Conceptualizing Career Insecurity:

Toward a Better Understanding and Measurement of a Multidimensional Construct

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Abstract

Applying qualitative and quantitative analyses across four studies and seven samples, we

clarified the meaning and developed a new measure of career insecurity. Career insecurity is

defined as "*an individual's thoughts and worries that central content aspects of one's future

career might possibly develop in an undesired manner.*" The new *Multidimensional Career

Insecurity Scale* (MU-CI-S) measures eight career insecurity (CI) dimensions: (1) CI-Career

opportunities, (2) CI-Decreased prestige and qualification requirements of the employment,

(3) CI-Contractual employment conditions, (4) CI-Unemployment, (5) CI-Change of

workplace, (6) CI-Retirement, (7) CI-Work-nonwork interactions, and (8) CI-Discrepancy

between individual resources and work demands. Across all studies, the MU-CI-S showed

excellent psychometric properties (e.g., factor loadings of all items and internal consistencies

of all dimensions) and high levels of construct validity (e.g., theoretically assumed factorial

structure and discriminant and convergent validity). Moreover, the analyses showed

concurrent, predictive, and incremental validity beyond neuroticism and other job and career

insecurity measures for predicting health and well-being, job performance, career success, and

career attitudes. The results provide a comprehensive assessment and investigation of

career-related insecurity perceptions in the current labor market. Moreover, the results offer

theoretical and practical implications for individual career planning, career counseling, and

organizational career management.

Keywords: career insecurity, career management, scale development

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of a Multidimensional Construct

Introduction

Today's careers are inherently insecure (e.g., Colakoglu, 2011; Hall et al., 2018; Spurk et al., 2016; Sullivan & Baruch, 2009). This is related to ongoing changes in, for example, organizational restructuring, global business competition, and technological advancements (e.g., digitization). Moreover, specific events, for example, economic crises or the COVID-19 pandemic, can raise perceptions of career insecurity (Spurk & Straub, 2020). Accordingly, career insecurity is attracting increased scholarly attention (Colakoglu, 2011; Ortlieb & Weiss, 2018; Spurk et al., 2016; Trevor-Roberts, 2006).

Career development can be defined as the sequence of different jobs and related occupational experiences spanning a person's life (Arthur et al., 1989; Greenhaus & Kossek, 2014). From a conceptual/theoretical perspective, career theories describe career development as a multidimensional endeavor: Individuals need to consider and integrate different content domains (e.g., developmental tasks and life roles) during their career (Greenhaus & Kossek, 2014; Hall et al., 2018; Sullivan & Baruch, 2009; Super, 1953). Likewise, career insecurity is presumably multidimensional: Individuals might experience insecurity when considering different content domains of their future career. Yet, existing conceptualizations of career insecurity do not specify content domains of insecurity. They are one dimensional (e.g., Colakoglu, 2011; Höge et al., 2012; Ortlieb & Weiss, 2018; Spurk et al., 2016) and may not cover the full breadth and dimensionality of the underlying career construct (Hinkin, 1995; Trevor-Roberts, 2006). This is problematic because the understanding of an individual's experience of career insecurity and its idiosyncratic aspects is important for career management (Trevor-Roberts, 2006).

From a psychometrical perspective, by relying primarily on *ad hoc* measures, the construction and validation process of past career insecurity scales remains relatively unclear (Colakoglu, 2011; Höge et al., 2012). This situation is particularly problematic because, in our view, past measures of career insecurity are confounded by aspects of perceived low employability (e.g., Colakoglu, 2011) or lack of confidence in career goal attainment and career planning (e.g., Höge et al., 2012). In sum, although career insecurity represents an important career construct, these shortcomings hamper a clear interpretation of career insecurity research because (a) it remains unclear how employees experience and understand multidimensional career insecurity, (b) past conceptualizations might be confounded by similar other constructs, and (c) existing measurements focus on narrow or unspecified overall aspects of career insecurity.

Against this background, this article has three major aims. Our *first aim* is to contribute to the conceptual clarification of multidimensional career insecurity. This will contribute to past insecurity and career research in the workplace by providing a detailed clarification of a construct with increasing importance in the world of work. Moreover, it will provide a solid, rich, and detailed conceptual basis for future research.

Our *second aim* is to develop and validate a psychometrically sound, multidimensional measure of career insecurity, accounting for best-practice recommendations in scale development (e.g., Hinkin, 1995; Wright et al., 2017). Specifically, we aim to focus on aspects of content and construct validity (convergent and discriminant validity) by empirically comparing multidimensional career insecurity with one-dimensional career insecurity, job insecurity, perceived low employability, and perceived career barriers. This second aim will expand on previous research on career insecurity that primarily applied ad hoc measures. Such a validated multidimensional measure can not only be applied in future research but also serves as an important evaluation measure within applied settings like personnel development,

career management, and career counseling. For example, the new scale can be used as an overall screening instrument to evaluate the degree to which career insecurity is a topic for an individual career actor or within a specific organization (e.g., as part of an employee survey). Additionally, by measuring the expression of specific career insecurity content dimensions, the new scale can also be applied to derive customized solutions in career counseling or personnel and organizational management.

Our *third aim* is to establish the criterion validity of the scale by showing a differentiated empirical picture of (incremental) relationships with career insecurity outcomes relevant for organizations and individual career development (e.g., health/well-being, job performance, career success, and career attitudes). By applying theories from stress and career research, this will contribute to the theoretical and empirical understanding of career insecurity and directly inform occupational health and career research. Moreover, it will also be informative for applied settings, such as employee retention or performance management. In sum, the developed and validated *Multidimensional Career Insecurity Scale* (MU-CI-S) will enable comprehensive overall measurement of the higher-order construct of career insecurity and a facet-rich investigation of the separate career insecurity dimensions in future research.

To reach these aims, we conducted four studies comprising seven independent samples (an overview of all studies, study aims, assigned samples, and sample characteristics can be seen in the Online Supplements: Tables S1 and S2). *Study 1* is related to conceptual advancement: We clarify the nature of multidimensional career insecurity based on the literature, conducting qualitative interviews with employees and a workshop with career counselors (Sample #1, overall $N = 30$) and surveying scholars with expertise in applied psychology and careers research (Sample #2, $N = 10$). *Study 2* is related to scale development: We generate items, apply an item-sorting task (Sample #3, $N = 16$) to ensure content

adequacy, present results on psychometric properties and factorial structure (Sample #4,

$N = 404$; Sample #5, $N = 1,091$; Sample #6, $N = 182$; Sample #7, $N = 1,443$), and test for

construct validity (i.e., discriminant and convergent validity; Sample #4 and #5). *Studies 3*

and 4 are related to criterion validity. In *Study 3*, we investigate concurrent validity, predictive

validity, and the incremental validity of the overall scale when predicting diverse outcomes

(e.g., physical symptoms, in-role behavior, career satisfaction, career commitment) within one

cross-sectional (Sample #5) and one time-lagged (Sample #6) dataset. In *Study 4*, we examine

aspects of the differential predictive nature of the eight identified career insecurity dimensions

by conducting relative weights analyses with several outcomes (Sample #7).

Study 1: Conceptualizing and Understanding Career Insecurity

Part 1: Conceptual Clarification and Similar Constructs

Past definitions and measures of career insecurity

While career insecurity is seen as a fundamental experience within an individual's

career, past research has not explicitly defined the construct (e.g., Trevor-Roberts, 2006) or

clearly differentiated it from related constructs. For example, Tien et al. (2005) defined career

insecurity as "any factors that make individuals feel uncertain of their career future" (p. 154).

This definition seems to confound predictors (i.e., factors that make individuals feel) of career

insecurity with the construct itself. Moreover, the study focused on career insecurity among

college students and hence did not account for relevant issues in the labor market.

As another example, Colakoglu (2011) stated that individuals experience career

insecurity "when they feel powerless to maintain continuous employment (i.e., employability)

in their careers" (p. 50). Following this definition (sample item: "I am worried that I will have

times during which I don't have any paid employment"), career insecurity is narrowed down

to aspects of continuous employment (versus unemployment), which conceptually is very

close to perceived (low) employability and job insecurity (De Cuyper et al., 2012; Shoss, 2017).

A third example comes from Höge et al. (2012), who defined career insecurity as an individual's insecurity about the attainment of mid- to long-term career goals (see also Spurk et al., 2016). Career insecurity is conceptualized as a one-dimensional construct related to individual goals, but without more detail. Moreover, the four-item scale of Höge et al. (2012) includes items that do not cover career insecurity directly but are conceptually similar to other constructs. For example, the item "I am not sure whether I shall achieve my career aims" taps into self-efficacy (Chen et al., 2001), while "It is difficult for me to plan my professional future" taps into career planning (Gould, 1979).

Core characteristics of career insecurity

Although divergent, existing definitions share some common features that, together with insights from research on related insecurity constructs (e.g., job insecurity) and career development, help to identity four core characteristics of career insecurity.

Insecurity component. Career insecurity exists between complete predictability and considerable unsureness about how one's future career might look (Trevor-Roberts, 2006). Hence, similar to research on other work-related insecurity perceptions, such as job insecurity (Cheng & Chan, 2008; De Witte, 2005; Shoss, 2017), not knowing exactly what the future will bring and associated thoughts and worries are at the core of *career insecurity*. In that sense, career insecurity has a negative connotation, as it involves having thoughts and/or worries that something *undesired might* occur in the future. In other words, when feeling insecure about their career, (a) individuals are not sure (i.e., it *might* happen or not) (b) whether career-related aspects will change in an undesired way[1]. This is associated with

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[1] Past job insecurity research used the terms insecurity and uncertainty. Insecurity usually refers to undesired aspects of the job that might occur or not occur, while uncertainty involves not knowing something for sure (without having worries) or (in)stability. Moreover, uncertainty is usually operationalized in the response format

thoughts and worries. Indeed, past insecurity research sometimes distinguished between cognitive (i.e., "thinking about") and affective (i.e., "feelings about") insecurity components (Jiang & Lavaysse, 2018; Pienaar et al., 2013). Both components of insecurity are meaningful and should be included in the career insecurity construct.

Future time perspective. Career insecurity includes short-term and mid- to long-term insecurities (Höge et al., 2012; Spurk et al., 2016; Trevor-Roberts, 2006). In other words, people might be thinking and worrying about career contents that are relatively close (e.g., potentially missed next career developmental opportunities) and/or relatively far in the future (e.g., potential loss of career developmental opportunities in the late career). For example, it has been shown that contractors may feel secure about their opportunities in the short term (because they might easily find other options) but insecure about their long-term career development (Bambacas & Kulik, 2013). This aligns with career developmental theories that assume that careers and related experiences continuously evolve over time (Greenhaus & Kossek, 2014; Hall et al., 2018; Sullivan & Baruch, 2009; Super, 1953).

Multidimensionality. Career development is a multifaceted, individualized process that taps into different content domains (e.g., Greenhaus & Kossek, 2014; Lee et al., 2014; Shockley et al., 2016; Sullivan & Baruch, 2009). Individuals may not only worry about their overall career but also develop specific thoughts and worries that relate to different content domains (e.g., the employer or retirement regulations). These specific content-related thoughts and worries are based to some extent on the more general perception that the career might be insecure: Individuals may cognitively and affectively process this general feeling into a more aspectual evaluation. Examples are thoughts and worries about different career developmental tasks, such as potentially not establishing one's position, not developing enough expertise, not holding up the standards and status of the current employment and

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of the scale (e.g.; 1 = not sure at all, 5 = totally sure), whereas insecurity is addressed in the item formulation per se. We refer to insecurity and therefore use this term to avoid confusion with past insecurity research.

related aspects, problems with integrating work and non-work life, or unsureness about retirement issues (Akkermans & Kubasch, 2017; Greenhaus & Kossek, 2014; Lent & Brown, 2013; Wang & Wanberg, 2017). In other words, we approach career insecurity as a multidimensional construct, consisting of distinct dimensions that capture employees' thoughts and worries regarding central aspects of their future career development. Hence, the central career aspects should reflect some of the most relevant and frequently considered aspects of insecurity of the majority of a population (e.g., employees). Because these dimensions share a common core insecurity, they should be moderately related but nonetheless distinct from each other.

Context: Intra- and extra-organizational development. Because career development involves a sequence of different jobs and related occupational experiences spanning a person's life (Arthur et al., 1989; Greenhaus & Kossek, 2014), careers can cross organizational boundaries (Hall et al., 2018). Hence, the content domain of career insecurity includes aspects of both intra- and extra-organizational development. In other words, individuals might think and worry about missing career opportunities within or outside the current employer or about potential undesired employment changes with the current or with another employer (e.g., potential undesired changes in the occupation or a potentially involuntary move to a totally different field of expertise or employer). Integrating these four aspects, we offer the following definition:

> "*Career insecurity is an individual's thoughts and worries that central content aspects*
> *of one's future career might possibly develop in an undesired manner.*"

Commonalities and differences with similar constructs

Career insecurity is similar yet distinct from constructs that focus either on insecurity in the work domain or on perceptions related to detrimental career development. To clarify the theoretical nature of career insecurity vis-à-vis related constructs, we will compare career

insecurity with (a) job insecurity, which is the most frequently studied insecurity variable in

the work domain (Cheng & Chan, 2008; Shoss, 2017), (b) perceived low employability as a

maladaptive self-evaluation regarding future employment prospects (Akkermans & Kubasch,

2017), and (c) perceived career barriers, which are central career stressors associated with

undesired career outcomes (Hirschi & Freund, 2014; Ng & Feldman, 2014b).

Job insecurity. Job insecurity refers to the perceived threat and worry of losing one's

current job (i.e., quantitative job insecurity) or aspects of one's job (e.g., stimulating job

content; Greenhalgh & Rosenblatt, 1984) in the near future (Ellonen & Nätti, 2015; Vander

Elst et al., 2016). Like job insecurity, career insecurity is future-directed and includes

thoughts and worries about the possibility that something undesired might happen—not that

something negatively will occur for sure. Hence, both job and career insecurity have an

insecurity component at their core, and both represent a perceived threat for the individual.

However, there also are differences between job insecurity and career insecurity. First,

they differ regarding their future time perspective. Job insecurity focuses predominantly on

short-term insecurities (e.g., Ellonen & Nätti, 2015; Vander Elst et al., 2016). An illustration

is the sample item from De Witte (2000): "I think I might lose my job in the near future." In

contrast, career insecurity spans the entire career and thus focuses on short-term, mid-term,

and long-term thoughts and worries. Second, job insecurity refers to the current job in the

current organization (Shoss, 2017). Conversely, although career insecurity perceptions might

be related to the current organizational career path, career insecurity is not restricted to the

current organization. Third, job insecurity concerns not only the job as such but also valuable

characteristics of the current job (e.g., stimulating job content or autonomy of a given task or

overcrowded offices leading to daily work interruptions; Hellgren et al., 1999; Shoss, 2017).

Meanwhile, career insecurity concerns broader career developmental aspects (e.g.,

unemployment, overall career goals, unemployment, career opportunities, or retirement) and therefore does not focus on job characteristics per se.

Moreover, job insecurity does not automatically imply career insecurity and vice versa. Employees may feel insecure about their job yet not about their career. Consider the example of an early career academic scientist, who may feel insecure about the current job because financing is not stable but still quite sure about how the career will develop. Similarly, imagine a talent working in a startup that might possibly not survive (high job insecurity) who nevertheless has low career insecurity because the talent might easily find other opportunities in the world of work. Conversely, employees may feel insecure about their career but not about their job. For example, a manufacturer or deliverer might have a secure job but still face severe career insecurity due to digitization or automation in the mid- to long term.

Perceived low employability. Perceived employability can be conceptualized as an individual's appraisal of available job opportunities in the internal and/or external labor market (De Cuyper et al., 2011; Rothwell & Arnold, 2007). Perceived low employability describes a situation in which individuals do not see many alternative jobs, and this has some resemblance to the notion of career insecurity. Both constructs refer to negative career-related experiences, and they both include perceptions of the internal and external organizational labor market. However, there are differences in terms of experiencing insecurity and multidimensionality. First, perceived low employability consists of the perception that alternative job opportunities are (not possibly) few or unavailable. Second, the target of low perceived employability refers only to other potential employment (e.g., other jobs within the current organization or another organization), whereas career insecurity includes content aspects of career development that presumably go beyond such employment issues (e.g., work non-work issues, developmental opportunities, retirement issues).

Perceived career barriers. Perceived career barriers are perceived external obstacles to occupational goals (Holland et al., 1980; Lent & Brown, 2013). Like career insecurity, they represent an unpleasant evaluation related to hurdles inside and/or outside the organization, including non-work barriers, which are detrimental to career development (Ng & Feldman, 2014b). Yet, there are differences in terms of the time perspective and insecurity. First, perceived career barriers involve appraisals about present (not future-oriented) hurdles (e.g., labor market, family, or organization) for an individual's career development, whereas career insecurity represent appraisals of the future. Second, perceived career barriers do not have an insecurity component at their core.

Part 2: Identification of Career Insecurity Dimensions

Next, we sought to identify the *different content aspects*, seen as separate dimensions within a multidimensional conceptualization of career insecurity. In a first step, we conducted a literature search to identify different content domains of career insecurity. Based on this, we named and described potential career insecurity dimensions. In a second step, we conducted semi-structured qualitative interviews and a workshop with career counselors to integrate the idiosyncratic understanding of employees about career insecurity within the initially described career insecurity dimensions. In addition, we extended the initial dimensions by identifying two dimensions that were not identified in the literature review yet advanced in the interviews and workshops. We relied on thematic analysis to derive and describe the emerging career insecurity dimensions (Braun & Clarke, 2006). In a third step, we conducted a survey with applied psychology and careers researchers to refine the career insecurity dimensions.

Step 1: Past literature

We searched comprehensive scientific databases (e.g., SCOPUS and Google Scholar) for literature related to career insecurities. We searched the fields of social sciences and

economics/management to identify studies relevant to the field of applied psychology.[2] We

excluded articles that mentioned insecurity as a side theme (e.g., the study was conducted in

times of economic crisis, but insecurity was not a central study variable) or did not provide a

clear description or definition of the content of the construct (e.g., the study referred to

insecurity or a similar construct, but it was unclear whether it was about careers or jobs or

other targets). This procedure resulted in 15 articles.

Based on these articles, a systematic categorization of relevant *content aspects* was

performed by the first three authors. On the lowest level, a single individual content aspect

was included in the categorization process when the target of the insecurity was clear and

linked to the career. Regarding the validity of codes, a content aspect that referred to "exit out

of employment" was included because it represents a career developmental task, whereas

"work task uncertainty" was not included because it represents a content aspect of the current

job (i.e., job characteristic) but not the career. Altogether, 17 individual content aspects were

identified (e.g., potential lack of upward mobility, undesired developmental opportunities,

maybe not enough pension coverage, or presumably problematic exit out of working life).

Subsequently, the 17 individual content aspects were sorted into potential themes based on the

lowest common denominator (i.e., thematic analysis; Braun & Clarke, 2006). Subsequently,

themes were categorized into overarching dimensions (i.e., the career insecurity dimensions).

