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COURAGE VS. TOLERANCE OF AMBIGUITY IN YOUNG ADULTS' CAREER CHOICES: LIFE ORIENTATION'S MODERATING EFFECT

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This study explored the relationship between courage and tolerance of ambiguity in the context of career-related attitudes among young adults, and examined the moderating effect of life orientations—categorized as transitive or moratory. The study involved 229 participants (145 women, 84 men) aged 19 to 26. Courage was measured using a custom-adapted Courage Scale, while tolerance of ambiguity was assessed with the Tolerance of Ambiguity in Career Decision Making Questionnaire. Life orientation was evaluated with the Social Participation Questionnaire. Results showed that mainly moratory orientation significantly moderated the relationship between courage and tolerance of ambiguity. Specifically, the interaction effect indicated that at low to average levels of moratory orientation, higher courage was associated with lower aversion to ambiguity.

Keywords*:* courage; life orientation; tolerance of ambiguity; career; young adults

The process of career decision-making, involving the selection of an educational or vocational path, stands as a pivotal task for young individuals. It constitutes a significant focus within vocational psychology and counseling (Gati et al., 2010; Gati & Levin, 2014; Levin et al., 2020; Lipshits-Braziler et al., 2016; Udayar et al., 2020). The decisions made in this context can significantly bear on both personal and professional domains, representing a devel-

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opmental challenge that demands not only expertise and abilities but also maturity, courage, and determination. Navigating this challenge is increasingly complex due to the uncertainties and volatility of the labor market (Di Maggio et al., 2020; Wawrzonek, 2020). Essential information for young individuals to guide their career choices often remains unclear or inaccessible at crucial moments. Consequently, a vital skill in career planning and implementation is the ability to effectively manage ambiguity (Xu & Tracey, 2014). According to the report *Młodzi Polacy na rynku pracy* [Young Poles in the labor market] (PwC, 2022) a substantial 74.1% of surveyed young Poles currently prioritize employment stability over the risk of self-employment. Many express apprehension about preparing career plans due to concerns regarding the COVID-19 pandemic, challenging economic and political conditions, as well as migration crises. In the face of such perceived threats, having courage appears to be advantageous, serving as a resource promoting rational action and facilitating more effective career decision-making. Therefore, courage can be viewed as a psychological asset and a defensive mechanism that activates when confronted with difficulties and crises amid uncertainty and apprehensions about the future (Hannah et al., 2007).

Career decision-making has become increasingly complex in today's globalized and uncertain job market, where young adults must navigate challenges that extend beyond mere skill acquisition. Psychological resilience and adaptability are increasingly critical in responding to these challenges. This study explores two psychological constructs, courage and tolerance of ambiguity, and examines their interaction with life orientation to better understand how these traits are associated with career-related ambiguity management. Focusing on young adults during emerging adulthood is particularly relevant, as this developmental phase is characterized by heightened exploration, identity formation, and vulnerability. The research also addresses a critical gap in the existing literature by investigating the moderating role of life orientation, a construct that bridges individual psychological traits with broader socio-developmental contexts. In doing so, it contributes to understanding psychological resources relevant to managing uncertainty in career planning.

Ambiguity Tolerance When Making Career Decisions

To foster career maturity, individuals require the capacity to navigate decision-making amid uncertain circumstances, a trait bolstered by ambiguity

tolerance. This term finds its origins in American organizational sociology, particularly within the works of March (as cited in Gati et al., 2010; Gati & Levin, 2014; Levin et al., 2020; Lipshits-Braziler et al., 2016; Udayar et al., 2020). Additionally, Hofstede (2000, p. 177) incorporates the synonymous term uncertainty avoidance, defining it as "managing uncertain situations in the workplace".

Ambiguity or uncertainty tolerance is both subjective and can be ingrained within a cultural heritage, transmitted and reinforced by fundamental social institutions such as family, school, and state. It serves as a factor that shapes the values and behaviors of a culture. Moreover, ambiguity tolerance is regarded as a dimension of individual differences within an accepted value hierarchy or as a cognitive motivation (You et al., 2011).

Defined within this context, ambiguity tolerance is the perceptual and responsive approach towards ambiguous situations or stimuli characterized by unfamiliar, intricate, or inconsistent cues (Budner, 1962; Furnham & Ribchester, 1995). This construct exhibits a bipolar nature: at one end are individuals inclined toward embracing new and surprising experiences, while at the other are those who tend to avoid them. Individuals with low ambiguity tolerance often experience heightened stress in response to ambiguous stimuli, leading them to react prematurely to avoid such situations. Conversely, those with high ambiguity tolerance tend to perceive unusual stimuli as desirable and engaging (Furnham & Ribchester, 1995).

Ambiguity tolerance seems connected to the concept of the need for cognitive closure (Kruglanski, 1990). Like a preference, this "need" pertains to a relatively fixed inclination rather than a state arising from a specific deficit. Individuals with low ambiguity tolerance seek information to diminish subjectively perceived uncertainty, striving for cognitive closure (Webster & Kruglanski, 1994; Jaworski, 1998).

An affirmative relationship is anticipated between ambiguity tolerance and career maturity domains, such as concern, control, curiosity, and certainty, as outlined by Savickas and Portfeli (2012). This anticipation is supported by studies conducted by Xu and Tracey (2014, 2015a), who found ambiguity tolerance to predict general indecisiveness, dysfunctional beliefs, inadequate information retrieval skills among job candidates, and all dimensions of career adaptability. Furthermore, it was observed to moderate the relationship between exploring the professional environment and acquiring inconsistent information.

Subsequent studies (Xu et al., 2016; Xu & Tracey, 2017a, 2017b) delineated a four-element structure of ambiguity tolerance comprising preference, tolerance, confidence, and aversion. Preference reflects an individual's inclination towards ambiguity in career decision-making, while tolerance signifies the acceptance and competence in managing ambiguity. Confidence predominantly relates to an individual's sense of agency, while aversion describes the inclination to perceive and avoid ambiguity in vocational decision-making.

Recent research by these authors has focused on the relationship between career adaptability and personal attributes, exploring its relations with labor market coping. Utilizing a tool developed by Xu and Tracey (2015b), Park et al. (2019) discovered that tolerance of ambiguity in work decision-making situations positively predicts feelings of well-being.

Courage

Courage has conventionally been portrayed as an inherent trait or fixed disposition within an individual. However, more contemporary perspectives define it primarily as a specific form of action. Norton and Weiss (2009) articulated courage as a personal attribute enabling particular behavior despite experiencing fear. Rate et al. (2007) delineated the four fundamental attributes of courageous behavior: (1) intentionality, (2) prudence, (3) managing threats, risks, or obstacles; and (4) pursuing a noble or worthwhile goal.

