPI and DOSPERT). Phase 2 examined the incremental prediction of work and life outcomes—over and above the traits in the FFM of personality in two independent studies. Finally, Phase 3 included a multitrait multimethod (MTMM) study of the relations between the GRiPS and the FFM of personality, as well as incremental validity of the GRiPS over the DOSPERT and the Big Five personality traits for predicting academic outcomes. We also compare the predictive validity of the GRiPS and DOSPERT for predicting both narrow and broad outcomes. Table 1 summarizes the three phases of our study.

2.1 | Phase 1: Scale development

To create the items for the general risk taking propensity scale, we followed the guidelines for item content described by Angleitner, John, and Löhr (1986). Angleitner and colleagues identified six categories of item content for personality inventories: (a) characteristic activities, (b) attributions of traits, (c) wishes, interests, and preference, (d) biographical facts and past behavior, (e) attitudes and beliefs, and (f) others reaction to oneself. The goal was to assess domain-general risk propensity using short items written in simple language (i.e., a "common sense" approach; Wolfe, 1993). Each author independently generated between five to 10 items. As a group, we discussed the content of the items and eliminated ones that were poorly worded or duplicates. We also eliminated items that were domain-specific (e.g., "I enjoy betting on sports") or items that did not comply with the aforementioned guidelines for item content. The initial scale had 14 items as shown in Table 2. Responses were made on a 5-point response scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

2.1.1 | Study 1. Item reduction

Methods and procedure

We used three indices for assessing the quality of the initial scale and its items, including (a) factor loadings derived from exploratory factor analysis (EFA), (b) item-total correlations, and (c) item response theory (IRT) item discrimination parameters. Participants (n = 255) were recruited from Amazon Mechanical Turk (MTurk). We removed participants who failed to answer the attention check question correctly ("please select strongly disagree."). The final sample had 233 participants. The average age of the sample was 32 years old, and 56% were

TABLE 1 Summary of studies

	Phase 1—Scale development		Phase 2—Predictive validity		Phase 3—Incremental validity and MTMM	
	Study 1	Study 2	Study 1	Study 2	Study 1	
Sample characteristics	MTurk (n = 233)	MTurk (n = 295)	MTurk (n = 352)	Organization (n = 327)	Student (n = 181)	Other ratings (n = 135)
Measures	GRiPS	GRiPS	*Time 1*	*Time 1*	*Time 1*	GRiPS
		DOSPERT	GRiPS	GRiPS	GRiPS	Big Five
		JPI-Risk	Big Five	Big Five	Big Five	
			Time 2 (1 week later)	*Time 2 (2 months later)*	DOSPERT	
			Outcomes	Outcomes	*Time 2 (2 months later)*	
					Outcomes	

Note. JPI: Jackson's Personality Inventory; DOSPERT: Domain-Specific Risk Taking Scale; MTMM: multitrait multimethod; GRiPS: General Risk Propensity Scale.

TABLE 2 Summary of item characteristics of the initial 14-item scale in Phase 1

		Item descriptives			Factor		Discrm.
Index	Item	Mean	*SD*	Item-total *r*	1	2	parameter
1	**Taking risks makes life more fun**	3.4	1.1	0.77	**0.80**	0.03	2.55
2	**My friends would say that I'm a risk taker**	2.6	1.3	0.85	**0.73**	−0.17	3.48
3	**I enjoy taking risks in most aspects of my life**	2.8	1.2	0.85	**0.78**	−0.10	3.61
4	**I would take a risk even if it meant I might get hurt**	2.5	1.3	0.73	**0.64**	−0.12	2.27
5	**Taking risks is an important part of my life**	2.7	1.3	0.83	**0.71**	−0.15	3.10
6	In general, I avoid taking risks (-)	2.8	1.2	0.76	−0.07	**0.86**	−2.29
7	I generally like to "play it safe" (-)	2.5	1.1	0.73	−0.04	**0.82**	−1.89
8	**I commonly make risky decisions**	2.6	1.2	0.71	**0.62**	−0.10	1.86
9	**I am a believer of taking chances**	3.5	1.2	0.77	**0.75**	−0.01	2.28
10	When taking a chance, I focus more on winning than on possibly losing	3.6	1.1	0.55	**0.71**	**0.25**	1.05
11	**I am attracted, rather than scared, by risk**	2.7	1.2	0.83	**0.75**	−0.09	2.89
12	I generally avoid risky situations (-)	2.6	1.2	0.69	−0.01	**0.82**	−1.85
13	I focus more on the positive outcomes of risk, rather than negative ones	3.4	1.2	0.67	**0.73**	0.12	1.46
14	You never get anywhere without taking chances	3.6	1.0	0.60	**0.68**	0.14	1.31

Note. Final eight-item version of the General Risk Propensity Scale (GRiPS) are in bold. (-) denotes negatively worded items.

male. Participants responded to the 14 initial items of the general risk scale. For each item, they indicated the degree to which they agree or disagree with the statement. Participants received $0.30 for their participation.

Results

Table 2 contains the summary of the initial item characteristics. Principal axis factoring with Direct Oblimin rotation was conducted to examine the factor structure and item loading of our initial set of 14 items. Parallel analysis was used (Hayton, Allen, & Scarpello, 2004) to determine the number of factors that best represented the data. Parallel analysis has been shown to be among the most accurate methods for factor retention, compared with other procedures such as the maximum likelihood estimation (Humphreys & Montanelli Jr, 1975) and the Kaiser criterion (Kaiser, 1960). Parallel analysis generates simulated data based on the same sample size and number of variables in the observed data. Next, average eigenvalues from the simulated data are compared with the observed eigenvalues. Factors are retained when the observed eigenvalues are equal to or greater than the simulated eigenvalues. Although the parallel analysis suggested a three-factor solution, the observed eigenvalues for the first three factors were 7.34, 0.76, and 0.39. The first two factors explained 53% of the total variance, whereas the third factor only explained an additional 11% variance.