The dimensions were labeled and initially described based on the "essence" of what each

dimension is about (Braun & Clarke, 2006). In cases of non-agreement between the coders

about the categorization of individual content aspects or about describing a dimension, the

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[2] We searched the available time span and used the following search terms within the field (a) title and (b) title, abstract, keywords: "career insecurity"; "career uncertainty"; "career instability"; "career precariousness"; "work insecurity"; "work uncertainty"; "work instability"; "precariousness"; "occupational insecurity"; "occupational uncertainty"; "occupational instability"; and "occupational precariousness." We used this broad search strategy because we already knew that research on career-related insecurities is scarce, and we did not want to miss a potentially relevant article. Moreover, we know from past research that the terms "insecurity," "uncertainty," and "instability" are used interchangeably despite their conceptual differences. Finally, we did not search for "job insecurity" because we believe this construct is meaningfully different from career insecurity.

authors reached consensus through discussion. The resulting descriptions of the dimensions were used as a basis for further coding within the qualitative interviews in the next step.

Van Eetveldt et al. (2013) used career insecurity as a term and defined it as "the perception of a potential threat to career mobility and career progress." The described items for measuring career insecurity in this quantitative study also tapped into aspects like "opportunities for personal development" or "career opportunities." Hence, their study provided information about content aspects that were later coded under the career insecurity dimension of career opportunities. Colakoglu (2011) defined career insecurity as "the sense of powerlessness to maintain desired employability in one's career" (p. 48). The items were close to this definition. Hence, the study provided information about content aspects that were categorized under the career insecurity dimension of unemployment. Scott-Marshall (2010) referred to work-related insecurities and conceptualized several content areas (dimensions) that are relevant for career insecurity: earnings insecurity was categorized under the career insecurity dimension of contractual employment conditions, pension coverage insecurity was categorized under the dimension of retirement issues, and work–life balance insecurity was categorized under the dimension of work–nonwork interactions.

In sum, we identified six potential *career insecurity dimensions* about which individuals might be thinking or worrying. These are thoughts and worries related to (a) *career opportunities* (e.g., lack of upward mobility or developmental opportunities in the future; Körner et al., 2015; Van Eetveldt et al., 2013); (b) *prestige & qualification requirements of employment* (e.g., getting jobs with low status or low qualification requirements; Colakoglu, 2011; Scott-Marshall, 2010); (c) *contractual employment conditions* (e.g., temporary employment or part-time work; Schmitt, 2012; Scott-Marshall, 2010); (d) *unemployment* (e.g., job loss and longer periods of unemployment; Colakoglu, 2011; Pavlova & Silbereisen, 2014); (e) *retirement issues* (e.g., not enough pension coverage or problematic

exit out of working life; Gesthuizen & Wolbers, 2011; Scott-Marshall, 2010); and (f) *work–nonwork interactions* (e.g., work–life balance insecurity; Scott-Marshall, 2010; Van Eetveldt et al., 2013).

Step 2: Qualitative interviews and career counselor workshop (Sample #1)

In 2016, we conducted qualitative in-depth interviews with employees and a workshop (comparable to a focus group) with career counselors to (a) verify the initially identified six dimensions (deductive approach), (b) identify potential dimensions that were not found in past research (inductive approach), and (c) better understand the meaning and content of the initially identified and new dimensions (inductive approach). Qualitative interviews and workshops are frequently utilized to identify understandings/dimensions of underlying constructs, for example, when identifying dimensions of career success (Shockley et al., 2016) or insecurity perceptions (Tien et al., 2005).

The interview participants were recruited through social media and the research teams' networks. The participants included 17 employees (8 women, 9 men) from Germany ($N = 10$, 58.8%) or German-speaking Switzerland ($N = 7$, 41.2%). The interview participants were between 20 and 55 years old (category 1: 20-30 years = 41.2%; category 2: 31-40 years = 29.4%; category 3: 41-55 = 29.4%; modus = 1; median = 2). They were paid 15 Euros (approx. 17.6 dollars) in Germany and 20 Swiss francs (approx. 21.3 dollars) in Switzerland per interview. We interviewed persons who worked at least within 50% of a full-time-equivalent position, indicating a steady work status (Kukla et al., 2019). For these employees, the work domain and related experiences should be relevant to the participants' life. Furthermore, the participants were selected to represent a diverse group in terms of educational level (e.g., academics and non-academics) and occupied jobs (e.g., druggist, actor, physician, and psychologist) to get a broader overview of relevant career insecurity aspects (Creswell, 2009; Shockley et al., 2016). Generally, the interview followed a predefined

semi-structured interview guideline. After an initial discussion about the past career of the

participants*,* we asked questions about the meaning of career insecurity (e.g., "Which aspects

of your future career do you perceive as insecure?" or "What thoughts and worries do you

have when thinking about your future career?"). All interviews were audio recorded and

transcribed for further analyses. The interviews lasted 30.12 minutes on average ($SD = 11.03$).

Besides interviewing employees, we conducted a *workshop* with career counselors

from Switzerland ($N = 13$; 8 women, 5 men). The career counselors were not incentivized, but

they were told that their participation would be helpful for improving the understanding of

career insecurity. These career counselors discussed aspects of career insecurity they

experienced in their work with career counseling clients (e.g., "Regarding the work with your

clients, which thoughts and worries do they report when they think about their future

career?"). Written notes and flipcharts made by the workshop moderators and written notes

made by the career counselor group were used as material for further analysis.

The total number ($N = 30$) of participants was determined based on the saturation

method (Saumure & Given, 2008), whereby data are collected to the point at which

subsequent participants fail to provide unique information on the topic under investigation.

Evidence of saturation was based on coding subsets of the data. The first subset consisted of

six interviewees, the next subset consisted of the workshop members, the third subset

included the next six interviewees, and finally the last coding round, where saturation was

achieved based on a lack of new information, included five interviewees. A sample size of 30

participants meets the recommendation of at least 25 participants for qualitative research

aimed at item development (Sandelowski, 1995) and of 20–30 for non-ethnographic

qualitative interviewing (Warren, 2001). The whole project and data collection were approved

by the ethical standards board of the Institute of Psychology of the University of Bern,

Switzerland.

Both the transcripts from the interviews and the materials from the workshop were combined to verify the initially identified career insecurity dimensions and to potentially identify new career insecurity dimensions. This should ensure that the multidimensional conceptualization of career insecurity developed here is fine-graded in terms of insecurity content and covers the full breadth and dimensionality of the underlying construct. Based on thematic analysis (Braun & Clarke, 2006), single individual aspects of career insecurity were identified. One individual aspect always represented one single content unit reflecting a thought or worry about the future career. Individual career insecurity aspects were (a) added by the raters to either one of the initially identified six dimensions or (b) added to a new dimension together with other aspects of similar meaning. This categorization process was performed by one of the authors that share the first authorship and two assistants not previously involved in the research project. The interrater reliability was κ = .93.

After the individual career insecurity aspects were categorized into new career insecurity dimensions, the total number of new dimensions was reduced by collapsing them with common underlying themes. For instance, different types of mobility-related insecurities were included into one new dimension (cf. below "Career Insecurity-*Change of workplace*"), instead of treating them as different dimensions (e.g., within versus outside the current organization). Finally, the labels and content descriptions of the initially derived career insecurity dimensions from step 1 were adapted based on the new content of the qualitatively generated career insecurity aspects, and labels and descriptions were assigned to the newly added career insecurity dimensions. For example, qualitative analyses showed that the dimension *prestige & qualification requirements of employment* seems predominantly and genuinely about a decrease and not an increase in both prestige and qualification. Therefore, we added a "decrease" to the labeling of that dimension (i.e., CI-Decreased prestige & qualification requirements of future employment). This process was performed by the first

three authors. In cases of non-agreement on the categorized career insecurity aspects or the

career insecurity dimension labels and descriptions, discrepancies were resolved via

discussion. The labels and descriptions of the career insecurity dimensions were refined based

on the *essence* of what each dimension is about (Braun & Clarke, 2006). Finally, this

procedure resulted in adding two more career insecurity dimensions to the six that were

initially identified: *Career Insecurity* (*CI*)*-Change of workplace,* and *CI-Discrepancy between*

individual resources/work demands (see Table 1 for an overview of all dimensions).

Insert Table 1 about here.

Step 3: Refinement based on a scholarly expert survey (Sample #2)

In a final step in September 2016, we invited ten international scholars (Belgium,

Germany, Switzerland, the Netherlands, the United States) from the fields of applied

psychology and career research to participate in an online survey and presented them with our

definition of career insecurity as well as the eight career insecurity dimensions and their

descriptions. The international scholars were not incentivized but were told that their expertise

would be helpful for developing the conceptualization of multidimensional career insecurity.

The goals of this scholar survey were to evaluate (a) if the identified career insecurity

dimensions are exhaustive and (b) if the eight career insecurity dimensions and their

descriptions are clearly understandable and possess content validity. Regarding

exhaustiveness, 90.0% of the scholars agreed that the dimensions represent the definition and

the construct of career insecurity entirely. Two scholars proposed each one additional

dimension (i.e., "external macro conditions" and "social sphere at work"). We decided not to

include these dimensions because external macro conditions are better seen as contextual

predictors of career insecurity and not as a direct feature of one's own career, and social

sphere at work is strongly related to current job characteristics and is thus better seen as one aspect of job insecurity (see above). Regarding the *dimensional descriptions*, if the scholars indicated a meaningful mismatch between the dimension description and its label (this was the case for CI-Decreased prestige & qualification requirements of future employment), we refined the dimension description slightly to enhance the fit to its label.

Discussion Study 1

Based on past research, qualitative interviews, a workshop, and the expertise of international scholars, we provided a conceptual clarification and better understanding of the meaning of career insecurity and its multidimensional nature. Considering that career development per se is a multifaceted, individualized process (Lee et al., 2014; Lent & Brown, 2013; Shockley et al., 2016; Sullivan & Baruch, 2009), we identified eight different career insecurity dimensions that tap into diverse content domains and therefore provide concrete insights about the nature and content of the construct. Hence, compared to one-dimensional career insecurity conceptualizations, our conceptualization provides a more comprehensive basis for the study of career insecurity. Moreover, we clarified that career insecurity is a unique construct that should be discriminated from (a) job insecurity, (b) perceived low employability, and (c) perceived career barriers.

Study 2: The Measurement of Career Insecurity–Development and Initial Validation of a Multidimensional Career Insecurity Scale (MU-CI-S)

The aim of the second study was—based on Study 1's conceptualization—the development of the Multidimensional Career Insecurity Scale (MU-CI-S), following state-of-the-art scale construction methods (Hinkin, 1995; Wright et al., 2017).

Part 1: Item Development and Selection

Based on the descriptions of the eight career insecurity dimensions from Table 1, the first three authors independently developed a minimum of five items per dimension. The

items were formulated to capture both cognitive (e.g., "Chance are…" or "I wonder…") and affective (e.g., "I fear…" or "I worry…") career insecurity components. To align our new measure with research on the insecurity domain in the workplace, we inspected job and other career insecurity measures for suitable expressions, tapping varying degrees of insecurity (e.g., Colakoglu, 2011; Hellgren et al., 1999; Vander Elst et al., 2014). Following Hinkin's (1998) recommendation, we created items that were easy to understand, not double-barreled, and consistent in terms of perspective. This procedure resulted in a pool of 120 items.

Content validity of the scale (Sample #3)

To establish the content validity of the scale, we conducted an item-sort task (e.g., Anderson & Gerbing, 1991), where items that could not clearly be assigned to their corresponding career insecurity dimension were identified and excluded. In October 2016, we sampled psychologists ($N = 16$) studying or working at universities for this item-sort task because they possess the necessary conceptual ability (Brady et al., 2017; Hinkin, 1998) and are experts in matching item content to respective factor descriptions. The characteristics of the respondents were as follows: 75% female, 25% male; age: $M = 27.00$, $SD = 2.13$; and 56.3% had a bachelor's degree (43.7% a master's or equal degree). The psychologists were not incentivized, but they were told that their participation would be helpful for the scale validation process. The participants had to assign every item to the most appropriate career insecurity dimension (for similar approaches, see Brady et al., 2017; Hirschi et al., 2018). Ten items that were *not* correctly assigned to the corresponding career insecurity dimension by more than 25% of the participants were excluded (cf. Hirschi et al., 2018).

Based on the remaining items ($N = 110$), the first three authors discussed and chose items for further use, which tapped into different aspects of each career insecurity dimension content-wise and were easiest to understand. For example, we chose items about *retirement age* and *pension payment* instead of *retirement age* and *retirement timing* to achieve a

relatively heterogeneous measurement of the dimension CI-Retirement. Furthermore, we

targeted four items per dimension to ensure an optimum mix of economical and reliable

measurement (Brady et al., 2017; Hinkin, 1995, 1998). Therefore, about eight items per

dimension were selected to have the possibility to choose among a sufficient number of items

via exploratory factor analysis (EFA) in a further survey (see below). Based on these

discussions, an item pool of 63 items was retained.

Exploratory factor analysis and final item selection[3]

      Sample and procedure (Sample #4). In 2016, participants were recruited through a

German online-access research panel company. The panel provider paid 3.35 Euros (approx. 4

dollars) to each participant. None of the participants earned money with online surveys

professionally, and all held a regularly paid job (at least 50% of a full-time position). Based

on data quality checks related to carelessness and speeding (DeSimone et al., 2015), 8.18% of

the participants were excluded, resulting in a final sample size of 404 (49.3% men). The

respondents were $M = 38.21$ ($SD = 9.23$) years old, came from a large variety of industry

sectors, and worked on average 37.18 ($SD = 5.44$) hours per week, and about half of them

held a university degree (50.5%). The dataset contained no missing data.

      Measures (Sample #4). We measured *multidimensional career insecurity* with the

above preselected 63 German career insecurity items. The participants indicated the extent to

which they agreed with the items on a five-point Likert-type scale ranging from 1 (*totally*

disagree) to 5 (*totally agree*). The items were grouped in their respective dimensions. The

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[3] As an important note regarding our procedure, Samples #4 to #7 from the different online surveys 3 to 6, respectively (see Online SupplementsTables S1 and S2), were used for different purposes. We were careful to avoid any data overlap (e.g., exploratory and confirmatory data analyses were conducted in fully independent samples). However, to conduct insightful replications across samples, we will report some analyses across several samples. For example, the CFA factor structure is tested in every available sample. However, due to space limitations, we will not report all of the results within the main document; instead, we will report some results in the Online Supplements (e.g., the factor loadings of the CFAs from the Samples #5 to #7, cf. Table S3). To save space, we will describe each sample and the related measures only when the sample is mentioned the first time in the manuscript. Table S4 in the Online Supplements provides an overview of the measured variables from Samples #4 to #7 and lists the parts of the manuscript in which the samples have been used. Table S5 gives an overview of all Cronbach's alphas of all measures across these samples.

order of the items within the dimension was fully randomized, as was the order of the

dimensions.

For use in later parts of the manuscript (Study 2, Part 3), we measured *quantitative job insecurity* (threat of losing one's job) with the four-item scale developed by De Witte (2000) and validated by Vander Elst et al. (2014). A sample item is "I think I might lose my job in the near future." *Qualitative job insecurity* (threat of losing different aspects of one's job) was measured with the four-item scale (e.g., "I feel that the organization can provide me with stimulating job content in the near future [R]") of Hellgren et al. (1999). The respondents were asked to rate all quantitative and qualitative job insecurity items on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). We measured *perceived low employability* using a scale from De Cuyper et al. (2011). The scale consists of four statements (e.g., "Given my qualifications and experience, getting a new job would not be very hard at all"), with a seven-point Likert-type scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Because the scale originally measures perceived employability, we recoded the values associated with the responses prior to our data analyses to represent low employability perceptions. We measured *perceived career barriers* with Hirschi and Freund (2014) six-item scale. The respondents had to indicate on a six-point Likert-type scale ranging from 1 (*totally disagree*) to 6 (*totally agree*) the extent to which different factors (e.g., external circumstances, family responsibilities) act as barriers to their career development. Furthermore, we applied one-dimensional career insecurity scales from Colakoglu (2011) and Höge et al. (2012). Colakoglu's (2011) scale consists of five items. Responses were given on a five-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "I will not be able to get jobs easily with other employers." One-dimensional career insecurity as conceptualized by Höge et al. (2012) was measured with four items on a

six-point Likert-type scale ranging from 1 (*totally disagree*) to 6 (*totally agree*). A sample

item is "I am not sure whether I shall achieve my career aims."

Data analysis. We applied an EFA (PROMAX rotation) without fixing the numbers

of expected factors and using principal axis factors extraction, as recommended by Hinkin

(1998), to the 63 career insecurity items. Based on the factor eigenvalues, the expected

eight-factor solution emerged (eigenvalues between 1.62 and 27.82, together explaining

76.70% of the total variance). Within the rotated factor solution, all items had their highest

loading on the theoretically expected factor. The factor loadings ranged from .51 to .96, and

there were no cross-loadings above .40. The factor intercorrelations ranged from .30 to .70

(i.e., eight dimensions that are moderately positively related).

Based on these results, the *final item selection* was conducted by applying different

criteria. First, the item selection should ascertain that the dimension is represented in its full

scope. Consequently, items that cover a new facet of the dimension—in comparison to

another item with a higher factor loading, but an already represented facet—were preferred

(Hinkin, 1995). Second, following a conservative approach (Peterson, 2000), each selected

item should also have a factor loading higher than .70, clearly exceeding the recommended

minimum cutoff value of .40 (Ford et al., 1986; Hinkin, 1998). Third, as a subordinate

selection criterion, at least one item from the cognitive and affective career insecurity

component was retained. By accounting for these criteria, we aimed to select items that reflect

the dimension in its entire scope and show high reliability values. Table 2 shows factor

loadings, means, standard deviations, corrected item-total correlations, and Cronbach's alphas

for the subscales (32 items in total, four items per dimension) of the MU-CI-S[4] that were

retained for use in subsequent studies.

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[4] All data collections were based on the German language version of the scale. For this paper, the scale items
were systematically translated from German into English in collaboration with native English speakers who were
also fluent in German. During the translation process, we took care that all relevant career insecurity

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Insert Table 2 about here.

To provide further clarity about the fit of the items to the theoretical career insecurity construct and its dimension, we exemplarily describe some items and their conceptual fit. As mentioned above, the general career insecurity construct includes both unsureness (something might/could happen) about the future as well as thoughts (about something undesired) or worries about the future. These aspects were considered in the item formulation. For example, the item "I am *worried* that the career opportunities in my occupational field *could* develop unfavorably" from the CI-Career opportunities dimension clearly includes both conceptual aspects. Moreover, the introduction sentence (see Table 2) and the items were formulated to include the mid- and long-term future and both intra- and extra-organizational career aspects (e.g., "I am worried that the contractual framework of my *future work* could change unfavorably" from the CI-Contractual employment condition dimension, or "I wonder if I could be unemployed *in my future career*" from the CI-Unemployment dimension).

