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Research Article

Belief in a Just World Predicting Career Exploration through Future Time Perspective in Chinese Higher Education Students

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ABSTRACT

This study examined the relationship between belief in a just world, future time perspective, and career exploration among vocational college students in Guangxi, China. Drawing on Career Construction Theory, belief in a just world was conceptualized as an adaptive readiness factor, future time perspective as a cognitive-regulatory resource, and career exploration as an adapting response. A quantitative cross-sectional survey design was employed. Data were collected from 1,055 students enrolled in nine higher vocational institutions and analyzed using confirmatory factor analysis and structural equation modeling. The measurement model demonstrated satisfactory reliability, convergent validity, and discriminant validity. The structural model showed an acceptable fit to the data, with $\chi^2/df = 2.43$, RMSEA = 0.037, SRMR = 0.042, CFI = 0.96, and TLI = 0.95. The results indicated that belief in a just world was positively associated with career exploration and future time perspective. Future time perspective was also positively associated with career exploration and partially mediated the relationship between belief in a just world and career exploration. The model explained 30% of the variance in future time perspective and 46% of the variance in career exploration. These findings suggest that students' fairness-related beliefs and future-oriented cognition are important psychological correlates of proactive career development behavior. The study extends Career Construction Theory by integrating just-world beliefs and future time perspective into a mediation framework for vocational students' career exploration. Because the study used a cross-sectional design, the findings should be interpreted as theoretically grounded associations rather than causal evidence.

KEYWORDS adaptive readiness • decent work and economic growth • mediation analysis • school-to-work transition • temporal self-regulation • vocational education • quality education

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1. INTRODUCTION

Young adults increasingly face a complex developmental process as they move from vocational education into employment. Rapid technological change, occupational restructuring, employment uncertainty, and nonlinear career trajectories require students not only to master technical competencies but also to develop psychological resources that support informed career decision-making. Technical and vocational education and training play a central role in preparing young people for employability, decent work, and smoother school-to-work transitions [1]–[3]. However, the effectiveness of vocational education depends not only on institutional training but also on students' active engagement in career development behaviors. Among these behaviors, career exploration is especially important because it enables individuals to gather and process information about themselves and the occupational environment, reduce uncertainty, and construct realistic career pathways [4]–[7].

Career exploration is particularly relevant for vocational college students because they are typically prepared for relatively direct entry into specific occupational fields. Unlike students in general academic pathways, vocational students are expected to turn applied training, internships, and technical skills into labor-market opportunities. However, this transition is often uncertain. Vocational students may face changing skill demands, regional disparities in employment opportunities, limited access to high-quality career information, and concerns about whether vocational credentials will lead to desirable work outcomes. Under these conditions, proactive career exploration helps students clarify vocational interests, evaluate alternative career paths, understand labor-market requirements, and make more informed employment-related decisions [5], [8], [9].

Nevertheless, students differ substantially in their engagement with career exploration. Some actively seek occupational information and reflect on future possibilities, whereas others remain passive even when career services are available. This variation suggests that career exploration cannot be explained solely by institutional support or structural labor market conditions; psychological beliefs and future-oriented cognition may also be important.

Career Construction Theory provides a useful framework for explaining these individual differences. The theory conceptualizes career development as an adaptive process in which individuals respond to vocational tasks, transitions, and contextual challenges by mobilizing personal and psychosocial resources. The career construction model of adaptation explains career development by differentiating four key components: adaptive readiness, adaptability resources, adapting responses, and adaptation outcomes [10]. Adaptive readiness refers to motivational, dispositional, or belief-based orientations that prepare individuals to face career-related demands. Adaptability resources refer to psychosocial capacities, commonly represented by concern, control, curiosity, and confidence. Adapting responses refer to real career behaviors, including exploration, planning, and decision-making, whereas adaptation outcomes include indicators such as employability, person–job fit, and career satisfaction [11]. Within this framework, career exploration can be understood as an adaptive response through which vocational students manage uncertainty during the school-to-work transition.

Although prior research has examined predictors of career exploration, much of this literature has emphasized proximal career-related factors such as career adaptability, career decision-making self-efficacy, parental support, social support, vocational identity, and career planning. These variables are important, but they do not fully explain how broader socio-cognitive beliefs shape students' willingness to invest in career-related behaviors. Jiang et al. [5] emphasized that future research on career exploration should examine psychological mechanisms and contextual conditions that explain why individuals engage in exploration and how exploration contributes to career development. This issue is particularly important in vocational education, where students' career behavior is shaped by the interaction among personal agency, family and institutional support, and perceived labor-market opportunities [12]–[14]. Accordingly, greater attention should be given to belief systems that may function as motivational foundations for exploratory career behavior.

One belief system that may be especially relevant is personal belief in a just world. Belief in a just world refers to the extent to which individuals believe that life outcomes are fair, deserved, predictable, and meaningfully connected to effort and behavior [15]–[17]. Personal belief in a just world concerns the belief that events in one's own life are fair, whereas general belief in a just world concerns fairness in the world more broadly. This distinction is important because personal belief in a just world is more consistently associated with adaptive functioning, coping, motivation, and goal-directed behavior than general just-world beliefs [18]–[20]. In vocational education, students who believe that their own efforts can lead to fair and meaningful outcomes may be more willing to invest in career exploration. Conversely, students who perceive future outcomes as arbitrary or unfair may question whether career planning and information seeking are worthwhile.

Recent evidence supports the relevance of just-world beliefs in educational and vocational contexts. Lin et al. [21] found that belief in a just world served as a mediating mechanism linking social support to learning motivation among students enrolled in higher vocational colleges in China. Wang et al. [12] further showed that belief in a just world enhanced the indirect relationship

between career-related parental support and proactive career behavior, with career adaptability functioning as the mediating mechanism among vocational college students. These findings suggest that just-world beliefs may be associated with students' motivation, adaptability, and proactive career engagement. However, the specific relationship between personal belief in a just world and career exploration remains insufficiently examined, particularly within a Career Construction Theory-based model.