Next, we examined the factor structure of the initial measure as a two-factor model. The two latent factors in the EFA model were highly correlated (r = −0.68). We identified items that did not either load onto the main factor or cross-loaded onto multiple factors. Based on the results presented in Table 2, items 6, 7, and 12 loaded onto the second factor, and item 10 also loaded—albeit weakly—on to the second factor. Based on the content of the items, the second factor extracted from the factor analysis appears to be driven by the negatively worded items. Factor loadings were also extracted using a one-factor solution. Results revealed that items 10, 12, 13, and 14 all had loadings lower than 0.70.

IRT analysis IRT models each response as a function of the characteristics of the item and the respondent's standing on the latent trait. The data in the present study were modeled using the graded response model (Samejima, 1997), which is typically used for

polytomous response data, such as a Likert scale. The graded response model produces a set of parameters for each item that describes the characteristics of that item. For the purpose of item analysis, the discrimination parameter is most important. The discrimination parameter describes the degree to which the item is able to differentiate between high and low levels of the latent trait. Therefore, high discrimination is an indication of a quality item, and items with low discrimination should be eliminated from the scale. Baker (2001) categorizes discrimination parameters above 1.7 as "perfect" and those above 1.35 as "high." The results revealed that items 10, 13, and 14 were noticeably lower than the other items in the scale, with items 10 and 14 below the threshold of "high" and item 13 barely above that threshold.

Taking into account the factor loadings, item-total correlations, and discrimination parameters, we identified items 1, 2, 3, 4, 5, 8, 9, and 11 as the best fitting items for the shortened GRiPS, as they all loaded onto the same factor and had the highest item-total correlations and discrimination parameters. We also removed the negatively worded items from the original scale. Although some researchers have advocated the use of negatively worded items as a means to identify careless responding and reduce acquiescence, this practice comes at the expense of lower psychometric qualities (Dalal & Carter, 2015). Moreover, we mitigated issues of inattentive responding by independently assessing participants' attentiveness with quality check questions. The shortened eight-item scale included only positively worded items and had excellent internal consistency (α = 0.92).

2.1.2 | Study 2. Confirmatory factor analysis

Method

A second set of participants (n = 300) was recruited from MTurk. Participants who failed to answer the attention check question ("Please select strongly disagree") were removed from the sample. The final sample had 295 participants. The average age of the sample was 37 years old, and 49% were male. Participants responded to the eight-item version of the GRiPS. For each item, they indicated the degree to which they agreed or disagreed with the statement. Participants also completed the 30-item DOSPERT scale (Blais & Weber, 2006) and the 20-item risk taking subscale of the JPI (Jackson, 1977). Participants received $0.30 for their participation.

Results

Table 3 contains the descriptive statistics for each item of the GRiPS, as well as their intercorrelations with the JPI and the DOSPERT. The eight-item GRiPS had excellent reliability (α = 0.92). A confirmatory factor analysis was conducted to assess the factor structure of the shortened measure. The single-factor model had satisfactory fit (root mean square error of approximation = 0.074, 90% confidence interval [0.050, 0.099], standardized root mean square residual = 0.024, comparative fit index = 0.98, Tucker–Lewis Index = 0.98). Consistent with previous findings of sex and age differences in risk taking (Byrnes et al., 1999; Defoe, Dubas, Figner, & van Aken, 2015), men scored significantly higher on the shortened risk taking measure (M = 2.71, SD = 0.89) than women (M = 2.22, SD = 0.88), $t(290) = 4.82$, $p < 0.001$. Age was also significantly correlated with risk taking, $r = -0.27$, $p < 0.01$. People were less risk seeking as they aged. Finally, we found evidence of convergent validity for the general risk taking measure. GRiPS was significantly correlated with the summated DOSPERT score (r = 0.63) and the JPI-Risk subscale (r = 0.82).

2.2 | Phase 2: Predictive validity

2.2.1 | Methods and procedure

Study 1

Five hundred participants from MTurk participated at Time 1. Approximately 1 week later, the participants were invited to complete a follow-up survey. We included four attention check questions across the two surveys (e.g., "If you are paying attention, please select strongly disagree") to ensure the quality of responses. Participants who failed more than two questions were dropped from the survey. Of the 500 original participants, 352 returned to complete Time 2. The average age of the final sample was 35 years old, and 52% were male. At Time 1, participants completed the general risk items, along with the mini-IPIP, which contained 20 items assessing the FFM of personality (Donnellan, Oswald, Baird, & Lucas, 2006). Outcome measures were completed approximately 1 week later. Participants received $0.25 for their participation at Time 1 and $0.60 at Time 2.

