Original Article

Counting the Muses in German Speakers – Evaluation of the German-Language Translation of the Kaufman Domains of Creativity Scales (K-DOCS)

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Abstract: The Kaufman Domains of Creativity Scales (K-DOCS) assess individual differences in creativity across five domains (Everyday, Scholarly, Performance, Science, and Artistic). We provide data on the psychometric properties and the structural and nomological validity of the German adaptation of the K-DOCS from three samples (N_{total} = 1,379). Our findings supported the 5-factorial structure of the German K-DOCS in line with the original version and prior language adaptations. Our findings showed overall satisfying psychometric properties (reliability: .78 ≤ ωs ≤ .87) and scalar measurement invariance for gender. Correlations with external measures of broad and narrow traits supported the convergent validity (self-reports of creativity and a situational judgment test of creative thinking) and the nomological validity (e.g., Big Five personality traits, cognitive styles, and adult playfulness). Overall, the findings support the notion that the German-language adaptation of the K-DOCS can be used to study individual differences across five domains of creativity.

Keywords: creativity, K-DOCS, Kaufman Domains of Creativity Scales, amusement park theoretical model of creativity

Creativity is among the most frequently studied individual difference variables and is a robust predictor of important real-life outcomes such as academic performance and personal and organizational success (see Kaufman, 2016, for an overview). Kaufman (2012) has introduced the *Kaufman Domains of Creativity Scales* (K-DOCS), a frequently used self-report instrument that assesses individual differences in creativity across five domains. We provide a German translation of the K-DOCS and tested its psychometric properties and validity (item and scale parameters, reliability, structural and nomological validity) and measurement invariance for gender using data from three independently collected samples.

Creativity: Definition and Assessment

Although creativity has been systematically studied for almost a century, there is still debate on its definition and the distinction of its core features and conditions (e.g., personality, situations, and chance; e.g., Amabile & Pratt, 2016; Guilford, 1950). Accordingly, competing models regarding the dimensionality exist depending on whether creativity is understood in terms of a process model, different domains in which creativity can be expressed, or if there is a general factor of creativity. There is consensus, however, that creativity requires originality (or novelty) and effectiveness (or usefulness, appropriateness, and utility; Runco & Jaeger, 2012).

Along with discussions on the theoretical definition, there are multiple approaches to assessing creativity (for a discussion, see Plucker et al., 2019). Two strategies to assess creativity can be broadly distinguished that are also linked to the understanding of creativity as a

cognitive ability versus a personality trait. First, creative abilities can be measured by tests with a single *correct* response (e.g., finding the semantic associate of a series of related words in the Remote Associate Task; Mednick, 1962), the quantity (*fluency*), and quality (*originality*) of *productions* (e.g., when finishing incomplete drawings or answering open-ended questions) based on normative scoring instructions (e.g., Torrance Tests of Creative Thinking, Torrance, 1974; the originality scales of the Berlin Intelligence Structure Test, Jäger et al., 1997) or by collecting expert judgments on creative products (Consensual Assessment Technique, Amabile, 1996). Second, self-report questionnaires assess creativity by asking participants for their perceptions of their creativity (Snyder et al., 2021), reports of creative achievements (e.g., Carson et al., 2005), or beliefs about their own creative process (Pringle & Sowden, 2017).

Both ability and self-report approaches to assessing creativity have their advantages and disadvantages. For example, an advantage of ability tests is that respondents must show creative behavior by producing creative solutions, often under time constraints that are supervised by a test administrator; they assess the creative ability of a person in its narrow sense. However, their overlap with other constructs such as intelligence is often discussed (e.g., Silvia, 2015), and any rating of creative work involves some subjective judgment. In comparison, self-reports are easier to administer, and the scoring and interpretation of test scores are more standardized and often demonstrate higher reliability than ability tests (e.g., when requiring consensus scoring). Meta-analyses and reviews yielded promising evidence for the reliability and validity of self-reports of creativity (Kaufman, 2019; Silvia et al., 2012). Also, it has been questioned whether ability tests of creativity ignore the domain specificity of creativity (e.g., a musician might yield low scores in tasks of alternative uses but show high artistic or performance creativity) and whether tasks and products covered in ability tests contain utility for the person (e.g., Kaufman, 2012, 2016).

From a practical assessment perspective, both approaches have merits. For example, a psychological evaluation (report) of a client may compare the actual performance of a client in creative tasks (ability test) with their perception of how creative they see themselves in general and/or certain domains (self-reports). The (in) congruency across test scores in the two methods is, in itself, of diagnostic value (e.g., realistic vs. distorted view about the own ability) and may be a reflection of a person's creative metacognition (Kaufman & Beghetto, 2013).

Kaufman Domains of Creativity Scales (K-DOCS)

Theoretical Background

The K-DOCS is a multidimensional self-report instrument that was developed based on the *amusement park theoretical model of creativity* (APT model; Baer & Kaufman, 2005, 2017). The APT model proposes that creativity is expressed differentially across domains in which creative activities and products can occur and that considering domains is better suited to understand creativity than relying on general-factor models (Baer & Kaufman, 2017). Factor-analytic studies of large databases of self-reports have identified thematic areas (e.g., arts) that are further divided into domains (e.g., fiction and poetry) and then microdomains (e.g., haikus or poems; Kaufman et al., 2011). Also, the APT model acknowledges that different domains can relate to differential conditions that allow for the emergence of creative solutions in the respective domain; Kaufman (2012) exemplifies this as "a creative actor may need to be extraverted, but a creative scientist may need to be conscientious," (p. 298) and this might contribute to understanding the correlations between creative domains and, for example, personality traits. Finally, the APT model assumes that certain conditions exist that are necessary but not sufficient to show creativity. These include inclinations to intelligence, creative self-beliefs, and higher expressions of the personality trait of openness to experience.

Development and Structure

Based on research on the APT model, Kaufman (2012) developed the K-DOCS with the aim of assessing self-reported individual differences in everyday creative behaviors across multiple domains. Kaufman generated 94 items that represented creative *behaviors* that might occur in everyday life and asked participants to rate themselves on these behaviors using the following instructions: "Compared to people of approximately your age and life experience, how creative would you rate yourself for each of the following acts? For acts that you have not specifically done, estimate your creative potential based on your performance on similar tasks" (p. 300). Participants gave their responses on a 5-point rating scale (1 = *being much less creative*; 5 = *being much more creative*).