In contrast to courage perceived as a state, courage enacted through behavior—construed as a trait—is variable and contingent upon other personality dimensions. Hannah et al. (2007) proposed that courageous behavior is associated with an array of individual strengths and resources, such as resilience, optimism, hope, and openness to experience, along with diverse norms, personal values, and beliefs (e.g., loyalty or bravery), which mitigate perceived fear or encourage courageous behavior despite it.

Recent investigations have delved into the role of courage in psychological aspects related to career development (Ginevra et al., 2020). Their findings suggest that courageous behavior positively impacts job quality, a sense of professional identity, and prosocial behavior (Howard & Alipour, 2014; Howard et al., 2017; Koerner, 2014). Moreover, adolescents exhibiting higher levels of courage are more motivated to pursue life plans, employ diverse solutions to attain them, and experience lower anxiety levels (Ginevra & Capozza, 2015; Magnano et al., 2017). Among young individuals, courage mediates be-

tween career adaptability and life satisfaction (Ginevra et al., 2018; Pajestka, 2023a), as well as satisfaction within their chosen field of study (Platania et al., 2023). Additionally, courage was observed to mediate the relationship between career readiness, adaptability, and indicators of well-being (Magnano et al., 2021). Youth concerned about their future careers, perceiving themselves as responsible for their development, and possessing self-confidence are more inclined to exhibit courage in pursuing future goals despite perceived obstacles. Consequently, they are more likely to perceive their quality of life positively.

Life Orientation as a Moderator

Current research primarily focuses on analyzing the relationship between ambiguity tolerance and subjective characteristics in young adults, typically students (Xu & Tracey, 2017a, 2017b). However, these studies have often overlooked various developmental characteristics deemed pivotal in preparing individuals for the responsibilities of adulthood.

Studies conducted in numerous countries (Brzezinska et al., 2011; Buhl & Lanz, 2007; Lanz & Tagliabue, 2007; Macek et al., 2007; Rękosiewicz, 2013a, 2013b; Sirsch et al., 2009) indicate that young people delay assuming adult tasks and roles. In psychology, this phenomenon is referred to as a prolonged moratorium and has recently been acknowledged as normative, culminating in the proposal of a new developmental phase termed emerging adulthood by Arnett (2000) and Luyckx et al. (2006).

German researchers (Reinders & Butz, 2001) propose that during this phase, young individuals exhibit two general types of personal life orientations: moratory and transitive. The former entails capitalizing on the opportunities linked to youth, while the latter involves engaging in activities that equip young individuals with the skills necessary for adult life. Although the authors of this concept (Reinders, 2006; Reinders et al., 2001) do not consider any combination of the two life orientations as optimal, Rękosiewicz (2013b) suggests that a blend of high transitive and low moratory orientation could be developmentally beneficial. This proposition is corroborated by Turska and Stasiła-Sieradzka (2016), based on Reinders' concept, which emphasizes that attitudes toward transitioning into the labor market are significantly relate to the development of both "positive" (transitive) and "negative" (moratory) life orientations.

Research Framework and Hypotheses Development

The conceptual model in this study is informed by the Career Construction Theory (Savickas, 2005), which emphasizes the role of psychological resources and personal meaning-making in navigating vocational development, particularly under uncertain or ambiguous conditions. In this framework, courage can be viewed as a resource that enables proactive engagement with fear or uncertainty during career planning, while tolerance of ambiguity reflects a cognitive-emotional style that facilitates decision-making in the face of unclear outcomes (Xu & Tracey, 2017b).

The study also draws on the psychological capital model (Luthans et al., 2007), which includes courage as a form of agentic self-regulation that supports career adaptability and well-being. Finally, the inclusion of life orientation reflects a developmental perspective (Arnett, 2000; Reinders & Butz, 2001), where orientations toward adulthood (moratory vs. transitive) shape how individuals access or express their psychological traits in career-relevant contexts.

Therefore, the present research encompasses two primary aims: (1) to describe the average levels and distribution of ambiguity tolerance, life orientation (transitive and moratory), and courage among young adults. This descriptive analysis aims to provide context for interpreting the correlational and moderation findings and to offer potential points of comparison with existing literature, and (2) verifying the relationship between courage and the four components of ambiguity tolerance—Preference, Confidence, Tolerance, and Aversion—concerning career decisions, while considering the moderating impact of life orientation. Three hypotheses were formulated in relation to the latter objective and are supported by robust theoretical frameworks and empirical evidence.

Courage functions as a psychological resource that helps individuals act in the face of fear and uncertainty (Norton & Weiss, 2009). This characteristic overlaps with constructs such as self-efficacy and openness to experience, which support flexible and adaptive responses in challenging situations. Within the career domain, these qualities are particularly important when facing ambiguous or high-stakes decisions, such as choosing a vocational path or navigating labor market transitions. Empirical studies support the importance of courage in career development. Ginevra et al. (2018) and Magnano et al. (2017) found that courage positively correlates with career adaptability, pro-

fessional identity, and reduced anxiety regarding career decisions. These findings suggest that individuals who are more courageous may also be more tolerant of ambiguous situations, which are common in career planning. Therefore, we hypothesize that courage is positively associated with preference, confidence, and tolerance of ambiguity, and negatively associated with aversion to ambiguity in career decision-making (Hypothesis 1).

The concept of life orientation provides insight into how individuals approach adulthood and future planning. Transitive orientation emphasizes responsibility, long-term goals, and preparation for adult roles. In contrast, moratory orientation focuses on present experiences, often avoiding commitments or responsibilities (Reinders & Butz, 2001). These orientations are thought to shape how young adults respond to challenges, including those associated with career planning. Developmental research suggests that a transitive orientation facilitates readiness for the labor market and promotes traits such as perseverance and initiative—qualities closely linked to courageous behavior (Rękosiewicz, 2013b; Turska & Stasiła-Sieradzka, 2016). Conversely, individuals with high moratory orientation may be less inclined to act courageously, as they tend to avoid difficult or long-term tasks. Therefore, we hypothesize that courage is positively associated with transitive life orientation and negatively associated with moratory life orientation (Hypothesis 2).