TABLE 3 Item characteristics, standardized factor loadings, and correlations with DOSPERT for Study 2

GRiPS item no.	Descriptives		CFA	Convergent validity						
	Mean	*SD*	Factor Loadings	Social	Financial	Health	Ethical	Recreation	DOSPERT summated	JPI-Risk
1	3.0	1.0	0.74	0.29	0.39	0.36	0.30	0.48	0.53	0.62
2	2.3	1.1	0.89	0.20	0.44	0.36	0.25	0.50	0.52	0.72
3	2.3	1.1	0.91	0.24	0.49	0.40	0.37	0.49	0.58	0.75
4	2.2	1.1	0.77	0.22	0.39	0.41	0.28	0.55	0.54	0.67
5	2.3	1.1	0.84	0.21	0.40	0.38	0.30	0.44	0.50	0.69
6	2.2	1.0	0.81	0.21	0.46	0.41	0.38	0.39	0.53	0.67
7	3.0	1.1	0.76	0.35	0.40	0.37	0.23	0.46	0.53	0.67
8	2.4	1.1	0.83	0.21	0.38	0.40	0.25	0.54	0.53	0.72
Mean	2.5	0.9		0.28	0.49	0.46	0.35	0.57	0.63	0.82

Note. All correlations are statistically significant at $p < 0.001$. JPI: Jackson's Personality Inventory; DOSPERT: Domain-Specific Risk Taking Scale.

TABLE 4 List of broad and narrow outcomes in Phases 2 and 3

	Broad vs. narrow	Construct	*k*	Example item	Response scale	Reference
Phase 2. Study 1	Narrow	Safety motivation	3	"I believe that it is important to reduce the risk of accidents and incidents in the workplace."	1 to 5 (strongly disagree to strongly agree)	Neal & Griffin (2006)
	Narrow	Job application fabrication	5	"I outright fabricated or made up information about myself when applying for a job so as to maximize the chances of getting hired for the job."	True and false	König, Wong, & Cen (2012)
	Narrow	Risk tolerance	5	Would you prefer A. A gamble with 80% chance of winning $4,000 or B. $2,000 for sure	Chance prospect (A)/sure thing (B)	
	Broad	Career satisfaction	3	"I have found my career quite interesting."	1 to 5 (strongly disagree to strongly agree)	Shockley, Ureksoy, Rodopman, Poteat, & Dullaghan (2016)
	Broad	Counterproductive work behavior	10	"Purposely waste your employer's materials/supplies"	1 to 5 (never to every day)	Spector, Bauer, & Fox (2010)
Phase 2. Study 2	Broad	Job satisfaction	8	"Waste of time"	Yes/no/?	Smith (1969)
	Broad	Job stress		"Overwhelming"	Yes/No/?	Smith (1969)
	Broad	Work withdrawal	6	"Made excuses to miss meetings."	1 to 5 (never to many times)	Hanisch & Hulin (1990)
	Narrow	Safety participation	3	"I put in extra effort to improve the safety of the workplace"	1 to 5 (strongly disagree to strongly agree)	Neal and Griffin (2006)
	Narrow	Safety compliance	3	"I use all the necessary safety equipment to do my job"	1 to 5 (strongly disagree to strongly agree)	Neal & Griffin (2006)
Phase 3	Narrow	Excused absence	1	"How often did you miss class for reasons out of your control in the last 2 weeks?	Open ended	
	Narrow	Unexcused absence	1	"How often did you miss class for reasons within your control in the last 2 weeks?	Open ended	
	Narrow	Smoking	1	"How many cigarettes do you smoke on an average day?"	Open ended	
	Narrow	Seat belt habit	1	"How often do you wear your seatbelt while driving?"	1 to 5 (never to always)	
	Narrow	Credit card ownership	1	"How many credit cards do you currently own?"	Open ended	
	Narrow	Alcohol use	10	"How often do you have six of more drinks on one occasion?"	Varies	Saunders, Aasland, Babor, De la Fuente, & Grant (1993)
	Broad	College subjective well-being	16	"I am pleased with how my college education is going so far."	1 to 7 (strongly disagree to strongly agree)	Renshaw (2016)
	Broad	Dropout intentions	5	"I plan to drop out of the current university in the next six months."	1 to 5 (strongly disagree to strongly agree)	
	Broad	Grade point average	1	"What is your cumulative grade point average at this institution?"	Open ended	
	Broad	Depression	4	"Little interest or pleasure in doing things"	1 to 4 (never to early every day)	Kroenke, Spitzer, Williams, & Löwe (2009)

Study 2

We used data collected from a large entertainment company with a substantial number of seasonal employees. For this sample, GRiPS was administered as part of a larger project to examine selection practices in the company. Respondents were mostly seasonal employees from high school (29%) or college (40%). Seven hundred thirty workers completed the initial assessment in June, and 327 workers completed the follow-up survey in August. The median age

TABLE 5 Mean, standard deviation, internal consistency, and correlations of Phase 2—Study 1's variables

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1	GRiPS	2.60	0.93	(0.94)										
2	Extrav.	2.55	1.01	0.42**	(0.85)									
3	Agree.	3.74	0.83	0.00	0.24**	(0.81)								
4	Consci.	3.60	0.87	−0.20**	0.12*	0.31**	(0.79)							
5	Neuro.	2.48	1.02	−0.08	−0.23**	−0.16**	−0.25**	(0.86)						
6	Openness.	3.86	0.79	0.13*	0.24**	0.42**	0.21**	−0.20**	(0.73)					
7	Safety	4.15	0.96	−0.16**	−0.07	0.29**	0.18**	−0.04	0.21**	(0.90)				
8	CWB	1.59	0.54	0.21**	0.07	−0.12*	−0.22**	0.34**	−0.15**	−0.12*	(0.84)			
9	Fabrication	1.06	0.18	0.11*	−0.00	−0.09	−0.09	0.11*	−0.05	−0.13*	0.24**	(0.85)		
10	Risk.Tol	1.58	0.28	−0.14*	−0.04	0.05	0.06	0.04	0.01	−0.00	−0.12*	−0.12*	(0.67)	
11	Career Sat.	3.58	1.13	0.02	0.20**	0.28**	0.28**	−0.32**	0.25**	−0.10	−0.27**	−0.08	0.04	(0.95)

Note. Diagonals contain Cronbach's alphas. CWB: Counterproductive work behaviors.