Part 2: Confirmation of Factor Structure and Model Comparisons

To confirm the results regarding the 32 items obtained by the EFA with confirmatory factor analysis (CFA), we collected a further independent sample.

Sample and procedure (Sample #5)

Participants were recruited through another German online-access research panel company in 2019. The respondents received a small incentive (i.e., 2.50 Euros, approx. 3 dollars) for participating in the study. Based on data quality checks (cf. approach used in Sample #4), 7.56% of the participants were excluded, resulting in a final sample size of 1,091 (51.5% men). The respondents were $M = 44.11$ years old ($SD = 12.74$), came from a large

characteristics (e.g., unsureness and undesirability) were kept in the English translation of the scale presented in Table 2.

variety of German industry sectors, and 66.09% had full-time employment, and about one-third held a university degree (37.0%). The dataset contained no missing data.

Measures (Sample #5)

We measured multidimensional career insecurity (32 items, final version), quantitative job insecurity, qualitative job insecurity, perceived low employability, perceived career barriers, and one-dimensional career insecurity with the same scales as in Sample #4.

Regarding further measures that will be used in the following sections of the manuscript, we measured *neuroticism* using four items of the German version of the BFI-K (Rammstedt & John, 2005). The respondents were asked to rate the items on a five-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "I see myself as someone who gets nervous easily." We measured the frequency of *physical symptoms* within the last three months with five items from Pennebaker (1982), including headache, muscle tension, and sleep disturbances, on a five-point Likert-type scale ranging from 1 (*very seldom*) to 5 (*very often*). Furthermore, we measured *burnout exhaustion* with the Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2003). The respondents were asked to rate eight items on a six-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). A sample item is "After my work, I regularly feel worn out and weary." We measured *in-role behavior* (job performance) with seven items developed by Williams and Anderson (1991). A sample item is "I meet the formal requirements of my job." The participants answered on a five-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). *Counterproductive work behavior* was measured with a scale from Spector et al. (2010). The participants were asked to answer ten items related to how often they have done different things in their present job (1 = *never*, 2 = *once or twice*, 3 = *once or twice/month*, 4 = *once or twice/week*, and 5 = *every day*). Sample items are "Purposely wasted your employer's materials/supplies" and "Insulted or made fun of someone at work." We

measured *career satisfaction* with a German version (Spurk et al., 2011) of the career

satisfaction scale developed by Greenhaus et al. (1990). To measure *job satisfaction* in an

economic and appropriate way (Wanous et al., 1997), we used a single item measure ("I am

satisfied with my current job"). The participants answered on a five-point Likert-type scale

ranging from 1 (*totally disagree*) to 5 (*totally agree*). *Affective career commitment* was

measured with six items (Meyer et al., 1993). A sample item is "My occupation is important

to my self-image." The respondents were asked to rate these items on a seven-point

Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). We measured

career turnover intentions with a three-item scale (Barthauer et al., 2020). A sample item is "I

often think of giving up my current professional career." The respondents were asked to rate

these items on a seven-point Likert-type scale ranging from 1 (*strongly disagree*) to 6

(*strongly agree*).

Data analysis

We conducted CFA with the 32 career insecurity items of the MU-CI-S to confirm the

eight-factor solution of the new scale using Mplus Version 8.1 (Muthén & Muthén, 1998-

2015). We evaluated the model fit based on different model fit indices: comparative fit index

(CFI; Kline, 2011), standardized root mean square residual (SRMR; Hu & Bentler, 1998), and

the root mean square error of approximation (RMSEA; Kline, 2011). Models with a CFI value

greater than .95 and RMSEA and SRMR values less than .08 indicate a good model fit (Hu &

Bentler, 1998).

We tested and compared one theoretically plausible model, *Model 1* (eight

intercorrelated latent first-order factors), with another theoretically plausible model, *Model 2*

(eight latent first-order factors loading on one latent second-order general career insecurity

factor). Model 2 assumes that a latent general career insecurity factor accounts for the

correlational pattern between the first-order factors. Such a model has specific advantages

because it, for example, accounts for the relationships between the eight career insecurity dimensions in a more parsimonious way (second-order models have more degrees of freedom than first-order models with correlated factors; Byrne, 2005). Finally, Model 1 and Model 2 were compared with *Model 3* (general factor model: all 32 items loading on one latent first-order factor; χ^2 [464] = 13242.48, $p < .001$, CFI = .58, RMSEA = .16, SRMR = .10). Model comparisons showed that Model 1 ($\Delta\chi^2 = 11458.27$, $\Delta df = 28$, $p < .001$, ΔCFI = .38) and Model 2 ($\Delta\chi^2 = 11086.60$, $\Delta df = 8$, $p < .001$, ΔCFI = .37) were preferable in terms of model fit compared to Model 3. Model 1 showed a better model fit compared to Model 2 when considering the Chi-square difference test ($\Delta\chi^2 = 371.66$, $\Delta df = 20$, $p < .001$), but not when considering the ΔCFI of .01, which should be greater than .01 to indicate meaningful differences (Cheung & Rensvold, 2002). Both Model 1 (χ^2 [436] = 1784.21, $p < .001$; CFI = .96, RMSEA = .05, SRMR = .04) and Model 2 (χ^2 [456] = 2155.87, $p < .001$; CFI = .95, RMSEA = .06, SRMR = .06) showed good overall model fit. Moreover, Model 2 showed a high composite reliability of .92, indicating that the eight dimensions consistently measure the second-order career insecurity factor (Colwell, 2016; Raykov, 1997). Furthermore, these results were replicated in Samples #6 and #7 (see Online Supplements: Tables S6).

In sum, these results suggest that (a) the eight-factor solution from the EFA in Sample #4 can be confirmed with a CFA across three independent samples; (b) an eight-factor solution fits the data better than a one-factor solution across three independent samples; and (c) the shared variance of the eight correlated factors can parsimoniously be explained by a latent second-order general career insecurity factor across three independent samples. Altogether, these results suggest that the scale can be either applied by investigating overall career insecurity or as eight single career insecurity factors, reflecting the intercorrelated single career insecurity dimensions and their specific content.

Part 3: Construct Validity: Discriminant and Convergent Validity in Relation to Similar Constructs and One-Dimensional Career Insecurity Measures (Sample #4 and #5)

After confirming the structure of the MU-CI-S, we used Sample #4 (see above, Study 2, Part 1, $N = 404$) and Sample #5 (see above, Study 2, Part 2, $N = 1,091$) to conduct further validation analyses. The first goal of these analyses was to show convergent and discriminant validity regarding similar constructs discussed in Study, Part 1 (i.e., job insecurity, perceived low employability, perceived career barriers) and one-dimensional career insecurity scales (Colakoglu, 2011; Höge et al., 2012). As argued in Study 1, the developed career insecurity construct is conceptually related to yet distinct from similar constructs, resulting in the following hypotheses:

Hypothesis 1: The MU-CI-S can be discriminated from (a) job insecurity, (b) perceived low employability, (c) perceived career barriers, and (d) one-dimensional career insecurity.

Hypothesis 2: The MU-CI-S is positively related to (a) job insecurity, (b) perceived low employability, (c) perceived career barriers, and (d) one-dimensional career insecurity.

Discriminant validity

To test the discriminant validity of the eight career insecurity dimensions of the MU-CI-S, we used two frequently applied approaches: CFA model comparisons and related Chi-square difference tests and the Fornell–Larcker (1981) test.

CFA model comparisons. These comparisons always included one of the eight career insecurity dimensions and one of the similar constructs (e.g., job insecurity, perceived low employability, or one-dimensional career insecurity). Moreover, we always compared two different CFA models with each other. Model A was a one-factor model, whereas Model B was a two-factor model. Within Model A, four items of the specific career insecurity

dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., quantitative job insecurity) were modeled as one latent first-order factor. Model B was a latent two-factor measurement model (e.g., CI-Retirement and job insecurity modeled as two separate, but intercorrelated, latent first-order factors). According to Hypothesis 1, a two-factor model (i.e., Model B) should show a significantly better model fit than a one-factor model (i.e., Model A). As expected, in all conducted comparisons with both samples (see Online Supplements: Tables S7.1 to Table S7.6), the two-factor model (i.e., Model B) was preferable to the one-factor model (i.e., Model A; Sample #4: $\Delta\chi^2$ ranged from 253.96 to 1057.69, $\Delta df = 1$, all p-values below .001; Sample #5: $\Delta\chi^2$ ranged from 588.07 to 2825.79, $\Delta df = 1$, all p-values below .001).

Fornell–Larcker (1981) test. Furthermore, we conducted the Fornell–Larcker (1981) test, which examines the average variance extracted (AVE) of the factor indicators by its underlying latent construct. A latent construct (e.g., one career insecurity dimension) should explain more variance in its own indicators than in other constructs (e.g., quantitative job insecurity). Moreover, the AVE should be larger than .50 to show that the latent construct explains more variance in its indicators compared to measurement error. In all Fornell–Larcker tests using Samples #4 and #5, the AVE of all eight career insecurity dimensions was above .50 (.72 to .86 and .64 to .85, respectively). In all cases in both samples, these AVE values exceeded the squared correlations of the dimensions with similar constructs (i.e., job insecurity, perceived employability, perceived career barriers) or the one-dimensional career insecurity measures (squared correlations ranged between .01 and .61 in Sample #4 and between .00 and .53 in Sample #5), supporting the discriminant validity of all eight insecurity dimensions. Taken together, the results from the CFA model comparisons and the Fornell–Larcker test support Hypothesis 1.

Convergent validity

Table 3 presents the correlations of the MU-CI-S and its eight dimensions with similar constructs and one-dimensional career insecurity measures in Sample #4 and Sample #5. MU-CI-S and all eight career insecurity dimensions were—with one exception—significantly positively correlated (with varying size) with similar constructs and one-dimensional career insecurity scales (rs ranged from .10 [$p = .048$] to .78 [$p < .001$] in Sample #4; and from .01 [$p = .755$] to .73 [$p < .001$] in Sample #5). The only non-significant correlation was found in Sample #5 between perceived low employability and CI-Work–nonwork interactions ($r = .01$, $p = .755$). In sum, these results support Hypothesis 2.

Insert Table 3 about here.

Discussion Study 2

Based on the results of Study 1, we developed a comprehensive, psychometrically sound, and multidimensional measurement tool (i.e., the MU-CI-S). The eight career insecurity dimensions can be economically measured with four items per dimension. The initial analyses revealed that the MU-CI-S has construct validity (i.e., factorial, discriminant, and convergent validity). Furthermore, the MU-CI-S can either be applied as an overall mean score representing career insecurity in its entire breadth (as shown by an adequate CFA model with a general career insecurity second-order factor and high composite reliabilities across three independent samples) or as single dimensions representing specific aspects of career insecurity. The MU-CI-S is empirically different from quantitative and qualitative job insecurity, perceived low employability, perceived career barriers, and one-dimensional career insecurity measures. Moreover, quantitative job insecurity and one-dimensional career insecurity seem to specifically tap into the career insecurity dimension of unemployment, which can be seen in the relatively high correlations in Table 3, indicating the need for a

broader career insecurity construct. Finally, the varying correlation sizes of the eight separate

career insecurity dimensions of the MU-CI-S among each other and with the similar analyzed

constructs suggest that a content-specific investigation of career insecurity provides a useful

perspective for future insecurity research.

Study 3: Criterion validity – Relations with Central Outcomes and Incremental Validity

Beyond Other Insecurity Measures

In this stage of scale development, it is important to show that the newly developed

career insecurity scale exhibits meaningful relationships with theoretically relevant outcomes

(i.e., health/well-being, job performance, career success, and career attitudes) and can explain

additional variance in these variables beyond other existing insecurity measures (Hinkin,

1995; Wright et al., 2017). We will derive a series of hypotheses based on stress (Folkman et

al., 1986; Hobfoll et al., 2018) and social–cognitive career frameworks (Lent & Brown,

2013), which we will test in one cross-sectional and one time-lagged sample. In terms of

conceptual fit and integration, we decided to explain the relationships of career insecurity

with health and well-being and job performance by stress approaches, and the relationships

with career success and career attitudes by social–cognitive career frameworks. We

intentionally use two theoretical approaches to show that the construct career insecurity

contains aspects of both experienced stress (e.g., thoughts and worries, insecurity) and career

development (e.g., different content domains of the future career).

Theoretical approaches to stress (e.g., the Conservation of Resource Theory; Hobfoll

et al., 2018) assume that stress results when resources are threatened. Career insecurity can be

seen as a career-related stressor that represents a threat to resources. For example, a possible

loss of income (as one thought and worry of career insecurity) represents a threat to the

fundamental monetary resource of money, which is representative of other valuable resources

in society (e.g., third-party services, secure home; Hobfoll et al., 2018). A potential loss of

prestige or employment (as one thought and worry of career insecurity) represents a threat to social relationships and social embedment, which are fundamental needs of individuals (Hobfoll et al., 2018). As a final example, potentially increased work–nonwork conflict (as one thought and worry of career insecurity) represents a threat to belongingness, support, and family commodities in terms of material resources.

These threats resulting from career insecurity are associated with strain and associated negative outcomes (Hobfoll et al., 2018), such as reduced health and well-being, as shown in increased physical symptoms or burnout exhaustion (Hobfoll et al., 2018; Shoss, 2017). Moreover, strain typically hinders optimal functioning toward achieving personal and organizational goals because strain narrows attention and diminishes self-regulation, such as allocating effort or monitoring behavior (Ortlieb & Weiss, 2018; Shoss, 2017; Sverke et al., 2002). Therefore, career insecurity should be associated with lowered levels of job performance (e.g., reduced in-role behavior) or increased levels of counterproductive work behavior (Hobfoll et al., 2018; Shoss, 2017). Past empirical research in other insecurity domains supports this reasoning by showing that job insecurity is negatively related to health, job performance, and different satisfaction judgments (Cheng & Chan, 2008; De Witte et al., 2016; Shoss, 2017; Sverke et al., 2019). Furthermore, one-dimensional career insecurity showed negative correlations with general well-being (Höge et al., 2012) and job performance (Ortlieb & Weiss, 2018). Overall, based on stress approaches and past research, we assume detrimental effects of career insecurity on health and well-being (see Hypothesis 3) and job performance (see Hypothesis 4) outcomes.

Hypothesis 3: Career insecurity is positively related to (a) physical symptoms and (b) burnout exhaustion.

Hypothesis 4: Career insecurity is (a) negatively related to in-role behavior and (b) positively related to counterproductive work behavior.

Social–cognitive career management (e.g., Lent & Brown, 2013) is another suitable theoretical approach for understanding the outcomes of career insecurity. One core idea of social–cognitive reasoning is that agency and control are important drivers of successful career development (Bandura, 1986; Shoss, 2017; Sverke et al., 2002). For example, career-related self-efficacy and outcome expectancy both assume a sense of agency and control that is lacking when individuals perceive their career as insecure. An individual who thinks and worries that his or her future career might develop in an undesired manner also experiences a lack of agency and control because it is unclear how to affect and manage the future and what his or her future career might look like. Moreover, such a lack of control is accompanied with negative arousal, which is also detrimental to career management (Bandura, 1986; Lent & Brown, 2013).

Accordingly, career insecurity should be negatively related to career success, such as workplace status (Abele & Spurk, 2009; Ng et al., 2005) and job and career satisfaction (Abele & Spurk, 2009). Career satisfaction is an individual's evaluation of his or her career until now. It makes sense to assume that a current career insecurity evaluation (thoughts and worries about the future career) might be negatively related to the evaluation of the progression from the past to present career because the road to the present career might be seen as one reason for the present insecure situation. Hence, it might be that individuals with higher career insecurity are attributing this insecurity to their past career decisions and development, which relates to lower career satisfaction judgements compared to individuals with lower career insecurity.

Moreover, lower career management and lower career success (e.g., job and career satisfaction) are associated with career attitudes like lower career commitment or higher career turnover intentions (Spurk et al., 2019; Zhu et al., 2020). Career turnover intentions are defined as an individual's attitude toward and perceived probability of staying in or leaving a

profession or a chosen career track (e.g., career as a specialist in a current occupational field;

Aydogdu & Asikgil, 2011; Barthauer et al., 2020). Because career insecurity might be

interpreted as failure and that the career may be developing in an undesired direction,

individuals with higher levels of career insecurity might also show higher career turnover

intentions (Barthauer et al., 2020; Lent & Brown, 2013; Luzzo, 1993).

Past empirical research in other insecurity domains provides support for our

assumptions. For example, job insecurity is negatively related to job satisfaction and attitudes,

such as commitment (Shoss, 2017; Sverke et al., 2002). Furthermore, one-dimensional career

insecurity showed negative correlations with career success (Colakoglu, 2011; Spurk et al.,

2016). In sum, based on reasoning from social–cognitive career models and past research, we

assume that there is a detrimental relationship between career insecurity and career success

(see Hypothesis 5) and career attitudes (see Hypothesis 6).

Hypothesis 5: Career insecurity is negatively related to (a) career satisfaction and (b)

job satisfaction.

Hypothesis 6: Career insecurity is (a) negatively related to career commitment and (b)

positively related to career turnover intentions.

Additionally, career insecurity should show incremental validity beyond job insecurity

when predicting career outcomes because the content domain of career insecurity covers the

career whereas the content domain of job insecurity covers the current job or employment.

Moreover, because career and job insecurity are related to partly different threats, a unique

and different stress experience should result from career insecurity. Therefore, career

insecurity should also show incremental validity when predicting strain-related outcomes in

the form of health and well-being and job performance. Finally, because the conceptualization

of career insecurity applied here and the developed scale are different and broader compared

to other one-dimensional career insecurity and job insecurity measures, and because we

already established discriminant validity against these other insecurity constructs (see

Study 2), we hypothesize the following:

> *Hypothesis 7:* The MU-CI-S explains variance in (a) physical symptoms, (b) burnout
>
> exhaustion, (c) in-role behavior, (d) counterproductive work behavior, (e) career
>
> satisfaction, (f) job satisfaction, (g) career commitment, and (h) career turnover
>
> intentions beyond other insecurity constructs (i.e., job insecurity and one-dimensional
>
> career insecurity constructs).

Method

In order to test the abovementioned hypotheses, we used Sample #5 ($N = 1,091$, see

Study 2, and Tables S2 and S4). Moreover, we added a time-lagged dataset (Sample #6),

which is described in the following.

Sample and procedure (Sample #6)

Two student assistants collected the sample in two subsequent online survey waves via

personal contacts with employees and organizations, with three months between each wave.

The participants could take part in a voucher raffle as an incentive. Three vouchers worth 50

Swiss francs (approx. 53.3 dollars) were raffled at each measurement time point. In addition,

three further vouchers, each worth 60 Swiss francs (approx. 64 dollars), were raffled among

all participants who took part at all measurement points. The sample of 182 employees (T1;

April/May 2017) in Switzerland included 65.4% women and 34.6% men, with a mean age of

42.02 ($SD = 11.54$). On average, the participants worked 36.11 ($SD = 7.45$) hours per week

(57.1% academics, 42.9% non-academics). They worked in diverse jobs and were employees

of different organizations. The dropout rate was 31.87 percent ($N = 124$ at T2; August 2017).