Future time perspective may explain how personal belief in a just world is associated with career exploration. Future time perspective refers to how individuals perceive, value, and connect the future with present behavior [22]. Students with a stronger future time perspective are more likely to recognize that current academic effort, skill development, and career exploration can contribute to future occupational success. This construct is not merely a passive orientation toward the future; it has a self-regulatory function. Meta-analytic evidence indicates that time perspective is associated with goal monitoring, goal-directed behavior, and self-regulatory ability [23]. Career research also shows that future-oriented cognition is associated with employability confidence, clarity of vocational identity, exploration, focused search behavior, and later person–job fit [24]–[26]. Thus, a future time perspective may serve as a cognitive-regulatory resource that links motivational beliefs to exploratory career action.

Despite these theoretical and empirical developments, several gaps remain. First, career exploration research among vocational students has rarely examined personal belief in a just world as a socio-cognitive antecedent. Second, although just-world beliefs have been linked to learning motivation and proactive career behavior, their role within the career construction model of exploration remains underdeveloped. Third, future time perspective has been studied as a predictor of career-related outcomes, but its mediating role between fairness-related beliefs and career exploration has not been sufficiently tested. Fourth, many studies focus on general university students, whereas vocational college students constitute a distinct population because their education is closely tied to occupational preparation and labor-market entry.

The present study examines the associations among personal belief in a just world, future time perspective, and career exploration among vocational college students in Guangxi, China. Specifically, it tests whether future time perspective statistically mediates the association between personal belief in a just world and career exploration. This study contributes to the literature in three ways. First, it extends Career Construction Theory by positioning personal belief in a just world as a socio-cognitive form of adaptive readiness. Second, it conceptualizes future time perspective as a cognitive-regulatory resource that links readiness beliefs to adaptive responses. Third, it contributes to vocational education research by focusing on career exploration among Chinese vocational college students. Because the study uses a cross-sectional design, the proposed mediation model is interpreted as a theoretically grounded indirect association rather than evidence of causal mediation.

2. LITERATURE REVIEW

2.1. Career Construction Theory as the Theoretical Foundation

Career Construction Theory provides a comprehensive theoretical foundation for understanding career development as an adaptive, contextual, and meaning-making process. This theory views individuals not merely as passive recipients of vocational opportunities, but as active agents who construct career paths by interpreting life experiences, negotiating contextual demands, and responding to developmental tasks [27], [28]. Career construction emphasizes three interrelated dimensions: vocational personality, career adaptability, and life themes, which together explain what individuals prefer to do, how they cope with career tasks and transitions, and why particular work roles become personally meaningful [29], [30]. This perspective is especially relevant in contemporary labor markets, where students must manage uncertainty, educational-to-work transitions, and changing occupational expectations.

Within Career Construction Theory, career development follows an adaptation model consisting of adaptive readiness, adaptability resources, adapting responses, and adaptation outcomes. Adaptive readiness refers to relatively general dispositions, orientations, or belief systems that prepare individuals to deal with career-related challenges. Adaptability resources refer to psychosocial strengths that enable individuals to manage occupational transitions, commonly represented by concern, control, curiosity, and confidence [10]. These resources help individuals think about the future, take responsibility for career decisions, explore possible selves and work environments, and develop confidence in pursuing career goals. Empirical reviews and meta-analytic findings further support the importance of career adaptability in relation to career-related behaviors and outcomes, including career preparation, decision-making, satisfaction, and adaptation outcomes [11], [31]–[33].

The present study applies this adaptation framework to explain the relationship among belief in a just world, future time perspective, and career exploration. Belief in a just world is conceptualized as adaptive readiness because it reflects students' broader socio-cognitive belief that effort, fairness, and outcomes are meaningfully connected. Future time perspective is positioned as a cognitive-regulatory resource because it enables students to connect present actions with future goals and consequences. Career exploration is considered an

adaptive response because it involves concrete career-related behavior through which students gather information about themselves and occupational environments. Therefore, this study extends Career Construction Theory by integrating fairness belief and future-oriented cognition into the readiness–resource–response sequence.

2.2. Career Exploration as an Adapting Response

Career exploration is a central construct in vocational psychology because it refers to purposeful activities through which individuals gather, interpret, and use information about themselves and the world of work. Stumpf et al. [4] conceptualized career exploration as a multi-dimensional process involving self-exploration, environmental exploration, intended systematic exploration, and reactions to exploration. Self-exploration involves reflection on interests, values, abilities, and career goals, whereas environmental exploration involves seeking information about occupations, organizations, labor-market opportunities, and career pathways. Later scholarship broadened this view by emphasizing that career exploration is not only an information-seeking activity, but also an identity-related and motivational process shaped by developmental, relational, and sociocultural contexts [34], [35].

In vocational education, career exploration is particularly important because students are often expected to transform specialized training into employability and labor-market entry. Vocational students may face uncertainties due to limited career information, rapid changes in industry skill demands, unequal recognition of credentials, and competition with graduates from other educational pathways. Under such conditions, exploration helps students reduce uncertainty, clarify vocational identity, evaluate alternatives, and develop realistic employment plans. Research on vocational identity also suggests that exploration is closely linked to the formation of worker identity, especially during the transition from adolescence to adulthood [36]. Thus, for vocational college students, career exploration is not only a preparatory activity but also a developmental process that supports identity formation and career readiness.

From the perspective of Career Construction Theory, career exploration can be understood as an adaptive response, reflecting students' active efforts to manage career uncertainty and prepare for future transitions. However, students may differ substantially in their willingness to explore. Some may perceive exploration as useful and meaningful, whereas others may consider it ineffective when they believe that effort is unlikely to produce desirable outcomes. Recent reviews emphasize that future research should identify psychological mechanisms and contextual conditions that explain why individuals engage in career exploration and how exploration contributes to later outcomes [5]. Therefore, the present study positions career exploration as a behavioral outcome that may be influenced by students' belief in a just world and future time perspective.