*$p < 0.05$. **$p < 0.01$.

of the final sample was 21, and 60% were male. The respondents held a variety of positions in the organization. The most common job titles were ride associate (7%), ride host (4%), admissions associate (4%), and food services associate (3%). The GRiPS and four of the five personality traits were completed at Time 1. Openness to experience was not measured as part of the selection project. The outcome measures were completed at Time 2.

2.2.2 | Measures

Table 4 contains the list of outcome measures collected for both studies. Broad outcomes consisted of job and career satisfaction, job stress, counterproductive work behavior, and withdrawal behavior.[1] Narrow outcomes consisted of safety behaviors (compliance, motivation, and participation), job application fabrication, and risk tolerance.

2.2.3 | Results

Study 1

Table 5 contains the means, standard deviations, internal consistencies, and intercorrelations of the Study 1 variables. The GRiPS was positively correlated with extraversion and openness to experience and negatively correlated with conscientiousness. The main findings were mostly consistent with our predictions. The GRiPS was negatively associated with safety motivation and positively associated with CWB and fabrication on a job application. Moreover, the GRiPS was found to predict choices on the risk-tolerance measure. Risk takers were more likely to select the risky choice with a high expected value (e.g., 50% chance of winning $1,000) than the "sure thing" (e.g., $250 for sure). The GRiPS was not, however, associated with career satisfaction.

Next, we examined the incremental validity of our risk taking measure over the Big Five personality traits. Table 6 presents the incremental validity as the change in R^2 after adding the GRiPS to each of the Big Five traits as a predictor of the outcome variables in Study 1. The GRiPS explained additional variance over the combined FFM for CWB, fabrication on job applications, and safety motivation, but not risk tolerance. Across all the outcomes, the GRiPS explained the most unique variance when combined with the neuroticism, agreeableness, and openness dimensions of the FFM and provided the least incremental prediction over conscientiousness.

Study 2

Table 7 contains the means, standard deviations, internal consistencies, and the intercorrelations of the Study 2 variables. The GRiPS was positively correlated with extraversion and neuroticism and negatively correlated with conscientiousness. We also found evidence for the predictive validity of the GRiPS. The GRiPS was associated with job (dis)satisfaction, job stress, safety (non)compliance, and job withdrawal. Risk taking propensity did not, however, predict safety participation.

Table 6 presents the incremental validity as the change in R^2 obtained by adding the GRiPS to the regression model that already contained the FFM traits as predictors of the outcome variables in Study 2. The GRiPS explained additional variance over the combined FFM for predicting job stress, safety compliance, and job withdrawal, but not for job satisfaction or safety participation. The results were also consistent with Study 1 across all of the outcomes. The GRiPS explained the most unique variance when combined with the neuroticism and agreeableness dimension of the FFM and provided the least incremental prediction over conscientiousness.

Test–retest reliability

The GRiPS was administered once more 3 months after the first survey as a follow-up assessment in Study 2. There was significant attrition of seasonal employees due to the onset of the academic school year. We obtained data for 115 of the initial 730 employees who completed both surveys. The GRiPS had a 3-month test–retest reliability of $r = 0.80$.

2.3 | Phase 3: MTMM and incremental validity

In order to substantiate construct validity of the GRiPS and its relations with the FFM of personality, we conducted a

[1]Withdrawal behavior is a facet of counterproductivity (Spector, Fox, & Penney, 2006)

TABLE 6 Incremental predictive validity of GRiPS over Big Five personality in Phase 2

	Study 1				
N = 352	CWB	Fabrication	Risk tol.	Safety motv.	Career sat.
Extraversion	0.04**	0.02**	0.02*	0.02**	0.01
Agreeableness	0.05**	0.01*	0.02*	0.03**	0.00
Conscientiousness	0.03**	0.01*	0.02*	0.02**	0.01
Neuroticism	0.06**	0.01*	0.02*	0.03**	0.00
Openness to experience	0.06**	0.01*	0.02*	0.04*	0.00
Combined Big Five	0.03**	0.01*	0.01*	0.01*	0.00
Model R^2	*0.20***	*0.03***	*0.02*	*0.14***	*0.18***
	Study 2				
***N* = 240**	**Job sat.**	**Job stress**	**Safety comp.**	**Safety part.**	**Job withdr.**
Extraversion	0.02*	0.03**	0.06*	0.02*	0.06**
Agreeableness	0.02*	0.04**	0.05**	0.01	0.06**
Conscientiousness	0.01	0.03**	0.03**	0.00	0.04**
Neuroticism	0.02*	0.04**	0.05**	0.01	0.06**
Combined Big Five	0.01	0.03*	0.03*	0.00	0.03**
Model R^2	*0.11***	*0.09***	*0.16***	*0.18***	*0.15***

Note. Values in regular font represent incremental validity of GRiPS after controlling for each personality trait and all Big Five traits combined. Values in italics represent the R^2 of the overall model, which includes the Big Five and GRiPS as predictors of work-related criterion. CWB: Counterproductive work behaviors.

*$p < 0.5$. **$p < 0.01$.

