

Creative Personal Identity and Creative Mindsets, and Their Implications for Creative Potential and Metacognition: A Latent Variable and a Latent Class Approach

Rogelio Puente-Diaz¹, and Judith Cavazos-Arroyo²

¹ School of Business and Economics, Universidad Anáhuac México, Mexico

² Centro Interdisciplinario de Posgrados, Universidad Popular Autónoma del Estado de Puebla, Mexico

ABSTRACT

The amount of attention given to creative beliefs has increased in recent years. This article suggests that the selection of one's best ideas from a set of self-generated alternatives should be included as an indicator of metacognition; something known as creative metacognition accuracy. The present investigation examined the role of creative mindsets and creative personal identity on the selection of one's best idea, creative self-efficacy, and potential, under two conceptualizations of these beliefs: latent variables and latent classes. College business students completed a battery of questionnaires assessing creative mindsets, creative personal identity, and creative self-efficacy. In addition, participants completed a divergent thinking task involving improvement of smartphones and were asked to choose their best idea. Two independent judges also selected the best idea from participants' set of self-generated ideas. Under the latent class conceptualization, a class with high levels of growth mindset and creative personal identity, and low levels of a fixed mindset showed higher levels of accurate idea selection and creative self-efficacy than the rest of the classes. Similarly, under the latent variable conceptualization, creative personal identity had a posi-

tive influence on accurate idea selection and creative self-efficacy.

KEYWORDS:

creative personal identity, creative metacognition, creative beliefs, creative self-efficacy, creative potential

Article history:

Received: October 29, 2020

Received in revised form: December 17, 2020

Accepted: December 20, 2021

ISSN 2354-0036

DOI: 10.2478/ctra-2021-0015

Corresponding author at:

Rogelio Puente-Diaz

E-MAIL: rogelio.puente@anahuac.mx

INTRODUCTION

Creativity scholars have paid increased attention to the role of creative beliefs (Beghetto & Karwowski, 2017; Karwowski, Han, & Beghetto, 2019). These beliefs include creative self-concept, creative self-efficacy, creative mindsets, creative personal identity, and creative metacognition (Beghetto & Karwowski, 2017). Creative metacognition involves self and contextual knowledge (Kaufman & Beghetto, 2013). The present article posits that in addition to self and contextual knowledge, having the ability to choose one's best idea from a set of alternatives should also be included as an indicator of metacognition; something known as creative metacognition accuracy (Birney, Beckmann, & Seah, 2016; Grohman, Wodniecka, & Klusak, 2006; Karwowski, Czerwinka, & Kaufman, 2020). If this proposition is correct, it would be relevant to examine how other creative beliefs, such as creative mindsets and creative personal identity, might influence the ability to choose one's best idea. Thus far, research has mainly examined the influence of creative beliefs on creative performance or potential (Farmer & Tierney, 2017; Beghetto & Karwowski, 2017; Puente-Díaz, 2016) without examining the influence of these beliefs on creative metacognition accuracy. Understanding metacognition accuracy is important given that models of the creative process emphasize relevance of idea generation and idea selection as two crucial components of creative product development (e.g., Amabile, 1996; see Runco & Dow, 2004 for one of the first studies examining accuracy). Hence, the purpose of this investigation is to examine the influence of creative mindsets and creative personal identity on creative metacognition accuracy under two different conceptualizations of creative beliefs: as latent variables and latent classes. A secondary purpose is to examine the influence of creative mindsets and creative personal identity on creative self-efficacy and potential.

CREATIVE MINDSETS

There are two creative mindsets: growth and fixed (Karwowski, 2014). Growth mindsets are characterized by the belief that creative skills are developable with time and practice. Conversely, fixed mindsets hold the belief that creative skills are fixed and there is not much one can do about it. Given that creative mindsets assess individual beliefs about the nature of creativity, they might also influence three relevant outcomes: ideal generation and selection as well as creative self-efficacy.

Regarding idea generation as a proxy of creative potential and creative self-efficacy, a recent investigation (Royston & Reiter-Palmon, 2017) found that creative mindsets were capable of influencing creative potential by increasing individuals' confidence in their ability to generate novel and useful ideas – creative self-efficacy. Specifically, whereas growth mindsets were positively related to creative self-efficacy, fixed mindsets had a negative relationship. Creative self-efficacy then had a positive relationship with creative potential. Similarly, other investigations have also supported the influence of creative mindsets on creative self-efficacy (Puente-Díaz & Cavazos-Arroyo, 2017).