2.3. Belief in a Just World as Adaptive Readiness

Belief in a just world refers to the extent to which individuals believe that the world is fair, orderly, and predictable, such that people generally receive outcomes they deserve. Just-world theory was originally developed to explain individuals' motivation to perceive the social world as meaningful and controllable [15], [37]. From this perspective, belief in a just world functions as a cognitive-motivational system that helps individuals interpret effort, responsibility, deservingness, and outcomes. Reviews of just-world research show that this belief is related to coping, motivation, goal investment, and responses to perceived injustice [16], [17], [38]. In career development, such a belief may be important because students' willingness to invest in career preparation depends partly on whether they believe that effort can lead to fair and meaningful future opportunities.

A key distinction in the literature is between general and personal belief in a just world. General belief in a just world refers to the belief that people in general are treated fairly, whereas personal belief in a just world refers to the belief that events in one's own life are fair. This distinction is important because personal belief in a just world is often more strongly related to adaptive outcomes, including well-being, self-esteem, optimism, coping, and approach-oriented behavior [18], [39]. In the educational and vocational context, personal belief in a just world may be especially relevant because students' career preparation is closely connected to expectations about whether their own effort, training, and persistence will be rewarded. When students perceive their personal world as fair, they may be more likely to view career exploration as a worthwhile investment rather than a futile activity.

Recent empirical studies provide support for the relevance of belief in a just world in educational and vocational settings. Laurin et al. [40] found that justice beliefs can serve a self-regulatory function, especially by supporting investment in long-term goals when individuals believe that effort can produce fair outcomes. Among higher vocational students in China, Lin et al. [21] found that belief in a just world partially mediated the relationship between social support and learning motivation. Similarly, Wang et al. [12] showed that belief in a just world strengthened the indirect relationship between career-related parental support and proactive career behavior through career adaptability among vocational college students. These findings suggest that belief in a just world can be conceptualized as an adaptive readiness, as it prepares students psychologically to invest effort in future-oriented career development.

2.4. Future Time Perspective as a Cognitive-Regulatory Resource

Future time perspective refers to the way individuals perceive, value, and organize their future. It reflects psychological time rather than chronological time, including how far individuals think into the future, how clearly they perceive future goals, and how strongly they connect present behavior with future consequences [22], [41]. In educational and career settings, future time perspective is important because career preparation often requires delayed gratification, sustained effort, and the ability to evaluate current activities in relation to future outcomes. Students with a stronger future time perspective are more likely to understand that present actions—such as searching for career information, developing skills, and reflecting on alternatives—can contribute to later employability and person–job fit.

Future time perspective can also be understood as a self-regulatory resource. Students who perceive the future as meaningful and connected to present behavior may be more likely to set goals, monitor progress, and regulate effort over time. Hoyle and Sherrill [42] argued that future orientation plays a role in the self-system because possible future selves can guide current motivation and behavior. More recently, Baird et al. [23] provided meta-analytic evidence that future time perspective is positively associated with self-regulatory processes, including goal setting, goal monitoring, goal operation, self-regulatory ability, and adaptive outcomes. These findings indicate that future time perspective does not merely represent thinking about the future; rather, it functions as a cognitive-regulatory mechanism that helps individuals translate future goals into present action.

Within Career Construction Theory, future time perspective can be positioned as a cognitive-regulatory resource that links adaptive readiness with adapting responses. Students who believe that effort and outcomes are fairly connected may develop a stronger sense that present career preparation matters for future success. This future-oriented cognition may then increase engagement in career exploration because exploration becomes part of a meaningful pathway toward future goals. Longitudinal evidence supports this logic: Hu et al. [24] found that career-related future time orientation predicted later perceived person–job fit through exploration and focused search among Chinese university students. Therefore, the present study proposes that future time perspective may mediate the relationship between belief in a just world and career exploration.

2.5. Hypothesis Development

2.5.1. Belief in a Just World and Career Exploration

Belief in a just world (BJW) refers to individuals' belief that the world is generally fair and that people tend to obtain outcomes they deserve through their actions and efforts [37]. This belief may encourage career exploration because exploration requires students to invest effort in collecting occupational information, reflecting on personal interests, comparing alternatives, and preparing for future career decisions. When students believe that effort is meaningfully connected to future outcomes, they are more likely to perceive career exploration as useful rather than uncertain or futile. In this sense, BJW provides a motivational foundation for proactive career-related behavior by strengthening students' confidence that their present investment can contribute to fair and desirable career outcomes. Lerner's just-world theory also emphasizes that BJW supports long-term goal-directed activity by allowing individuals to view the world as manageable and predictable [18].

This argument is consistent with Career Construction Theory, which explains career development through the sequence of adaptive readiness, adaptability resources, adapting responses, and adaptation results [10]. Within this framework, BJW can be conceptualized as an adaptive readiness factor that prepares students psychologically to engage in career-related tasks. In contrast, career exploration represents an adaptive response aimed at managing vocational development. Empirical evidence supports this logic: career construction research identifies exploration as part of students' adapting responses, and longitudinal evidence among vocational college students shows that BJW strengthens pathways toward proactive career behavior through career adaptability [12], [43]. Therefore, the present study proposes:

H1: Belief in a just world is positively associated with career exploration.

2.5.2. Belief in a Just World and Future Time Perspective

Belief in a just world is also expected to be positively associated with future time perspective (FTP). FTP reflects the extent to which individuals think about, value, and plan for future outcomes. Students with stronger BJW may be more likely to view the future as meaningful, controllable, and connected to present effort. Conversely, when students perceive the world as arbitrary or unfair, they may be less motivated to develop a clear future orientation, as planning may seem less useful. Thus, BJW may strengthen FTP by reinforcing students' belief that present actions can lead to deserved future outcomes.