Life orientation, as a developmental framework, may condition how psychological traits such as courage function in real-world decision-making contexts. Emerging adulthood is marked by identity exploration and instability, and individuals' orientations toward this phase can shape their capacity to manage career-related ambiguity (Arnett, 2000). Xu and Tracey (2017b) found that ambiguity tolerance interacts with various individual and contextual variables in predicting career decision-making outcomes. These findings suggest that external developmental factors, such as life orientation, may moderate the role of internal traits like courage in adapting to ambiguous vocational scenarios. While both courage and tolerance of ambiguity are considered relatively stable psychological dispositions, this study conceptualizes courage as a motivational trait that may facilitate more adaptive responses to uncertainty in vocational contexts. Following theoretical frameworks that define courage as a behavioral resource enabling action despite fear (Norton & Weiss, 2009; Rate et al., 2007), we view courage as a potential precursor to tolerance of ambiguity in decision-making contexts. This directional assumption also aligns with previous studies suggesting that courage supports adaptability and resilience in uncertain career situations (Ginevra et al., 2018; Magnano et al., 2021). Life

orientation may shape how individuals apply their internal resources, such as courage, when dealing with uncertain or ambiguous career-related decisions. A transitive life orientation reflects a future-oriented stance, responsibility, and readiness to engage with adult roles, which may amplify the beneficial effects of courage on tolerance of ambiguity. In contrast, a moratory orientation emphasizes the postponement of long-term commitments and a focus on present enjoyment, which may undermine or diminish the impact of courage, especially in contexts involving uncertainty or risk. This framework aligns with prior findings that transitive orientation correlates with career readiness and proactive engagement (Rękosiewicz, 2013b; Turska & Stasiła-Sieradzka, 2016), while moratory orientation is linked to avoidance and indecisiveness. Therefore, we hypothesize that life orientation moderates the association between courage and components of ambiguity tolerance such that a transitive orientation strengthens, and a moratory orientation weakens, the effect of courage (Hypothesis 3).

METHOD

Participants

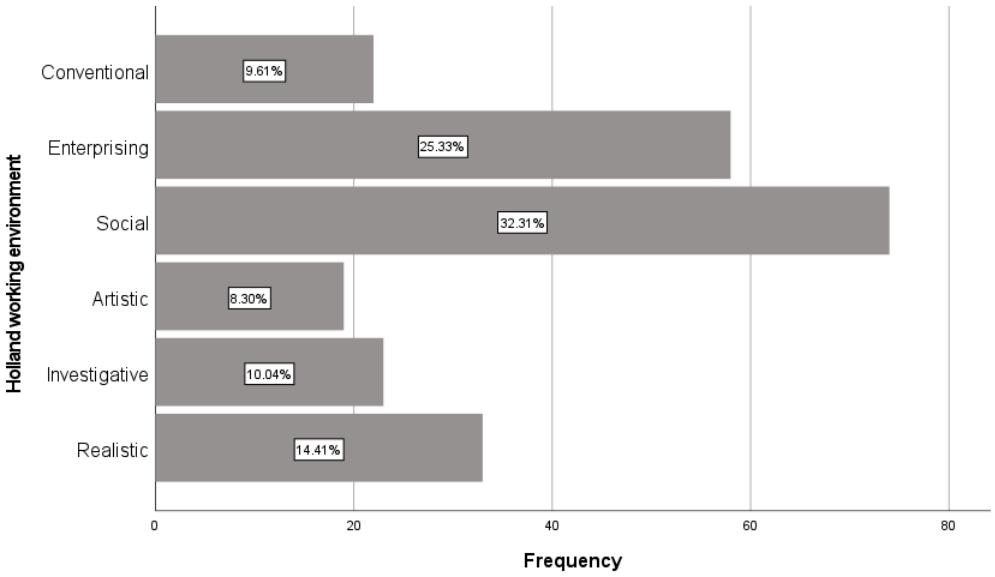
A total of 229 young adults, comprising 145 women and 84 men, aged between 19 and 26 years (M = 22.6, SD = 1.83), took part in this study. They were enrolled from various universities in Lodz. To ensure a diverse sample, attention was given to differentiating respondents based on their career preferences, as reflected in their chosen fields of study. The composition of the group, categorized according to types of occupational preference as per Holland's typology (1997), is illustrated in Figure 1. Within the study cohort, social and entrepreneurial preferences were most prevalent, accounting for a combined 57.6% of respondents, while artistic preferences were the least common, represented by 8.3%. Furthermore, the group exhibited heterogeneity regarding work experience. The majority of participants reported having more than one year of work experience, with a significant proportion currently employed (62.9%), while some were not employed (22.3%). Among the active respondents, a portion had work experience of less than one year (8.7%). The smallest subgroup (6.1%) consisted of individuals who had not yet engaged in any work activities.

Procedure

Data collection was conducted through a secure online testing platform designed explicitly for psychological research purposes. The research was discussed by the Ethics Committee of University of Lodz, which found no violations of ethical principles. Participants received an information letter outlining the broad research goals, the relevance of the overall project, the policy regarding confidentiality, and detailed information on the sampling procedure, and a statement confirming that informed consent was obtained from all participants and/or their legal guardians. Participation was voluntary, and respondents could stop completing the research protocol at any time without further explanation. An invitation to participate in the study was distributed via university social media channels.

Figure 1

Working and Learning Environment of Subjects According to Holland's Typology



An a priori power analysis was conducted using G*Power 3.1.9.4 (Faul et al., 2007, 2009) to determine the required sample size for the planned moderation analyses. Each regression model included five predictors: one independ-

ent variable, two moderators, and two corresponding interaction terms. Because four separate regression models were estimated (one for each dependent variable), the Bonferroni correction was applied, resulting in an adjusted alpha level of .0125. Following Cohen's (1988) conventions, a medium effect size was specified $f^2 = .15$. Medium-sized effects are commonly used when prior empirical evidence suggests theoretically meaningful associations, including in studies examining individual differences and psychological mechanisms (Aguinis et al., 2005; Frazier et al., 2004). With the effect size set to $f^2 = .15$, the corrected significance level of .0125, and a desired statistical power of .80, the G*Power analysis indicated that a minimum of approximately 89 participants was required to detect a significant interaction effect. The actual sample size ($N = 229$) exceeded this threshold, ensuring sufficient power to detect effects in the moderated regression models.

Measures

Ambiguity Tolerance

Ambiguity tolerance was measured using the Career Decision Ambiguity Tolerance Scale-Revised (CDAT-R) which was developed by Xu and Tracey (2015b) to evaluate individuals' responses to unknown, complex, inconsistent, and unpredictable information related to career decision-making. The scale contains 20 items, with respondents rating each item on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). It includes four subscales: (1) Preference, illustrated by items such as "It is interesting to discover new strengths and weaknesses"; (2) Tolerance, reflected in items like "I am tolerant of the possibility that my interests could change in the future"; (3) Confidence, including items such as "I am able to make a choice when multiple options seem equally appealing"; and (4) Aversion, represented by items like "I try to avoid complicated career decision-making tasks."