Kaufman computed principal component analyses (factors rotated to the varimax criterion) of the responses of 1,174 participants to identify the number and content of

dimensions and cross-validated his findings in a second sample (n = 1,144). In both samples, Kaufman found a robust 5-factor structure representing five domains: *Everyday* (including intrapersonal and interpersonal creativity) describes finding solutions to everyday problems (e.g., "teaching someone how to do something"); *Scholarly* involves creative approaches to analyses, debates, academic research, and nonfiction writing (e.g., "coming up with a new way to think about an old debate"); *Performance* contains behaviors that refer to creative behaviors in acting, music, and writing with an emphasis on the public presentation (e.g., "making up lyrics to a funny song"); *Mechanical–Scientific* (later renamed *Science*; McKay et al., 2017) describes STEM-related (e.g., technological and mathematical) creativity (e.g., "taking apart machines and figuring out how they work"); and *Artistic* describes creative behaviors in the field of the visual arts and esthetic appreciation (e.g., "making a sculpture or piece of pottery"). After analyzing redundancies, Kaufman reduced the set of items to 50, with 9 to 11 items per scale. Kapoor et al. (2021) recently used the Semantic Scale Network (SSN; Rosenbusch et al., 2020) and found only minor semantic overlap between K-DOCS and existing questionnaires that are included in the SSN database that contains the items of more than 4,000 psychological scales covering a variety of individual difference variables.

Psychometric Properties and Validity of the K-DOCS

Factor Structure

The factor structure of the K-DOCS has also been investigated with confirmatory factor analyses (CFA). McKay et al. (2017) tested three competing models, namely unidimensionality, five correlated factors, and a hierarchical model including the five factors and a higher-order general factor of creativity in independent samples of 825 English-speaking and 500 Polish-speaking participants. The five correlated factors model described the data best in both samples: The fit indexes when using the full set of items were RMSEA ≤ .068, CFI ≥ .769, TLI ≥ .757, SRMR ≤ .072, and $\chi^2_{1,165} \leq 5{,}214.57$ (RMSEA ≤ .083, CFI ≥ .944, TLI ≥ .927, SRMR ≤ .050, and $\chi^2_{80} \leq 354.05$ when analyzing item parcels). The findings replicated well in an aggregate sample of 22,013 English-speaking participants (Kapoor et al., 2021) and in studies testing Russian-language (Miroshnik et al., 2022), Slovene-language (Faletič & Avsec, 2019), and Turkish-language adaptations (Kandemir & Kaufman, 2020). Alternative models (e.g., hierarchical model including a general factor of creativity) have been examined but have always been outperformed by the five correlated factors model (e.g., Kapoor et al., 2021; McKay et al., 2017; Miroshnik et al., 2022). Furthermore, Kapoor et al. (2021) provided robust evidence for scalar measurement invariance across gender.

Reliability

Kaufman (2012) reported Cronbach's α coefficients between .83 (Artistic) and .87 (Performance). These findings have been replicated in English-speaking samples (e.g., Kapoor et al., 2021; McKay et al., 2017) and for the translations, with few exceptions for single scales. For example, Miroshnik et al. (2022) reported numerically slightly lower internal consistency coefficients for Artistic (McDonald's ω = .73) and Science (ω = .72). Also, Kaufman reported good retest correlations for 2-week intervals between .76 (Scholarly) and .86 (Performance) using data of 132 participants. Overall, the literature supports the good reliability of the K-DOCS scores and their appropriateness for using the K-DOCS for research purposes.

External Validity

There is good evidence for the convergent validity of the K-DOCS because correlations with other self-report measures of creative behaviors and achievements (e.g., CAQ; Carson et al., 2005) show positive associations in the range between .20 and .30, indicating overlap but no redundancies (Kaufman, 2012; McKay et al., 2017; Snyder et al., 2021). Also, correlations are typically domain-specific; for example, the CAQ's scientific discovery scale robustly relates exclusively to the Scholarly and Science scales of the K-DOCS (McKay et al., 2017). Self-perceptions and self-beliefs of creativity correlate robustly with the K-DOCS scores (rs ≈ .50; McKay et al., 2017; Snyder et al., 2021) without being redundant. In accordance with the APT model, the K-DOCS overlap to some extent with intelligence, with coefficients between .05 (Performance) and .25 (Scholarly and Science), and the personality trait of openness (e.g., McKay et al., 2017). Kandemir and Kaufman (2020) showed that students' scores on the K-DOCS systematically varied by college major (e.g., students of the arts yielded the highest scores in the Artistic domain). Also, the domains were predictive of real-life outcomes. For example, Scholarly creativity scores were related to SAT scores in critical writing and critical reading (rs = .32 and .29) and producing captions to photographs (r = .21; Pretz & Kaufman, 2017). In addition, Scholarly creativity scores predicted Australian Tertiary Admission Ranking scores, an Australian standardized test comparable to the SATs, above and beyond high school grade point average (GPA) scores (Kaufman et al., 2021).

There is comparatively broad knowledge on the nomological net of the K-DOCS. Regarding broad personality traits, there are domain-specific associations with the Big Five traits besides openness: across studies and measures

of the Big Five, extraversion relates to the Everyday and Performance scales as they require social interactions, and Performance relates to low neuroticism (McKay et al., 2017; Miroshnik et al., 2022). Beyond the Big Five traits, numerous studies have also localized the K-DOCS domains within systems of narrower traits such as the Dark Triad, adult playfulness, and curiosity, to name but a few (see Introduction of Study 2).

The Present Research

We translated the K-DOCS into German and examined the psychometric properties and validity of the German-language translation in two studies. In Study 1, we provided an initial analysis of the psychometric properties and tested the 5-factor structure as proposed in the original K-DOCS and its language adaptations (McKay et al., 2017). The main aims of Study 2 were (a) replicating the findings from Study 1, (b) examining the measurement invariance regarding gender, and (c) testing the validity by analyzing the associations between the K-DOCS and indicators of creativity (convergent validity) as well as broad (i.e., Big Five traits) and narrow (e.g., adult playfulness) individual difference variables (nomological validity).

Study 1

Method

Sample and Procedure

Sample 1 comprised 511 participants (71.4% women, 27.8% men, and 0.8% who identified as nonbinary) who completed the German K-DOCS and a demographic questionnaire online (all online studies reported in this line of research were hosted by SoSci Survey [www.soscisurvey.de]). Participants were between 16 and 69 years old (M = 26.3, SD = 10.1). About two-thirds of the sample were students (68.7%), 20.7% were employed, and the remainder were unemployed (3.7%), retired (2.2%), in vocational training (3.1%), or responded with *other* (1.6%). Their educational level was high, as 24.3% held a university degree, 61.8% finished high school qualifying them to attend university, 7.2% completed vocational training, 4.1% held a regular high school diploma, and 2.6% responded with other.

We advertised the study online on the websites of the authors' department, the German Psychology Today blog, and the Leibniz Institute for Psychological Documentation. Participants completed the online survey on average in 4–6 min. There was no financial compensation for participation, but psychology students were given the opportunity to earn course credit. Inclusion criteria were speaking German fluently and being 18 years or older.