Prior research provides support for this theoretical link. Bartholomaeus and Strelan [18] showed that BJW for the self is associated with adaptive and approach-oriented outcomes, including well-being, coping, prosocial tendencies, and positive future orientation. In educational contexts, Lin et al. [21] found that BJW was positively related to learning motivation among higher vocational students and partially mediated the relationship between social support and learning motivation. These findings suggest that fairness beliefs may help students maintain motivation, confidence, and future-directed cognition,

especially in vocational education contexts where students must prepare for uncertain training and employment transitions. Therefore, the present study proposes:

H2: Belief in a just world is positively associated with future time perspective.

2.5.3. Future Time Perspective and Career Exploration

Future time perspective is expected to be positively associated with career exploration because career exploration is inherently future-oriented. Students who have a clearer view of their future are more likely to recognize the value of present career-related activities, such as gathering occupational information, evaluating possible career paths, and reflecting on person–career fit. From a self-regulatory perspective, FTP helps students connect present behavior with long-term goals, making exploration a meaningful step toward future career success. Meta-analytic evidence supports this argument by showing that FTP is associated with motivation and behavior across education, work, and health domains [44].

More specifically, research in career development shows that future-oriented cognition can promote active career behavior. Hu et al. [24] found that career-related future time orientation predicted later person–job fit through exploration and focused search over 12 months. This indicates that students who think more clearly about their occupational future are more likely to engage in behaviors that help them understand career options and improve future career fit. Within Career Construction Theory, FTP can therefore be understood as a cognitive-regulatory resource that encourages adapting responses, particularly career exploration. Therefore, the present study proposes:

H3: Future time perspective is positively associated with career exploration.

2.5.4. The Mediating Role of Future Time Perspective

Future time perspective is expected to mediate the relationship between belief in a just world and career exploration. Theoretically, BJW may instill in students the motivational belief that effort will be fairly rewarded. At the same time, FTP may provide the cognitive regulatory mechanism that translates this belief into current career behavior. Students who believe that the world is fair may be more likely to perceive the future as controllable and worth planning for; this stronger future orientation may then encourage them to engage in career exploration. This mediation logic aligns with Career Construction Theory, which holds that adaptive readiness factors influence adaptive responses through psychological and self-regulatory resources.

Empirical findings support the plausibility of this indirect pathway, although the exact BJW–FTP–career exploration model remains underexamined. BJW has been linked to adaptive future-related outcomes and stronger motivation in educational/vocational contexts, while FTP has been shown to predict career exploration and focused search over time [18], [21], [24], [45]. In addition, meta-analytic evidence indicates that future time perspective is related to self-regulatory processes such as goal monitoring, goal-directed behavior, and self-regulatory ability, further supporting its role as a psychological mechanism linking motivational beliefs to career-related action [23]. Because the present study uses a cross-sectional design, this mediation should be interpreted as a theoretically grounded indirect association rather than definitive causal evidence. Therefore, the present study proposes:

H4: Future time perspective mediates the association between belief in a just world and career exploration.

2.6. Conceptual Framework

Based on Career Construction Theory and the reviewed empirical literature, this study proposes a mediation model in which belief in a just world is associated with career exploration both directly and indirectly through future time perspective. Belief in a just world is conceptualized as an adaptive readiness factor that may encourage students to view career-related effort as meaningful and worthwhile. Future time perspective is conceptualized as a cognitive-regulatory resource that links present action with future goals. Career exploration is conceptualized as an adapting response through which students seek self-related and occupational information to manage career uncertainty.

To visually summarize the theoretical assumptions underlying the study, Figure 1 presents the hypothesized mediation model linking belief in a just world, future time perspective, and career exploration. The model was developed based on Career Construction Theory, in which belief in a just world is positioned as an adaptive readiness factor, future time perspective as a cognitive-regulatory resource, and career exploration as an adapting response.

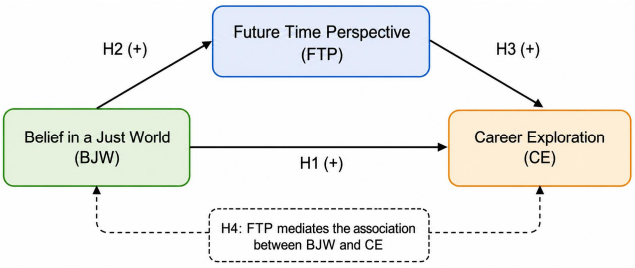

Figure 1. Hypothesized mediation model of belief in a just world, future time perspective, and career exploration.

Figure 1 illustrates the proposed direct and indirect pathways among the three focal constructs. The model assumes that students who hold stronger beliefs that personal effort and outcomes are fairly connected are

more likely to engage in career exploration. In addition, the model proposes that this association is partly explained by students' future time perspective, suggesting that fairness-related beliefs may strengthen future-oriented cognition, which in turn supports proactive career-related behavior. The inclusion of both a direct path from belief in a just world to career exploration and an indirect path through future time perspective reflects a partial mediation framework, allowing the study to examine whether future-oriented cognition explains only part, rather than all, of the association between fairness belief and exploratory career behavior.

3. MATERIALS AND METHODS

3.1. Study Plan

This study employed a quantitative cross-sectional survey design to examine the associations among personal belief in a just world, future time perspective, and career exploration among vocational college students in Guangxi, China. A cross-sectional design was considered appropriate because the study aimed to test theoretically grounded associations among psychological constructs at a single point in time rather than to establish temporal or causal effects. Accordingly, the mediation model tested in this study was interpreted as a statistical indirect association rather than evidence of causal mediation.

The study was grounded in Career Construction Theory, which conceptualizes career development as an adaptive process involving adaptive readiness, adaptability resources, adapting responses, and adaptation outcomes. In the proposed model, personal belief in a just world was conceptualized as a socio-cognitive form of adaptive readiness, future time perspective as a cognitive-regulatory resource, and career exploration as an adapting response. Structural equation modeling was used as the primary analytical technique because it allows simultaneous estimation of measurement and structural relationships among latent variables while accounting for measurement error.