Notably, the Confidence subscale is a recent addition and remains under validation by the authors (Xu & Tracey, 2017a). For this study, a Polish version of the scale was adapted. The Cronbach's α coefficients for the subscales were as follows, with values for the present version in parentheses: Preference, α = .79 (.87); Tolerance, α = .69 (.87); Confidence, α = .86 (.85); and Aversion, α = .83 (.79).

Courage

The Courage Measure-Reduced Version (CM-R) was used to measure courage originally developed by Norton and Weiss (2009) to assess self-perceived courage, defined as the persistence to act despite fear. The original questionnaire consisted of 12 items, such as "If there is an important reason to face something that scares me, I will face it," rated on a seven-point scale from 1 (*never*) to 7 (*always*). Howard and Alipur (2014) later refined the measure, reducing it to six items by removing reverse-scored items with low reliability. International studies have demonstrated strong reliability for the reduced scale, with Cronbach's alpha values reported as .81 (Ginevra et al., 2018) and .83 (Sovet et al., 2018).

The Polish adaptation of the shortened version was conducted by Pajestka (2023b), achieving satisfactory model fit indices and a reliability coefficient of .84. In this study, the 6-item reduced version of the Courage Measure (Howard & Alipour, 2014) was utilized, yielding a reliability index of .88.

Life Orientation

The Social Participation Questionnaire (SPQ-2), an original Polish instrument developed by Rękosiewicz et al. (2013a) was used to examine life orientation. It is based on Reinders' (2006) theoretical framework, which identifies types of life orientation during the transition from adolescence to adulthood. The scale assesses two orientations: moratory life orientation (e.g., "If possible, I avoid responsibilities and spend my time in pleasant ways") and transitive life orientation (e.g., "I do a lot to have a job in the future that will provide me with success in life").

For research purposes, the abbreviated version (SPQ-2) is recommended for individuals aged 19–35. This version consists of 20 items divided into two subscales, with respondents rating each item on a 5-point scale ranging from 1 (*no*) to 5 (*yes*). High scores on the moratory orientation subscale indicate a focus on current goals and immediate opportunities, while high scores on the transitive orientation subscale reflect an emphasis on future development and goal attainment.

Psychometric analyses have demonstrated satisfactory reliability, with Cronbach's alpha coefficients reported as .86 for the moratory orientation sub-

scale and .84 for the transitive orientation subscale (Rękosiewicz, 2013a). In this study, the reliability coefficients were .86 and .80, respectively.

Data Analysis

Confirmatory Factor Analyses (CFAs) using the maximum likelihood (ML) estimation method were conducted in AMOS to verify the factorial validity of all measures used in the study. Model fit was considered acceptable when CFI and TLI were ≥ .90, RMSEA ≤ .08, and SRMR ≤ .08, following common recommendations (e.g., Hu & Bentler, 1999; Kline, 2016).

The statistical analysis in this research employed a combination of descriptive, correlation, and moderation analyses to explore the relationships among courage, tolerance of ambiguity, and life orientation in career decision-making.

To address potential gender-related effects, supplementary analyses were conducted including gender as a covariate in all regression and moderation models. Gender was dummy-coded (0 = female, 1 = male) and entered alongside the predictor and moderators. These analyses aimed to verify whether gender had a significant relationship with the outcome variables or altered the strength or direction of the reported effects.

To address the first research aim, we conducted descriptive analyses, including means, standard deviations, and comparisons of subscale scores using repeated measures ANOVA. These analyses were intended to profile the study sample and highlight relative levels of courage, life orientation, and ambiguity tolerance subscales. Pearson's correlation coefficients were calculated to examine the direct relationships between courage, the components of ambiguity tolerance (preference, confidence, tolerance, and aversion), and the two dimensions of life orientation (transitive and moratory). These results also serve to contextualize the subsequent correlational and moderation analyses by providing a clearer picture of the baseline distribution of the variables.

Because the research question concerned whether each dimension of life orientation independently modifies the association between courage and ambiguity tolerance, moderation was tested using PROCESS Model 2 (Hayes, 2022). Model 2 allows the estimation of two separate two-way interactions (X × W and X × Z) without imposing a three-way interaction. Conceptually, moratory and transitive orientations represent distinct developmental stances (Reinders & Butz, 2001) that may strengthen or weaken the effect of courage on ambiguity tolerance in different ways, but they are not theorized to interact with each other in this process. Therefore, a model permitting two independent moderators aligns more closely with theory and avoids unnecessary parame-

ters that lack theoretical justification. This analytic approach also simplifies interpretation by allowing moderation to be evaluated separately for each life-orientation dimension. All predictors were mean-centered prior to analysis. For any significant interaction term, conditional effects (spotlight) analyses were performed at low (−1 *SD*), mean, and high (+1 *SD*) levels of the moderator. In addition, the Johnson–Neyman technique was applied to determine the specific region of significance for the moderation effect.

Model fit and significance were assessed through *F*-statistics and changes in R^2 values, ensuring that the moderation effects were statistically meaningful. Given the conceptual distinctiveness of the four dimensions of ambiguity tolerance (Preference, Tolerance, Confidence, and Aversion), separate moderation models were estimated for each dependent variable. This approach allowed for the independent assessment of interaction effects and provided greater clarity in interpreting how life orientation moderates the relationship between courage and specific aspects of ambiguity tolerance. While a structural equation modeling approach might offer an integrative assessment of multiple outcomes simultaneously, the decision to analyze the components separately was made to maintain alignment with prior studies (e.g., Xu & Tracey, 2015b; Xu et al., 2016; Xu & Tracey, 2017b) using the same scales and to enhance interpretability. This methodological decision limits the ability to report unified model-level fit indices, which is acknowledged as a limitation of the present design. Descriptive, correlation, and moderation analyses were conducted in IBM SPSS Statistics 29. These statistical techniques provided a comprehensive framework for testing the hypotheses and interpreting the nuanced interplay between the constructs of interest.

RESULTS

Preliminary Analyses

As a first step, Confirmatory Factor Analyses (CFAs) were conducted to verify the factorial validity of all measures used in the study.