Instrument

We translated the 50 items of Kaufman's (2012) original English-language version of the K-DOCS into German. Three psychologists who are native German speakers with advanced English proficiency translated the items independently from each other before jointly discussing the translations. They agreed upon a translation, which was then evaluated by a bilingual German and English speaker, and final revisions were made. No items were excluded during the translation process, and, in line with the original version, participants gave their responses on a 5-point rating scale (1 = *being much less creative*; 5 = *being much more creative*). The German translation is provided in the Open Science Framework (OSF; https://osf.io/jsd6n/).

Data Analysis

We computed CFAs with five correlated factors in *Mplus* 8.6 (Muthén & Muthén, 1998–2019). We used the item-factor assignment of the original K-DOCS (Kaufman, 2012). In line with McKay et al. (2017), we computed two CFA models: Model 1 considered the full set of 50 items as manifest indicators, whereas in Model 2, we used item parceling to account for the model complexity. As McKay et al., we used 3–4 items per parcel and built the parcels by aggregating items with low and high factor loadings. To account for the ordinal nature of the data, we used the WLSMV estimator for Model 1 (Li, 2016) and the maximum likelihood estimator in Model 2, as the item parcels are of continuous nature. We evaluated the model fit based on the RMSEA, CFI, TLI, and SRMR coefficients in comparison to previous reports of the model fit of the K-DOCS (McKay et al., 2017). Following Moshagen and Musch's (2014) simulation studies, our sample size meets the requirements of CFAs with the WLSMV estimator as prior studies showed good convergence rates for finding the proper factor loadings, standard errors, and model fit (e.g., McKay et al., 2017). We computed Cronbach's α and McDonald's ω (Dunn et al., 2014) as measures of internal consistency with Kelley's (2017) *MBESS* package version 4.8.1 in CRAN R. Finally, we computed the item parameters (i.e., mean, *SD*, skewness, kurtosis, and corrected item-total correlations [CITC]) to examine item difficulties (item difficulty refers to the extent of agreement to an item in item analyses of personality questionnaires [e.g., Xie & Cobb, 2020] and variability in responses). All data and syntaxes are provided in the OSF.

Results and Discussion

The fit indices of the CFAs are given in Table 1. The findings from both models, using the full set of items and the item parcels, were comparable to those reported by McKay et al. (2017). When accounting for the model

Table 1. Confirmatory factor analyses of the German-language K-DOCS

Model	χ^2	*df*	CFI	TLI	RMSEA [90% CIs]	SRMR
Sample 1 (*N* = 511)						
All items as indicators	4,609.57	1,165	.710	.695	.076 [.074, .078]	.095
Three parcels per factor	288.01	80	.935	.915	.071 [.063, .080]	.052
Sample 2 (*N* = 502)						
All items as indicators	4,701.27	1,165	.736	.723	.078 [.075, .080]	.098
Three parcels per factor	307.68	80	.934	.913	.075 [.066, .084]	.059
Sample 3 (*N* = 366)						
All items as indicators	3,372.80	1,165	.790	.779	.072 [.069, .075]	.095
Three parcels per factor	329.52	80	.912	.885	.092 [.082, .103]	.064

Note. K-DOCS = Kaufman Domains of Creativity Scales. All χ^2 coefficients are statistically significant ($p < .001$).

complexity and using the item parcels (Model 2), the fit indexes suggested that the model fits the data well (based on Hu & Bentler's, 1999 conventional criteria) with RMSEA = .071 and CFI and TLI exceeding .90. This also fits McKay et al.'s findings numerically and conceptually. Table 2 (Sample 1) gives the range of the loadings for each scale. All loadings exceeded .33 except for two items from the Science scale, namely Item 4 ("helping to carry out or design a scientific experiment;" λ = .29) and Item 29 ("solving math puzzles;" λ = .28; see online supplementary material A [ESM A] for all loadings). Overall, our findings support the proposed 5-factorial structure for the German adaptation of the K-DOCS. However, replication is needed to clarify findings on items that showed comparatively low loadings.

Second, we examined the item difficulties and variance parameters (see ESM A for all coefficients) and found that the items showed good variability (*SD*s between 0.83 and 1.81) and moderate item difficulties for each of the five scales (*M*s between 1.87 and 4.03). The ranges of the CITCs for each scale are displayed in Table 2 (all coefficients in ESM A). The CITCs indicated good discrimination ($r_{it} \geq .23$), except for Item 1 of the Everyday scale ($r_{it} = .19$; "finding something fun to do when I have no money"). However, Item 1 was characterized by a salient loading (λ = .33). Replication is needed to clarify the psychometric goodness of this item.

Finally, we examined the scales' scores. The reliability by means of Cronbach's α and McDonald's ω was satisfying and in line with prior findings on the K-DOCS, with values between .78 and .84. Also, the means and *SD*s were comparable to prior findings of the English and Polish K-DOCS versions. The inspection of the skewness and kurtosis parameters did not suggest deviation from normality. The intercorrelations of the manifest scores were between $r = -.06$ and .36 (see ESM B for all coefficients). Demographic analyses showed no association between K-DOCS scores and age ($rs \leq |.08|$), but men yielded higher scores in the Science ($r = -.27$) and women in Artistic scales ($r = .22$; $ps < .001$), as in prior research (Kapoor et al., 2021).

Our initial study of the German translation of the K-DOCS showed that the previously reported 5-factorial structure (e.g., Kaufman, 2012; McKay et al., 2017) could be retrieved. We found promising evidence for its good psychometric properties with few exceptions, namely the loadings and CITCs of Items 1 (Everyday) and 4 and 29 (Science). We decided not to eliminate items from the German K-DOCS since the findings await replication in an independent sample. A major limitation of this study is that we did not examine the validity of the K-DOCS by testing correlations with external measures.

Study 2

The main goal behind Study 2 was to replicate findings on the psychometric properties and structural validity from Study 1 and to extend our research to test the measurement invariance for gender and the nomological validity of the German K-DOCS. Prior studies (Kapoor et al., 2021; Miroshnik et al., 2022) showed scalar invariance (i.e., equal number of factors and equivalent loadings and intercepts) for men and women.