The participants who dropped out did not differ from those who participated at both times

with regard to insecurity variables (i.e., the MU-CI-S, job insecurity, one-dimensional career

insecurity scales). The analyses are based on the entire sample ($N = 182$) because we used

Mplus version 8.1 (Muthén & Muthén, 1998-2015) with a Full Information Maximum

Likelihood Estimator to account for the missing data (Graham & Coffman, 2012).

Measures (Sample #6)

We measured multidimensional career insecurity at T1 with the MU-CI-S. We

measured quantitative job insecurity and one-dimensional career insecurity at T1 with the

same scales as in Sample #4. Additionally, we measured *neuroticism* at T1 with the same

scale as in Sample #5. All outcomes were measured at T2. We measured the frequency of

physical symptoms within the last three months and *in-role behavior* as described in

Sample #5 (see above). We used a single-item measure regarding overall *satisfaction with the*

career (Heslin, 2003). The item was rated on a five-point Likert-type scale ranging from 1

(*totally disagree*) to 5 (*strongly agree*). We measured *affective career commitment* using a

scale developed by Felfe et al. (2006; see also Spurk et al., 2016). The respondents were

asked to rate five items on a six-point Likert-type scale ranging from 1 (*strongly disagree*) to

6 (*strongly agree*). A sample item is "My career has a great personal significance for me."

Cronbach's alphas of all applied scales are shown in Table 5 (Sample #6) and Table S5

(Sample #5).

Data analysis

To test the concurrent and predictive validity of the MU-CI-S, we performed bivariate

(time-lagged) correlation analyses. To test the incremental validity of the MU-CI-S, we

performed a series of multiple hierarchical regression analyses. Because the relationships

between career insecurity and its outcomes might be explained by insecure, fearful, and

negative affectivity-related personality traits (Mak & Mueller, 2000; Shoss, 2017), we

controlled for neuroticism in the analyses. We regressed each outcome variable (i.e.,

Sample #5 + Sample #6: physical symptoms, in-role behavior, career satisfaction, career

commitment; Sample #5: burnout exhaustion, counterproductive work behavior, job

satisfaction, career turnover intentions) on neuroticism in the first step. In the second step, we included quantitative job insecurity, qualitative job insecurity (only in Sample #5), and both of the one-dimensional career insecurity measures (Colakoglu, 2011; Höge et al., 2012) together. A total of three (Sample #6) or four (Sample #5) predictors were added to the model simultaneously in step 2. In the third step, we included the MU-CI-S to assess whether it significantly explains additional variance in the outcomes, which would show incremental validity. Within the results section, we present the ΔR^2 between step 2 and step 3, MU-CI-S βs (within step 3), and the explained variance in step 3 (i.e., R^2). All further details are listed in Table S8 in the Online Supplements.

Results

Concurrent (Sample #5) and predictive validity (Sample #6)

The means, standard deviations, and intercorrelations between the study variables are shown in Table 4 (Sample #5, first value in parentheses below) and Table 5 (Sample #6, second value in parentheses below). The MU-CI-S was positively related to physical symptoms ($r = .46, p < .001; r = .44, p < .001$) and burnout exhaustion ($r = .48, p < .001$), supporting Hypothesis 3a and 3b.

Insert Table 4 and Table 5 about here.

Moreover, the MU-CI-S was negatively related to in-role behavior ($r = - .29, p < .001; r = - .28, p = .002$), supporting Hypothesis 4a, and it was positively related to counterproductive work behavior ($r = .28, p < .001$), supporting Hypothesis 4b. The MU-CI-S was negatively related to career satisfaction ($r = - 41, p < .001; r = - .37, p < .001$) and job satisfaction ($r = - .42, p < .001$), supporting Hypothesis 5a and 5b. Additionally, the MU-CI-S was negatively correlated with career commitment ($r = - .40, p < .001; r = - .15, p = .098$),

supporting Hypothesis 6a. Finally, the MU-CI-S was positively correlated with career

turnover intentions ($r = .44$, $p < .001$), supporting Hypothesis 6b.

Cross-sectional and time-lagged incremental validity when predicting central outcomes

(Sample #5, Sample #6)

Regarding physical symptoms, the MU-CI-S explained variance beyond all other

constructs, with ΔR^2 ranging from .03 (Sample #5, $p < .001$) to .09 (Sample #6, $p < .001$).

MU-CI-S βs ranged from .28 (Sample #5, $p < .001$) to .43 (Sample #6, $p = .001$). All

constructs together (i.e., step 3) explained 32% (Sample #6) to 36% (Sample #5) of the

variance in physical symptoms. In Sample #5, the MU-CI-S explained the variance in burnout

exhaustion beyond all other constructs ($R^2 = .39$, $\Delta R^2 = .03$, $p < .001$; MU-CI-S β = .29,

$p < .001$).

Regarding in-role behavior, the MU-CI-S explained variance beyond all other

constructs, and ΔR^2 ranged from .01 (Sample #5, $p < .001$) to .06 (Sample #6, $p = .001$).

MU-CI-S βs ranged from - .17 (Sample #5, $p < .001$) to - .39 (Sample #6, $p = .012$). All

constructs together explained between 11% and 13% of the variance in in-role behavior.

Additionally, in Sample #5, the MU-CI-S explained the variance in counterproductive work

behavior beyond all other constructs ($R^2 = .11$, $\Delta R^2 = .02$, $p < .001$; MU-CI-S β = .22,

$p < .001$).

Regarding career satisfaction, the MU-CI-S explained the variance within Sample #5

beyond all other constructs ($R^2 = .35$, $\Delta R^2 = .01$, $p < .001$; MU-CI-S β = - .13, $p = .001$). The

MU-CI-S did not explain the variance within Sample #6 beyond all other constructs ($R^2 = .16$,

$\Delta R^2 = .02$, $p = .077$; MU-CI-S β = - .17, $p = .269$). However, all other predictors also showed

nonsignificant results in Sample #6. Regarding job satisfaction, the MU-CI-S explained the

variance beyond all other constructs within Sample #5 ($R^2 = .36$, $\Delta R^2 = .01$, $p < .001$;

MU-CI-S β = - .16, $p < .001$).

The MU-CI-S explained the variance in career commitment beyond all other constructs, and ΔR^2 ranged from .01 (Sample #5, p = .006) to .06 (Sample #6, p = .001). MU-CI-S βs ranged from - .11 (Sample #5, p = .006) to - .39 (Sample #6, p = .016). All constructs together explained between 9% (Sample #6) and 26% (Sample #5) of the variance in career commitment. Moreover, within Sample #5, the MU-CI-S explained the variance in career turnover intention beyond all other constructs (R^2 = .27, ΔR^2 = .01, p < .001; MU-CI-S β = .17, p < .001). Overall, these results suggest that the MU-CI-S has incremental validity beyond neuroticism, quantitative and qualitative job insecurity, and one-dimensional career insecurity, supporting Hypothesis 7.

Discussion Study 3

In Study 3, we investigated central outcomes of career insecurity derived from stress and social–cognitive career models, which extended the understanding of the relationships between career insecurity and other variables. The results from two independent samples demonstrated the concurrent validity, predictive validity, and cross-sectional and time-lagged incremental validity of the MU-CI-S beyond neuroticism and other insecurity constructs when explaining the variance in poor health and well-being, low job performance, low career success, and low career attitudes related to career management. Given the replication of results across samples, the results are likely robust. In sum, overall career insecurity (represented by the mean score of eight dimensions) seems to have mainly detrimental effects on personal and work-related functioning. Taken together, it appears that the MU-CI-S has acceptable criterion validity.

Study 4: The Relative Importance of Different Career Insecurity Dimensions

The goal of Study 4 was to analyze the relative importance of the eight career insecurity dimensions for the relationships with the outcomes used in Study 3 in a large sample of employees using a relative weights analysis. Moreover, we added another indicator

of career success as a further outcome (i.e., workplace status as an employee's relative standing in an organization, as characterized by the respect, prominence, and prestige they possess in the eyes of other organizational members; Djurdjevic et al., 2017).

We assume that the career insecurity dimensions will show differing importance when predicting outcomes (e.g., one career insecurity dimension explains more variance in the outcome compared to another career insecurity dimension for the same outcome). Although the eight dimensions share a common core insecurity, they nonetheless reflect unique insecurity aspects that are expressed in diverse future-related thoughts and worries that have already been discriminated in Studies 1 to 3.

For example, the career insecurity dimensions of work–nonwork interactions and discrepancy between individual resources and work demands might explain larger portions of the variance in the outcomes of well-being and health compared to the other dimensions. This assumption is based on research showing that work–nonwork or nonwork–work conflicts especially affect more generic well-being aspects, for instance, overall life satisfaction (Adams et al., 1996) or physical well-being (Kinnunen et al., 2004). Moreover, a potential future misfit of individual resources and work demands can be seen as a lack of personal resources, which has been shown to be relatively strongly related to lower well-being (Hobfoll et al., 2018).

Moreover, the career insecurity dimensions of career opportunities, decreased prestige & qualification requirements of the future employment, and unemployment might explain relatively large portions of the variance in the outcome of career success compared to the other dimensions. This might be because perceptions of and having appropriate career opportunities are relatively strongly related to career success (Hirschi et al., 2018; Kraimer et al., 2011; Ng & Feldman, 2014a). Moreover, employment prestige and unemployment are relatively strongly related to high and low levels of career success, respectively (Feldman &

Ng, 2007; Seibert, 2006). Consequentially, insecurities about prestige or unemployment in the future might also be especially strong related to career success.

As a final example, the career insecurity dimensions of decreased prestige & qualification requirements of the future employment, contractual employment conditions, and discrepancy between individual resources and work demands might explain larger portions of the variance in the outcome of job performance compared to the other dimensions. This might be because those career insecurity dimensions tap career facets closely related to the current line of work. Moreover, past research showed that a discrepancy in (individual) resources and work demands has a detrimental effect on job performance (Bakker et al., 2004; McGonagle et al., 2015). Hence, it might be that those thoughts and worries about such undesired future career aspects might also be especially strongly related to job performance.

It is beyond the scope of the paper to derive hypotheses about each and every possible contrast between all career insecurity dimensions for all outcomes. However, the examples provided here offer theoretical support for potential differences between the career insecurity dimensions when predicting an outcome. Accordingly, we formulate the following research question:

> *Research Question 1:* What is the relative importance of the eight career insecurity
> dimensions for predicting the outcomes of (a) physical symptoms, (b)
> counterproductive work behavior, (c) workplace status, (d) career satisfaction, and (e)
> career turnover intentions?

Method

Sample and procedure (Sample #7)

In 2017, participants were recruited through a Swiss online-access research panel company with over 70,000 registered respondents in Switzerland[5]. The respondents received

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[5] A partial dataset ($N = 728$) was used in Hofer et al. (2021). There is no overlap in the used constructs.

an incentive (i.e., four Swiss francs, approx. 4.3 dollars) for a successfully completed questionnaire (see Study 2, Part 1, Sample #4). The participants had to be employed in at least 50% of a full-time position. Based on data quality checks (see Study 2, Part 1, Sample #4), 3.8% of the participants were excluded, resulting in a final sample of 1,443 employees, including 50.4% women and 49.6% men. The participants were $M = 38.05$ years old ($SD = 9.80$) and worked 38.45 ($SD = 6.05$) hours per week on average within different industries and sectors (e.g., private educational system, healthcare, manufacturing industry).

Measures (Sample #7)

We measured multidimensional career insecurity with the MU-CI-S. All outcomes related to the frequency of physical symptoms, counterproductive work behavior, career turnover intentions, and career satisfaction were measured as in Sample #5 (cf. Table S4 in Online Supplements). We measured workplace status using a scale developed by Djurdjevic et al. (2017). The respondents were asked to rate five items on a seven-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is "I possess high status in my organization." Although a self-report measure, Djurdjevic et al. (2017) found significant positive correlations between self-reported and peer-reported workplace status for the same focal person. Cronbach's alphas of all applied scales are shown in Table 6.

Analytical procedure

We used RWA-Web to examine relative importance in the classic multiple regression model (Tonidandel & LeBreton, 2015). The *relative weights analysis* (RWA) identifies the relative importance of each career insecurity dimension in relation to different outcomes. We estimated the statistical significance of the relative weights using a bootstrapping procedure with the RWA-Web default bootstrapping options ($k = 10,000$ replications and alpha $= .05$). The obtained rescaled weights provide estimates of the relative importance of the different

dimensions using the metric of percentage of predicted variance attributed to each outcome

variable (Tonidandel & LeBreton, 2015).

Results

Preliminary results: Correlations

Descriptive statistics, intercorrelations, and Cronbach's alphas among variables are

shown in Table 6. Overall, the size and pattern of relationships between the eight career

insecurity dimensions were very similar compared to the samples used previously.

Insert Table 6 about here.

RWA results

The detailed results highlighting the three dimensions that explain the largest portion

of the variance (i.e., rescaled relative weight) for every outcome are displayed in Table 7. The

results in Table 7 show that the single career insecurity dimensions explain different portions

of variance in every outcome. For example, regarding workplace status, the largest portion of

the explained variance was due to *CI-Career opportunities* (23.88%, $CI_{95\%}$ = [0.008;0.003]),

the second largest portion was due to *CI-Decreased prestige & qualification requirements of*

future employment (14.87%, $CI_{95\%}$ = [0.003;0.023]), and the third largest portion was due to

CI-Unemployment (13.81%, $CI_{95\%}$ = [0.003;0.022]). Across all analyses, the largest portion of

explained variance was due to *CI-Discrepancy between individual resources/work demands*

(44.02%, $CI_{95\%}$ = [0.031;0.073]) for predicting physical symptoms, and the smallest

significant portion of explained variance was due to *CI-Retirement* (1.65%,

$CI_{95\%}$ = [0.001;0.008]) for predicting career satisfaction.

Insert Table 7 about here.

We compared whether the relative importance of each career insecurity dimension differed significantly from the other career insecurity dimensions (Tonidandel & LeBreton, 2015). For every outcome, at least five differences between the weights of the career insecurity dimensions were significant. In sum, the descriptive results and the contrasts between the weights show that the different career insecurity dimensions explain different portions of the variance in an individual outcome.

Discussion Study 4

In Study 4, we extended the results of Study 3, shedding more light on the differential relationships of all eight career insecurity dimensions with health and well-being, job performance, career success, and career attitudes. The results showed that the career insecurity dimensions were differentially important for predicting specific outcomes. Some dimensions showed relatively stronger relationships with specific outcomes compared with other dimensions. Some dimensions showed rather small relationships compared to other dimensions but consistently explained significant portions of the variance in the majority of outcomes. Moreover, for all but one outcome (i.e., physical symptoms), seven or eight career insecurity dimensions explained unique portions of variance, and every career insecurity dimension predicted significant portions of variance (with varying importance compared to the other dimensions). Therefore, we conclude that it is important to conceptualize and measure career insecurity in its entire breadth as a multidimensional construct.

General Discussion

This study addressed the need to explicitly consider insecurity perceptions associated with an individual's future career (Lee et al., 2018; Trevor-Roberts, 2006). Through four studies with seven samples using a mixed-method approach, we clarified the conceptual nature of career insecurity (Aim 1), developed and tested a new eight-dimensional measure

(the MU-CI-S; Aim 2), and investigated the new scale in relation to central outcomes (Aim 3). Overall, we replicated the central results associated with scale development and validation across at least two different samples. The results of the study have several implications.

Theoretical and Empirical Implications for Career Development and Insecurity Research

First, our studies provide knowledge about which thoughts and worries employees have when thinking about their future career. In doing so, we extend past one-dimensional conceptualizations of career insecurity (Colakoglu, 2011; Höge et al., 2012) to a multidimensional approach. The eight career insecurity dimensions reflect key elements in prominent career development models. CI-Career opportunities, CI-Decreased prestige & qualification requirements of future employment, and CI-Contractual employment conditions are related to *discrete future occupational employment situations across a person's career*. These dimensions align with career models that highlight that individuals typically engage in different types of employment or jobs across their careers (Arthur et al., 1989; Schein, 1971). CI-Unemployment, CI-Change of workplace, and CI-Retirement are related to *different potential career transitions across a person's career*. Career transitions are moves across organizational, occupational, and role boundaries, which can create both minor discontinuities and major interruptions in an individual career (Gunz et al., 2007). The dimensions align with career models that highlight lifespan approaches or role transitions over time (Hall et al., 2018; Super, 1990). Finally, CI-Work–nonwork interactions and CI-Discrepancy between individual resources/work demands are related to *the interaction between personal characteristics/circumstances and aspects of working life across a person's career*. These dimensions align with career models that highlight the interplay between the person and contextual factors (Greenhaus & Kossek, 2014; Gunz et al., 2011).

Second, by identifying the content of career insecurity, we extend past idiosyncratic research on college students' sources of career insecurity (Tien et al., 2005). Moreover, our conceptual approach to identifying dimensions of a construct (i.e., career insecurity) extends similar research on the dimensionality and understanding of career success. For example, some studies assumed that the subjective meaning (or understanding) of career success can best be understood in a multidimensional manner and that the underlying dimensions are best derived from subjective understandings about common content aspects of career success (Mayrhofer et al., 2016; Shockley et al., 2016). Such approaches enriched one-dimensional and narrow conceptualizations of career success. Similarly, our study conceptually enriches the field of career insecurity research.

Third, we developed and validated a psychometrically sound multidimensional scale to measure career insecurity. The results revealed that multidimensional career insecurity is related to yet distinct from a variety of other constructs: one-dimensional career insecurity, job insecurity, perceived low employability, and perceived career barriers. These results have theoretical relevance for research on insecurity in the workplace. Although existing job and one-dimensional career insecurity conceptualizations and measures are important (Colakoglu, 2011; De Witte, 2005; Shoss, 2017), they seem to miss important aspects. Specifically, they seem to tap mostly into the unemployment dimension of career insecurity, whereas all other career insecurity dimensions (especially CI-Retirement and CI-Work–nonwork interactions, see Table 3) show less empirical overlap with other insecurity measures.

On a related note, our measure of career insecurity can be used as a mean score representing the construct in its breadth or, alternatively, to probe specific dimensions. This conclusion is based on several CFA tests. On the one hand, these tests showed that career insecurity can be conceptualized and measured as a latent second-order construct. It captures employees' thoughts and worries regarding common content aspects of future career

development. The tests also showed that eight correlated latent first-order factors representing the separate career insecurity dimensions fit the data equally well, hence making it possible to use distinct dimensions. Note that we assumed that career insecurity is a reflective construct; that is, perceived overall career insecurity is affecting its dimensions by triggering an insecurity-related perception process (Edwards, 2001; Fleuren et al., 2018). Therefore, we applied reflective modelling strategies (e.g., CFAs with a second-order structure).