Within this procedure, a specific CFA was performed to test the four-factor structure of the CDAT-R. The model demonstrated acceptable fit: $\chi^2(164) = 406.05$, $p < .001$, CMIN/DF = 2.48, CFI = .88, TLI = .87, RMSEA = .080 (90% CI [.071, .090]), *p*-close = .000, and SRMR = .07. Although some indices fell slightly

below conventional thresholds for good fit, they remained within the acceptable range (Hu & Bentler, 1999), confirming the factorial validity of the measure.

To evaluate the one-factor structure of the Courage scale, a CFA was also performed. This model showed strong fit: $\chi^2(9) = 16.78$, $p = .052$, CFI = .99, TLI = .98, RMSEA = .062 (90% CI [.000, .107]), and SRMR = .03. All indices met or exceeded recommended criteria (Hu & Bentler, 1999), supporting the one-dimensionality and factorial soundness of the scale.

A further CFA assessed the two-factor structure of the Social Participation Questionnaire (SPQ-2). Model fit was moderate: $\chi^2(161) = 346.46$, $p < .001$, CMIN/DF = 2.15, CFI = .90, TLI = .89, RMSEA = .071 (90% CI [.061, .081]), *p*-close = .001, and SRMR = .08. A small number of residual covariances were added based on modification indices and theoretical considerations (similar item content and wording). Overall, the findings support the instrument's factorial validity (Hu & Bentler, 1999), though certain indices suggest that additional refinements may enhance model fit in future studies.

Prior to hypothesis testing, several additional preliminary analyses were conducted to ensure the data met the assumptions necessary for robust statistical analysis.

Measures of skewness and kurtosis for the total scores of the study's variables indicated acceptable ranges, with skewness values between –.48 and .11 and kurtosis values between –.79 and .01, demonstrating normal distribution. The normality of the distributions for career adaptability, courage, and life satisfaction was further verified using the Kolmogorov–Smirnov test. Additionally, the presence of floor and ceiling effects,[1] which could limit the detection of variability in responses, was examined by analyzing the frequency of the highest and lowest possible scores. No substantial floor or ceiling effects were detected, as less than 15% of the participants achieved extreme scores on any dimension.

Descriptive statistics and correlations provided an overview of the distribution and interrelationships of the study variables (Table 1). Among the subscales of the Career Decision Ambiguity Tolerance Scale-Revised (CDAT-R), preference exhibited the highest mean scores, followed by confidence, tolerance, and aversion. Repeated measures ANOVA confirmed statistically significant differences among these subscales, with a substantial effect size, $F(3,$

[1] Floor and ceiling effects were assessed by identifying the proportion of participants who selected the lowest and highest possible scores on each scale. A potential floor or ceiling effect was considered present if more than 15% of the sample selected the minimum or maximum score, following general interpretive guidelines (Terwee et al., 2007).

684) = 93.23, $p < .001$, $\eta^2 = .29$). Subsequent post-hoc comparisons using Bonferroni correction affirmed significant differences between tolerance and aversion ($p < .05$), as well as among other subscale pairs ($p < .001$). Similarly, comparisons of life orientation scores revealed significantly higher scores for transitive orientation than moratory orientation, $F(1, 228) = 87.62$; $p < .001$, $\eta^2 = .28$.

Table 1

Means, Standard Deviations, and Correlations of Variables

	Variables	*M*	*SD*	Skew.	Kurt.	1	2	3	4	5	6	7
Career Decision Ambiguity Tolerance Scale-R	1. Preference	5.48	1.08	−.48	−.07	1						
	2. Tolerance	4.20	1.43	−.01	−.79	.23**	1					
	3. Confidence	4.62	1.08	−.11	−.49	.39**	.42**	1				
	4. Aversion	3.83	1.13	.09	−.09	−.09	−.03	−.25**	1			
Courage Measure	5. Courage	4.94	1.06	−.31	.01	.33**	.24**	.52**	−.25**	1		
Life orientation (SPQ−2)	6. Transitive	3.73	.60	.08	−.05	.42**	−.06	.20**	−.06	.21**	1	
	7. Moratorium	3.13	.66	−.19	.01	.03	.20**	.08	.11	.10	−.19**	1

Note. $N = 229$.

**$p < .01$.

Although gender was not a primary variable of interest, we conducted supplementary analyses to explore its potential impact. In a supplementary regression model predicting confidence, gender emerged as a statistically significant predictor ($B = 1.39$, $p = .034$), suggesting that gender may independently

contribute to individuals' perceived confidence in dealing with ambiguity even after accounting for courage, life orientation, and their interactions. However, when included as a covariate in the full moderation models, gender did not substantially alter the significance or direction of the interaction effects.

This comprehensive examination of the data's properties provided a solid foundation for subsequent hypothesis testing and ensured the rigor of the statistical analyses performed.

Main Analyses

An analysis revealed a moderate positive association between courage and preference (Pearson's r = .33). Additionally, courage demonstrated a weak positive association with tolerance (r = .24), a strong positive association with confidence (r =.52), and a weak negative association with aversion (r = −.25) (all p < .01; see Table 1). These findings substantiated Hypothesis 1. As anticipated, a weak positive correlation was also identified between courage and transitive orientation (r = .21; p < .01); however, no significant relationship was found between courage and moratory orientation which supported Hypothesis 2 only partially.

Moderation analyses were conducted using PROCESS macro for SPSS (Hayes, 2022) to examine the moderating effects of moratory and transitive life orientation on the relationship between courage and each component of ambiguity tolerance. To ensure the reliability of the regression models, multicollinearity diagnostics were performed for all predictors (courage, moratory orientation, and transitive orientation). The Variance Inflation Factor (VIF) values ranged from 1.05 to 1.09, and Tolerance values ranged from .92 to .95 across all models. These values fall well within acceptable limits (VIF < 5; Tolerance > 0.1), indicating that multicollinearity was not a concern in any of the models. Thus, the predictor variables were sufficiently independent to be included in the analyses without biasing the results.

Results of moderation (Table 2) revealed that none of the interaction terms involving transitive life orientation and courage were statistically significant, indicating that this orientation did not moderate the effect of courage on ambiguity tolerance. However, among all models tested, the only observable interaction involving courage and a life orientation dimension emerged for aversion. Subsequent analysis of this model revealed a marginally significant in-

teraction effect between courage and moratory orientation (B = .02; SE = .01; 95% CI [.01; 0.03], $p < .05$). The inclusion of the interaction term resulted in a marginally significant increase in explained variance (ΔR^2 = .03; F[1, 223] = 3.81; p = 0.052).