We collected data from two independent samples. The study of the nomological validity followed four aims: First, we examined the convergent validity of the K-DOCS. We expected positive correlations between the K-DOCS and self-reports assessing creativity by means of a single item that are part of standard personality trait scales for the Big Five personality traits (part of intellect scale) and the character strength (i.e., a morally positively valued trait) of creativity (Ostendorf, 1990; Ruch et al., 2014), as well as a short subscale of a HEXACO scale on creativity (3 items; Ashton & Lee, 2009). McKay et al. (2017) reported

Table 2. Item and scale parameters of the German-language K-DOCS

Parameter	Everyday	Scholarly	Performance	Science	Artistic
Study 1					
Sample 1 (N = 511)					
M	3.75	3.45	2.71	2.46	3.24
SD	0.50	0.56	0.81	0.78	0.73
Skewness	−0.29	−0.28	0.09	0.48	−0.22
Kurtosis	0.20	0.28	−0.56	−0.48	−0.27
α	.78	.78	.84	.82	.79
ω	.78	.78	.84	.82	.79
CITC	[.19, .53]	[.39, .52]	[.41, .64]	[.31, .71]	[.26, .58]
λ	[.33, .69]	[.40, .74]	[.50, .77]	[.28, .85]	[.50, .76]
r_{age}	−.08	−.02	−.03	.05	−.08
r_{gender}	.06	−.04	−.03	−.27***	.22***
Study 2					
Sample 2 (N = 502)					
M	3.85	3.47	2.62	2.69	3.14
SD	0.48	0.56	0.84	0.82	0.76
Skewness	−0.70	−0.29	0.11	0.19	−0.21
Kurtosis	1.11	0.18	−0.78	−0.59	−0.25
α	.78	.78	.85	.82	.80
ω	.78	.78	.85	.83	.80
CITC	[.30, .53]	[.28, .55]	[.32, .75]	[.32, .74]	[.31, .62]
λ	[.44, .68]	[.45, .64]	[.46, .78]	[.35, .79]	[.47, .79]
r_{age}	.13**	.06	−.03	.11*	.04
r_{gender}	.10*	.03	.07	−.34***	.25***
Sample 3 (N = 366)					
M	3.73	3.46	2.84	2.43	3.25
SD	0.58	0.60	0.87	0.73	0.74
Skewness	−0.63	−0.37	0.15	0.47	−0.30
Kurtosis	0.71	0.76	−0.55	−0.43	−0.28
α	.84	.82	.87	.80	.80
ω	.84	.82	.87	.80	.81
CITC	[.36, .59]	[.39, .58]	[.43, .76]	[.21, .71]	[.30, .63]
λ	[.48, .75]	[.45, .74]	[.55, .85]	[.11, .85]	[.47, .76]
r_{age}	.08	.09	.09	.06	−.03
r_{gender}	.04	−.08	−.17*	−.25***	.13*

Note. CITC = minimum and maximum values of corrected item-total correlation; K-DOCS = Kaufman Domains of Creativity Scales. λ = loading from CFA Model 1. Gender is coded as 1 = men and 2 = women. *p < .05. **p < .01. ***p < .001. Two-tailed.

correlations between .20 and .60 for the overlap between the K-DOCS and indicators of creative personality, and we expected correlations in the same range.

We supplemented the study of the convergent validity of the K-DOCS by testing the associations with a situational judgment test (SJT) of creative thinking styles in the work context (i.e., the *Creative Response Evaluation-Work*, CRE-W; Kaufman & Reiter-Palmon, 2019). Creative thinking styles are defined as "people's preferences for how they choose to be creative as well as a person's specific creative strengths" (p. 191, Reiter-Palmon & Kaufman, 2018) and are described by the dimensions *New* (inclinations to find new solutions) and *Different* (choosing the best alternative of existing potential solutions). In SJTs, participants are asked how they would react when dealing with dilemmas. Contrary to classical self-report questionnaires, test takers

are unaware of what is being assessed, which reduces biases common to self-report questionnaires (e.g., social desirability; Lievens et al., 2008). Prior research reported positive correlations (between .10 and .30) between the K-DOCS and the CRE-W (Kaufman & Reiter-Palmon, 2019; Proyer & Brauer, 2020).

Second, we aimed at replicating associations known from the literature between the German K-DOCS and the Big Five personality traits, the Dark Triad, and adult playfulness to examine the nomological validity. As mentioned, the findings on the Big Five differed across prior studies depend on the instrument used. Here, we expected positive correlations between extraversion and the Everyday and Performance scales, as well as a negative association between Performance and neuroticism. We tested the remaining associations between the K-DOCS and the Big Five traits in exploratory fashion and examined their replicability across both samples. Furthermore, when McKay et al. (2017) used the Dirty Dozen instrument for the assessment of the Dark Triad personality traits of Machiavellianism, narcissism, and psychopathy, they found positive correlations ≥ .20 between Machiavellianism and the Science scale (r = .20) and narcissism and the Everyday and Scholarly scales (rs = .21). We also aimed to replicate prior findings on adult playfulness (i.e., individual differences in [re]framing everyday situations in a way that they are experienced as personally interesting, and/or entertaining, and/or intellectually stimulating, Proyer, 2017). It has been argued that playfulness contributes to facilitate creativity (see Proyer et al., 2019 for an overview). In line with Proyer et al. (2019), we expected positive associations between the K-DOCS and indicators of adult playfulness, with effect sizes r between .20 and .30.

Third, we extended the knowledge on the nomological validity of the K-DOCS by testing associations with theoretically close constructs; namely, three cognitive styles (i.e., knowing, planning, and creating; Cools & Van den Broeck, 2007) and work-related curiosity (Mussel et al., 2012). For the former, we expected to find overlap between the K-DOCS and the creative thinking style that is characterized by exploring problems, interest in novel approaches, and liking to invent and create (Cools & Van den Broeck, 2007). We tested the associations with the planning style (i.e., structured, organized, and routine-based approaches) and knowing style (i.e., logical, precise, and rational thinking) in an exploratory fashion since no pattern of associations could be derived from the literature. Curiosity is characterized by seeking for information, knowledge acquisition, and learning, and it has been argued that being curious might be a prerequisite to creativity (e.g., Kashdan & Fincham, 2002). Therefore, we expected positive associations with the K-DOCS, particularly for Science and Scholarly creativity.

Finally, we examined the discriminant validity by testing the relationships between the K-DOCS and the Impostor Phenomenon (IP; i.e., inclinations to discount success and to attribute achievements to chance and luck instead of ability; Clance, 1985). While one would expect that the IP relates to discrepancies between self-reported and objectively measured criteria of creativity, the IP is typically unrelated to the components that constitute discrepancies. Thus, we expected self-reports of the IP to be unrelated to self-reports of creative behaviors (K-DOCS).

Method

Participants and Procedure

Sample 2 comprised 502 participants (66.9% women, 33.1% men) who completed the German K-DOCS and external measures online. Participants were between 18 and 82 years old (M = 36.0, SD = 14.1). More than half of the sample were employees (58.6%), 33.1% were students, and the remainder were in vocational training (3.6%), retired (2.8%), unemployed (1.2%), and 0.8% responded with other. Their educational level was high, as nearly half of the sample (47.8%) held an academic degree, 30.5% finished high school qualifying them to attend university, 13.3% completed vocational training, 7.4% held a regular high school diploma, and 1.0% responded with other. The data were collected as part of a larger research project in 2017, which was advertised as an online study of creativity and personality. Inclusion criteria were being 18 years or older and speaking German. The link to the online questionnaire was advertised on the authors' department website, social media, and the websites of Psychology Today and the Leibniz Centre for Psychological Documentation. Completion of the questionnaires took about 50 min on average. Participants were offered to enter a lottery to win vouchers for an online retailer, and psychology students were given the opportunity to earn course credit.