Fourth, the relationships between career insecurity and outcomes align with hypotheses inspired by theories from stress and career management research. The results support the idea that career insecurity is a career-related stressor that exerts mainly negative effects (e.g., general: lower health and well-being; work-specific: lower job performance) due to experienced strain and a depletion of resources (Folkman et al., 1986; Hobfoll et al., 2018). In addition, career insecurity might be detrimental for career success (e.g., workplace status, career satisfaction) and individual career management (e.g., career attitudes), consistent with models on social–cognitive career management (Lent & Brown, 2013). In sum, by integrating career insecurity in stress- and career-specific theories, the article addresses recent calls (Akkermans & Kubasch, 2017) to bridge applied psychology and vocational behavior research, specifically occupational health and career development. Importantly, we also showed that the relationship of career insecurity to other variables cannot simply be explained as resulting from an anxious personal disposition related to negative affectivity because the relationships held after controlling for neuroticism in two samples (including one time-lagged design).

Fifth, the results of Study 4 showed that some career insecurity dimensions have a significantly stronger relationship with specific outcomes compared to other dimensions. Such differences not only highlight the usefulness of a multidimensional scale but also inform career theory. For example, CI-Discrepancy between individual resources/work demands

explains significantly more variance in physical symptoms compared to the other dimensions. This finding shows that career development and health are meaningfully related issues and calls for more interdisciplinary research between careers and occupational health psychology. Recent approaches like the sustainable career (De Vos et al., 2020; Van der Heijden et al., 2020) are already addressing such issues and might be enriched by the construct of career insecurity. As another example, CI-Work–nonwork interactions explain significantly more variance in career turnover intentions than CI-Contractual employment conditions, CI-Unemployment, CI-Change of workplace, and CI-Retirement. This finding indicates that work–home perspectives (Greenhaus & Kossek, 2014) are important and that insecurities within such domains are meaningful for career attitudes and career decisions that might change the career paths of individuals.

In recent years, careers have become more insecure, and this trend will likely continue given the rise of the gig economy and digitization. Presumably, the gig economy will also affect careers and thus the career insecurity of many individuals (Spurk & Straub, 2020). Working in the gig economy is related to more unstable employment and precariousness, which will likely increase the career insecurity dimensions of, for example, unemployment or career opportunities. In contrast, because the gig economy is also related to higher levels of autonomy and flexibility, other dimensions of career insecurity might be reduced by working in the gig economy, such as the discrepancy between individual resources/work demands or change of workplace. Another often-mentioned future trend is digitization, due to which numerous jobs or occupations might be at risk in the future (Hirschi, 2018). This might increase levels of CI-Change of workplace or CI-Prestige and the qualification requirements of future employment.

Practical Implications

Regarding the applied settings, the 32 items of the MU-CI-S represent a valid, reliable, and easy-to-understand self-assessment that can guide employees in their future career development. Such an assessment could be used within career counseling to diagnose overall career insecurity or specific insecurity profiles that allow for a customized intervention strategy. For example, diagnosing relatively high levels of CI-Work nonwork interactions within a counseling setting would mean that the employee and counsellor need to incorporate the employee's private life and potential close ones in the counselling process. Moreover, insecurity profiles could also be used for applied organizational settings, such as the development of career management systems or organizational retention strategies. In such a strategy, the derived career insecurity profiles could be used to develop workforce-fitted career systems or retention strategies. For example, if results show that CI-Retirement is a major issue compared to the other dimensions, the organization could apply intervention strategies such as (long-term) retirement planning workshops or optimizing pension plans or incentives. Such customized applications represent an economical way to reduce the most important parts of career insecurity and could thus be an interesting option from a cost/benefit standpoint.

Although such custom-fit applications are an advantage of the development of the multidimensional scale, the scale nonetheless enables the diagnosis of overall career insecurity. Regarding the results of Study 3 (criterion validity), it seems clear that both human resource management and career counselors should care about the career insecurity levels of their clients. Programs, techniques, or trainings aiming to reduce career insecurity (e.g., by developing more optimistic general attitudes or coping strategies to better deal with insecurity perceptions or implementing a more long-term and transparent intra- or extra-organizational career system) could help to increase health and well-being, job performance, career success, and career attitudes. As another possibility, programs that enhance personal and contextual

resources, such as career self-management trainings (Raabe et al., 2007) or career coaching (Spurk et al., 2015), offer promise for reducing career insecurity (e.g., by increasing career optimism).

Besides applied settings, the new scale can also be useful for applied researchers. By measuring career insecurity, the scale could help inform future intervention research (e.g., career counselling effectiveness or training effectiveness), as reducing career insecurity can and should be a major aim of such career interventions. Therefore, both the overall score and all or specific single dimensions could be used as additional outcomes within evaluation studies. In addition, the new scale provides flexibility for future career insecurity research. If researchers are interested in career insecurity as a focal construct, applying the 32 items to measure all dimensions provides an attractive way to investigate career insecurity and to address dimensional research questions, for example, by deriving latent career insecurity profiles. In contrast, if specific research topics are the focus (e.g., retirement or career success), researchers might assess only the CI-Retirement or CI-Career opportunities dimensions, respectively. This would broaden the knowledge about specific insecurity content aspects.

Limitations and Future Research

The studies have some limitations that need to be addressed. First, we investigated career insecurity within a population of employed adults because they represent a large and important group within the labor market. However, our conceptualization and measurement cannot be generalized without caution to a non-working population (e.g., long-term unemployment) or to self-employed individuals or gig workers because they might, for example, interpret the items differently. In other words, not all dimensions might fit equally across different populations. Future research could focus on career insecurities of the latter

groups, for example, by testing if and how the MU-CI-S can be applied or adapted for these groups and how the levels of career insecurity differ between these groups.

Second, we derived our conceptualization and further empirical results from seven independent samples, including European and international scholar samples. As past research has shown that the meaning of career success might differ between Western and non-Western countries (Mayrhofer et al., 2016), the results of Studies 3 and 4 (i.e., samples from Germany and Switzerland) might therefore not be generalizable to other cultural contexts. Moreover, career systems and (tax-financed) pension coverage differ between countries, which might affect the meaning of career insecurity in this domain or its relationships with other variables. Hence, future research should investigate whether the developed scale and meaning of career insecurity remains invariant across different cultural contexts and countries.

Third, although we already included several empirical correlates and outcomes of career insecurity in Studies 2, 3, and 4, the nomological net of career insecurity has not been fully explored yet. Regarding outcomes of career insecurity, future research might investigate if, how, and when career insecurity leads to psychological and physical boundarylessness (Guan et al., 2019) or, in contrast, to career inaction (Verbruggen & De Vos, 2020). Stress theories and social–cognitive career theories may provide a useful theoretical background for investigating further outcomes. Although those theories provide a solid basis for the assumed direction of relationships, career insecurity and concepts like physical symptoms, burnout, and job performance might be reciprocally related. Similar thoughts/models have occasionally been tested in job insecurity research (De Witte et al., 2016; Sverke et al., 2019). This emphasizes the need for longitudinal studies.

Related to this, although most of the empirical evidence shows that insecurity is primarily a stressor and has clear and overwhelmingly negative consequences for individuals (De Witte et al., 2016; De Witte & Van Hootegem, in press; Sverke et al., 2019), career or

work preservation behaviors might motivate individuals to exert extra effort or to show

proactive behaviors to secure their careers (see Shoss, 2017 for such possibilities related to

job insecurity). Career insecurity and outcomes might also show nonlinear relationships. For

example, career insecurity could be negatively related with performance in the low to medium

range of career insecurity, but this negative relationship might flatten out in the medium to

higher range of career insecurity. Such relations have been shown within the job insecurity

literature (e.g., Selenko et al., 2013) and should be tested in more detail for career insecurity[6].

Finally, although we controlled for potential confounding variables (e.g., neuroticism to rule

out effects of anxious and fearful personal dispositions), future research could investigate

more specific third variable influences on the relationships investigated here. For example, a

rapid development in artificial intelligence might affect computer programmers' career

insecurity and their career satisfaction and commitment simultaneously.

Fourth, we focused upon outcomes of career insecurity because we wanted to

demonstrate the relevance of the construct for personal and work life as well as for career

development. Future studies may also focus on predictors of career insecurity (e.g.,

personality, career resources like adaptability, or contextual factors like supporting networks)

or develop more complex models that explain the effects on—or of—career insecurity while

accounting for moderators (e.g., opportunity structures or future temporal focus as a

personality trait). As another example, some of the constructs investigated here (e.g.,

perceived low employability and perceived career barriers) might also be seen as antecedents

of career insecurity. Hence, it might be that individuals who show proactive attitudes or

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[6] We tested curvilinear effects by adding a quadratic career insecurity term to all incremental validity analyses presented in this paper. The results showed two significant curvilinear relationships within 16 analyses. We found an effect of quadratic MU-CI-S on in-role behavior within sample #5. The negative correlation slows down with increasing MU-CI-S, which can be seen as a stabilization of performance with increasingly rising MU-CI-S. Moreover, we found an effect of quadratic MU-CI-S at T1 on physical symptoms at T2. Particularly in the case of high expressions of MU-CI-S, the physical symptoms increased further.

behaviors that enhance their employability or reduce their perceptions of barriers (Akkermans & Kubasch, 2017) might actively regulate their career insecurity perceptions.

Finally, although we investigated different relationships of the eight career insecurity dimensions with different outcomes, future research could investigate these differences in more detail. For instance, different boundary conditions might be relevant for different career insecurity dimensions (e.g., age could be a moderator for effects of the CI-Retirement dimension on outcomes, such as life satisfaction or retirement planning). Moreover, as mentioned in the practical implications section, the existence of typical dimensional constellations (e.g., latent profiles) and the antecedents and outcomes of such profiles would be of specific interest for future research.

Conclusion

Based on theoretical considerations of insecurity in work and career developmental theories, a comprehensive investigation of the construct of career insecurity was conducted. The article shows that career insecurity is an important construct that can be comprehensively assessed with the MU-CI-S. Career insecurity should be understood as a multidimensional construct encompassing eight specific career insecurity dimensions and showing unique relationships to different outcomes, which are highly important for employees and their future career development. MU-CI-S, the newly developed measure, provides an opportunity to overcome the limitations of past insecurity research in the workplace and highlights the need to focus more on specific short- to long-term career insecurity perceptions as an extension of insecurity research in the work and career domains.

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Table 1

Overview of Labels, Descriptions, and Examples (Interviews and Workshop) of the Eight Career Insecurity Dimensions (Study 1)

Label	Description	Examples from interviews	Examples from workshop
		Employees mentioned:	Clients were thinking about and worried that:
CI-Career opportunities	Thoughts and worries that future career opportunities (e.g., promotions, managerial responsibility, on-the-job training, personal development) might develop in an undesired manner.	I want to advance upward in my company, to a position I desire. These positions become fewer and fewer. And yes, there surely is insecurity as to if and when this next step can be done. It is unclear as to where and when I could develop further, learning new things, deal with new situations. Maybe taking over international projects.	They might not get enough promotion or advancement opportunities within their current or other employers. They might get involved in too many learning and developmental opportunities.
CI-Decreased prestige & qualification requirements of future employment	Thoughts and worries that the prestige (e.g., reputation of the held job) and qualification requirements (e.g., expected education or professional aspiration level) of the future employment situation might decrease in comparison to the current employment situation.	I have thoughts that my future employment will become boring or less challenging. It might be that the job I will pursue in the future might not be seen a prestigious by myself or other people.	Parts of the work might change (for example due to digitization), and therefore education level might decrease. Events or scandals might affect how the employment/occupation is described in terms of reputation in the future.
CI-Contractual employment conditions	Thoughts and worries that the basic conditions (e.g., salary, working hours, duration of employment contract, other contractual conditions) under which future work will be performed might develop in an undesired manner.	I might get jobs where I earn less. I have thoughts that working hours or holidays might change.	They might not get enough salary within their future. They might receive contracts with a non-satisfying duration.
CI-Unemployment	Thoughts and worries about the possibility of experiencing a dismissal or stages of unemployment at any point in one's future career.	I worry that after my contract has ended, I will not find another contract here or at another employer. I often think that I might not find any work in my future for what reasons ever.	They might be losing their jobs within their future career at some point in time. They might get fired by their current employer and don't find re-employment.

Note. CI = Career insecurity

Table 1 (continued)

Label	Description	Examples from interviews	Examples from workshop
		Employees mentioned:	Clients were thinking about and worried that:
CI-Change of workplace	Thoughts and worries about the possibility of undesired transitions to other work activities within (e.g., position change) or outside (e.g., employer change) the current organization, or transitions to fundamentally different fields of work (e.g., change of occupation).	I have thoughts that I have to conduct forced fundamental career changes, like changing to a completely different occupational field in the future. I have worries that I might have to change to another department, which is linked to a change of the job.	They do not know where (for example, in which city) they might work in the future. They fear if they have to work for another company or within another occupation in the future.
CI-Retirement	Thoughts and worries that conditions, which define the transition from work to retirement (e.g., pension payments, retirement age, other pension-related benefits) might develop in an undesired manner.	I have thoughts that my pension payments will be lower as expected now. I really feel insecure when or how I can go into retirement.	They receive not enough security from the state or other institutions and hence just do not know how their pension will look like. It is fully unsure when and under what conditions they can live after retirement.
CI-Work–nonwork interactions	Thoughts and worries that the work and other life domains (e.g., family, personal projects, free time) might affect each other in an undesired manner within the future.	Unforeseen things might happen, for example, family issues, that I might have to care for my mother in case of she is getting sick and this might force me to change my home residence that of course affects my work. Maybe something might occur unexpectedly, having children, building a new house, or something similar. Well, and then insecurities arise as to whether my career provides enough financial security for my personal or family needs.	They have a potential future divorce that would be very time consuming and distracting from work and whereby might provide a discrepancy between private and working life. Time spent in different life domains might conflict in the future. Expectations from family and/or employer are getting so high that they might not get combined in the future.
CI-Discrepancy between individual resources/work demands	Thoughts and worries that future individual resources (e.g., professional skills and abilities, physical or mental resources, personal capability) might not meet demands (e.g., performance requirements, from employer expected workload, managing, high-level quality) of the future work.	I have strong worries that I might become sick in the future and that I cannot do all things expected of me. Occupational requirements or expectations may become more difficult or high so that I cannot perform adequately anymore.	They might suffer from lowered personal capability. The possibility of changing demands in their field of work (e.g., globalization, restructuring) during their future career, which overburdens their skills.

Note. CI = Career insecurity.

Table 2

Career Insecurity Items and Related Statistics in Sample #4 (Study 2, EFA)

Item	Introduction sentence: Please indicate to what extent you agree to the following statements, if you think about your future career.	Factor Loading EFA	M	SD	r_{it}
CI-Career opportunities (.92)					
1	I am anxious that in my future career, no promotion possibilities could arise.	0.91	2.65	1.13	0.80
2	I am worried that the career opportunities in my occupational field could develop unfavorably.	0.86	2.65	1.11	0.83
3	I am worried that I might not get opportunities to take over occupational responsibilities in the future.	0.81	2.53	1.12	0.80
4	Chances are, my set career might not provide desired opportunities for further development.	0.85	2.77	1.17	0.81
CI-Decreased prestige & qualification requirements of future employment (.91)					
5	I fear that I might pursue a work with low prestige in the future.	0.90	2.27	1.13	0.79
6	I wonder if the future qualification requirements of my employment situation could be less.	0.79	2.36	1.06	0.80
7	I am anxious that the prestige of my future employment could decrease.	0.90	2.39	1.12	0.83
8	I am worried that the professional aspiration level of my work deteriorates.	0.74	2.47	1.16	0.79
CI-Contractual employment conditions (.92)					
9	I wonder if my salary could develop undesirably.	0.86	2.79	1.17	0.76
10	I am worried that the contractual framework of my future work could change unfavorably.	0.81	2.83	1.19	0.82
11	I fear that I might have to conduct my future work under worse conditions (e.g., working hours, salary).	0.81	2.76	1.17	0.83
12	I wonder if my future contractual working conditions might worsen.	0.72	2.83	1.14	0.81
CI-Unemployment (.96)					
13	I fear that I might be unemployed at some point in the future.	0.91	2.56	1.22	0.91
14	I am worried that I could be unemployed in my career.	0.91	2.58	1.24	0.90
15	I wonder if I could be unemployed in my future career.	0.92	2.61	1.24	0.90
16	I am worried that I might be affected by a dismissal during my career.	0.89	2.58	1.23	0.89
CI-Change of workplace (.92)					
17	I fear that I might have to involuntarily work for another employer in the future.	0.96	2.49	1.17	0.83
18	I am worried that I involuntarily have to change to an employment outside of my current organization	0.95	2.49	1.18	0.83
19	I am worried that the future could bring along an unwanted transition of my work.	0.80	2.68	1.19	0.81
20	I wonder if I might have to involuntarily change my occupation in my future career.	0.71	2.49	1.15	0.80
CI-Retirement (.91)					
21	I wonder if the level of pension payments could develop in an undesired manner.	0.88	3.76	1.11	0.82
22	I fear that the conditions for my retirement could worsen.	0.85	3.69	1.18	0.80
23	I wonder if my retirement age could increase undesirably.	0.87	3.74	1.20	0.78
24	Chances are, my transition from work to retirement might be more unfavorable than expected.	0.83	3.58	1.11	0.80
CI-Work–nonwork interactions (.92)					
25	I wonder if my family and my career could be incompatible in the future.	0.95	2.82	1.26	0.79
26	Chances are, the compatibility between work and private life could be problematic in the future.	0.93	2.90	1.16	0.86
27	I wonder if my free time and my work could conflict in the future.	0.85	2.84	1.16	0.79
28	I feel uneasy that my work and my private life could influence each other undesirably in the future.	0.82	2.82	1.14	0.79
CI-Discrepancy between individual resources/work demands (.93)					
29	Chances are, my physical or mental resources might once not be sufficient to manage work tasks well.	0.87	2.72	1.16	0.81
30	I am anxious that my personal work ability might deteriorating so much that I can no longer meet performance requirements.	0.89	2.47	1.11	0.85
31	I wonder if I might not any longer be up to the demands of my work in the future.	0.86	2.49	1.06	0.81
32	I am worried that the personal capability in my career might not be sufficient for the work requirements.	0.88	2.44	1.04	0.84

Note. r_{it} = corrected item-total correlations, Five-point Likert-type scale: (1) totally disagree, (2) rather disagree, (3) neither agree nor disagree, (4) rather agree, (5) totally agree. $N = 404$.