Table 2

Summary of Moderation Analyses for Courage × Life Orientation Predicting Components of Ambiguity Tolerance

DV	Predictor	*B*	*SE*	*T*	*p*	95% CI lower	95% CI upper
Preference	Courage	.63	.44	1.43	.16	−.24	1.50
	Moratory	.16	.22	.74	.46	.27	.59
	Transitive	.62	.27	2.31	.02	.09	1.15
	Courage × Moratory	.00	.01	−.38	.70	−.02	.01
	Courage × Transitive	−.01	.01	−.98	.33	−.03	.01
R^2 = 0.28, ΔR^2 = 0.003, F(5, 223) = 16.95, $p < 0.001$							
Tolerance	Courage	−.11	.64	−.17	.86	−1.38	1.16
	Moratory	.22	.32	.70	.48	−.40	.85
	Transitive	−.45	.39	−1.14	.26	−1.22	.33
	Courage × Moratory	.00	.01	−.06	.95	−.02	.02
	Courage × Transitive	.01	.01	.88	.38	−.01	.04
R^2 = 0.12, ΔR^2 = 0.003, F(5, 223) = 5.97, $p < 0.001$							
Confidence	Courage	.45	.43	1.07	.29	−.39	1.29
	Moratory	−.08	.21	−.36	.72	−.49	.34
	Transitive	.20	.26	.79	.43	−.31	.72
	Courage × Moratory	.00	.01	.60	.55	−.01	.02
	Courage × Transitive	.00	.01	−.43	.67	−.02	.01
R^2 = 0.32, ΔR^2 = 0.002, F(5, 223) = 20.90, $p < 0.001$							
Aversion	Courage	−.12	.52	−.23	.82	−1.14	.90
	Moratory	−.39	.26	−1.54	.13	−.90	.11
	Transitive	.42	.32	1.33	.19	−.20	1.04
	Courage × Moratory	.02	.01	1.95	.05	.01	.03
	Courage × Transitive	−.02	.01	−1.49	.14	−.04	.00
R^2 = 0.091, ΔR^2 = 0.034, F(5, 223) = 4.46, $p < 0.001$							

Note. DV = dependent variable, B = unstandardized regression coefficient, SE = standard error, CI = confidence interval, R^2 = model variance explained, ΔR^2 = change in variance due to interaction terms. F refers to the full regression model. Interaction block significance is reported separately in the text. All models included courage, moratory orientation, transitive orientation, and their two-way interaction terms.

This interaction indicates that the negative association between courage and aversion becomes weaker as moratory orientation increases. Given that only this moderator produced a significant interaction, conditional effects were examined exclusively for moratory orientation. The Johnson–Neyman technique was applied to further clarify the nature of the moderating effect. This analysis demonstrated that the effect of courage on aversive ambiguity tolerance was significantly negative at lower and average levels of moratory orientation but became non-significant at higher levels of this developmental orientation. Specifically, the Johnson–Neyman analysis indicated that the effect of courage remained statistically significant when moratory orientation was below approximately +0.41 *SD* above the mean. At higher levels of moratory orientation, the conditional effect of courage included zero, indicating no significance.

Table 3

Conditional Effects of Courage on Aversion of Ambiguity Tolerance at Levels of Moratory Life Orientation (Model 2, PROCESS)

Level of Moratory orientation	Effect	*SE*	*t*	*p*	95% CI lower	95% CI upper
Low (−1 SD)	−.28	.08	−3.61	< .001	−.43	−.13
Mean	−.17	.06	−2.95	.004	−.28	−.06
High (+1 SD)	−.07	.08	−.78	.435	−.23	.10

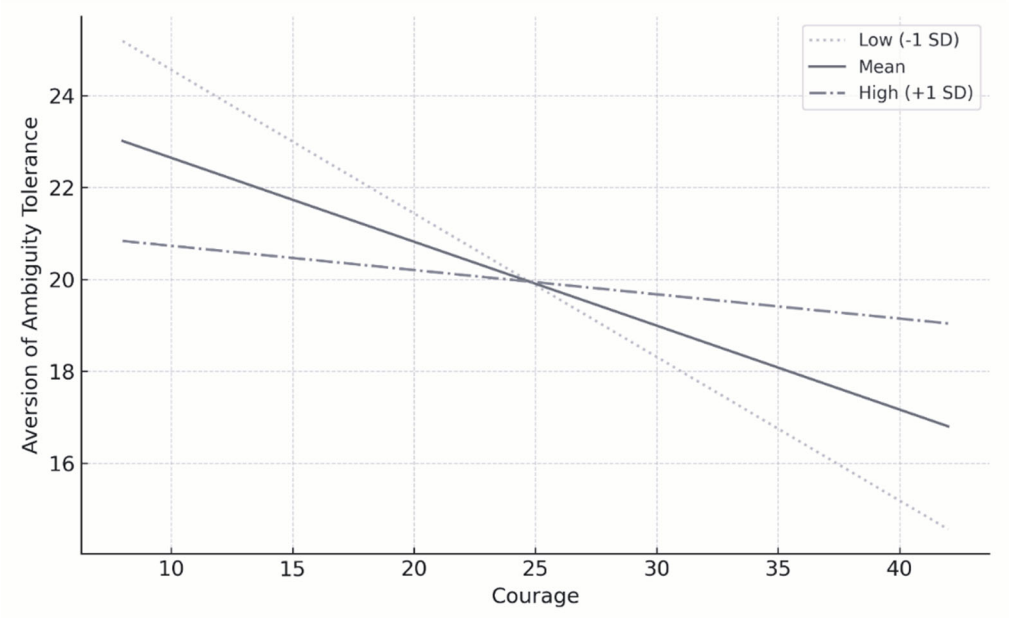
Note. Values calculated based on full Model 2, with Transitive Orientation held at its mean level—consistent with the theory of Model 2. Coefficients reported are unstandardized (*B*).

To facilitate the interpretation of this interaction, Figure 2 provides a graphical representation of the moderating role of moratory orientation on the association between courage and aversive ambiguity. Simple slopes are plotted at −1 *SD*, mean, and +1 *SD* levels of moratory orientation, consistent with recommendations for probing interactions in linear models. As depicted in the figure, higher levels of courage are associated with lower aversive ambiguity across all levels of the moderator; however, the strength of this association

varies systematically. At low and average levels of moratory orientation, the negative association between courage and aversion with ambiguity is clearly visible and steeper. In contrast, at high levels of moratory orientation, the slope becomes flatter, reflecting the nonsignificant conditional effect observed in the Johnson–Neyman region. Taken together, the figure visually supports the conclusion that moratory orientation attenuates the negative association between courage and aversive ambiguity tolerance. These results demonstrate that moratory orientation, but not transitive orientation, affects how courage relates to aversion in career-related ambiguity situations. Thus, Hypothesis 3 received partial support.