3.2. Participants and Sampling Procedure

The participants were vocational college students enrolled in higher vocational institutions in Guangxi, China. Table 1 summarizes the sample recruitment process and response screening procedure. This information is provided to clarify the number of questionnaires distributed, the exclusion of invalid or incomplete responses, and the final number of valid cases included in the statistical analysis.

Table 1. Sample recruitment and response screening

Description	Number
Questionnaires distributed	1,200
Invalid or incomplete responses excluded	145
Valid responses retained for analysis	1,055
Effective response rate	87.9%

As shown in Table 1, 1,200 questionnaires were distributed across nine higher vocational institutions in Guangxi, China. After excluding 145 invalid or incomplete responses, 1,055 valid responses were retained, yielding an effective response rate of 87.9%. This high response rate suggests strong participant engagement and provides a sufficiently large sample for confirmatory factor analysis and structural equation modeling. The final sample size also enhances the study's statistical power and supports the stability of parameter estimates in the proposed mediation model.

3.3. Data Collection

Data were collected using a self-administered online questionnaire. Participation was voluntary, and students completed the questionnaire through institutional learning platforms. Before completing the questionnaire, participants were informed of the study's purpose, the voluntary nature of participation, and the confidentiality of their responses.

The questionnaire consisted of four sections; the first collected demographic information. The second section measured belief in a just world. The third section measured future time perspective. The fourth section measured career exploration. After data collection, all responses were screened for completeness and response quality before statistical analysis.

3.4. Measures

3.4.1. Personal belief in a just world

Personal belief in a just world was measured using items adapted from the Personal Belief in a Just World Scale developed [17]. This construct assesses the extent to which individuals believe that events and outcomes in their own lives are fair, deserved, and meaningfully connected to personal effort. Personal belief in a just world was selected rather than general belief in a just world because personal just-world beliefs are more closely associated with adaptive functioning, motivation, coping, and goal-directed behavior. The scale included seven items.

3.4.2. Future time perspective

Future time perspective was measured using items adapted from the Future Time Perspective Scale developed [22]. This construct reflects the extent to which students think about the future, connect present behavior with future consequences, and perceive future goals as meaningful. Future time perspective was included because it represents a cognitive-motivational orientation that may help students regulate present career-related

behavior in relation to future occupational goals. The scale included ten items.

3.4.3. Career exploration

Career exploration was measured using items adapted from the Career Exploration Survey developed by Stumpf, Colarelli, and Hartman [4]. Career exploration is students' efforts to gather and process information about themselves and the occupational environment. The construct includes both self-exploration and environmental exploration. Self-exploration refers to reflecting on personal interests, values, abilities, and career goals, whereas environmental exploration involves seeking information about occupations, job requirements, labor market conditions, and career opportunities. The scale included eleven items.

Table 2. Measurement constructs, number of items, example items, response scale, and sources

Construct	Items	Example Item	Response Scale	Sources
Belief in a Just World	7	“I feel that I am treated fairly in life."	5-point Likert scale: 1 = strongly disagree to 5 = strongly agree	Adopted from Dalbert (2001) [17]; Dalbert (1999) [39].
Future Time Perspective	10	“I consider how my current actions will affect my future."	5-point Likert scale: 1 = strongly disagree to 5 = strongly agree	Adopted from Husman and Shell (2008) [22]
Career Exploration	11	“I actively search for career-related information."	5-point Likert scale: 1 = strongly disagree to 5 = strongly agree	Adopted from Stumpf et al. (1983) [4]; Stumpf and Lockhart (1987) [46] ; Rowold and Staufenbiel (2010) [47]

Note. Higher scores indicate higher levels of the corresponding construct. Full item wording is provided in Supplementary Table S1.

3.5. Pilot Testing

A pilot test was conducted with 150 vocational college students before the main survey; it aimed to assess item clarity, readability, questionnaire structure, and preliminary psychometric quality. Participants were asked to identify unclear or confusing items.

Based on the pilot feedback, minor wording adjustments were made to improve clarity. Preliminary reliability analysis and confirmatory factor analysis were also conducted. The pilot results indicated that the adapted instruments had acceptable reliability and factor structure for use in the main study.

3.6. Data Examination

Before conducting the main analysis, the data were screened using SPSS version 23 to ensure suitability for SEM. The screening included missing data, response quality, outliers, normality, and multicollinearity, as these may affect the accuracy of estimates and the validity of the model [48], [49]. Responses with more than 10% missing data were excluded, and remaining missing values were handled using full-information maximum likelihood estimation, which reduces bias compared with listwise deletion [50]–[52]. Incomplete and straight-line responses were examined to detect careless responding [53].

Outliers were assessed using standardized scores and Mahalanobis distance. Normality was evaluated using skewness and kurtosis, with acceptable ranges of (-2) to (+2) for skewness and (-7) to (+7) for kurtosis [54]. Multicollinearity was assessed using inter-construct correlations, tolerance, and VIF; tolerance values above 0.10 and VIF values below 5 indicate no serious concern [55].

3.7. Data Analysis

Data analysis was conducted using SPSS and AMOS. SPSS was used for data screening, descriptive statistics, reliability testing, and Pearson correlation analysis, whereas AMOS was employed for confirmatory factor analysis, structural equation modeling, and mediation testing. Prior to hypothesis testing, the dataset was examined for missing values, outliers, and normality, as well as skewness and kurtosis. Reliability was evaluated using Cronbach's alpha, with values of ≥ 0.70 considered acceptable [56], [57].

Confirmatory factor analysis (CFA) was conducted to examine a measurement model comprising three latent constructs: belief in a just world, future time perspective, and career exploration. Model fit was evaluated using several indices, including χ^2/df, CFI, TLI, RMSEA, and SRMR, with acceptable fit indicated by $\chi^2/df < 3.00$, CFI and TLI > 0.90, RMSEA < 0.08, and SRMR < 0.08. The use of multiple fit indices was considered appropriate because the chi-square statistic is sensitive to sample size and should not be interpreted as the sole indicator of model adequacy. [54], [58]–[60].