Table 3

Intercorrelations of Career Insecurity with Similar Constructs in Sample #4 and Sample #5 (Study 2)

Variable	Sample #4 M	Sample #4 SD	Sample #5 M	Sample #5 SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 CI-Career opportunities	2.65	1.01	2.74	1.01		.64***	.61***	.53***	.55***	.40***	.50***	.40***	.75***	.44***	.30***	.16***	.54***	.49***	.57***
2 CI-Decreased prestige & qualification requirements of future employment	2.37	0.99	2.34	0.95	.64***		.64***	.53***	.59***	.35***	.51***	.46***	.76***	.47***	.21***	.11***	.56***	.45***	.48***
3 CI-Contractual employment conditions	2.80	1.04	2.84	1.03	.60***	.62***		.64***	.68***	.51***	.59***	.53***	.85***	.55***	.36***	.20***	.53***	.55***	.60***
4 CI-Unemployment	2.58	1.17	2.59	1.14	.48***	.52***	.58***		.75***	.43***	.45***	.47***	.79***	.73***	.26***	.31***	.48***	.67***	.58***
5 CI-Change of workplace	2.54	1.05	2.61	1.04	.54***	.58***	.60***	.70***		.45***	.57***	.54***	.84***	.63***	.23***	.17***	.54***	.60***	.57***
6 CI-Retirement	3.69	1.02	3.53	1.00	.33***	.27***	.43***	.34***	.29***		.50***	.40***	.66***	.34***	.21***	.09**	.34***	.43***	.41***
7 CI-Work–nonwork interactions	2.85	1.05	2.78	1.09	.47***	.49***	.55***	.40***	.48***	.32***		.56***	.77***	.40***	.15***	.01	.58***	.43***	.50***
8 CI-Discrepancy between individual resources/work demands	2.53	0.99	2.76	1.03	.45***	.50***	.49***	.41***	.48***	.37***	.42***		.71***	.43***	.19***	.12***	.49***	.46***	.40***
9 MU-CI-S	2.75	0.77	2.77	0.79	.76***	.78***	.82***	.76***	.80***	.57***	.70***	.69***		.65***	.31***	.19***	.66***	.67***	.67***
10 Quantitative job insecurity	2.22	0.85	2.40	0.91	.39***	.47***	.52***	.64***	.54***	.21***	.36***	.34***	.59***		.34***	.35***	.48***	.63***	.57***
11 Qualitative job insecurity	2.77	0.83	2.89	0.79	.30***	.24***	.34***	.31***	.25***	.11*	.24***	.16**	.33***	.40***		.40***	.16***	.34***	.41***
12 Perceived employability (R)	3.66	1.41	3.65	1.39	.18***	.18***	.19***	.32***	.22***	.15**	.10*	.15**	.26***	.28***	.52***		.08*	.39***	.29***
13 Perceived career barriers	2.73	1.10	2.72	1.04	.60***	.64***	.56***	.52***	.56***	.27***	.55***	.52***	.71***	.48***	.27***	.20***		.50***	.55***
14 Career insecurity (Colakoglu)	2.77	1.07	2.67	1.03	.56***	.60***	.62***	.78***	.66***	.40***	.44***	.48***	.77***	.59***	.34***	.36***	.56***		.68***
15 Career insecurity (Höge et al.)	3.33	1.01	2.76	0.93	.59***	.53***	.58***	.60***	.53***	.37***	.51***	.42***	.70***	.55***	.43***	.22***	.56***	.66***	

Note. CI = Career insecurity. MU-CI-S = Multidimensional Career Insecurity Scale. Below diagonal = Sample #4 ($N = 404$), above diagonal = Sample #5 ($N = 1,091$).

*** $p < .001$. ** $p < .01$. * $p < .05$.

Table 4
Descriptive Statistics and Intercorrelations in Sample #5 (Study 3)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 MU-CI-S	2.77	0.79	.96													
2 Neuroticism	2.67	0.97	.49***	.85												
3 Quantitative job insecurity	2.40	0.91	.65***	.37***	.83											
4 Qualitative job insecurity	2.89	0.79	.31***	.29***	.34***	.81										
5 Career Insecurity (Colakoglu)	2.68	1.03	.67***	.49***	.63***	.34***	.91									
6 Career Insecurity (Höge et al.)	2.76	0.93	.67***	.55***	.57***	.41***	.68***	.77								
7 Physical symptoms	2.30	0.91	.46***	.56***	.30***	.14***	.38***	.38***	.80							
8 Burnout exhaustion	2.30	0.61	.48***	.56***	.31***	.31***	.36***	.43***	.55***	.87						
9 In-role behavior	4.19	0.62	-.29***	-.25***	-.26***	-.08*	-.22***	-.21***	-.21***	-.28***	.87					
10 Counterproductive work behavior	1.49	0.60	.28***	.23***	.21***	-.04	.21***	.18***	.27***	.20***	-.39***	.91				
11 Career satisfaction	3.33	0.88	-.41***	-.40***	-.30***	-.45***	-.37***	-.50***	-.24***	-.40***	.20***	-.05	.93			
12 Job satisfaction	3.56	1.06	-.42***	-.44***	-.32***	-.44***	-.33***	-.49***	-.37***	-.54***	.24***	-.16***	.54***	–		
13 Career commitment	4.95	1.19	-.40***	-.40***	-.35***	-.34***	-.38***	-.42***	-.29***	-.41***	.40***	-.27***	.50***	.56***	.80	
14 Career turnover intentions	2.60	1.46	.44***	.34***	.36***	.24***	.38***	.49***	.34***	.42***	-.28***	.27***	-.35***	-.51***	-.53***	.95

Note. MU-CI-S = Multidimensional Career Insecurity Scale. Values in diagonal are Cronbach's alphas based on standardized items. *N* = 1,091. *** *p* < .001. ** *p* < .01.
* *p* < .05.

Table 5

Descriptive Statistics, Intercorrelations, and Cronbach's Alphas Among Variables in Sample #6 (Study 3)

Variable	M	SD	1	2	3	4	5	6	7	8	9
1 MU-CI-S T1	2.48	0.72	.96								
2 Neuroticism T1	2.73	0.83	.40***	.73							
3 Quantitative job insecurity T1	1.95	0.84	.57***	.25***	.81						
4 Career insecurity (Colakoglu) T1	2.44	0.98	.72***	.35***	.61***	.88					
5 Career insecurity (Höge et al.) T1	3.09	1.11	.72***	.35***	.54***	.60***	.77				
6 Physical symptoms T2	1.90	0.73	.44***	.44***	.09	.30***	.33***	.70			
7 In-role behavior T2	4.45	0.46	-.28**	-.28**	-.09	-.17*	-.11	-.18	.80		
8 Career satisfaction T2	4.12	0.84	-.37***	-.24**	-.28**	-.33***	-.34***	-.22*	.07	-	
9 Career commitment T2	4.02	0.85	-.15†	-.13	.09	-.03	-.02	-.23*	.24**	.24**	.82

Note. MU-CI-S = Multidimensional Career Insecurity Scale. Values in diagonal are Cronbach's alphas. $N = 182$. † $p = .098$. *** $p < .001$.
** $p < .01$. * $p < .05$.

Table 6

Descriptive Statistics, Intercorrelations, and Cronbach's Alphas Among Variables in Sample #7 (Study 4)

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	CI-Career opportunities	2.33	0.98	.87													
2	CI-Decreased prestige & qualification requirements of future employment	2.00	0.86	.56***	.84												
3	CI-Contractual employment conditions	2.61	1.07	.59***	.61***	.92											
4	CI-Unemployment	2.23	1.01	.56***	.48***	.58***	.92										
5	CI-Change of workplace	2.27	0.97	.54***	.52***	.61***	.70***	.91									
6	CI-Retirement	3.68	0.90	.33***	.31***	.45***	.36***	.36***	.85								
7	CI-Work–nonwork interactions	2.60	1.01	.37***	.35***	.44***	.37***	.47***	.40***	.90							
8	CI-Discrepancy between individual resources/work demands	2.34	0.99	.36***	.39***	.43***	.46***	.53***	.32***	.46***	.91						
9	MU-CI-S	2.51	0.71	.74***	.72***	.81***	.78***	.81***	.60***	.67***	.68***	.95					
10	Physical symptoms	1.89	0.73	.18***	.18***	.20***	.20***	.22***	.20***	.24***	.32***	.30***	.68				
11	Counterproductive work behavior	1.46	0.41	.17***	.19***	.15***	.16***	.16***	.08**	.14***	.17***	.21***	.18***	.77			
12	Workplace status	4.12	1.39	-.23***	-.20***	-.20***	-.20***	-.15***	-.16***	-.17***	-.18***	-.26***	-.14***	-.05	.92		
13	Career satisfaction	3.89	0.84	-.38***	-.31***	-.24***	-.29***	-.26***	-.14***	-.25***	-.26***	-.37***	-.16***	-.16***	.40***	-	
14	Career turnover intentions	2.56	1.37	-.37***	.30***	.30***	.27***	.27***	.15***	.31***	.26***	.38***	.21***	.25***	-.24***	-.40***	.93

Note. CI = Career insecurity. MU-CI-S = Multidimensional Career Insecurity Scale. Values in diagonal are Cronbach's alphas. N = 1,441-1,443. *** $p < .001$. ** $p < .01$.

Table 7

Results from Relative Weights Analysis Sample #7 (Study 4)

Career Insecurity Dimension	Physical symptoms	Counterproductive work behavior	Workplace status	Career satisfaction	Career turnover intentions
CI-Career opportunities	5.09 [-0.001;0.014]	**14.34*** [0.002;0.017]	**23.88*** [0.008;0.033]	**34.84*** [0.044;0.086]	**31.19*** [0.039;0.081]
CI-Decreased prestige & qualification requirements of future employment	5.08 [-0.001;0.014]	**24.32*** [0.004;0.028]	**14.87*** [0.003;0.023]	**17.36*** [0.019;0.050]	**12.98*** [0.014;0.038]
CI-Contractual employment conditions	5.11 [-0.002;0.011]	6.66* [+0.000;0.008]	10.89* [0.001;0.017]	5.19* [0.006;0.015]	9.72* [0.010;0.029]
CI-Unemployment	5.99 [-0.001;0.014]	12.35* [0.001;0.015]	**13.81*** [0.003;0.022]	**12.89*** [0.013;0.038]	7.61* [0.007;0.024]
CI-Change of workplace	7.40* [0.001;0.017]	9.25* [0.001;0.012]	4.33 [-0.005;0.005]	6.10* [0.007;0.020]	6.61* [0.007;0.022]
CI-Retirement	**11.87*** [0.003;0.025]	1.47 [-0.004;0.002]	9.41* [+0.000;0.017]	1.65* [0.001;0.008]	1.68 [-0.000;0.007]
CI-Work–nonwork interactions	**15.44*** [0.007;0.032]	10.08* [0.001;0.013]	10.63* [0.001;0.019]	11.19* [0.010;0.035]	**19.77*** [0.022;0.056]
CI-Discrepancy between individual resources/work demands	**44.02*** [0.031;0.073]	**21.53*** [0.004;0.023]	12.18* [0.002;0.020]	10.78* [0.009;0.036]	10.43* [0.010;0.034]
R^2	0.12	0.05	0.08	0.18	0.18

Note. Values listed are rescaled relative weights. Bias-corrected and accelerated confidence intervals of the raw weights are shown in parentheses. Bold displayed values show the three largest values for every outcome. CI = Career insecurity. 95% bootstrapping confidence intervals in brackets for significance test. $N = 1,443$. * $p < .05$.

Data Availability Statement

The data that support the findings of this study are available from the corresponding

author upon reasonable request.

Online Supplements

Within this document, we show the further materials with the aim to provide a better overview of the multiple studies and samples described in the main document. Moreover, due to space limitations within the main document, we show the detailed results of several analyses that we have conducted to provide evidence of content, construct, and incremental validity of the new *Multidimensional Career Insecurity Scale*; MU-CI-S. Specifically, we present an overview of studies, purposes, study parts, and assigned samples (Table S1), an overview of collected samples, sample sizes, and sample origin (Table S2), items and standardized factor loadings of the CFAs including the 32 Items of the MU-CI-S (Table S3), overview of the measured variables (Table S4), Cronbach's Alphas of the applied measures (Table S5), CFA comparisons of different factor structures of the 32 Items of the MU-CI-S (Table S6), CFA comparisons for discriminant validity analyses (Table S7), and incremental validity of the MU-CI-S mean score beyond neuroticism and other insecurity measures (Table S8). In sum, these results (see Table S1 to S8) provide support for the content, construct, and incremental validity of the new scale.

Table S1

Overview of Studies, Purposes, Study Parts, and Assigned Samples

Study description	Samples used
Study 1 – Conceptualizing and understanding career insecurity	
Purpose: Clarify the theoretical nature and conceptualization of career insecurity via deductive and inductive approaches.	
Part 1 – Conceptual clarification and similar constructs	-
Part 2 – Identification of career insecurity dimensions	#1 and #2
Study 2 – Measurement of career insecurity	
Purpose: Development and initial validation of a psychometrically sound new Multidimensional Career Insecurity Scale (MU-CI-S; based on the conceptualization from Study 1).	
Part 1 – Item development and selection	#3 and #4
Part 2 – Confirmation of factor structure and factor structure model comparison	#5, #6, and #7
Part 3 – Construct Validity: Discriminant and convergent validity	#4 and #5

Table S1 (continued)

Study description	Samples used
Study 3 – Criterion validity: Relationships with central outcomes and incremental validity	
Purpose: Demonstrating incremental predictive power of the new career insecurity measure beyond other insecurity constructs/measures and neuroticism.	
Theoretical assumptions: Career insecurity and health and well-being, job performance, career success, and career attitudes	-
Hypotheses testing: Cross-sectional and time-lagged relationships with outcomes (concurrent and predictive validity)	#5 and #6 #5 and #6
Hypotheses testing: Cross-sectional and time-lagged incremental validity tests (incremental validity)	
Study 4 – Relative predictive importance of different career insecurity dimensions	
Purpose: Showing the relative and different importance of the eight career insecurity dimensions for different correlates through relative weights analysis.	#7

Table S2

Overview of Collected Samples, Sample Sizes, and Sample Origin

Sample description	Sample size	Sample origin
Sample #1 – Face to face interviews with employees and workshop with career counselors	30	Germany and Switzerland
Sample #2 – Online survey 1 with international scholarly experts from the fields of management and applied psychology	10	Belgium, Germany, Switzerland, The Netherlands, USA
Sample #3 – Online survey 2 with psychologists	16	Germany and Switzerland
Sample #4 – Online survey 3 with a heterogeneous sample of employees	404	Germany
Sample #5 – Online survey 4 with a heterogeneous sample of employees	1,091	Germany
Sample #6 – Online survey 5 with a heterogeneous sample of employees (time-lagged)	182	Switzerland
Sample #7 – Online survey 6 with a heterogeneous sample of employees	1,443	Switzerland

Table S3

Items and Standardized Factor Loadings of the CFAs including the 32 Items of the MU-CI-S

Item	Please indicate to what extent you agree to the following statements, if you think about your future career.	Factor Loading of CFAs		
		Sample #5	Sample #6	Sample #7
CI-Career opportunities				
1	I am anxious that in my future career, no promotion possibilities could arise.	0.84	0.81	0.80
2	I am worried that the career opportunities in my occupational field could develop unfavorably.	0.82	0.84	0.80
3	I am worried that I might not get opportunities to take over occupational responsibilities in the future.	0.82	0.73	0.81
4	Chances are, my set career might not provide desired opportunities for further development.	0.73	0.68	0.75
CI-Decreased prestige & qualification requirements of the future employment				
5	I fear that I might pursue a work with low prestige in the future.	0.81	0.80	0.76
6	I wonder if the future qualification requirements of my employment situation could be less.	0.81	0.82	0.73
7	I am anxious that the prestige of my future employment could decrease.	0.76	0.77	0.72
8	I am worried that the professional aspiration level of my work deteriorates.	0.85	0.89	0.78
CI-Contractual employment conditions				
9	I wonder if my salary could develop undesirably.	0.79	0.91	0.80
10	I am worried that the contractual framework of my future work could change unfavorably.	0.85	0.90	0.89
11	I fear that I might have to conduct my future work under worse conditions (e.g., working hours, salary).	0.83	0.84	0.82
12	I wonder if my future contractual working conditions might worsen.	0.87	0.92	0.91

Note. Standardized factor loadings of the CFA models with eight intercorrelated first order factors (i.e., Model 1 Table S6). Sample #5: Germany, $N = 1,091$; Sample #6: Switzerland, T1, $N = 182$; Sample #7: Switzerland, $N = 1,443$. Model fit: Sample #5: χ^2 [436] = 1784.21; CFI = .96, TLI = .95, SRMR = .04, RMSEA = .05, Sample #6 (T1): χ^2 [436] = 691.59; CFI = .95, TLI = .94, SRMR = .07, RMSEA = .06, Sample #7: χ^2 [436] = 1975.27; CFI = .94, TLI = .95, SRMR = .05, RMSEA = .05.

Table S3 (continued)

Item	Please indicate to what extent you agree to the following statements, if you think about your future career.	Factor Loading of CFAs		
		Sample #5	Sample #6	Sample #7
CI-Unemployment				
13	I fear that I might be unemployed at some point in the future.	0.94	0.96	0.90
14	I am worried that I could be unemployed in my career.	0.92	0.90	0.90
15	I wonder if I could be unemployed in my future career.	0.94	0.92	0.89
16	I am worried that I might be affected by a dismissal during my career	0.90	0.77	0.79
CI-Change of workplace				
17	I fear that I might have to involuntarily work for another employer in the future.	0.88	0.95	0.87
18	I am worried that I involuntarily have to change to an employment outside of my current organization.	0.87	0.94	0.88
19	I am worried that the future could bring along an unwanted transition of my work.	0.80	0.72	0.80
20	I wonder if I might have to involuntarily change my occupation in my future career.	0.87	0.82	0.82
CI-Retirement				
21	I wonder if the level of pension payments could develop in an undesired manner.	0.86	0.94	0.84
22	I fear that the conditions for my retirement could worsen.	0.87	0.94	0.90
23	I wonder if my retirement age could increase undesirably.	0.75	0.71	0.67
24	Chances are, my transition from work to retirement might be more unfavorable than expected.	0.74	0.60	0.68

Note. Standardized factor loadings of the CFA models with eight intercorrelated first order factors (i.e., Model 1 Table S6). Sample #5: Germany, $N = 1,091$; Sample #6: Switzerland, T1, $N = 182$; Sample #7: Switzerland, $N = 1,443$. Model fit: Sample #5: χ^2 [436] = 1784.21; CFI = .96, TLI = .95, SRMR = .04, RMSEA = .05, Sample #6 (T1): χ^2 [436] = 691.59; CFI = .95, TLI = .94, SRMR = .07, RMSEA = .06, Sample #7: χ^2 [436] = 1975.27; CFI = .94, TLI = .95, SRMR = .05, RMSEA = .05.

Table S3 (continued)

Item	Please indicate to what extent you agree to the following statements, if you think about your future career.	Factor Loading of CFAs		
		Sample #5	Sample #6	Sample #7
CI-Work-nonwork interactions				
25	I wonder if my family and my career could be incompatible in the future.	0.86	0.80	0.72
26	Chances are, the compatibility between work and private life could be problematic in the future.	0.93	0.93	0.92
27	I wonder if my free time and my work could conflict in the future.	0.89	0.90	0.82
28	I feel uneasy that my work and my private life could influence each other undesirably in the future.	0.87	0.89	0.86
CI-Discrepancy between individual resources/work demands				
29	Chances are, my physical or mental resources might once not be sufficient to manage work tasks well.	0.84	0.88	0.82
30	I am anxious that my personal work ability might deteriorating so much that I can no longer meet performance requirements.	0.92	0.89	0.90
31	I wonder if I might not any longer be up to the demands of my work in the future.	0.91	0.89	0.89
32	I am worried that the personal capability in my career might not be sufficient for the work requirements.	0.81	0.82	0.80

Note. Standardized factor loadings of the CFA models with eight intercorrelated first order factors (i.e., Model 1 Table S6). Sample #5: Germany, $N = 1{,}091$; Sample #6: Switzerland, T1, $N = 182$; Sample #7: Switzerland, $N = 1{,}443$. Model fit: Sample #5: χ^2 [436] = 1784.21; CFI = .96, TLI = .95, SRMR = .04, RMSEA = .05, Sample #6 (T1): χ^2 [436] = 691.59; CFI = .95, TLI = .94, SRMR = .07, RMSEA = .06, Sample #7: χ^2 [436] = 1975.27; CFI = .94, TLI = .95, SRMR = .05, RMSEA = .05.