Hence, if creative mindsets are capable of influencing indicators of creative potential, such as the quality and originality of ideas generated, can they also influence one's ability to select one's best idea from a set of alternatives? This is what the present study is set to test. Specifically, the present investigation seeks to answer a recent call for more research examining the consequences of creative mindsets (Karwowski & Brzeski, 2017) and also to test a recent theoretical proposition suggesting that individuals with higher levels of growth mindset might be better at judging their creative abilities (Karwowski & Barbot, 2016). This investigation also represents continuation of previous work on accurate intrapersonal idea selection (see Runco & Smith, 1992; Silvia, 2008), which has received limited attention (Rietzschel & Ritter, 2018; see Birney et al., 2016 for a relevant exception). The hypothesized effect of creative mindsets on creative metacognition comes from the proposition that mindsets are capable of influencing such cognitive processes as attention, information processing, and memory (Plaks, 2017). Hence, mindsets influence attention by making more salient certain performance characteristics.

CREATIVE PERSONAL IDENTITY

Individuals can hold multiple identities. Creative personal identity is defined as valuing the role of being creative and seeing such a role as important for defining the self (Farmer, Tierney, & Kung-Mcintyer, 2003). Individual differences in creative personal identity are important predictors of one's confidence in one's ability to generate creative ideas and creative potential (Tierney & Farmer, 2011). Hence, valuing creativity influences creative potential and self-efficacious beliefs.

Creative personal identity could also influence the cognitive process of selecting one's best idea. Specifically, the self-verification theory (Swann, 1983, 1984) suggests that identities influence cognition in the sense that individuals want to maintain a consistent view of the self with the valued identity; hence, they tend to pay more attention to identity confirming evidence. The influence of identity on cognitive processes is explained by conceptualizing identities as mental representations capable of affecting the direction of different cognitive processes (Swann & Bosson, 2010). The main reason why individuals seek to receive self-verifying feedback is because it assures them that their self-views are valid to guide their behavior (Swann & Bosson, 2010). Hence, individuals who value creativity as an important part of the self would be more engaged in trying to choose their best ideas from a set of self-generated alternatives in order to fulfill their desire for coherence (Swann & Bosson, 2010), suggesting a motivationally positive role of creative personal identity (Karwowski & Barbot, 2016). Hence, individuals with high levels of creative personal identity should pay close attention to the selection of ideas in order to achieve self-verification. Failing to choose one's best idea might reflect a discrepancy between what individuals value and what they show in their selection of creative ideas.

Another mechanism for the influence of creative personal identity comes from the theoretical and empirical work on multiple identities and creativity (e.g., Gocłowska & Crisp, 2014; Steffens,

Gocłowska, Cruwys, & Gallinsky, 2015). Specifically, this line of research suggests that individuals holding multiple identities tend to have better performance in idea generation tasks because they have access to a wider variety of experiences (Gocłowska & Crisp, 2014). Similarly, it might also have implications for the evaluation of one's ideas, given that the benefit of being exposed to a wider variety of experiences might help discern between ideas with more or less potential. Some theoretical and empirical work supports the idea that identities play an important role in idea generation and evaluation (Haslam, Adarves-Yorno, Postmes, & Jans, 2013), yet this work has focused more on interpersonal as opposed to intrapersonal evaluation. Hence, if this theoretical development is correct, creative personal identity should play a positive role in both the generation and the selection of ideas.

CONCEPTUALIZING CREATIVE MINDSETS AND CREATIVE PERSONAL IDENTITY

Creative mindsets and creative personal identity are part of a family of creative beliefs (Beghetto & Karwowski, 2017) with important implications for the creative process. These beliefs could be conceptualized as variables capturing individual differences (Karwowski & Lebuda, 2016), a latent variable approach. Similarly, these creative beliefs could be conceptualized as a configuration of beliefs reflecting the creative self in which it is possible identify sub-groups with qualitative differences in their profiles – a latent class approach (Karwowski, Royston, & Reiter-Palmon, 2019). Creative mindsets represent beliefs about the nature of creativity. These mindsets would mainly have implications if individuals value creativity (Beghetto & Karwowski, 2017). Hence, both sets of beliefs, creative mindsets, and creative personal identity, should be included in the analysis to obtain latent classes. Creative self-efficacy, creative metacognition accuracy, and creative potential are conceptualized as outcomes likely to vary as a function of other creative beliefs (Beghetto & Karwowski, 2017). Hence, the following hypotheses were tested:

Under the latent class conceptualization:

1. A class characterized by having high levels of growth mindset and creative personal identity would show higher levels of creative metacognition accuracy than a class characterized by having low levels of growth mindset and creative personal identity or high levels of fixed mindset.
2. A class characterized by having high levels of growth mindset and creative personal identity would show higher levels of creative potential than a class characterized by having low levels of growth mindset and creative personal identity or high levels of fixed mindset.
3. A class characterized by having high levels of growth mindset and creative personal identity would show higher levels of creative self-efficacy than a class characterized by having low levels of growth mindset and creative personal identity or high levels of fixed mindset.

Under the latent variable conceptualization:

4. Growth mindsets and creative personal identity would be positively related to creative metacognition accuracy. Conversely, fixed mindsets would be negatively related to creative metacognition accuracy.
5. Growth mindsets and creative personal identity would be positively related to creative potential. Conversely, fixed mindsets and creative potential would have a negative relationship.
6. Growth mindsets and creative personal identity would be positively related to creative self-efficacy. Conversely, fixed mindsets and creative self-efficacy would have a negative relationship.

In sum, the purpose of the present investigation is twofold. First, we want to examine the influence of creative mindsets and creative personal identity on creative metacognition accuracy under two different conceptualizations of creative beliefs: as latent variables and latent classes. A secondary purpose is to examine the influence of creative mindsets and creative personal identity on creative self-efficacy and potential.

METHOD

Participants and Procedure

Participants were 273 (169 women and 104 men; ages 18 to 62 years, $M = 22.75$ years and $SD = 5.41$) college business students from two universities in Mexico. Participants received extra credit for their participation. All participants had experience in generating ideas to solve business problems or improving products and services. Participants were informed that they were going to participate in a study about the generation of ideas. Questionnaire packets were administered in small groups of two participants and completed with paper and pencil. All participants first completed the creative beliefs measures and then the divergent thinking task.

Measures

Short scale of creative self (SSCS; Karwowski, 2014). This questionnaire uses 11 items to assess creative self-efficacy and creative personal identity and asks respondents to indicate how identified they feel with each statement. Six items assess creative self-efficacy and five items assess creative personal identity in a scale of 1 (definitely no) to 5¹ (definitely yes). The scores have shown to be reliable and valid (Karwowski, 2014). The wording of some items was modified to make specific

¹ Following the suggestions set by Beghetto & Karwowski (2017), we inform readers that we used the traditional measure of creative self-efficacy. When we designed and conducted the current investigation, the recommendations to improve the assessment of creative self-efficacy were not published yet.

references to the task of generating ideas in the business sector (three for creative self-efficacy and two for personal identity). Sample items were: "I know I can efficiently solve even complicated business problems," "I am good in proposing original solutions of business problems," and "It is important for me to be a creative business person." The H coefficients for the scores of both scales were acceptable (.89 and .94, respectively).

Creative mindsets (Karwowski, 2014). This questionnaire uses ten items to assess fixed and growth mindsets (five items each). All items use a five-point scale ranging from "1 (definitely no)" to "5 (definitely yes)". Some items were slightly modified to make specific references to the context of business. Sample items were: "Everyone can create something great in business at some point if he or she is given appropriate conditions" (growth) and "You either are creative or you are not – even trying very hard you cannot change much" (fixed). Scores have shown adequate psychometric properties, including evidence for factorial validity and internal consistency (Karwowski, 2014). The H coefficients for the scores of both scales were acceptable (.75 and .74, respectively).

Divergent thinking task. Participants completed a divergent thinking task involving generating ideas to improve smartphones (hardware improvements or new apps). The task of improving products is common among managers and marketers in the private sector. There was no time limit to complete the divergent thinking tasks. Even though we did not time how long participants spent generating ideas, the whole questionnaire package took between 15 and 20 minutes to complete.

The divergent thinking task was scored by computing the number of ideas (fluency) and the originality of each idea (based on observed frequencies of responses). If the idea was given by less than 2% of the participants, it obtained two points. Conversely, if the idea was mentioned by more than 2% of the participants, it obtained one point. Consistent with previous research (Kaufman, Plucker, & Baer, 2008), fluency and originality scores were highly correlated (.88). Hence, only originality scores were used as a proxy of creative potential given that they are more closely related to the definition of creativity (original and useful ideas). Creative metacognition accuracy was conceptualized as a match between participants' selection and the selection of the most creative idea made by two judges (who had knowledge about technology and the process of improving products; these two judges agreed on 91% of their judgments and resolved their differences in the remaining 9%). If there was a match, it received a value of 1; if there was a mismatch, it received a value of zero.