Construct reliability and validity were assessed using composite reliability, average variance extracted, standardized factor loadings, the Fornell–Larcker criterion, and the Heterotrait–Monotrait ratio. Composite reliability values above 0.70, factor loadings above 0.50, and AVE values above 0.50 indicated acceptable reliability and convergent validity. In contrast, discriminant validity was supported when the square root of AVE exceeded

inter-construct correlations and HTMT values were below 0.85 [55], [61], [62]. After the measurement model was validated, SEM was used to test the hypothesized relationships, and the mediation effect of future time perspective was examined using bias-corrected bootstrapping with 5,000 resamples. The indirect effect was significant when the 95% confidence interval did not include zero [63]–[65].

4. RESULTS

4.1. Respondent Characteristics

Table 3 reports the demographic profile of the respondents, including gender, age, and year of study. Presenting these characteristics is important for contextualizing the sample and assessing whether the participants represent the target population of vocational college students approaching the school-to-work transition.

Table 3. Demographic Characteristics of Respondents

Characteristic	Category	N = 1055	Percentage
Gender	Male	487	46.2%
	Female	568	53.8%
Age	18–20 years	612	58.0%
	21–23 years	389	36.9%
	> 24 years	54	5.1%
Year of study	First year	378	35.8%
	Second year	401	38.0%
	Third year	276	26.2%

The demographic distribution in Table 3 shows that the sample was relatively balanced by gender, with female students comprising 53.8% and male students 46.2% of the respondents. Most participants were aged 18–20 years, followed by those aged 21–23 years, indicating that the sample largely represented young adults in a critical stage of career development. In terms of academic progression, first, second, and third-year students were all represented, with the highest proportion from second-year students. This distribution is appropriate for examining career exploration because students across different years of study may already be considering occupational pathways, internships, and labor-market entry.

4.2. Descriptive Statistics and Normality Assessment

Table 4 presents the descriptive statistics and normality indicators for the three main study variables. The mean and standard deviation values provide an overview of students' levels of belief in a just world, future time perspective, and career exploration. In contrast, skewness and kurtosis values indicate whether the data meet the assumptions for parametric and structural equation modeling analyses.

Table 4. Descriptive Statistics and Normality Indicators

Variable	M	SD	Skewness	Kurtosis
Belief in a Just World	3.74	0.61	−0.42	−0.31
Future Time Perspective	3.81	0.58	−0.37	−0.28
Career Exploration	3.69	0.63	−0.45	−0.36

Note. N = 1,055.

The results in Table 4 show that the mean scores for all constructs were above the midpoint of the five-point scale, indicating that respondents generally reported moderate to relatively high levels of belief in a just world, future time perspective, and career exploration. Future time perspective had the highest mean score, suggesting that students tended to think about and value their future goals. The skewness and kurtosis values were within commonly accepted thresholds, indicating no substantial deviation from normality.

4.3. Correlation Analysis

Table 5 presents the Pearson correlation coefficients among belief in a just world, future time perspective, and career exploration. This analysis examined preliminary bivariate associations among the study variables before testing the full structural model.

Table 5. Correlation Matrix

Variable	BJW	FTP	CE
Belief in a Just World	—		
Future Time Perspective	0.54***	—	
Career Exploration	0.49***	0.57***	—

Note. N = 1,055; ***p < 0.001.

As shown in Table 5, all correlations were positive and statistically significant ($p < 0.001$). Belief in a just world was moderately correlated with future time perspective and career exploration, while future time perspective was also moderately correlated with career exploration. These findings provide initial empirical support for the hypothesized relationships. Importantly, the correlations were sufficiently strong to indicate meaningful associations, but not so high as to suggest redundancy among constructs.

4.4. Measurement Model Results

Table 6 summarizes the reliability and convergent validity results for the measurement model. The table includes standardized factor loadings, Cronbach's alpha, composite reliability, and average variance extracted for each latent construct.

Standardized factor loadings exceeded the recommended threshold of 0.50, suggesting that the observed items adequately represented their respective

latent constructs. Cronbach's alpha and composite reliability values were above 0.90, indicating strong internal consistency. In addition, AVE values exceeded 0.50 for all constructs, supporting convergent validity. These results confirm that belief in a just world, future time perspective, and career exploration were measured reliably and validly, thereby justifying their inclusion in the structural model.

Table 6. Summary of measurement model reliability and convergent validity

Construct	Items	Standardized Loading	Cronbach's Alpha	CR	AVE	Interpretation
Belief in a Just World	7	0.68–0.79	0.91	0.91	0.59	Reliable and valid
Future Time Perspective	10	0.72–0.81	0.93	0.93	0.57	Reliable and valid
Career Exploration	11	0.70–0.79	0.92	0.92	0.56	Reliable and valid

Note. CR = composite reliability; AVE = average variance extracted. Full item-level standardized loadings are provided in Supplementary Table S2.

4.5. Discriminant Validity

Table 7 reports the application of the Fornell–Larcker criterion to evaluate discriminant validity across the three latent constructs. The analysis confirms discriminant validity when each construct's AVE square root is greater than its correlations with the remaining constructs.

Table 7. Fornell–Larcker Criterion

Construct	BJW	FTP	CE
Belief in a Just World	0.77		
Future Time Perspective	0.54	0.79	
Career Exploration	0.49	0.57	0.75

Note. Diagonal values represent the square root of AVE.

Table 7 shows that the square root of the AVE for each latent construct exceeded its correlations with all other constructs. This pattern supports the establishment of discriminant validity, indicating that each construct explains a greater proportion of variance in its own indicators than it shares with indicators representing other constructs in the model.

To further verify discriminant validity, Table 8 presents the Heterotrait–Monotrait (HTMT) ratios for the study constructs. The HTMT criterion provides a more conservative assessment of discriminant validity compared with traditional approaches.