Table S4

Overview of the Measured Variables from Samples #4 to #7 across Different Parts of the Manuscript (Tests of Factorial Structure, Construct Validity [Convergent and Discriminant Validity], Criterion Validity, and Incremental Validity)

		Sample Study / Part Data Analysis	#4 2/1 EFA	#4 2/3 DV & CV	#5 2/2 CFA	#5 2/3 DV & CV	#5 Study 3 CCV/IV	#6 2/2 CFA	#6 Study 3 PV/IV	#7 2/2 CFA	#7 Study 4 RWA
Construct	Scale	Number of Items									
Multidimensional Career Insecurity	All newly developed multidimensional CI items	63	X								
Multidimensional Career Insecurity	Multidimensional career insecurity scale (i.e., MU-CI-S)	32		X	X	X	X	X	X	X	X
Neuroticism	Rammstedt & John (2005)	4					X		X		
Quantitative Job Insecurity	De Witte (2000)	4		X		X	X		X		
Qualitative Job Insecurity	Hellgren et al. (1999)	4		X		X	X				
Perceived Low Employability	De Cuyper et al. (2011)	4		X		X					
Perceived Career Barriers	Hirschi and Freund (2014)	6		X		X					
One-dimensional Career Insecurity	Colakoglu (2011)	5		X		X	X		X		
One-dimensional Career Insecurity	Höge et al. (2012)	4		X		X	X		X		

Note. CI = Career insecurity. EFA = Exploratory factor analysis. DV = Discriminant validity. CV = Convergent validity. CFA = Confirmatory factor analysis. CCV = Concurrent validity. PV = Predictive validity. IV = Incremental validity. RWA = Relative weight analysis. The complete literature references can be found on the following page in the section literature measures.

Table S4 (continued)

Construct	Scale	Sample Study / Part Data Analysis — Number of Items	#4 2 / 1 EFA	#4 2 / 3 DV & CV	#5 2 / 2 CFA	#5 2 / 3 DV & CV	#5 Study 3 CCV/IV	#6 2 / 2 CFA	#6 Study 3 PV/IV	#7 2 / 2 CFA	#7 Study 4 RWA
Physical Symptoms	Pennebaker (1982)	5					X		X		X
Burnout Exhaustion	OBI (Demerouti et al., 2003)	8					X				
In-role Behavior	Williams and Anderson (1991)	7					X		X		
Counterproductive Work Behavior	Spector, Bauer, and Fox (2010)	10					X				X
Workplace status	Djurdjevic et al. (2017)	5									X
Career Satisfaction	1. Greenhaus, Parasuraman, and Wormley (1990)						X				
	2. Following Heslin (2003)								X		X
Job Satisfaction	Following Wanous et al. (1997)	5					X				
Career Commiment	1. Meyer, Allen & Smith (1993)	1					X				
	2. Felfe, Schmook, and Six (2006)	5							X		
Career Turnover Intentions	Barthauer, Kaucher, Spurk, & Kauffeld (2020)	3					X				X

Note. OBI = Oldenburg Burnout Inventory. EFA = Exploratory factor analysis. DV = Discriminant validity. CV = Convergent validity. CFA = Confirmatory factor analysis. CCV = Concurrent validity. PV = Predictive validity. IV = Incremental validity. RWA = Relative weight analysis. The complete literature references can be found on the following page in the section literature measures.

References Table S4

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Table S5

Cronbach's Alphas from Samples #4 to #7 across Different Parts of the Manuscript

Variable Sample	#4	#5	#6	#7
Career insecurity-Career opportunities	.92	.88	.85	.87
Career insecurity-Decreased prestige & qualification requirements of the future employment	.91	.88	.89	.84
Career insecurity-Contractual employment conditions	.92	.90	.94	.92
Career insecurity-Unemployment	.96	.96	.94	.92
Career insecurity-Change of workplace	.92	.91	.92	.91
Career insecurity-Retirement	.91	.88	.87	.85
Career insecurity-Work-nonwork interactions	.92	.94	.93	.90
Career insecurity-Discrepancy between individual resources/work demands	93	.93	.93	.91
Multidimensional Career Insecurity Scale (MU-CI-S)	.96	.96	.96	.95
Quantitative job insecurity	.79	.83	.81	NA
Qualitative job insecurity	.82	.81	NA	NA
Perceived low employability	.91	.91	NA	NA
Perceived career barriers	.89	.85	NA	NA
One-dimensional career insecurity (Colakoglu)	.92	.91	.88	NA
One-dimensional career insecurity (Höge et al.)	.73	.77	.77	NA
Neuroticism	NA	.85	.73	NA
Physical symptoms	NA	.80	.70	.68
Burnout exhaustion	NA	.87	NA	NA
In-role behavior	NA	.87	.80	NA
Counterproductive work behavior	NA	.91	NA	.77
Workplace status	NA	NA	NA	.92
Career satisfaction	NA	.93	–	–
Job satisfaction	NA	–	NA	NA
Career commitment	NA	.80	.82	NA
Career turnover intentions	NA	.95	NA	.93

Note. Cronbach's alphas are based on original *N* and on standardized items. MU-CI-S Cronbach's alpha is based on 32 items. Single item measures are indicated by –. NA = not available i.e., not measured.

Table S6

CFA Comparisons of Different Factor Structures of the 32 Items of the MU-CI-S within Sample #5, Sample #6, and Sample #7

Model	Model fit indices						Model comparisons			
	χ^2	*df*	*p*	CFI	RMSEA	SRMR	Basis	$\Delta\chi^2$	Δdf	*p*
Sample #5 (N = 1,091)										
Model 1	1784.21	436	< .001	0.96	0.05	0.04	Model 2	371.66	20	< .001
							Model 3	11458.27	28	< .001
Model 2	2155.87	456	< .001	0.95	0.06	0.06				
							Model 3	11086.60	8	< .001
Model 3	13242.48	464	< .001	0.58	0.16	0.10	–	–	–	–
Sample #6 (T1, N = 182)										
Model 1	691.59	436	< .001	0.95	0.06	0.07	Model 2	54.46	20	< .001
							Model 3	2317.23	28	< .001
Model 2	746.05	456	< .001	0.94	0.06	0.08				
							Model 3	2262.77	8	< .001
Model 3	3008.82	464	< .001	0.50	0.17	0.11	–	–	–	–
Sample #7 (N = 1,443)										
Model 1	1975.27	436	< .001	0.96	0.05	0.05	Model 2	356.84	20	< .001
							Model 3	13335.95	28	< .001
Model 2	2332.11	456	< .001	0.95	0.05	0.06				
							Model 3	12979.11	8	< .001
Model 3	15311.22	464	< .001	0.56	0.15	0.10	–	–	–	–

Note. Model 1 = eight intercorrelated first order factors. Model 2 = eight first order factors loading on one second order general career insecurity factor. Model 2 Composite Reliabilities: .92 (Sample #5), .86 (Sample #6), .89 (Sample #7). Model 3 = general factor model, all items load on one factor.

Table S7.1

Results of CFA Model Comparisons between Dimensions of the MU-CI-S and Qualitative Job Insecurity

	Comparison of one- vs. two-factor models												$\Delta\chi^2$-Difference
	One-factor model						Two-factor model						
Measurement models	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	
CI-Career opportunities and qualitative job insecurity													
Sample #4	525.47	20	< .001	0.71	0.25	0.17	25.92	19	.132	1.00	0.03	0.03	499.55
Sample #5	1322.95	20	< .001	0.66	0.24	0.16	84.43	19	< .001	0.98	0.06	0.03	1238.53
CI-Decreased prestige & qualification requirements of the future employment and qualitative job insecurity													
Sample #4	557.17	20	< .001	0.69	0.26	0.18	40.03	19	.003	0.99	0.05	0.05	517.14
Sample #5	1405.74	20	< .001	0.64	0.25	0.17	90.46	19	< .001	0.98	0.06	0.03	1315.29
CI-Contractual employment conditions and qualitative job insecurity													
Sample #4	537.22	20	< .001	0.71	0.25	0.16	57.51	19	< .001	0.98	0.07	0.03	479.71
Sample #5	1410.99	20	< .001	0.69	0.25	0.15	258.25	19	< .001	0.95	0.11	0.04	1152.73
CI-Unemployment and qualitative job insecurity													
Sample #4	532.56	20	< .001	0.79	0.25	0.17	26.56	19	.115	1.00	0.03	0.03	506.00
Sample #5	1363.81	20	< .001	0.79	0.25	0.17	83.31	19	< .001	0.99	0.06	0.05	1280.50
CI-Change of workplace and qualitative job insecurity													
Sample #4	570.97	20	< .001	0.70	0.26	0.18	47.73	19	< .001	0.98	0.06	0.03	523.24
Sample #5	1459.05	20	< .001	0.69	0.26	0.18	154.19	19	< .001	0.97	0.08	0.05	1304.86
CI-Retirement and qualitative job insecurity													
Sample #4	598.31	20	< .001	0.66	0.27	0.20	32.88	19	.025	0.99	0.04	0.04	565.44
Sample #5	1422.73	20	< .001	0.64	0.25	0.18	97.03	19	< .001	0.98	0.06	0.04	1325.70
CI-Work-nonwork interactions and qualitative job insecurity													
Sample #4	560.06	20	< .001	0.69	0.26	0.18	28.71	19	.071	0.99	0.04	0.02	531.35
Sample #5	1466.60	20	< .001	0.73	0.26	0.18	79.52	19	< .001	0.99	0.05	0.02	1387.09
CI-Discrepancy between individual resources/work demands and qualitative job insecurity													
Sample #4	600.90	20	< .001	0.69	0.27	0.19	53.61	19	< .001	0.98	0.07	0.05	547.29
Sample #5	1435.68	20	< .001	0.72	0.26	0.18	79.79	19	< .001	0.99	0.05	0.03	1355.89

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI Retirement) and all items of one of the similar constructs (e.g., qualitative job insecurity), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and job insecurity modeled as two separate, but intercorrelated first-order factors).

Table S7.2

Results of CFA Model Comparisons Between Dimensions of MU-CI-S and Quantitative Job Insecurity

	Comparison of one- vs. two-factor models												$\Delta\chi^2$ Difference
	One-factor model						Two-factor model						
Measurement models	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	
CI-Career opportunities and quantitative job insecurity													
Sample #4	581.87	20	< .001	0.71	0.26	0.15	29.86	19	.054	0.99	0.04	0.05	552.01
Sample #5	1608.74	20	< .001	0.66	0.27	0.13	98.62	19	< .001	0.98	0.06	0.04	1510.12
CI-Decreased prestige & qualification requirements of the future employment and quantitative job insecurity													
Sample #4	528.56	20	< .001	0.73	0.25	0.12	34.57	19	.016	0.99	0.05	0.04	494.00
Sample #5	1545.02	20	< .001	0.68	0.26	0.12	148.66	19	< .001	0.97	0.08	0.04	1396.36
CI-Contractual employment conditions and quantitative job insecurity													
Sample #4	546.29	20	< .001	0.74	0.26	0.12	105.03	19	< .001	0.96	0.11	0.07	441.26
Sample #5	1525.56	20	< .001	0.72	0.26	0.11	278.68	19	< .001	0.95	0.11	0.04	1246.88
CI-Unemployment and quantitative job insecurity													
Sample #4	410.23	20	< .001	0.86	0.22	0.09	41.42	19	.002	0.99	0.05	0.05	368.81
Sample #5	848.74	20	< .001	0.89	0.20	0.07	71.19	19	< .001	0.99	0.05	0.03	777.55
CI-Change of workplace and quantitative job insecurity													
Sample #4	483.10	20	< .001	0.77	0.24	0.11	47.52	19	< .001	0.99	0.06	0.03	435.58
Sample #5	1137.83	20	< .001	0.81	0.23	0.09	146.92	19	< .001	0.98	0.08	0.04	990.91
CI-Retirement and quantitative job insecurity													
Sample #4	673.03	20	< .001	0.64	0.28	0.18	39.96	19	.003	0.99	0.05	0.06	633.08
Sample #5	1904.60	20	< .001	0.59	0.29	0.17	126.24	19	< .001	0.98	0.07	0.05	1778.35
CI-Work-nonwork interactions and quantitative job insecurity													
Sample #4	618.37	20	< .001	0.69	0.27	0.16	45.71	19	.001	0.99	0.06	0.06	572.66
Sample #5	1811.48	20	< .001	0.71	0.29	0.17	139.89	19	< .001	0.98	0.08	0.05	1671.58
CI-Discrepancy between individual resources/work demands and quantitative job insecurity													
Sample #4	614.04	20	< .001	0.70	0.27	0.16	28.70	19	.071	1.00	0.04	0.04	585.34
Sample #5	1691.61	20	< .001	0.71	0.28	0.15	84.03	19	< .001	0.99	0.06	0.04	1607.58

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., quantitative job insecurity), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and job insecurity modeled as two separate, but intercorrelated first-order factors).

Table S7.3

Results of CFA Model Comparisons Between Dimensions of MU-CI-S and Perceived Low Employability

Measurement models	One-factor model						Two-factor model						Difference
	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	$\Delta\chi^2$
CI-Career opportunities and perceived low employability													
Sample #4	1062.27	20	< .001	0.53	0.36	0.25	29.38	19	.060	1.00	0.04	0.02	1032.88
Sample #5	2831.74	20	< .001	0.45	0.36	0.25	87.05	19	< .001	0.99	0.06	0.03	2744.69
CI-Decreased prestige & qualification requirements of the future employment and perceived low employability													
Sample #4	1069.66	20	< .001	0.52	0.36	0.25	35.69	19	.012	0.99	0.05	0.03	1033.97
Sample #5	2884.02	20	< .001	0.45	0.36	0.26	110.19	19	< .001	0.98	0.07	0.03	2773.83
CI-Contractual employment conditions and perceived low employability													
Sample #4	1093.74	20	< .001	0.53	0.37	0.25	63.11	19	< .001	0.98	0.08	0.03	1030.62
Sample #5	2943.50	20	< .001	0.50	0.37	0.24	246.71	19	< .001	0.96	0.11	0.03	2696.79
CI-Unemployment and perceived low employability													
Sample #4	1006.24	20	< .001	0.67	0.35	0.23	43.38	19	.001	0.99	0.06	0.03	962.86
Sample #5	2623.40	20	< .001	0.67	0.35	0.23	55.47	19	< .001	1.00	0.04	0.02	2567.92
CI-Change of workplace and perceived low employability													
Sample #4	1067.19	20	< .001	0.55	0.36	0.24	49.59	19	< .001	0.99	0.06	0.03	1017.60
Sample #5	2841.40	20	< .001	0.53	0.36	0.25	100.43	19	< .001	0.99	0.06	0.02	2740.97
CI-Retirement and perceived low employability													
Sample #4	1090.03	20	< .001	0.51	0.36	0.25	46.13	19	.001	0.99	0.06	0.03	1043.89
Sample #5	2885.22	20	< .001	0.45	0.36	0.26	79.85	19	< .001	0.99	0.05	0.03	2805.37
CI-Work-nonwork interactions and perceived low employability													
Sample #4	1098.46	20	< .001	0.52	0.37	0.26	40.77	19	.003	0.99	0.05	0.03	1057.69
Sample #5	2929.78	20	< .001	0.57	0.37	0.26	103.99	19	< .001	0.99	0.06	0.02	2825.79
CI-Discrepancy between individual resources/work demands and perceived low employability													
Sample #4	1075.12	20	< .001	0.55	0.36	0.25	27.84	19	.087	1.00	0.03	0.02	1047.28
Sample #5	2849.95	20	< .001	0.56	0.36	0.26	62.86	19	< .001	0.99	0.05	0.01	2787.09

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., perceived low employability), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and perceived low employability modeled as two separate, but intercorrelated first-order factors).

Table S7.4

Results of CFA Model Comparisons Between Dimensions of MU-CI-S and Perceived Career Barriers

Measurement models	One-factor model						Two-factor model						Difference
	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	$\Delta\chi^2$
CI-Career opportunities and perceived career barriers													
Sample #4	638.60	35	< .001	0.77	0.21	0.10	128.36	34	< .001	0.96	0.08	0.03	510.23
Sample #5	1483.58	35	< .001	0.73	0.20	0.10	376.17	34	< .001	0.94	0.10	0.05	1107.40
CI-Decreased prestige & qualification requirements of the future employment and perceived career barriers													
Sample #4	520.28	35	< .001	0.81	0.19	0.08	118.31	34	< .001	0.97	0.08	0.03	401.97
Sample #5	1355.04	35	< .001	0.76	0.19	0.09	278.52	34	< .001	0.96	0.08	0.04	1076.52
CI-Contractual employment conditions and perceived career barriers													
Sample #4	759.75	35	< .001	0.72	0.23	0.11	159.56	34	< .001	0.95	0.10	0.04	600.19
Sample #5	1845.78	35	< .001	0.70	0.22	0.12	505.06	34	< .001	0.92	0.11	0.06	1340.72
CI-Unemployment and perceived career barriers													
Sample #4	888.55	35	< .001	0.74	0.25	0.17	127.16	34	< .001	0.97	0.08	0.04	761.39
Sample #5	2036.50	35	< .001	0.75	0.23	0.17	325.55	34	< .001	0.96	0.09	0.06	1710.95
CI-Change of workplace and perceived career barriers													
Sample #4	750.12	35	< .001	0.73	0.23	0.12	136.01	34	< .001	0.96	0.09	0.04	614.11
Sample #5	1680.27	35	< .001	0.74	0.21	0.12	320.65	34	< .001	0.95	0.09	0.05	1359.62
CI-Retirement and perceived career barriers													
Sample #4	1171.97	35	< .001	0.52	0.28	0.23	124.33	34	< .001	0.96	0.08	0.04	1047.64
Sample #5	2390.29	35	< .001	0.55	0.25	0.18	368.82	34	< .001	0.94	0.10	0.06	2021.47
CI-Work-nonwork interactions and perceived career barriers													
Sample #4	771.87	35	< .001	0.71	0.23	0.12	136.02	34	< .001	0.96	0.09	0.04	635.85
Sample #5	1594.45	35	< .001	0.78	0.20	0.12	285.53	34	< .001	0.96	0.08	0.03	1308.92
CI-Discrepancy between individual resources/work demands and perceived career barriers													
Sample #4	825.43	35	< .001	0.70	0.24	0.14	122.93	34	< .001	0.97	0.08	0.03	702.50
Sample #5	1933.16	35	< .001	0.71	0.22	0.15	254.84	34	< .001	0.97	0.08	0.04	1678.33

Above the table header is the spanning label: Comparison of one- vs. two-factor models

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., perceived career barriers), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and perceived career barriers modeled as two separate, but intercorrelated first-order factors).