Sample 3 consisted of 366 participants (79.5% women, 19.7% men, and 0.8% identified as nonbinary) who completed the German K-DOCS and other self-report questionnaires (see Instruments for an overview) online. Participants were between 18 and 71 years old (M = 25.5, SD = 7.7). The sample consisted mostly of students (83.1%), 12.6% were employed, and the remainder were retired (1.4%), unemployed (1.1%), or responded with other (1.9%). The educational level was high, as 23.5% held an academic degree, 66.1% finished high school qualifying them to attend university, 7.9% completed vocational training, 1.7% held a regular high

school diploma, and 0.8% responded with other. The link to the online questionnaire was advertised on the authors' department website. Completing the online questionnaire took on average about 60–75 min. Participants could pause the questionnaire at any time and return later. There was no financial compensation. Students were given the opportunity to earn course credit. Inclusion criteria were speaking German fluently and being 18 years or older.

Instruments

Creativity and Creative Thinking

In Samples 2 and 3, we collected self-reports of the single-item 6-point bipolar adjective scale *creative – uncreative* of Ostendorf's (1990) Big Five self-report instrument *Minimum Redundancy Scales-30* (MRS-30) (sample items and response options for each instrument used in Study 2 are provided in ESM C). In Sample 3, we additionally provided participants with the single item of Ruch et al.'s (2014) *Character Strengths Rating Form* (CSRF) that contains the description of creativity as a positively valued trait. Also, we assessed creativity in terms of the personality trait facet of openness by using the 3-item creativity subscale of Ashton and Lee's (2009) *HEXACO-60* personality inventory in Sample 3. High scorers are characterized by actively seeking new solutions and expressing themselves through arts.

Participants of Sample 2 also completed the *Creative Response Evaluation-Work* (CRE-W; Kaufman & Reiter-Palmon, 2019), a situational judgment test (SJT) of creative thinking styles. The German adaptation (Proyer & Brauer, 2020) contains 19 work-related scenarios describing dilemma situations that employees could encounter at work. For each situation, respondents are presented with four to six possible solutions, and participants are asked to rate each solution on a 6-point scale (1 = *very unlikely that I choose this course of action*; 6 = *very likely that I choose this course of action*). Overall, the CRE-W consists of 92 items, and three scores are computed: The total score, *Creative Initiative* (CI), reflects general inclinations to find a creative solution. Furthermore, *New* (i.e., finding a new approach to solve a problem; 23 items) and *Different* (i.e., using and combining existing strategies to solve a problem; 30 items) describe creative thinking styles. The Creative Initiative scores are computed based on a regression equation that weighs each item with a coefficient based on ratings of an international committee of creativity experts. Like comparable SJTs (see Lievens et al., 2008), the CRE-W is characterized by internal consistency coefficients in the range between .60 and .85. Proyer and Brauer (2020) provided comprehensive evidence on the validity.

Big Five

We assessed the Big Five personality traits with the *Minimum Redundancy Scales-30* (MRS-30; Ostendorf, 1990) in Samples 2 and 3. The instrument comprises 30 bipolar adjective scales. As recommended by Ostendorf (1990), we computed the factor scores using a Principal Component Analysis (orthogonal rotation, delta method) extracting five factors.

Dark Triad

The German adaptation of the *Short Dark Triad* (SD3) by Malesza et al. (2019; original version by Jones & Paulhus, 2014) assesses the Dark Triad traits of *Machiavellianism*, *Psychopathy*, and *Narcissism* with 9 items each. Malesza et al. (2019) provided robust evidence on the reliability of the SD3 (e.g., 4-week retest correlations ≥ .74) and convergent and discriminant validity (see also Wehner et al., 2021).

Cognitive Styles and Curiosity

The *Cognitive Styles Indicator* (CoSI; Cools & Van den Broeck, 2007) assesses inclinations to three types of thinking: *Creating* (7 items), *Knowing* (4 items), and *Planning* (7 items). We used a German translation that has been previously found to be reliable ($\alpha \geq .75$) and showed a robust 3-factorial structure across two independent samples (Proyer & Brauer, 2020).

The 10-item *Work-Related Curiosity Scale* (Mussel et al., 2012) assesses epistemic curiosity (i.e., "seeking of information, knowledge acquisition, learning, and thinking," p. 109). Mussel et al. (2012) reported high internal consistency ($\alpha = .85$) and evidence of factorial and nomological validity.

Adult Playfulness

We assessed adult playfulness with two instruments. First, the 5-item *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012) is a global indicator of playfulness, with high scores indicating an easy onset and frequent display of playful behavior. Proyer (2012) provided evidence on the reliability (e.g., retest correlation of .79 for 12–16 weeks) and validity (e.g., factorial and nomological). Second, we used the 28-item OLIW questionnaire (Proyer, 2017) that differentiates among four facets of playfulness in adults: *Other-directed*, *Lighthearted*, *Intellectual*, and *Whimsical*. Each facet is assessed with seven items. There is robust evidence regarding the reliability (e.g., retest correlations $r_{tt} \geq .67$ across 3 months) and validity (e.g., convergence with daily data; see Proyer, 2017).

Impostor Phenomenon

The *German-Language Clance Impostor Phenomenon Scale* (GCIPS) by Brauer and Wolf (2016; English version: Clance, 1985) contains 20 items. Brauer and Wolf provided evidence of good internal consistency ($\alpha s \geq .87$) and factorial and nomological validity.

Data Analysis

Analogously to Study 1, we computed CFAs (correlated 5-factor model), the internal consistencies α and ω, descriptive statistics, and CITCs. Again, our sample sizes met the requirements for CFA (Moshagen & Musch, 2014). We tested the measurement invariance (MI) for the K-DOCS among men and women by computing a multigroup confirmatory factor analysis in *Mplus* 8.6 using the data of all men and women collected across our three samples in Studies 1 and 2 (N_{total} = 1,372; *n*s = 380 men; 992 women). We tested three degrees of invariance, namely configural (i.e., same number of factors), metric (i.e., same number of factors and equal loadings), and scalar invariance (i.e., same number of factors, equal loadings, and equal intercepts). We examined the change in model fit between each step and followed Chen's (2007) recommendations for samples $N > 300$ for interpreting the change in fit on basis of changes in CFI, RMSEA, and SRMR. We rejected metric invariance when ΔCFI ≥ .010 and ΔRMSEA ≥ 0.015 or ΔSRMR ≥ .030 and rejected scalar invariance when ΔCFI ≥ .010 and ΔRMSEA ≥ 0.015 or ΔSRMR ≥ .010. The sample size met the requirements for adequate estimations of MI (Chen, 2007), but Yoon and Lai (2018) have shown that imbalanced sample sizes can affect the estimation of MI and recommend additionally analyzing the data with equal sample sizes. This is achieved by drawing a random subsample of the larger sample that matches the *n* of the smaller sample. Hence, we randomly selected 380 women from the full data set and computed the MI analysis again with equal subsample sizes for the men and women (N_{total} = 760).