RESULTS OF THE LATENT CLASS MODEL

A mixture modeling procedure with Mplus 7.1 was used to obtain latent classes with all items from the creative mindsets and creative personal identity questionnaires. To assess model fit, suggestions made by Masyn (2013) were followed in which several models are fit and the analyst uses a combination of statistical and "common" sense criteria to choose the best possible model. In addition, the 3-step approach was used to assess the influence of the latent classes on the dependent

variables (Asparouhov & Muthén, 2014), which has the advantage of considering the uncertainty in the classification procedure to estimate the coefficients and standard errors.

The analysis started with a model with one latent class, followed by models with two, three, and four classes. Results showed that after three classes, the proposed models did not fit the data well. Hence, the solution should be around two to three classes. The bootstrap likelihood test, in which a given model with N classes is tested against a model with $N-1$ classes, was used. Results showed that the model with three classes was better than the model with two classes, Loglikelihood = -4366.46 $df = 45$, $p < .001$. Hence, the three-class solution was retained. The three-class solution had adequate size of classes ranging from 16 to 55% and levels of entropy = .92.

Examination of the three latent classes (see Figure 1) showed that latent class one (30%) was characterized by medium levels of creative personal identity, relatively low levels of growth mindset, and high levels of fixed mindset (MILGHF). Class two (16%) was characterized by the lowest levels of creative personal identity, relatively high levels of growth mindset and low levels of fixed mindset (LIHGLF). Last, class three (55%) had the highest levels of creative personal identity and growth mindset, and low levels of fixed mindset (HIHGLF).

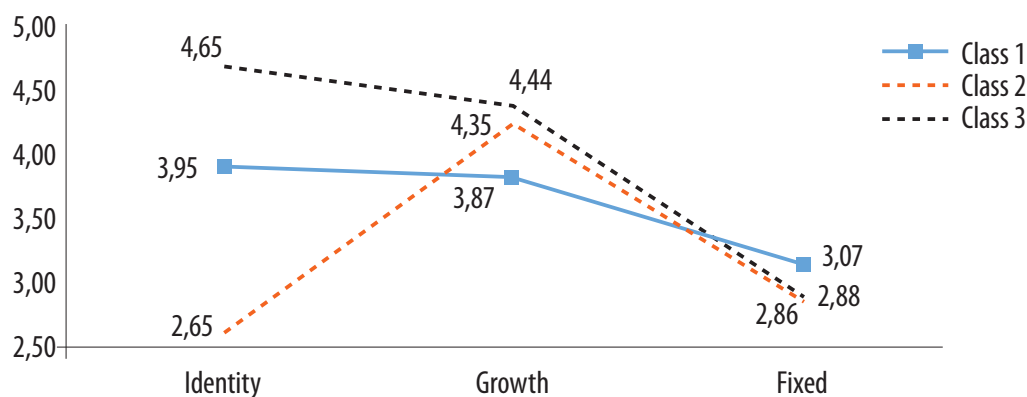


Figure 1. Differences between latent classes in creative personal identity, growth, and fixed mindsets

Results from the three-step approach for creative self-efficacy showed a significant effect of class, $\chi^2 = 76.99$, $p < .001$. Pairwise comparisons showed that the HIHGLF class ($M = 4.32$, $S.E. = .05$) had significantly higher levels of creative self-efficacy than the MILGHF class ($M = 3.75$, $S.E. = .07$), $\chi^2 = 38.33$, $p < .001$ and the LIHGLF class ($M = 3.42$, $S.E. = .11$), $\chi^2 = 60.22$, $p < .001$. Last, the MILGHF class had higher levels of creative self-efficacy than the LIHGLF class, $\chi^2 = 7.16$, $p = .007$.

Results for metacognition accuracy showed a marginally significant effect of class, $\chi^2 = 4.73$, $p = .09$. Pairwise comparisons showed that the HIHGLF class ($M = 63\%$, $S.E. = .04$) had significantly higher levels of metacognition accuracy than the LIHGLF class ($M = 44\%$, $S.E. = .08$), $\chi^2 = 3.97$, $p = .046$. Conversely, the difference with the MILGHF ($M = 65\%$, $S.E. = .06$) was not significant, $\chi^2 = .06$, $p = .80$. Last, the difference in metacognition accuracy between the MILGHF and the LIHGLF class was significant, $\chi^2 = 3.98$, $p = .046$.