TABLE 7 Mean, standard deviation, internal consistency, and correlations of Phase 2—Study 2's variables

	Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10
1	GRiPS	2.62	0.88	(0.91)									
2	Extrav.	3.26	0.88	0.22**	(0.76)								
3	Agree.	3.97	0.64	−0.04	0.28**	(0.63)							
4	Conscien.	4.12	0.50	−0.26**	0.21**	0.31**	(0.89)						
5	Neuro.	2.44	0.71	0.09*	−0.19**	−0.16**	−0.47**	(0.58)					
6	Job sat.	2.25	0.85	−0.20**	−0.07	0.11	0.28**	−0.23**	(0.87)				
7	Job stress	1.17	0.92	0.23**	0.10	0.03	−0.08	0.21**	−0.43**	(0.84)			
8	Safety comp.	4.69	0.59	−0.22**	0.00	0.17*	0.35**	−0.17*	0.12*	−0.15**	(0.93)		
9	Safety part.	4.38	0.79	−0.13	0.15*	0.27**	0.37**	−0.25**	0.22**	−0.16**	0.66**	(0.91)	
10	Job withdr.	2.10	0.70	0.28**	0.05	−0.02	−0.33**	0.18**	−0.47**	0.29**	−0.20**	−0.20**[y]	(0.75)

Note. Diagonals contain Cronbach's alphas.

*$p < 0.05$. **$p < 0.01$.

multitrait multimethod (MTMM) study with a student sample (Campbell & Fiske, 1959). We also investigated the incremental validity of the GRiPS over the DOSPERT scale in predicting both broad and narrow outcomes. We expected that narrow dimensions of the DOSPERT scale would predict outcomes that best matched its domain. For example, the financial domain of the DOSPERT scale should better predict credit card ownership, and the health domain should better predict alcohol use. The GRiPS, however, should better predict broad outcomes such as SWB and academic performance. We also examine if the GRiPS provides incremental prediction over the summated score of the DOSPERT scale on the broad outcomes, after accounting for the FFM. We examined whether the GRiPS is incrementally more predictive of broad scholastic outcomes than the summation of the DOSPERT domains.

2.3.1 | Method and procedure

Data were collected from students enrolled in psychology courses at a large southern university. Students received nominal course credit for their completion. Four hundred and thirty-four participants completed the survey at Time 1 during the first month of the semester, where they completed the GRiPS, the Big Five Inventory (John, Donahue, & Kentle, 1991), and the DOSPERT. Two hundred and forty-nine participants completed the follow-up survey approximately 2 months later, containing the outcome measures described below. We included five attention check questions across the two surveys. Participants who failed more than three questions were dropped from the survey. The final sample contained 181 participants (28% of the participants were freshman, 20% sophomore, 27% juniors, and 25% seniors), 82% were female, and 83% were Caucasian. We also asked participants to

invite one of their close friends and/or relatives to complete a survey where they rated the personality and risk propensity of the participant using the GRiPS and Mini-IPIP. We received responses from 47 other ratings from the initial sample. Additional data were collected in a new sample of 166 students, from which we obtained 91 other ratings, thus increasing the sample size of other ratings to 135—acceptable for small effect sizes and 80% confidence (Schönbrodt & Perugini, 2013).

2.3.2 | Measures

Outcome measures are presented in Table 4. Like Phase 2, we measured broad outcomes such as students' SWB and depression. We also included performance outcomes (dropout intentions and grade point average) for exploratory purposes. Narrow outcomes were chosen to best correspond with the individual facets of the DOSPERT. These narrow outcomes included excused and unexcused absences (ethical/social), smoking and alcohol use (health), seat belt habit (recreation/safety), and credit card ownership (financial).

2.3.3 | Results

Multitrait multimethod matrix

Table 8 presents the MTMM matrix for the Big Five and GRiPS. General risk taking propensity was reliably measured by self- and other-ratings, with coefficients α of 0.89 and 0.93, respectively. We also found acceptable internal consistencies for personality and for both self-rating and peer rating. Values of the heterotrait-monomethod triangles are shown in italics, and the values of the heterotrait-heteromethod triangle are underlined. Monotrait-heteromethod values are in the bolded diagonal.

The MTMM is used to examine the construct, convergent, and divergent validity of the GRiPS with the FFM of personality. We examined the four criteria listed by Campbell and Fiske (1959) to evaluate the MTMM matrix. First, the convergent validity diagonal in bold, which denotes correlation between self-rating and other rating of the same trait, is significantly different from zero, and these correlations are the highest in the entire MTMM matrix. Convergent validity for the five facets of personality was all statistically significant and fairly large, with the exception of agreeableness, which only had a correlation of 0.18. This suggests that there is convergent validity for self-rating and other rating of majority of the personality facets and the GRiPS. Second, convergent validity values are greater than the values in the heterotrait-heteromethod triangles, with the exception of the validity coefficient for agreeableness (r = 0.18*), which is lower than the highest coefficient (r = −0.37*) in the heterotrait-heteromethod triangle. This indicates the convergent validity of a trait greater than the relation between the trait and another variable with neither shared method nor trait. Third, we observed similar patterns of interrelations between traits in each monomethod blocks. Most notably, the correlations between GRiPS and the facets of personality were mostly consistent across monomethod blocks. Extraversion and neuroticism were significantly correlated with GRiPS in both self-ratings and other ratings. Openness to experience and conscientiousness were correlated with GRiPS in self-ratings but not in other ratings. Finally, with the exception of agreeableness, all convergent validity values (numbers in bold) are equal to or greater than the heterotrait-monomethod triangles (numbers in italics), which suggest minimal method effects on the observed correlations. The criteria listed, according to Campbell and Fiske (1959), provide evidence for discriminant and convergent validity.