Finally, we computed bivariate correlations between the K-DOCS and external measures controlling for age and gender. Power analyses (type = sensitivity; G*Power, Faul et al., 2007) showed that our samples allowed to detect effects sizes of ρ = .14 (Sample 2) and ρ = .17 (Sample 3) with 90% power and 5% Type I error rate. We interpret effect sizes *r*s ≥ .10, .20, and .30 as small, moderate, and large effects (Gignac & Szodorai, 2016). We decided to evaluate the correlations on basis of their effect sizes instead of statistical significance because the sample sizes would flag even minor associations, that are practically negligible, as significant and with the large number of tests, the Type I error rate increases. For transparency, we report the *p* values. Both study samples allow estimating comparatively stable correlations (Schönbrodt & Perugini, 2013) and analyzing their replicability across samples; see OSF for all data and syntaxes.

Results

Factor Structure and Psychometric Properties

The CFA findings (Table 1) were in line with Study 1 and the study by McKay et al. (2017). An exception was the item parceling model in Sample 3, which showed slightly numerically lower fit than observed in Samples 1 and 2 (Δs [fit] ≤ 0.003). However, this might be an artifact of the parceling procedure that did not replicate across samples. The ranges of the loadings are displayed in Table 2 (see ESM A for all coefficients). Contrary to Study 1, Item 4 showed robust loadings in Samples 2 (.38) and 3 (.34). However, loadings for Item 29 were still mixed (.35 and .11 in Samples 2 and 3), but the CITCs indicated alignment with the scale score (r_{it} = .32 and .21 in Samples 2 and 3). Our findings further supported the correlated 5-factor structure.

The findings on the item parameters replicated those from Study 1 well in both samples (see ESM A). The scale means and *SD*s were comparable to Study 1, and skewness and kurtosis did not indicate deviations from normality. The reliabilities α and ω were ≥ .78 and ≥ .80 in both samples. The CITCs were ≥ .28 across samples except for Item 29 in Sample 3 (r_{it} = .21); however, the item yielded satisfying CITC in Sample 2 (r_{it} = .32). As in Study 1, the scale intercorrelations were between $r = -.02$ and .46 (Sample 2) and between −.03 and .60 (Sample 3; see ESM B). Again, age was unrelated to the K-DOCS scores in both samples (*r*s ≤ |.13|). The effect of gender replicated well, as men yielded higher scores in Science (*r*s = −.34 and −.25, *p*s < .001) and women had higher Artistic scores ($r = .25$, $p < .001$ and $r = .13$, $p = .012$). Men yielded slightly higher scores in Performance in Sample 3 ($r = -.17$, $p = .001$).

Measurement Invariance

The inspection of the change indexes of model fit showed no evidence for rejecting metric invariance (all ΔCFI ≤ 0.006; ΔRMSEA ≤ 0.001; see ESM D for all fit indices). When comparing the metric and scalar invariance models, the ΔCFI exceeded the critical cutoff (≤ 0.018) but neither RMSEA (Δs ≤ 0.002) nor SRMR (Δs = 0.002) changed considerably with increasing restrictions. Thus, we accepted scalar invariance for men and women. The analysis of the latent means of the scalar model, with men as reference group (i.e., latent means are zero), showed statistically significant differences in latent means between men and women for Science ($M = -0.35$, $SD = 0.29$, $p < .001$) and Artistic creativity ($M = 0.45$, $SD = 0.83$, $p < .001$), whereas no significant differences existed for Everyday ($M = 0.04$, $SD = 0.28$, $p = .083$), Scholarly ($M = -0.06$, $SD = 0.45$, $p = .102$), and Performance ($M = -0.11$, $SD = 0.90$, $p = .101$).

Correlations With External Measures

The descriptive statistics and internal consistencies of the external measures are displayed in ESM E. We did not find evidence for any anomalies or robust deviations from prior studies in German-speaking samples for the external instruments.

Table 3. Convergent validity correlations between the K-DOCS and external measures of creativity in Samples 2 (N = 502) and 3 (N = 366)

		Creativity self-report			Situational judgment test (CRE-W)		
K-DOCS	Sample	MRS-30	HEXACO-60	CSRF	New	Different	Creative Initiative
Everyday							
	2	.24***	—	—	.15**	.17***	.16***
	3	.28***	.21***	.26***	—	—	—
Scholarly							
	2	.23***	—	—	.12**	.17***	.14*
	3	.29***	.32***	.28***	—	—	—
Performance							
	2	.34***	—	—	.09*	−.08	<.01
	3	.35***	.37***	.28***	—	—	—
Science							
	2	.16***	—	—	.17***	.25***	.23***
	3	.14**	.13*	.16**			
Artistic					—	—	—
	2	.55***	—	—	.22***	.12**	.17***
	3	.55***	.46***	.43***	—	—	—

Note. CRE-W = Creative Response Evaluation-Work; CSRF = Character Strengths Rating Form; K-DOCS = Kaufman Domains of Creativity Scales; MRS-30 = Minimum Redundancy Scales-30. *p < .05. **p < .01. ***p < .001. Two-tailed.

Creativity. The analysis of the convergent validity with self-reports of creativity met the expectations well (see Table 3). For the creativity self-reports based on the MRS-30, HEXACO-60, and CSRF, we found correlations ranging between .21 and .55 (ps < .001), except for the Science scale that showed positive but only small associations (.13 ≤ r ≤ .16, ps ≥ .012). However, when testing associations with the SJT of creative thinking, we found small-to-medium effect sizes for the Science scale (rs between .17 and .25, ps < .001). Also, the Everyday, Scholarly, and Artistic scales showed positive but numerically smaller associations with the CRE-W (.12 ≤ r ≤ .22). Performance was unrelated to the CRE-W (rs ≤ .09, ps ≥ .037).

Big Five. We found the expected associations between the K-DOCS and culture (MRS-30)/openness (HEXACO-60) with medium-to-large effect sizes between .23 (Everyday) and .53 (Artistic), except for Science which showed only small effects (r = .15, p < .001 in Sample 2 and r = .10, p = .055 in Sample 3; Table 4). As expected, extraversion was associated with the Everyday domain (rs ≥ .23, ps < .001) and, to a numerically lesser degree, with Performance (rs = .11 and .19, ps ≤ .011). Against expectations, we found no association between Performance and neuroticism (rs ≤ |.09|) but negative associations between neuroticism and Everyday (r = −.31 and −.36, ps < .001) and Scholarly creativity (rs = −.16 and −.21, ps < .001). Also, we found minor effect sizes for associations between Everyday creativity and agreeableness (rs = .18 and .13, ps ≤ .014) and conscientiousness (rs = .13 and .18, p ≤ .004). Remaining correlations did not replicate across samples or were negligible.