Results for originality did not show a significant effect of class, $\chi^2 = 2.57$, $p = .28$. None of the comparisons between the HIHGLF, MILGHF, and LIHGLF classes were significant ($M = 4.54$, $S.E. = .26$; $M = 4.07$, $S.E. = .34$; $M = 3.82$, $S.E. = .37$).

RESULTS OF THE LATENT VARIABLE MODEL

Mplus 7.11 was used to test the latent variable model. The variables were treated as non-normally distributed. A combination of absolute and incremental fit indexes was reported: Satorra-Bentler χ^2 , Root Mean Square Error of Approximation (RMSEA), Incremental Fit Index (IFI), and Tucker Lewis Index (TLI). The cutoff scores as the minimum acceptable levels of model fit were: RMSEA = $< .08$ and CFI and IFI $> .90$ (West, Taylor, & Wu, 2012).

Results for the measurement model of the latent variables growth and fixed mindsets, creative self-efficacy and creative personal identity showed an acceptable model fit $\chi^2 = 467.78$, $p < .001$ ($df = 180$), RMSEA = $.07$, CFI = $.94$ and TLI = $.93$. Examination of the standardized factor loadings revealed that they were all significant and in the expected direction (ranging from $.27$ to $.94$). The latent correlations showed acceptable levels of discriminant validity (Brown, 2006) ranging from $.07$ to $.77$ (see Table 1 for descriptive statistics, latent correlations, and H coefficients). Given that the fit of the measurement model was acceptable, the structural model was tested.

Table 1. Descriptive statistics, H coefficients, and latent correlations

	Growth	Fixed	CSE	CPI
Growth	0.74			
Fixed	-0.17*	0.75		
CSE	0.47*	0.18*	0.89	
CPI	0.30*	0.07	0.77*	0.94
Mean	4.26	2.94	3.99	4.14
SD	0.57	0.81	0.68	0.84

H coefficients on the diagonal

CSE = Creative self-efficacy, CPI = Creative personal identity

* indicates significance at the $.05$ level

Results showed an acceptable model fit $\chi^2 = 515.31$, $p < .001$ ($df = 218$), RMSEA = $.07$, CFI = $.94$ and TLI = $.93$. Examination of the individual parameters revealed a significant positive effect of creative personal identity on creative metacognition accuracy, $\gamma = .19$, $p = .040$. The effects of fixed or growth mindsets were not significant, $\gamma = -.12$, $p = .23$; $\gamma = -.13$, $p = .20$, respectively. Regarding originality, the effects of creative personal identity, growth, and fixed mindsets were not significant, $\gamma = .08$, $p = .31$; $\gamma = .13$, $p = .14$; $\gamma = -.03$, $p = .70$, respectively. Last, the effects of growth mindsets and creative personal identity on creative self-efficacy were significant, $\gamma = .29$, $p < .001$; $\gamma = .66$, $p < .001$, respectively. Crea-

tive metacognition accuracy (.04), originality (.03), and creative self-efficacy (.68) were the squared multiple correlations for the endogenous variables.

DISCUSSION

Theoretical and empirical efforts examining creative beliefs have increased in recent years (Beghetto & Karwowski, 2017; Karwowski & Kaufman, 2017). This study suggested that accurate idea selection and evaluation (Grohman et al., 2006; Runco & Dow, 2004) should be part of the broad creative metacognition construct and that creative mindset and creative personal identity might act as predictors. Under the latent class conceptualization of creative beliefs, results showed that a class with high levels of creative personal identity and growth mindset and low levels of fixed mindset (HIHGLF) had higher levels of creative metacognition accuracy. Hence, this particular configuration of creative beliefs seemed to facilitate the selection of one's best ideas. The facilitation process might come from the characteristics of growth mindset and creative personal identity. Specifically, individuals holding high levels of growth mindset might see performance on a creative task as reflection of their current ability with room for improvement. This belief might help recognize self-generated good ideas from bad ones. In addition, if individuals holding growth mindset also care about the role of being creative, then they might have a higher tendency to pay attention to the idea selection task in order to show behaviors consistent with their identity (Swann & Bosson, 2010). Our results were consistent with the idea that creative mindsets can interact to form complex latent classes (Karwowski et al., 2019) and also with the adaptive consequences of holding growth mindsets (Puente-Díaz & Cavazos-Arroyo, 2019). In addition, the latent variable model, showing a positive effect of creative personal identity on creative metacognition accuracy, further validated the important role of creative personal identity. Yet, growth mindsets did not play a significant role.