Figure 2

Conditional Effect of Courage on Aversion of Ambiguity Tolerance at Low, Mean, and High Levels of Moratory Orientation



DISCUSSION

This study investigated the associations between psychological traits—specifically courage and life orientation—and young adults' responses to career-related ambiguity. By examining the moderating role of life orientation

in the relationship between courage and the components of ambiguity tolerance, the findings contribute to a more nuanced understanding of how individual and developmental factors interact in career decision-making contexts characterized by uncertainty. The results suggest that courage is associated with psychological traits that may support more adaptive perceptions of ambiguity in career-related situations.

Tolerance for ambiguity, as discussed in the article, is identified as a crucial trait for career maturity. The capacity to navigate uncertainty without immediate closure allows for a more flexible and exploratory approach to career planning and decision-making. This flexibility is vital in a world where the only constant is change, and career paths are no longer linear or predictable. The results of descriptive statistics indicate that preference for ambiguity was highest, and aversion was lowest among the CDAT-R subscales, echoing patterns found in studies with similar populations (e.g., Xu & Tracey, 2017b). The higher endorsement of transitive over moratory life orientation also suggests a developmental orientation toward future planning among the sample. While these findings were not linked to specific hypotheses, they provide a useful profile of the psychological traits present in this group and support the relevance of exploring how these traits interact in the career context. For the purposes of this research the factorial structure of CDAT-R was validated with use of confirmatory factor analysis. The fit of the assumed factorial structure was satisfactory and closely aligns with patterns observed by Xu and Tracey (2017b), who originally validated the scale's four-factor structure in a similar-age population.

An interesting observation was the absence of an association between preference, tolerance, and aversion. This corroborates previous studies (Xu et al., 2016; Xu & Tracey, 2015b) indicating a lack of relationship between these seemingly contrasting components. However, confidence, conceptualized as a measure of competence in professional decision-making situations, exhibited a negative relationship with aversion. Initially introduced as a fourth subscale in the CDAT-R (Xu & Tracey, 2017b), confidence aims to account for behaviors directed at actively confronting ambiguity. These findings underscore the significance of confidence, interpreted as a form of self-efficacy, in gauging aversion toward new and ambiguously interpreted situations. The negative correlation observed between aversion and courage suggests that individuals who are more averse to ambiguity may also report lower levels of courage.

The results confirmed Hypothesis 1, indicating that courage is positively associated with preference for ambiguity, tolerance of ambiguity, and confi-

dence in decision-making, while negatively associated with aversion to ambiguity. These findings align with theoretical models conceptualizing courage as a psychological resource that supports individuals in managing perceived uncertainty and fear (Norton & Weiss, 2009; Rate et al., 2007). In the career context, the ability to tolerate ambiguous information and uncertain outcomes may facilitate flexible decision-making. The strong positive association between courage and confidence suggests that courageous individuals may approach career decision-making situations with a greater sense of agency and competence. Similarly, the negative relationship between courage and aversion to ambiguity supports the idea that courage may buffer against avoidance responses when facing unclear vocational options. These findings extend previous research on courage and career adaptability (e.g., Ginevra et al., 2018; Magnano et al., 2017; Martin, 2011), highlighting the specific role of courage in fostering more constructive approaches to ambiguous career environments (Di Maggio et al., 2020; Wawrzonek, 2020). This could be attributed to aversion, reflecting a maladaptive style concerning complex and unpredictable information, potentially linked to anxiety. In contrast, preference, tolerance, and certainty encompass adaptive styles geared toward unfamiliar information, potentially associated with cognitive curiosity (Magnano et al., 2017).

The results provided partial support for Hypothesis 2. Courage was positively associated with transitive life orientation, consistent with theoretical expectations that individuals who are future-oriented and focused on preparation for adult roles would exhibit greater psychological resources such as courage (Reinders & Butz, 2001; Rękosiewicz, 2013b). However, contrary to expectations, no significant relationship was found between courage and moratory orientation. This suggests that while a transitive orientation may foster goal-directed behaviors and the willingness to engage with uncertain future tasks, a moratory orientation—focused on present-oriented enjoyment and delay of adult responsibilities—may not necessarily correspond with lower levels of courage. These findings indicate that courage may align more closely with positive, future-focused developmental attitudes, but that its absence is not necessarily a hallmark of present-focused life strategies. Further research could explore whether different dimensions of moratory orientation (e.g., passive vs active postponement) differentially relate to psychological resources such as courage.

The results provided partial support for Hypothesis 3 regarding the moderating role of life orientation in the relationship between courage and components of ambiguity tolerance and provides insights into the complex interplay

between personality traits and developmental trajectories. The differentiation between moratory and transitive orientations in impacting career related ambiguity underscores the developmental context in career psychology (Arnett, 2000; Reinders & Butz, 2001). The moderating role of moratory orientation suggests that individuals deeply engaged in unstructured, prolonged exploration without commitment may derive weaker benefits from courage in reducing aversive reactions to ambiguity. Moratory orientation is associated with indecision, uncertainty, and extended exploration, sometimes reflecting emotional or motivational struggles rather than purposeful identity development (Luyckx et al., 2008). These individuals may experience chronic feelings of uncertainty that diminish the influence of courage. Even if they possess the capacity to act in the face of fear, the diffuse and unsettled nature of moratory exploration may prevent them from leveraging courage effectively to manage ambiguity.

The finding that moratory orientation moderated only the aversive component of ambiguity tolerance suggests that this facet is particularly sensitive to emotional and motivational factors. Aversive ambiguity tolerance reflects discomfort, tension, and avoidance tendencies in uncertain situations; therefore, it may be more reactive to psychological resources such as courage. Individuals high in moratory orientation appear to experience a developmental pause that encourages deeper reflection and exploration, which may weaken or counteract immediate avoidance responses.

The absence of moderation by transitive orientation supports the interpretation that forward-moving, future-oriented tendencies do not meaningfully alter emotional reactions to ambiguity. Instead, transitive orientation may shape broader developmental trajectories rather than immediate emotional responses to uncertainty.

This raises the potential for interventions, such as mindfulness or cognitive-behavioral strategies, aimed at enhancing ambiguity tolerance, to be tailored according to an individual's life orientation, echoing the findings of Xu and Tracey (2014) on the importance of adaptive coping mechanisms.