Next, we examined the correlations between GRiPS and the five factors of personality in the heterotrait-heteromethod triangle (underlined numbers), which illustrates the relations between GRiPS using self-ratings and the five factors of personality using others' ratings. The results revealed a positive and significant correlation between GRiPS and extraversion and negative correlation between GRiPS and neuroticism. GRiPS was also positively correlated with agreeableness and negatively correlated with consciousness. These correlations, however, did not reach convental levels of statistical significance.

TABLE 8 Results of the 6 Traits × 2 Method Analyses in Phase 3

			Self-Rating						Other-Rating					
Method and Trait	M	SD	GRiPS	Extra	Agree	Consc	Neuro	Open	GRiPS	Extra	Agree	Consc	Neuro	Open
Self-Rating														
GRiPS	2.93	0.81	(.89)											
Extra	3.28	0.87	*.38***	(.81)										
Agree	3.82	0.57	*-.09*	*.15***	(.73)									
Consc	3.67	0.64	*-.15**	*.09*	*.35***	(.80)								
Neuro	3.22	0.79	*-.20***	*-.27***	*-.39***	*-.26***	(.82)							
Open	3.71	0.66	*.22***	*.15***	*.22***	*.06*	*-.14***	(.80)						
Other-Rating														
GRiPS	2.29	0.93	**.37****	.09	**-**.02	**-**.13	**-**.03	.19*	(.93)					
Extra	3.40	0.92	.17*	**.57***	.08	**-**.05	**-**.16	.11	*.27**	(.78)				
Agree	4.06	0.79	.15	.14	**.18***	.07	**-**.05	**-**.16	*-.13*	*.21**	(.79)			
Consc	3.81	0.85	**-**.15	**-**.02	.03	**.32****	**-**07	**-**.22*	*-.10*	*.05*	*.33***	(.75)		
Neuro	2.74	0.74	**-**.19*	**-**.08	**-**.37*	.15	**.34****	.00	*-.18**	*-.06*	*-.27***	*-.10*	(.58)	
Open	4.18	0.72	.00	.02	**-**.03	.02	**-**.10	**.31****	*.03*	*.21**	*.19**	*.17**	*-.27**	(.77)

Note. Italics denote the heterotrait-monomethod analyses; numbers underlined denote the heterotrait-heteromethod analyses; numbers in bold denote the monotrait-heteromethod analyses.

*p < 0.05. **p < 0.01.

Incremental validity

Table 9 contains the means, standard deviations, and correlations between the GRiPS and the criteria measured in the study. Table 10 presents the regression coefficients of the GRiPS and the individual facets of the DOSPERT after controlling for the FFM of personality. The results were consistent with our expectation that GRiPS would provide more incremental prediction over broad outcomes, whereas the narrow domains of the DOSPERT would provide more incremental prediction over narrow outcomes. The GRiPS, for instance, explained the most incremental variance in grade point average and SWB. Though contrary to our expectations, dropout intention was better predicted by social risk taking than GRiPS. It is also worth mentioning that a summated DOSPERT score did not provide any incremental prediction above the Big Five on the broad outcomes. The results suggest that the summated DOSPERT score is not interchangeable with the GRiPS as a measure of general risk taking propensity.

The health and safety domains of the DOSPERT best predicted seatbelt use and alcohol abuse, whereas credit card ownership was best predicted by the financial domain. Interestingly, smoking was predicted by the financial and the ethical domains rather than the health domain. We also found differential prediction of the DOSPERT on excused and unexcused absences. Whereas ethical risk taking predicted unexcused absence, excused absence was best predicted by the GRiPS. One explanation is that unexcused absences are instances of wrongdoing: The student chose—intentionally—to skip class, thereby reflecting aspects of ethical risk. Excused absences, on the other hand, are a result of general life circumstances (e.g., illness) that prevents the student from attending class, which may be better predicted by a broad measure of risk.

3 | GENERAL DISCUSSION

We developed and validated a short self-report measure of general risk propensity, the GRiPS, across five samples. The GRiPS predicted unique variance in important work, life, and academic outcomes over the Big Five and the DOSPERT. Consistent with our predictions, risk takers are less satisfied with their jobs, experience more stress, and engage in more deviant behaviors at work.

The pattern of associations between the GRiPS, DOSPERT, and the Big Five sheds light on the nature of general risk taking propensity. The GRiPS had stronger associations with the financial, health, and recreation dimensions of the DOSPERT than with the social and ethical dimensions. The results suggest that self-reports of general risk taking appear to be associated with irresponsible and reckless behaviors, which characterizes many financial, health, and recreational risks (e.g., sky diving, unprotected sex, gambling a week's worth of pay; Slovic, 1987), and are dimensions of disinhibition in the maladaptive personality trait model (Ashton, Lee, Vries, Hendrickse, & Born, 2012; Krueger, Derringer, Markon, Watson, & Skodol, 2012). The ethical and social dimensions of the DOSPERT contain elements of nonconformity and moral awareness, which may explain their relatively weaker associations with GRiPS.

We expected—based on the risk-as-feelings hypothesis—that neuroticism would be associated with GRiPS, such that people high on neuroticism should perceive greater risks, which would deter risk taking (Lee, Ogunfowora, & Ashton, 2005). Our findings were, however, mixed. Neuroticism was positively, but weakly, correlated with GRiPS in the two adult samples. In the student sample, however, we found a strong negative relation between neuroticism and risk. The same results were found in the MTMM matrix. A possible explanation is that the GRiPS is a measure of general risk propensity, rather than of perceived risk. As suggested in the risk–return model, risk perception and risk propensity are separate antecedents of risk taking behaviors (Weber, 2010). Two people with similar risk propensities may differentially engage in risky behaviors because of differences in the perceived risks of those activities. Accordingly, whereas a neurotic person might perceive greater risk across situations, his or her general risk propensity can still be independent of his or her risk perceptions. The different patterns of results between the adult and college sample also suggest possible developmental factors that underlie the nature of risk taking as a personality disposition.