Table S7.5

Results of CFA Model Comparisons Between Dimensions of MU-CI-S and One-Dimensional Career Insecurity (Colakoglu, 2011)

	Comparison of one- vs. two-factor models												Difference
	One-factor model						Two-factor model						
Measurement models	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	$\Delta\chi^2$
CI-Career opportunities and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	824.02	27	< .001	0.71	0.27	0.12	126.84	26	< .001	0.96	0.10	0.03	697.18
Sample #5	1821.28	27	< .001	0.71	0.25	0.13	330.77	26	< .001	0.95	0.10	0.03	1490.51
CI-Decreased prestige & qualification requirements of the future employment and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	752.11	27	< .001	0.74	0.26	0.11	161.86	26	< .001	0.95	0.11	0.04	590.25
Sample #5	1995.19	27	< .001	0.68	0.26	0.14	349.19	26	< .001	0.95	0.11	0.04	1646.00
CI-Contractual employment conditions and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	752.32	27	< .001	0.74	0.26	0.10	180.50	26	< .001	0.95	0.12	0.04	571.82
Sample #5	2118.02	27	< .001	0.70	0.27	0.12	480.46	26	< .001	0.93	0.13	0.04	1637.57
CI-Unemployment and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	507.34	27	< .001	0.87	0.21	0.07	157.48	26	< .001	0.96	0.11	0.03	349.86
Sample #5	1854.15	27	< .001	0.80	0.25	0.12	371.85	26	< .001	0.96	0.11	0.04	1482.30
CI-Change of workplace and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	662.20	27	< .001	0.78	0.24	0.09	160.41	26	< .001	0.95	0.11	0.03	501.79
Sample #5	1937.65	27	< .001	0.74	0.26	0.10	386.26	26	< .001	0.95	0.11	0.04	1551.40
CI-Retirement and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	1018.01	27	< .001	0.62	0.30	0.18	134.43	26	< .001	0.96	0.10	0.04	883.58
Sample #5	2093.77	27	< .001	0.67	0.27	0.15	355.55	26	< .001	0.95	0.11	0.04	1738.22
CI-Work-nonwork interactions and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	1042.22	27	< .001	0.63	0.31	0.16	162.94	26	< .001	0.95	0.11	0.04	879.28
Sample #5	2897.35	27	< .001	0.63	0.31	0.20	296.92	26	< .001	0.97	0.10	0.03	2600.42
CI-Discrepancy between individual resources/work demands and one-dimensional career insecurity (Colakoglu, 2011)													
Sample #4	1089.11	27	< .001	0.62	0.31	0.17	140.10	26	< .001	0.96	0.10	0.03	949.01
Sample #5	2782.99	27	< .001	0.63	0.31	0.19	318.39	26	< .001	0.96	0.10	0.03	2464.61

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., career insecurity [Colakoglu]), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and career insecurity [Colakoglu] modeled as two separate, but intercorrelated first-order factors).

Table S7.6

Results of CFA Model Comparisons Between Dimensions of MU-CI-S and One-Dimensional Career Insecurity (Höge et al., 2012)

Measurement models	Comparison of one- vs. two-factor models												Difference
	One-factor model						Two-factor model						
	χ^2	df	p	CFI	RMSEA	SRMR	χ^2	df	p	CFI	RMSEA	SRMR	$\Delta\chi^2$
CI-Career opportunities and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	298.64	20	< .001	0.86	0.19	0.08	44.68	19	.001	0.99	0.06	0.03	253.96
Sample #5	704.79	20	< .001	0.83	0.18	0.08	106.05	19	< .001	0.98	0.07	0.03	598.74
CI-Decreased prestige & qualification requirements of the future employment and one-dimensional career insecurity (Höge et al.)													
Sample #4	378.40	20	< .001	0.80	0.21	0.10	41.88	19	.002	0.99	0.06	0.03	336.52
Sample #5	921.91	20	< .001	0.77	0.20	0.11	114.71	19	< .001	0.98	0.07	0.03	807.20
CI-Contractual employment conditions one-dimensional career insecurity (Höge et al., 2012.)													
Sample #4	378.46	20	< .001	0.81	0.21	0.09	79.65	19	< .001	0.97	0.09	0.03	298.81
Sample #5	907.12	20	< .001	0.81	0.20	0.08	319.04	19	< .001	0.94	0.12	0.05	588.07
CI-Unemployment and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	376.33	20	< .001	0.86	0.21	0.10	49.85	19	< .001	0.99	0.06	0.05	326.47
Sample #5	842.32	20	< .001	0.88	0.19	0.10	173.98	19	< .001	0.98	0.09	0.06	668.33
CI-Change of workplace and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	414.87	20	< .001	0.79	0.22	0.11	54.82	19	< .001	0.98	0.07	0.04	360.05
Sample #5	840.96	20	< .001	0.83	0.19	0.10	166.28	19	< .001	0.97	0.08	0.05	674.67
CI-Retirement and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	491.76	20	< .001	0.73	0.24	0.14	48.08	19	< .001	0.98	0.06	0.03	443.68
Sample #5	1080.14	20	< .001	0.73	0.22	0.13	100.35	19	< .001	0.98	0.06	0.04	979.78
CI-Work-nonwork interactions and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	390.35	20	< .001	0.80	0.21	0.10	29.03	19	.066	1.00	0.04	0.02	361.33
Sample #5	935.60	20	< .001	0.84	0.21	0.11	89.23	19	< .001	0.99	0.06	0.02	846.38
CI-Discrepancy between individual resources/work demands and one-dimensional career insecurity (Höge et al., 2012)													
Sample #4	466.86	20	< .001	0.77	0.24	0.13	45.14	19	.001	0.99	0.06	0.03	421.72
Sample #5	1123.78	20	< .001	0.78	0.23	0.14	102.31	19	< .001	0.98	0.06	0.04	1021.47

Note. All χ^2 difference tests have one degree of freedom and $p < .001$. All two-factor models fit comparably better than the corresponding one-factor model. Within Model A (= the one-factor model), four items of the specific career insecurity dimension of the MU-CI-S (e.g., CI-Retirement) and all items of one of the similar constructs (e.g., career insecurity [Höge et al.]), were modeled as one first-order latent factor. Model B was a two-factor measurement model (e.g., CI-Retirement and career insecurity [Höge et al.] modeled as two separate, but intercorrelated first-order factors).

Table S8.1

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Physical Symptoms

Sample	Sample #5 ($N = 1,091$)							Sample #6 ($N = 182$)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_β$)	p	R^2	ΔR^2	ΔF	p
Step 1				.310	.310	488.189	.000			.194	.194	43.33	.000
Neuroticism	.521 (.024)	.556	.000					.440 (.072)	.000				
Step 2				.330	.020	8.154	.000			.234	.040	3.08	.029
Neuroticism	.454 (.028)	.485	.000					.355 (.085)	.000				
Qualitative job insecurity	-.086 (.032)	-.074	.007					–	–				
Quantitative job insecurity	.067 (.033)	.067	.045					-.168 (.124)	.176				
Career insecurity (Colakoglu, 2011)	.075 (.033)	.085	.025					.184 (.117)	.115				
Career insecurity (Höge et al., 2012)	.046 (.037)	.047	.211					.153 (.119)	.199				
Step 3				.362	.033	55.330	.000			.322	.088	22.84	.000
Neuroticism	.424 (.028)	.453	.000					.313 (.083)	.000				
Qualitative job insecurity	-.079 (0.31)	-.068	.011					–	–				
Quantitative job insecurity	-.024 (.035)	-.023	.499					-.271 (.119)	.023				
Career insecurity (Colakoglu, 2011)	.020 (.033)	.023	.540					.016 (.124)	.899				
Career insecurity (Höge et al., 2012)	-.033 (.038)	-.034	.379					.040 (.118)	.734				
MU-CI-S	.325 (.044)	.283	.000					.433 (.135)	.001				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.2

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Burnout Exhaustion

Sample	Sample #5 ($N = 1,091$)							Sample #6 ($N = 182$)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_β$)	p	R^2	ΔR^2	ΔF	p
Step 1				.317	.317	504.417	.000	–	–	–	–	–	–
Neuroticism	.355 (.016)	.563	.000					–	–				
Step 2				.351	.034	14.324	.000	–	–	–	–	–	–
Neuroticism	.287 (.019)	.455	.000					–	–				
Qualitative job insecurity	.094 (.021)	.121	.000					–	–				
Quantitative job insecurity	.025 (.022)	.036	.265					–	–				
Career insecurity (Colakoglu, 2011)	.001 (.022)	.002	.951					–	–				
Career insecurity (Höge et al., 2012)	.071 (.025)	.107	.004					–	–				
Step 3				.385	.034	59.748	.000	–	–	–	–	–	–
Neuroticism	.266 (.019)	.422	.000					–	–				
Qualitative job insecurity	.099 (.021)	.127	.000					–	–				
Quantitative job insecurity	-.037 (.023)	-.056	.103					–	–				
Career insecurity (Colakoglu, 2011)	-.036 (.022)	-.061	.102					–	–				
Career insecurity (Höge et al., 2012)	.016 (.025)	.024	.525					–	–				
MU-CI-S	.223 (.029)	.289	.000					–	–				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.3

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): In-role Behavior

Sample	Sample #5 (N = 1,091)							Sample #6 (N = 182)					
	b (SE$_b$)	β	p	R^2	ΔR^2	Δ F	p	β (SE$_\beta$)	p	R^2	ΔR^2	Δ F	p
Step 1				.065	.065	75.288	.000			.067	.067	12.93	.000
Neuroticism	-.163 (.019)	-.254	.000					-.259 (.084)	.002				
Step 2				.100	.035	10.621	.000			.079	.012	.77	.513
Neuroticism	-.117 (.023)	-.183	.143					-.247 (.096)	.010				
Qualitative job insecurity	.041 (.025)	.052	.106					–	–				
Quantitative job insecurity	-.136 (.026)	-.198	.000					-.013 (.133)	.919				
Career insecurity (Colakoglu, 2011)	-.010 (.026)	-.016	.711					-.121 (.129)	.348				
Career insecurity (Höge et al., 2012)	-.005 (.029)	-.008	.853					.088 (.131)	.501				
Step 3				.111	.012	14.031	.000			.134	.055	11.18	.001
Neuroticism	-.105 (.023)	-.164	.000					-.214 (.095)	.025				
Qualitative job insecurity	.038 (.025)	.048	.128					–	–				
Quantitative job insecurity	-.099 (.028)	-.144	.000					.067 (.133)	.617				
Career insecurity (Colakoglu, 2011)	.012 (.027)	.021	.647					.026 (.139)	.853				
Career insecurity (Höge et al., 2012)	.027 (.031)	.040	.378					.187 (.133)	.159				
MU-CI-S	-.132 (.035)	-.168	.000					-.385 (.154)	.012				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.4

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Counterproductive Work Behavior

Sample	Sample #5 (N = 1,091)								Sample #6 (N = 182)					
	b (SE$_b$)	β	p	R^2	ΔR^2	Δ F	p	β (SE$_β$)	p	R^2	ΔR^2	Δ F	p
Step 1				.052	.052	60.129	.000	–	–	–	–	–	–
Neuroticism	.141 (.018)	.229	.000					–	–				
Step 2				.094	.042	12.497	.000	–	–	–	–	–	–
Neuroticism	.108 (.022)	.176	.000					–	–				
Qualitative job insecurity	-.127 (.024)	-.167	.000					–	–				
Quantitative job insecurity	.089 (.025)	.135	.000					–	–				
Career insecurity (Colakoglu, 2011)	.044 (.026)	.076	.083					–	–				
Career insecurity (Höge et al., 2012)	.014 (.028)	.022	.616					–	–				
Step 3				.113	.019	23.659	.000	–	–	–	–	–	–
Neuroticism	.093 (.022)	.151	.000					–	–				
Qualitative job insecurity	-.124 (.024)	-.162	.000					–	–				
Quantitative job insecurity	.043 (.027)	.066	.107					–	–				
Career insecurity (Colakoglu, 2011)	.017 (.026)	.029	.522					–	–				
Career insecurity (Höge et al.), 2012	-.026 (.029)	-.040	.372					–	–				
MU-CI-S	.164 (.034)	.218	.000					–	–				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.5

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Career Satisfaction

Sample	Sample #5 (N = 1,091)							Sample #6 (N = 182)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_\beta$)	p	R^2	ΔR^2	ΔF	p
Step 1				.161	.161	208.386	.000			.071	.071	13.76	.000
Neuroticism	-.363 (.025)	-.401	.000					-.267 (.084)	.001				
Step 2				.340	.180	73.809	.000			.148	.077	5.33	.002
Neuroticism	-.144 (.027)	-.159	.000					-.104 (.095)	.274				
Qualitative job insecurity	-.324 (.031)	-.289	.000					–	–				
Quantitative job insecurity	.034 (.032)	.036	.282					-.083 (.128)	.517				
Career insecurity (Colakoglu, 2011)	-.003 (.032)	-.003	.934					-.146 (.122)	.231				
Career insecurity (Höge et al., 2012)	-.296 (.036)	-.312	.000					-.159 (.123)	.196				
Step 3				.347	.007	11.781	.001			.163	.015	3.15	.077
Neuroticism	-.130 (.027)	-.144	.000					-.089 (.095)	.349				
Qualitative job insecurity	-.327 (.031)	-.292	.000					–	–				
Quantitative job insecurity	.075 (.034)	.078	.027					-.049 (.131)	.709				
Career insecurity (Colakoglu, 2011)	.022 (.033)	.026	.501					-.081 (.135)	.549				
Career insecurity (Höge et al., 2012)	-.260 (.037)	-.274	.000					-.112 (.129)	.384				
MU-CI-S	-.147 (.043)	-.132	.001					-.169 (.153)	.269				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.6

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Job Satisfaction

Sample	Sample #5 ($N = 1,091$)							Sample #6 ($N = 182$)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_β$)	p	R^2	ΔR^2	ΔF	p
Step 1				.193	.193	260.332	.000	–	–	–	–	–	–
Neuroticism	-.480 (.030)	-.439	.000					–	–				
Step 2				.352	.160	66.815	.000	–	–	–	–	–	–
Neuroticism	-.257 (.033)	-.235	.000					–	–				
Qualitative job insecurity	-.375 (.037)	-.277	.000					–	–				
Quantitative job insecurity	-.041 (.038)	-.035	.282					–	–				
Career insecurity (Colakoglu, 2011)	.123 (.038)	.120	.001					–	–				
Career insecurity (Höge et al., 2012)	-.359 (.043)	-.313	.000					–	–				
Step 3				.363	.010	17.171	.000	–	–	–	–	–	–
Neuroticism	-.237 (.033)	-.217	.000					–	–				
Qualitative job insecurity	-.379 (.036)	-.280	.000					–	–				
Quantitative job insecurity	.018 (.041)	.015	.665					–	–				
Career insecurity (Colakoglu, 2011)	.159 (.039)	.155	.000					–	–				
Career insecurity (Höge et al., 2012)	-.307 (.044)	-.268	.000					–	–				
MU-CI-S	-.211 (.051)	-.158	.000					–	–				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.7

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Career Commitment

Sample	Sample #5 (N = 1,091)							Sample #6 (N = 182)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_\beta$)	p	R^2	ΔR^2	ΔF	p
Step 1				.156	.156	200.771	.000			.011	.011	2.00	.160
Neuroticism	-.482 (.034)	-.395	.000					-.104 (.090)	.250				
Step 2				.254	.098	35.692	.000			.028	.017	1.03	.380
Neuroticism	-.246 (.039)	-.201	.000					-.134 (.101)	.185				
Qualitative job insecurity	-.252 (.044)	-.167	.000					–	–				
Quantitative job insecurity	-.137 (.046)	-.104	.003					.134 (.141)	.340				
Career insecurity (Colakoglu, 2011)	-.080 (.046)	-.070	.081					-.094 (.133)	.481				
Career insecurity (Höge et al., 2012)	-.168 (.051)	-.131	.001					.047 (.135)	.725				
Step 3				.259	.005	7.577	.006			.089	.061	11.78	.001
Neuroticism	-.231 (.039)	-.189	.000					-.102 (.099)	.305				
Qualitative job insecurity	-.256 (.044)	-.169	.000					–	–				
Quantitative job insecurity	-.090 (.049)	-.069	.067					.228 (.139)	.102				
Career insecurity (Colakoglu, 2011)	-.052 (.047)	-.045	.270					.054 (.143)	.708				
Career insecurity (Höge et al., 2012)	-.126 (.053)	-.099	.018					.144 (.137)	.292				
MU-CI-S	-.169 (.061)	-.113	.006					-.386 (.160)	.016				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.

Table S8.8

Incremental Validity of the MU-CI-S Mean Score beyond Neuroticism and Other Insecurity Measures (Study 3): Career Turnover Intentions

Sample	Sample #5 ($N = 1,091$)							Sample #6 ($N = 182$)					
	b (SE$_b$)	β	p	R^2	ΔR^2	ΔF	p	β (SE$_\beta$)	p	R^2	ΔR^2	ΔF	p
Step 1				.116	.116	143.389	.000	–	–	–	–	–	–
Neuroticism	.512 (.043)	.341	.000					–	–				
Step 2				.259	.142	52.074	.000	–	–	–	–	–	–
Neuroticism	.135 (.048)	.090	.005					–	–				
Qualitative job insecurity	.046 (.054)	.025	.398					–	–				
Quantitative job insecurity	.182 (056)	.113	.001					–	–				
Career insecurity (Colakoglu, 2011)	.004 (.056)	.003	.940					–	–				
Career insecurity (Höge et al., 2012)	.576 (.063)	.366	.000					–	–				
Step 3				.270	.012	17.518	.000	–	–	–	–	–	–
Neuroticism	.106 (.048)	.070	.028					–	–				
Qualitative job insecurity	.052 (.053)	.028	.331					–	–				
Quantitative job insecurity	.095 (.060)	.059	.113					–	–				
Career insecurity (Colakoglu, 2011)	-.048 (.057)	-.034	.398					–	–				
Career insecurity (Höge et al., 2012)	.499 (.065)	.317	.000					–	–				
MU-CI-S	.313 (.075)	.171	.000					–	–				

Note. MU-CI-S = Multidimensional Career Insecurity Scale. We also conducted pairwise incremental validity analyses. In these analyses, we included only one other construct in the first step (e.g., either neuroticism or quantitative job insecurity or another one-dimensional career insecurity measure). In the second step, we always included the MU-CI-S mean score. The results of these pairwise comparisons showed incremental validity of the MU-CI-S mean score in every case. CI = Career insecurity. b = unstandardized coefficient. Standard errors (SE) are shown in parentheses.