This outcome indicates that the beneficial effects of courage in reducing aversion toward ambiguous career situations may be somewhat weakened among individuals with a stronger moratory orientation. In contrast, no significant moderation effects were identified for transitive life orientation across the ambiguity tolerance components. These findings imply that while certain present-focused life orientations may dampen the positive impact of courage on managing ambiguity, a future-oriented (transitive) stance may not system-

atically strengthen this relationship. Given the marginal significance of the interaction effect and the modest increase in explained variance, these results should be interpreted cautiously. Future studies could further explore how life orientation nuances the expression of psychological resources like courage, particularly in diverse cultural or socio-economic contexts where transitions to adulthood may vary.

In summary, courage was positively correlated with preference for ambiguity, confidence in dealing with ambiguity, and overall ambiguity tolerance, and negatively (though marginally) with aversion to ambiguity. Among the life orientation variables, transitive orientation showed positive associations with some ambiguity tolerance components, whereas moratory orientation was more weakly related. No significant main effect was found between courage and moratory orientation. Moderation analyses revealed a marginally significant interaction between courage and moratory orientation in predicting aversion to ambiguity, suggesting that the protective role of courage may diminish when moratory orientation is high. No significant interaction effects were found for transitive orientation. These findings partially support the proposed hypotheses and emphasize the complexity of how personal and developmental factors interact in shaping responses to career-related ambiguity.

Implications for Career Counseling

Taken together, these results highlight the relevance of fostering psychological and developmental resources that may help young adults manage ambiguity related to career planning. Building on these insights, several practical implications for career counseling and vocational guidance emerge. By examining the roles of courage and tolerance for ambiguity in relation to career-related attitudes, the study informs the development of targeted interventions. Career counselors, for instance, could incorporate strategies to strengthen these traits, potentially enhancing clients' capacity to manage uncertainty in their career paths (Lipshits-Braziler et al., 2016; Gati & Levin, 2014). Educational initiatives could likewise aim to support the development of these attributes, thereby preparing students psychologically for navigating contemporary career environments (Savickas & Porfeli, 2012).

This study contributes to vocational psychology by highlighting how psychological traits and developmental orientations interact in shaping responses to ambiguity in career planning. Understanding how life orientation moderates

the relationship between courage and aversion to ambiguity may offer useful insights for tailoring interventions. Such approaches align with positive psychology frameworks that emphasize building internal resources to enhance adaptability and well-being (Luthans et al., 2007; Magnano et al., 2021).

Encouraging clients to view ambiguity not as a threat but as an opportunity for growth could be particularly beneficial in preparing them for modern, nonlinear career trajectories. As modern careers demand courage, it becomes imperative to guide young individuals in leveraging this attribute to adapt to forthcoming challenges while avoiding needless professional risks.

Limitations and Future Directions

Although the choice of PROCESS Model 2 was theoretically justified, alternative analytical configurations (e.g., Model 1 or Model 3) were not examined in this study. Exploring these models in future research could provide a more comprehensive understanding of the structural nature of the relationships among the variables. Moreover, the moderation effect identified in the present study was statistically marginal, and therefore the findings should be interpreted with appropriate caution.

Another important consideration concerns the directionality of the relationships examined. Although courage was modeled as a predictor of ambiguity tolerance, it is plausible that the association between these constructs is bidirectional or driven by shared underlying factors. To clarify the temporal and causal dynamics between courage and ambiguity tolerance, future studies should employ longitudinal or experimental research designs.

Furthermore, the study revealed discrepancies in gender and job preference distributions across the groups. While gender was not a central variable in the theoretical framework, it was included as a covariate in supplementary analyses. In the model predicting confidence, gender emerged as a statistically significant predictor, suggesting that gender-based differences may contribute to individuals' self-perceptions in ambiguous career contexts. However, gender did not significantly interact with the main predictors nor did it alter the core moderation effects. These findings underscore the need for future research to examine more thoroughly the role of gender in shaping psychological resources related to uncertainty and career decision-making.

The present study is also limited by its sampling and measurement approach. The sample consisted exclusively of university students, which restricts the ge-

neralizability of the findings to young adults in other developmental periods or occupational contexts. Additionally, all variables were assessed using self-report measures, which may introduce common-method variance and potentially inflate observed associations (Podsakoff et al., 2003). Future research should therefore incorporate more diverse samples and multi-method assessment strategies.

Finally, cultural context represents an important dimension that warrants more explicit consideration. Although the study was conducted among young adults in Poland—where employment stability and uncertainty avoidance have notable cultural significance—the research did not directly assess cultural variables. As such, the findings may not fully generalize to individuals from other cultural backgrounds. Poland's orientation toward uncertainty avoidance, as conceptualized by Hofstede (2000), may affect attitudes toward career ambiguity and shape responses to developmental orientations. Cross-cultural studies, such as those conducted by Gati et al. (2010), highlight the importance of examining universal versus culture-specific processes in vocational behavior. Future research comparing diverse cultural groups could therefore shed more light on how contextual factors shape the interplay between courage, ambiguity tolerance, and career-related psychological resources.

While the study contributes valuable insights, it also opens avenues for further research. Investigating additional variables that might interact with courage and ambiguity tolerance, such as resilience, optimism, or social support, could provide a more comprehensive understanding of career decision-making processes (Hannah et al., 2007; Koerner, 2014). Longitudinal studies tracking changes in life orientation, courage, and ambiguity tolerance over time could offer insights into how these factors relate to career trajectories and satisfaction, building on the foundational work of Arnett (2000) and Reinders (2006). Future studies should also address demographic disparities and explore changes in uncertainty tolerance concerning work status longitudinally. Investigating individuals at extreme levels of courage and examining whether specific dimensions of uncertainty tolerance exhibit stronger correlations with courage are also intriguing avenues for future research. Future research could further explore the dynamics of these relationships in different cultural contexts and across diverse socioeconomic backgrounds. Understanding how cultural values and societal expectations are associated with the development and expression of courage, tolerance for ambiguity, and life orientation could provide deeper insights into tailoring career guidance to meet the needs of diverse populations.

CONCLUSION

In summary, the present study underscores the importance of psychological resources, such as courage, and developmental orientations in shaping young adults' responses to career-related ambiguity. By highlighting both direct and moderated relationships, the findings contribute to a deeper understanding of how individuals navigate uncertain career environments. Continued research in this area is essential to further support young adults in building the resilience and adaptability needed for success in increasingly unpredictable labor markets.

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