Table 8. HTMT Ratios

Construct	BJW	FTP	CE
Belief in a Just World	—		
Future Time Perspective	0.63	—	
Career Exploration	0.59	0.67	—

The HTMT values presented in Table 8 were all below the conservative threshold of 0.85. This provides additional evidence that the three constructs are empirically distinguishable. In particular, although future time perspective and career exploration were positively related, their HTMT value remained below the recommended cut-off, indicating that they should not be treated as the same construct.

4.6. Structural Model Fit

Table 9 reports the fit indices for the hypothesized structural model. Multiple fit indices were examined because reliance on a single index may provide an incomplete evaluation of model adequacy, particularly in large samples.

Table 9. Structural Model Fit Indices

Fit Index	Value	Threshold	Interpretation
χ^2/df	2.43	< 3.00	Acceptable
RMSEA	0.037	< 0.08	Good
SRMR	0.042	< 0.08	Good
CFI	0.96	> 0.90	Good
TLI	0.95	> 0.90	Good

The results in Table 9 indicate that the structural model achieved an acceptable-to-good fit with the data. The χ^2/df value was below the recommended threshold of 3.00, while RMSEA and SRMR values were well below 0.08, indicating satisfactory absolute fit. The CFI and TLI values exceeded 0.90, demonstrating good incremental fit. These findings suggest that the proposed mediation model adequately represents the observed data and is appropriate for testing the hypothesized structural relationships.

4.7. Structural Path Analysis

The proposed structural model was tested to evaluate both the direct and indirect relationships among belief in a just world, future time perspective, and career exploration. As illustrated in Figure 2, the final structural equation model reports standardized path coefficients, factor loadings, and the proportion of variance explained in the endogenous variables.

The results indicate that belief in a just world was positively related to both future time perspective and career exploration. Future time perspective, in turn, showed a positive association with career exploration. The model accounted for 30% of the variance in future time perspective and 46% of the variance in career exploration, suggesting moderate explanatory capacity.

Taken together, these findings provide empirical support for the theoretical proposition that students' beliefs about fairness and their orientation toward the future represent important psychological factors associated with career exploration. Moreover, the continued significance of the direct pathway from belief in a just world to career exploration suggests that future time perspective functions as a partial mediator, rather than fully explaining the association between these constructs.

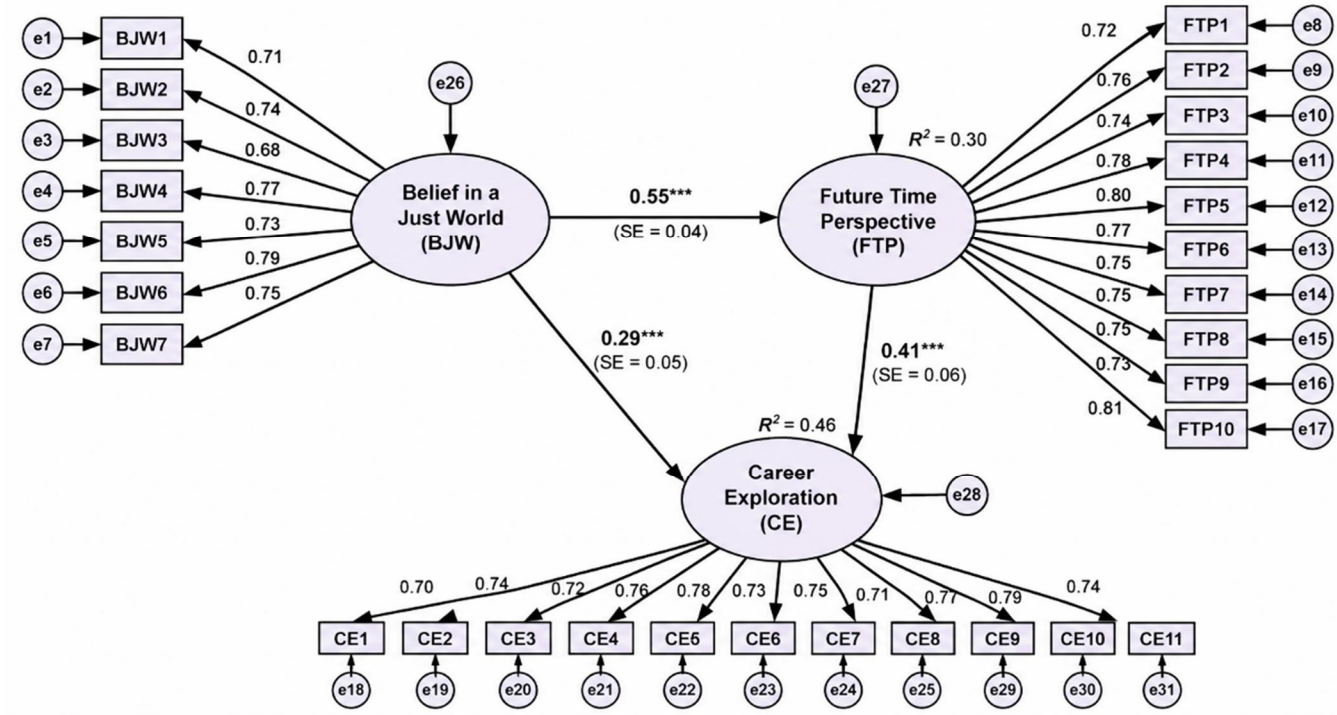

Figure 2. Final structural equation model with standardized estimates. (***p<0.001)

Table 10. Standardized structural path coefficients

Hypothesis	Path	Standardized Coef. (β)	SE	t-value	p-value	Result
H1	BJW → CE	0.29***	0.05	5.82	< 0.001	Supported
H2	BJW → FTP	0.55***	0.04	11.47	< 0.001	Supported
H3	FTP → CE	0.41***	0.06	7.36	< 0.001	Supported

Note. ***p < 0.001; R^2 for FTP = 0.30; R^2 for CE = 0.46.