Product improvement is an important task that business managers often have to face. When engaging in such process, it would be optimal to generate several ideas, but also to have the ability to choose the ideas with the most potential in order to move from creativity to innovation (Shalley, Hitt, & Zhou, 2015). Given the importance of idea generation and selection (Amabile, 1996) and relevance of the quality of raw ideas for predicting market success (Kornish & Ulrich, 2014), the proposition of adding accurate idea selection to the general creative metacognition construct seems justified.

Similarly, results for creative self-efficacy showed that the HIHGLF class had higher levels of creative self-efficacy than the rest of the classes. Under the latent variable conceptualization, growth mindset and creative personal identity had positive relationships with creative self-efficacy, which was consistent with previous research (Royston & Reiter-Palmon, 2017). Yet, it is important to mention that the relationship between creative self-efficacy and personal identity is reciprocal without a clear answer as to whether creative self-efficacy is the cause or the outcome of creative personal identity (Karwowski, 2016). Regarding creative potential, the latent class showing high lev-

els of creative personal identity and growth mindset and low levels of fixed mindset did not have a significant effect. Similarly, the latent variables of growth and fixed mindsets, and creative personal identity did not significantly influence creative potential.

From the latent class approach, it is assumed that creative beliefs are organized within individuals representing different configurations of beliefs. It seemed that holding a belief about malleability of creative skills in combination with valuing creative endeavors was beneficial in different fronts. First, it facilitated development of self-efficacious beliefs. Second, it helped choose one's best idea from a set of alternatives. Future studies might want to examine additional benefits of having a strong belief in malleability of valued creative endeavors. In addition, future studies could examine personal and contextual factors most likely to facilitate this specific type of configuration of creative beliefs.

LIMITATIONS

This study had several limitations. First, a sample of convenience was used. Even though business students have some experience developing ideas to improve products and services, results and conclusions might be different with more experienced businesspersons. Future studies should try to use more diverse samples. Second, a strict conceptualization of creative metacognition accuracy was used: match between participants' selection and judges' selection. This strict conceptualization might lead to different unexplored scenarios. For example, it could be that some participants did not like any of their ideas but chose one that was not "too bad." Similarly, judges might have faced a situation in which they did not like any of the participants' ideas but were instructed to choose one from each participant. Future research could expand the conceptualization of creative metacognition accuracy by having participants choose one idea and rate it. The additional rating might show that even though participants choose an idea, they might not think it is that creative, having a more complete indicator of individuals' metacognitive abilities to judge and choose their ideas. Third, even though results supported the role of a configuration of beliefs and creative personal identity in the understanding creative metacognition accuracy, a limited amount of variability was explained. Future studies could examine additional variables, such as the personality trait of openness to experience (Silvia, 2008) to increase the understanding of creative metacognition accuracy. Hopefully, creative research continues exploring the concept of metacognition (Puryear, 2015) and its implications for understanding the creative process in terms of idea generation, evaluation, and selection.

References

- Amabile, T.M. (1996). *Creativity in context*. Boulder, CO: Westview.
- Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: 3-step approaches using Mplus. *Webnote, 15*, 1–51. <https://www.statmodel.com/download/webnotes/webnote15.pdf>. Retrieved on July, 2020.