Conscientiousness was negatively associated with GRiPS in both adults and students, which is consistent with previous findings

TABLE 9 Mean, standard deviation, internal consistency, and correlations of Phase 3—Study 1's variables

Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. GRiPS	2.93	0.81	(0.89)										
2. Subj well-being	5.71	0.79	−0.18*	(0.92)									
3. Dropout	1.22	0.64	0.07	−0.33**	(0.88)								
4. Depression	1.98	0.83	−0.06	−0.24**	0.24**	(0.85)							
5. GPA	3.26	0.65	−0.20**	0.26**	−0.32**	0.01							
6. Excused absence	1.66	0.59	0.24**	−0.07	0.05	0.01	−0.06						
7. Unexcused absence	2.14	0.79	0.11	−0.29**	0.14	0.11	−0.18*	0.10					
8. Smoking	0.17	0.97	0.13	−0.07	−0.00	−0.04	−0.09	0.05	0.16*				
9. Seat belt	4.75	0.72	−0.03	0.00	0.05	0.11	0.09	−0.03	0.11	−0.02			
10. Credit card	0.86	0.86	0.10	−0.02	0.03	−0.07	0.01	−0.04	−0.04	−0.00	−0.18*		
11. Alcohol abuse	1.50	0.44	0.23**	−0.18*	0.05	0.06	−0.02	0.22**	0.34**	0.13	0.03	0.23**	(0.84)

Note. Diagonals contain Cronbach's alphas.

*$p < 0.05$. **$p < 0.01$.

TABLE 10 Incremental prediction of GRiPS over FFM and DOSPERT for Phase 3—Study 1

	Broad outcomes					
	College subjective well-being	GPA	Dropout intentions	Depression		
Step 2						
Social	0.02	0.00	0.14*	0.09		
Recreational	0.09*	0.02	−0.03	0.07		
Financial	−0.09	0.01	0.04	0.03		
Health/Safety	−0.01	−0.03	0.04	−0.05		
Ethical	0.06	0.04	−0.04	0.05		
Step 3						
GRiPS	−0.31**	−0.16**	0.04	0.13		
$R^2_{\text{model 1}}$	0.29**	0.11**	0.05	0.40**		
$R^2_{\text{model 2}}$	0.33**	0.12**	0.09†	0.42**		
$R^2_{\text{model 3}}$	0.37**	0.14**	0.09	0.42**		
$\Delta R^2_{(\text{model 3–2})}$	0.05**	0.02**	0.00	0.01		
	Narrow outcomes					
	Unexcused absence	Excused absence	Smoking	Seat belt	Credit card	Alcohol abuse
Step 2						
Social	−0.02	0.04	0.01	0.13	−0.04	0.04
Recreational	−0.02	0.00	0.07	−0.01	−0.03	−0.06
Financial	−0.04	0.01	−0.25**	0.02	−0.05	−0.01
Health/safety	0.04	0.07	0.01	−0.19**	0.18*	−0.02
Ethical	0.24*	−0.07	0.46**	0.09	0.10	0.19**
Step 3						
GRiPS	−0.03	0.15†	0.07	0.00	−0.02	0.04
$R^2_{\text{model 1}}$	0.09**	0.02	0.02	0.01	0.01	0.12**
$R^2_{\text{model 2}}$	0.14**	0.06	0.15**	0.07†	0.07†	0.34**
$R^2_{\text{model 3}}$	0.14**	0.08	0.15**	0.07	0.07	0.34
$\Delta R^2_{(\text{model 3–2})}$	0.00	0.02†	0.00	0.00	0.00	0.00

Note. Model 1 predictors include the Big Five; DOSPERT was added to Model 2; GRiPS was added to Model 3. Regression coefficients for Model 1 was omitted for ease of presentation. FFM: five-factor model; DOSPERT, Domain-Specific Risk-Taking Scale.

†$p < 0.10$. *$p < 0.05$. **$p < 0.01$.

(Lauriola & Levin, 2001; Weller & Tikir, 2011). The results were not surprising, as conscientiousness is generally characterized by disciplined decision making. Moreover, conscientiousness has been linked to an approach-motivation orientation (Gorman et al., 2012; Higgins et al., 2001), which suggests an underlying motivational component to risk taking. Risk takers may be motivated by hope, success, and achievement (Atkinson, 1957; Lopes, 1987; Scholer et al., 2010).

The relation between extraversion and risk taking has been mixed in past studies (Lee et al., 2005; Weller & Tikir, 2011). Lee et al. (2005) found, for instance, that extraversion was associated with risk taking measured with the Supernumerary Personality Inventory (Paunonen et al., 2003), whereas Weller and Tikir (2011) found no relation between extraversion and any of the five facets of the DOSPERT. Weller and Tikir (2011) did, however, find certain narrow facets of extraversion, such as social boldness, to be moderately correlated with the social, recreational, and health domains of the DOSPERT. These results suggest that broad personality traits, such as extraversion, are associated with broad assessments of trait risk taking (e.g., SPI), whereas narrow facets of extraversion are more predictive of domain specific risk taking behaviors (e.g., DOSPERT). Consistent with these findings, we found positive associations between the GRiPS, a broad assessment of trait risk taking, and extraversion in our studies.