Dark Triad. While Machiavellianism was unrelated to the K-DOCS (rs ≤ |.09|), we found positive associations with narcissism of small-to-medium size between .13 (Artistic) and .26 (Performance). Also, psychopathy was slightly related to Science (r = .15, p = .003).

Adult Playfulness. The correlations between the K-DOCS and indicators of adult playfulness showed the expected robust positive correlations that replicated across samples with four exceptions: Scholarly scores were unrelated to the global indicator of playfulness (rs ≤ .08), and the associations between Lighthearted types of playfulness were of small size and did not replicate across samples for the Scholarly, Scientific, and Artistic scales.

Curiosity. We found the expected positive associations between curiosity and the Everyday, Scholarly, and Science scales with medium-to-large effect sizes (rs between .26 and .46), and Artistic also showed small effects (rs = .12 and .17, ps ≤ .006). The relationship with Performance creativity was mixed; we did not find an association in Sample 2 (r = −.03, p = .563), but we did find a positive association in Sample 3 (r = .23, p < .001).

Cognitive Styles. When testing the relations to cognitive styles, we found the expected numerically highest overlap between the creating scale and the K-DOCS (.19 ≤ r ≤ .43; exception: Performance in Sample 2), whereas the planning style was either unrelated to the K-DOCS or showed minor effect sizes that did not replicate across samples

Table 4. Nomological validity correlations between the K-DOCS and external measures in Sample 2 (N = 502) and Sample 3 (N = 366)

	Everyday		Scholarly		Performance		Science		Artistic	
External measure	Sample 2	Sample 3	Sample 2	Sample 3	Sample 2	Sample 3	Sample 2	Sample 3	Sample 2	Sample 3
Big Five										
Extraversion	.34***	.23***	.09*	.09	.11*	.19***	−.13*	.08	<.01	.02
Neuroticism	−.31***	−.36***	−.16***	−.21***	.08	−.09	−.09	−.11*	.05	−.08
Culture	.23***	.28***	.25***	.35***	.35***	.33***	.15***	.10	.53***	.43***
Agreeableness	.18***	.13*	.01	−.06	.03	.02	.04	−.17***	.09*	.15**
Conscientiousness	.13**	.18***	.02	.13*	−.10*	−.10	.09	.03	.02	−.05
Dark Triad										
Machiavellianism	—	−.01	—	.07	—	−.01	—	.06	—	−.09
Narcissism	—	.21***	—	.21***	—	.26***	—	.17**	—	.13*
Psychopathy	—	−.02	—	.06	—	.06	—	.15**	—	−.05
Curiosity at work	.29***	.41***	.39***	.46***	−.03	.23***	.30***	.26***	.12**	.17**
Cognitive styles										
Knowing	.14**	.24***	.24***	.28***	−.09	.10	.32***	.16**	.10*	.02
Planning	.04	.07	.01	.12**	−.07	−.02	.11*	−.08	.04	−.03
Creating	.30***	.43***	.32***	.35***	.08	.26***	.19***	.22***	.22***	.31***
Playfulness (SMAP)	.13**	.17**	.08	.05	.23***	.24***	.12**	.14**	.20***	.23***
Playfulness (OLIW)										
Other-directed	.31***	.28***	.13**	.13*	.28***	.27***	.05	.07	.22***	.24***
Lighthearted	.22***	.26***	.11*	.08	.13*	.15**	−.04	.12*	.05	.15**
Intellectual	.24***	.26***	.31***	.23***	.19***	.19***	.18***	.26***	.22***	.26***
Whimsical	.23***	.29***	.25***	.34***	.28***	.28***	.11*	.20***	.30***	.34***
GCIPS	—	−.20***	—	−.07	—	−.09	—	−.05	—	−.02

Note. GCIPS = German-Language Clance Impostor Phenomenon Scale; K-DOCS = Kaufman Domains of Creativity Scales; SMAP = Short Measure of Adult Playfulness. *p < .05. **p < .01. ***p < .001. Two-tailed.

(rs ≤ .12). The knowing style related to the Everyday, Scholarly, and Science scales (.14 ≤ r ≤ .32).

Impostor Phenomenon. As expected, the GCIPS scores were unrelated to the K-DOCS (rs ≤ |.09|, ps ≥ .107), except for a negative association with Everyday creativity (r = −.20, p < .001). This provides initial and partial evidence for the discriminant validity of the K-DOCS.

General Discussion

Our study provided initial evidence on the psychometric properties of our German translation of the K-DOCS (Kaufman, 2012). CFAs across data from three independent samples showed that the 5-factor model proposed in the original version also fits well with data from participants who completed our German translation, when taking the model complexity into account. Also, we found comparable fit indices as in prior studies testing the same measurement model of the K-DOCS (e.g., Kapoor et al., 2021; McKay et al., 2017). The item and scale parameters showed satisfying difficulty indexes, CITCs, and loadings. However, Item 29 ("solving math puzzles") of the Science scale showed low loadings (between .11 and .35), whereas the CITCs suggested that it is associated with the total Science score (between .21 and .28). Prior studies have not reported information on item parameters, and it is possible that this item is characterized by comparatively low loadings in the original and other translations too. We decided to keep the item in the German translation to ensure the comparability of the German K-DOCS with its original and other-language translations. Our findings on the internal consistency showed that the coefficients were stable across samples and prior research (e.g., Kapoor et al., 2021; Kaufman, 2012). Thus, the K-DOCS yields appropriate reliability for its intended use for research purposes.

Demographic effects (age and gender) were in line with previous findings (e.g., Kapoor et al., 2021). Finally, the investigation of the measurement invariance (MI) for men and women showed scalar invariance, thus allowing to use the K-DOCS for comparisons across gender. However, the inspection of latent mean differences showed that men

yielded higher latent means in Science, and women were higher in Artistic, which aligns with the differences we found in the manifest scores across samples and prior findings (e.g., Kapoor et al., 2021). Future research should examine invariance with other translations to clarify whether the instrument is suited for cross-national comparisons of creative self-reports.

Study 2 additionally examined the validity of the German translation of the K-DOCS by testing associations with other indicators of creativity (self-reports and an SJT) as well as theoretically near broad and narrow individual difference variables (i.e., Big Five, Dark Triad, adult playfulness, cognitive styles, curiosity, and the IP) across two samples. While Sample 2 consisted mostly of employees, Sample 3 comprised a higher proportion of undergraduates. This allowed increased generalizability regarding professional status.