- Beghetto, R.A., & Karwowski, M. (2017). Toward untangling creative self-beliefs. In M. Karwowski & J.C. Kaufman (Eds.), *The creative self: Effect of beliefs, self-efficacy, mindset, and identity* (pp. 4–22). Cambridge, MA: Academic Press.
- Birney, D.P., Beckmann, J.F., & Seah, Y.-Z. (2016). More than the eye of the beholder: The interplay of person, task, and situation factors in evaluative judgements of creativity. *Learning and Individual Differences*, 51, 400–408. <https://doi.org/10.1016/j.lindif.2015.07.007>
- Brown, T.A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.
- Farmer, S.M., & Tierney, P. (2017). Considering creative self-efficacy: Its current state and ideas for future inquiry. In M. Karwowski & J.C. Kaufman (Eds.), *The creative self: Effect of beliefs, self-efficacy, mindset, and identity* (pp. 23–47). Cambridge, MA: Academic Press.
- Farmer, S.M., Tierney, P., & Kung-Mcintyre, K. (2003). Employee creativity in Taiwan: An application of role identity theory. *Academy of Management Journal*, 46 (5), 618–630. <https://doi.org/10.2307/30040653>
- Gocłowska, M.A., & Crisp, R.J. (2014). How dual-identity processes foster creativity. *Review of General Psychology*, 18(3), 216–236. <https://doi.org/10.1037/gpr0000008>
- Grohman, M., Wodniecka, Z., & Kłusak, M. (2006). Divergent thinking and evaluation skills: Do they always go together? *The Journal of Creative Behavior*, 40(2), 125–145. <https://doi.org/10.1002/j.2162-6057.2006.tb01269.x>
- Haslam, S.A., Adarves-Yorno, I., Postmes, T., & Jans, L. (2013). The collective origins of valued originality: A social identity approach to creativity. *Personality and Social Psychology Review*, 17(4), 384–401. <https://doi.org/10.1177/1088868313498001>
- Karwowski, M. (2014). Creative mindsets: Measurement, correlates, consequences. *Psychology of Aesthetics, Creativity, and the Arts*, 8(1), 62–70. <http://dx.doi.org/10.1037/a0034898>
- Karwowski, M. (2016). The dynamics of creative self-concept: Changes and reciprocal relations between creative self-efficacy and creative personal identity. *Creativity Research Journal*, 28(1), 99–104. <https://doi.org/10.1080/10400419.2016.1125254>
- Karwowski, M., & Barbot, B. (2016). Creative self-beliefs: Their nature, development, and correlates. In J.C. Kaufman & J. Baer (Eds.), *Cambridge companion to reason and development* (pp. 302–326). New York: Cambridge University Press.
- Karwowski, M., & Brzeski, A. (2017). Creative mindsets: Prospects and challenges. In M. Karwowski & J.C. Kaufman (Eds.), *The creative self: Effect of beliefs, self-efficacy, mindset, and identity* (pp. 367–383). Cambridge, MA: Academic Press.
- Karwowski, M., & Kaufman, J.C. (Eds.) (2017). *The creative self: Effect of beliefs, self-efficacy, mindset, and identity*. Cambridge, MA: Academic Press.
- Karwowski, M., & Lebuda, I. (2016). The big five, the huge two, and creative self-beliefs: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 10(2), 214–232. <http://dx.doi.org/10.1037/aca0000035>
- Karwowski, M., Czerwonka, M., & Kaufman, J.C. (2020). Does intelligence strengthen creative metacognition? *Psychology of Aesthetics, Creativity, and the Arts*, 14(3), 353–360. <https://doi.org/10.1037/aca0000208>
- Karwowski, M., Han, M.H., & Beghetto, R.A. (2019). Toward dynamizing the measurement of creative confidence beliefs. *Psychology of Aesthetics, Creativity, and the Arts*, 13(2), 193–202. <https://doi.org/10.1037/aca0000229>
- Karwowski, M., Lebuda, I., & Beghetto, R.A. (2019). Creative self-beliefs. In J.C. Kaufman & R.J. Sternberg (Eds.), *Cambridge handbook of creativity* (2nd Ed.). New York: Cambridge University Press.
- Karwowski, M., Royston, R.P., & Reiter-Palmon, R. (2019). Exploring creative mindsets: Variable and person-centered approaches. *Psychology of Aesthetics, Creativity, and the Arts*, 13(1), 36–48. <https://doi.org/10.1037/aca0000170>
- Kaufman, J.C., & Beghetto, R.A. (2013). In praise of Clark Kent: Creative metacognition and the importance of teaching kids when (not) to be creative. *Roeper Review*, 35(3), 155–165. <https://doi.org/10.1080/02783193.2013.799413>
- Kaufman, J.C., Plucker, J.A., & Baer, J. (2008). *Essentials of creativity assessment*. Hoboken, NJ: Wiley.