One notable finding is that the GRiPS predicted several negative outcomes, such as job stress, job withdrawal, and counterproductive work behavior, but failed to predict positive outcomes, such as career satisfaction, and was negatively related to job satisfaction. The popular portrayal of risk taking often paints a risk taker as a pioneer, breaking conventional rules to achieve greatness. Our data showed, however, that being a risk taker might not be a desirable attribute. People who report being risk takers are less likely to be satisfied with their jobs and comply with safety rules, are more likely to withdraw from their work, and experience more stress on the job and in school. Risk propensity also explained incremental variance over the Big Five for college GPA and counterproductive work behavior. The findings are noteworthy from an applied perspective, as they suggest the potential value of risk propensity as a selection instrument.

Still, risk taking is often associated—colloquially—with success in professions such as extreme sports, entrepreneurship, or stock trading. Therefore, it is possible that risk takers may be more satisfied and experience less stress in jobs where risk taking is necessary for

success. We analyzed data collected as part of an unpublished master's thesis (Curry, 2014). The sample included 542 participants from three venture and entrepreneur clubs across the Midwest and alumni of the college of business at a large public university in the Midwest.[2] We found that the GRiPS provided incremental prediction over the five factors of personality and the overall score of the DOSPERT in the self-reported engagement and success in entrepreneurship endeavors. The findings suggest that risk takers may find greater success in specific domains where risk taking is required or encouraged, such as entrepreneurship. In addition to financial and personal risks associated with entrepreneurship, successful entrepreneurs must be able to engage with potential customers and business partners, which are displays of extraversion. Brandstätter (1997), for instance, found that entrepreneurs had higher standings on risk taking and extraversion than the general population. Given the association between risk propensity and extraversion, it is not surprising that risk takers are more successful in entrepreneurial endeavors.

Our measure assessed risk taking as a broad construct, which is preferable for predicting broad outcomes. Multiple regression analysis revealed that the GRiPS provided incremental prediction for broad outcomes above the five factors of personality and the summated score in the DOSPERT. But the facets of the DOSPERT were more predictive of narrow risky behaviors, such as smoking and seat belt usage. Indeed, other measures of risk taking should not be discounted. When predicting domain-specific risky behaviors, such as engaging in risky health behaviors (e.g., smoking or unprotected sex) or making a speculative investment, domain-specific measure may be more appropriate.

Our measure is also not intended to be used in a clinical setting. The Iowa Gambling Task, for instance, has been used in identifying neurological deficits in reasoning and decision making for patients with mental illnesses such as schizophrenia, eating disorders, and borderline personality disorders (Brogan, Hevey, & Pignatti, 2010; Haaland & Landrø, 2007; Shurman, Horan, & Nuechterlein, 2005). The GRiPS was not designed for assessing formal personality disorders and, therefore, would not be appropriate for such purposes. Nevertheless, risk taking may be considered a maladaptive personality trait in the context of work and school, as it reflects the dimension of disinhibition (Dilchert, Ones, & Krueger, 2014; Krueger et al., 2012). Indeed, our findings show that high risk takers are more likely to engage in undesirable behaviors, such as CWBs, have lower grades in school, and experience lower job/academic satisfaction and higher stress.

The GRiPS provides researchers with a tool for future inquiry into the nature of risk taking as a general disposition. First, compared with most existing measures of risk taking, the GRiPS is shorter and more theoretically appropriate for measuring a person's general disposition toward risks. More broadly speaking, the GRiPS allows researchers to start examining the nomological network of risk taking as a disposition in the existing constellation of personality traits. Indeed, there are a number of theoretically related individual difference variables such as sensation seeking, impulsivity, and self-control that warrants further inquiry (de Vries, de Vries, & Feij, 2009; Mishra & Novakowski, 2016). Second, the modest bivariate correlations between GRiPS and outcomes in this paper suggest the existence of moderators. As demonstrated in our supplementary analysis, there are situations where risk propensity is positively related to work-related outcomes (e.g., entrepreneurship). Relatedly, as one reviewer pointed out, people with a high propensity for risk seek out risky situations voluntarily and risky behaviors also have prospect of gains. Indeed, Mishra (2014) suggested that individual ability may affect the result of risk taking: A financially literate investor, for example, may be better positioned to convert monetary risks into positive outcomes than a naïve investor. Other personality characteristics may also interact with risk taking propensity. For example, a highly conscientious risk taker may be more likely to engage in prosocial risky endeavors. In contrast, risk takers with high standings on dark traits may be more likely to engage in deviant behaviors (LeBreton, Shiverdecker, & Grimaldi, 2017).

The present investigation has several limitations. First, the MTMM study had a relatively small sample, which limits the strength of inferences to be made based on the results. A larger scale study with multiple sources of raters for both the predictor and criterion would provide further evidence for the validity of the GRiPS. Second, our study also used primarily self-report measures of outcomes, which may inflate the observed relations due to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We did, however, include temporal separation between the measurement of predictor and criterion variables. Our last study also included objective measures of academic outcomes such as GPA and number of absences. Future research should examine more objective indices of wealth, happiness, and health (e.g., socioeconomic status, marital status, and body mass index) and additional behavioral indices of risk taking (e.g., BART).

4 | CONCLUSION

Our research presents the GRiPS, a short measure of general risk taking propensity. Our scale converged with existing measures of risk propensity and offered incremental prediction of work, academic, and life outcomes over the FFM of personality and the DOSPERT. Moreover, unlike other measures of risk taking, our measure is free to use, easy to administer, and quick to complete—making it a useful tool in many research and applied situations.

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