The correlations with indicators of creativity in terms of single items of questionnaires (five-factor model, character strengths) or subscales (HEXACO) were positive for all K-DOCS scales and met the expectations from the literature in terms of effect sizes (McKay et al., 2017). When employing an SJT of creative thinking (CRE-W) to solve work-related dilemmas, we also found positive correlations of small-to-medium sizes. An exception was the Performance scale, but it can be argued that performance-related creative behaviors such as coming up with new lyrics to a song are qualities that do not systematically overlap with creative decisions in a workplace context, whereas the other K-DOCS domains entail creative behaviors that could contribute to solve the presented scenarios. Considering that correlations between SJTs and self-report measures are generally reduced based on the reduction of method biases (Lievens et al., 2008) and considering that the CRE-W assesses creative *thinking styles* instead of broad creativity (Reiter-Palmon & Kaufman, 2018), our findings indicate satisfying overlap and initial evidence for convergent validity because self-reports in the K-DOCS relate to solving dilemmas creatively. Future research should expand the study of the K-DOCS' validity by testing overlap with alternative indicators of creativity such as ability tests and expert judgments.

We replicated prior findings concerning associations with the Big Five, adult playfulness, and the Dark Triad (Kaufman, 2012; McKay et al., 2017; Proyer et al., 2019). Overall, the correlations met the expectations well in size and direction, with few exceptions. As expected, the K-DOCS showed overlap with the culture/openness trait and extraversion related to Performance creativity, but we did not find an association between Performance and neuroticism. However, there was a replicable pattern showing negative relations between neuroticism and the Everyday and Scholarly scales, and Everyday creativity was associated with higher agreeableness and conscientiousness (small effect sizes). This has also been reported in prior studies (Kaufman, 2012; McKay et al., 2017). Like McKay et al. (2017), we found slightly increased expressions of narcissism in those high in Everyday, Scholarly, and Performance creativity (moderate effect sizes). While the association between Machiavellianism and science-related creativity did not replicate, we found a minor association between Scientific creativity and psychopathy. Overall, the findings fit into previous research showing only negligible to minor overlap with the Dark Triad. Also, associations with adult playfulness aligned with prior research (Proyer et al., 2019), showing overlap but no redundancies. The inspection of facets of playfulness showed that those high in intellectual types of playfulness yielded higher scores in the K-DOCS, whereas creative behaviors that require interactions with others (Everyday, Performance, and Artistic) were related to other-directed playfulness.

We extended the knowledge on the nomological net by testing associations with thinking styles, curiosity, and the IP. Again, the findings met the expectations. In line with Kashdan and Fincham (2002), we found overlap but no redundancy between curiosity and the K-DOCS. The findings supported our expectation that creative self-reports in the K-DOCS would relate to a cognitive style characterized by innovation and finding new solutions, inquisitiveness, and learning, while being distinct from preferences for planned thinking. This might be viewed as initial evidence for the discriminant validity. Finally, we also found the IP to be unrelated to the K-DOCS, other than a correlation with Everyday creativity. A closer inspection of the items of the Everyday scale showed that there is some overlap with IP-typical concerns (e.g., using one's ability to teach others). It could be speculated that those high in the IP discount their creativity when it comes to evaluating their creative behaviors in terms of an ability. Taking the association between Everyday creativity and IP aside, our findings provide initial evidence for the K-DOCS' discriminant validity.

Overall, our findings on the psychometric properties and structural and nomological validity of a German-language translation of the K-DOCS provide promising evidence for assessing individual differences in five domains of creativity in German speakers. Our findings aligned well with those from other translations (e.g., McKay et al., 2017) and largely replicated prior findings of associations with external measures and extended the knowledge on the associations with indicators of curiosity, cognitive styles, and the IP. As expected, the K-DOCS can be localized well into the nomological net of curiosity and cognitive styles

(particular the *creating* style), whereas self-reports in the K-DOCS were unrelated to the IP.

Limitations and Future Directions

First, although self-reports of creativity allow good approximations of creativity (e.g., Silvia et al., 2012), they do not offer a comprehensive assessment of the breadth of the creativity construct. Also, it is unclear whether social desirability and valuations play a role for responding to the K-DOCS. For example, Brackett et al. (2006) provided evidence that people overestimate their emotional intelligence when comparing self-reports and performance tests, whereas they show accurate self-perceptions when it comes to general intelligence. Brackett et al. (2006) argued that discrepancies might be related to whether an ability (or trait) is positively valued, with greater discrepancies being related to stronger valuations. Considering that creativity is a positively valued trait (e.g., Peterson & Seligman, 2004), future research should examine the overlap between self-reports collected with the K-DOCS and performance tests of creativity (e.g., Jäger et al., 1997). Moreover, examining the role of systematic influences such as socially desirable responding could also contribute to better understand the latent measurement model of the K-DOCS. Although the 5-factor model fitted the data comparatively well, there is still variance left unexplained, and future research should examine whether response biases (e.g., social desirability, acquiescence, or proactive faking; cf. Ziegler, 2015) might explain variance in the item responses to the K-DOCS. Overall, the German K-DOCS seem to be useful in a multimethod assessment approach of creativity supplementing other data (e.g., performance tests, SJTs, or informant ratings). Such an approach would allow for a thorough assessment of creativity in an individual or a group of individuals and enable the examiner to get different perspectives of what constitutes creativity in an individual. Future studies will show what types of outcomes the German K-DOCS will predict better than other measures.

Second, our observed associations with other self-report instruments might be biased by shared method variance (Campbell & Fiske, 1959), although employing the SJT might alleviate this concern. In addition to testing objective markers of creativity, future studies could also collect informant ratings for the K-DOCS and estimate the overlap with self-reports as an indicator of convergent validity to reduce shared method variance (Campbell & Fiske, 1959). Ng and Feldman's (2012) meta-analysis compared correlates of self-indicators and external indicators of employees' creativity with external measures (e.g., interests, skills, and efficacy). As expected, they found inflated correlations when analyzing self-reports in comparison to non–self-reports. Also, retest correlations and predictive validity of the German K-DOCS should be addressed.

Finally, testing MI with other language versions would allow for cross-cultural research of creativity and its five domains in future research and establishing scalar invariance with the English version would allow to use Kapoor et al.'s (2021) norms. We hope that the introduction of the German-language version of the K-DOCS stimulates research on creativity in German-speaking samples since it allows to assess and differentiate among domains of creativity with a comparatively short instrument.

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Open Data
Open Data: The information needed to reproduce all of the reported results is available at https://osf.io/jsd6n/ (Brauer et al., 2022).

Open Materials: The information needed to reproduce all of the reported methodology is available at https://osf.io/jsd6n/ (Brauer et al., 2022).

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