- Kornish, L.J., & Ulrich, K.T. (2014). The importance of the raw idea in innovation: Testing the sow's ear hypothesis. *Journal of Marketing Research*, 51(1), 14–26. <https://doi.org/10.1509/jmr.12.0401>
- Masyn, K. (2013). Latent class analysis and finite mixture modeling. In T.D. Little (Ed.), *The Oxford handbook of quantitative methods in psychology* (Vol. 2, pp. 551–611). New York, NY: Oxford University Press.
- Plaks, J.E. (2017). Implicit theories: Assumptions that shape social and moral cognition. In J. M. Olson (Ed.), *Advances in experimental social psychology: Vol. 56. Advances in experimental social psychology* (p. 259–310). Elsevier Academic Press.
- Puente-Díaz, R. (2016). Creative self-efficacy: An exploration of its antecedents, consequences and applied implications. *The Journal of Psychology: Interdisciplinary and Applied*, 150(2), 175–195. <https://doi.org/10.1080/00223980.2015.1051498>
- Puente-Díaz, R., & Cavazos-Arroyo, J. (2017). The influence of creative mindsets on achievement goals, enjoyment, creative self-efficacy and performance among business students. *Thinking Skills and Creativity*, 24, 1–11. <https://doi.org/10.1016/j.tsc.2017.02.007>
- Puente-Díaz, R., & Cavazos-Arroyo, J. (2019). Creative mindsets and their affective and social Consequences: A latent class approach. *The Journal of Creative Behavior*, 53(4), 125–145. <https://doi.org/10.1002/jocb.217>
- Puryear, J.S. (2015). Metacognition as a moderator of creative ideation and creative production. *Creativity Research Journal*, 27(4), 334–341. <https://doi.org/10.1080/10400419.2015.1087270>
- Rietzschel, E.F. & Ritter, S. (2018). Moving from creativity to innovation. In R. Reiter-Palmon, V.L. Kennel, & J.C. Kaufman (Eds.), *Individual creativity in the workplace* (3–34). Academic Press: Cambridge, MA.
- Royston, R., & Reiter-Palmon, R. (2019). Creative self-efficacy as a mediator between creative mindsets and creative problem-solving. *The Journal of Creative Behavior*, 53(4), 472–481. <https://doi.org/10.1002/jocb.226>
- Runco, M.A., & Smith, W.R. (1992). Interpersonal and intrapersonal evaluations of creative ideas. *Personality and Individual Differences*, 13(3), 295–302. [https://doi.org/10.1016/0191-8869\(92\)90105-X](https://doi.org/10.1016/0191-8869(92)90105-X)
- Runco, M.A., & Dow, G.T. (2004). Assessing the accuracy of judgments of originality on three divergent thinking tests. *Korean Journal of Thinking & Problem Solving*, 14(2), 5–14.
- Shalley, C.E., Hitt, M.A., & Zhou, J. (2015). Introduction: Integrating creativity, innovation, and entrepreneurship to enhance the organization's capability to navigate in the new competitive landscape. In C.E. Shalley, M.A. Hitt, & J. Zhou (Eds.), *The Oxford handbook of creativity, innovation and entrepreneurship* (pp. 1–14). New York, NY: Oxford.
- Silvia, P.J. (2008). Discernment and creativity: How well can people identify their most creative ideas? *Psychology of Aesthetics, Creativity, and the Arts*, 2(3), 139–146. <https://doi.org/10.1037/1931-3896.2.3.139>
- Steffens, N.K., Gocłowska, M.A., Cruwys, T. & Gallinsky, A.D. (2015). How multiple social identities are related to creativity. *Personality and Social Psychology Bulletin*, 42(2), 188–203. <https://doi.org/10.1177/0146167215619875>
- Swann, W.B., Jr. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls & A.G. Greenwald (Eds.), *Social psychological perspectives on the self* (Vol. 2, pp. 33–66). Hillsdale, NJ: Erlbaum.
- Swann, W.B., Jr. (1984). The quest for accuracy in person perception: A matter of pragmatics. *Psychological Review*, 91(4), 457–477. <https://doi.org/10.1037/0033-295X.91.4.457>
- Swann, W.B., Jr. & Bosson, J. (2010). Self and Identity. In S.T. Fiske, D.T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed; 589–628). New York, NY: McGraw-Hill.
- Tierney, P., & Farmer, S.M. (2011). Creative self-efficacy development and creative performance over time. *Journal of Applied Psychology*, 96(2), 277–293. <https://doi.org/10.1037/a0020952>
- West, S.G., Taylor, A.B., & Wu, W. (2012). Model fit and model selection in structural equation modeling. In R.H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 209–231). New York, NY: Guilford Press.