Table 11. Bootstrap test of the indirect effect of belief in a just world on career exploration through future time perspective.

Path	Effect Type	Standardized Coef. (β)	SE	95% CI	p-value
BJW → CE	Direct effect	0.29	0.04	[0.21, 0.37]	< 0.001
BJW → FTP → CE	Indirect effect	0.23	0.04	[0.15, 0.32]	< 0.001
BJW → CE	Total effect	0.52	0.05	[0.43, 0.61]	< 0.001

The results in Table 10 show that all direct hypotheses were supported. Belief in a just world was positively associated with career exploration, indicating that students with stronger fairness-related beliefs were more likely to engage in proactive career exploration. Belief in a just world was also positively associated with future time perspective, suggesting that students who perceive life outcomes as fair and effort-dependent tend to hold stronger future-oriented cognition. Furthermore, future time perspective was positively associated with career exploration, confirming that students who more clearly connect present actions with future goals are more likely to seek career-related information and evaluate career alternatives. Collectively, these findings support the theoretical sequence proposed in Career Construction Theory.

Table 11 presents the bootstrapping results for the indirect effect of belief in a just world on career exploration through future time perspective. Bias-corrected bootstrapping with 5,000 resamples was used to assess the statistical significance of the mediation effect. The results indicate that the indirect effect of belief

in a just world on career exploration through future time perspective was statistically significant, as the 95% confidence interval did not include zero. This finding supports the mediating role of future time perspective. However, the direct effect of belief in a just world on career exploration remained significant after including the mediator, indicating partial mediation. Substantively, this suggests that fairness-related beliefs may encourage career exploration both directly and indirectly by strengthening students' future-oriented cognition. The indirect pathway accounted for 44% of the total effect, highlighting future time perspective as an important explanatory mechanism in the relationship between belief in a just world and career exploration.

5. DISCUSSION

This study provides empirical support for the role of belief in a just world and future time perspective in explaining career exploration among vocational college students in Guangxi, China. Drawing on Career Construction Theory, the findings suggest that belief in a just world may operate as an adaptive readiness factor, future time perspective as a cognitive-regulatory resource, and career exploration as an adapting response. The structural model demonstrated explanatory power, accounting for 30% of the variance in future time perspective and 46% of the variance in career exploration. These results indicate that vocational students' career exploration is shaped not only by career-related knowledge or technical competence, but also by broader socio-cognitive beliefs about fairness, effort, future possibility, and the perceived connection between present action and future outcomes.

The positive association between belief in a just world and career exploration suggests that students who believe that effort, responsibility, and outcomes are meaningfully connected are more likely to engage in active career-related behaviors. This finding is consistent with just-world theory, which argues that individuals are motivated to perceive the world as orderly, predictable, and fair, thereby sustaining goal-directed behavior in uncertain situations [37], [66]–[68]. In vocational education contexts, students may face uncertainty about labor market competition, institutional reputation, credential value, and the school-to-work transition. Under such conditions, belief in a just world may provide a psychological basis for agency by encouraging students to believe that career effort is worthwhile rather than futile. This interpretation is supported by recent Chinese educational research showing that belief in a just world is positively related to learning motivation, learning satisfaction, academic engagement, and self-regulated learning among students [21], [68]–[70]. Therefore, students with stronger just-world beliefs may be more willing to search for occupational information, reflect on personal strengths and limitations, consult significant others, and evaluate possible career pathways.

The findings also show that belief in a just world is positively associated with future time perspective. This suggests that fairness-related beliefs may help students view the future as meaningful, attainable, and responsive to present effort. Future time perspective refers to individuals' tendency to value future goals, recognize the connection between current behavior and later outcomes, and regulate present actions in accordance with long-term aims [22], [23]. When students believe that effort can lead to fair outcomes, they may be more likely to set goals, plan ahead, and view current educational and career activities as investments in the future. In this sense, belief in a just world may strengthen future-oriented cognition by reducing perceptions of arbitrariness and increasing the perceived controllability of future career outcomes. Recent research on career future time perspective further supports this interpretation, showing that career-related future cognition consists of perceived opportunity, value, and connectedness, and that it is associated with career decision-making self-efficacy, reduced career indecision, and career-searching behavior [71], [72].

Future time perspective was also positively associated with career exploration. This finding is theoretically coherent because career exploration is inherently future-oriented: students explore occupations, seek advice, compare alternatives, and assess their abilities as they prepare for future educational and employment decisions. A recent meta-analysis found that future time perspective is positively associated with goal setting, examination, application, self-regulatory ability, and adaptive outcomes, suggesting that future-oriented individuals are better at translating long-term goals into present action [23], [73]. In the context of career development, students with a stronger future time perspective may be more likely to view career exploration as purposeful rather than burdensome. Recent career research provides additional support: Hu et al. [24], using a time-lagged design with Chinese university students, found that career-related future time orientation predicted later perceived person–job fit through exploration and focused job search. Similarly, research on Chinese pre-service teachers found that career exploration predicted later career decision self-efficacy through work volition and career adaptability, indicating that exploration contributes to later career confidence and adaptive functioning [74].

The mediating role of future time perspective provides a more integrated explanation of how belief in a just world is linked to career exploration. Students who believe that the world is relatively fair and that effort matters may be more likely to develop future-oriented thinking; this future orientation, in turn, may motivate them to explore career options more actively. This mechanism is consistent with Career Construction Theory, which conceptualizes career development as an adaptation process involving adaptivity, adaptability resources, adapting responses, and adaptation results

[10], [75]. Within this framework, belief in a just world may function as a form of adaptivity or motivational readiness, future time perspective may complement adaptability resources by strengthening career concern and self-regulation, and career exploration may represent an adapting response through which students actively prepare for future work roles. Recent reviews of Career Construction Theory emphasize its continuing relevance for understanding how individuals construct careers under conditions of uncertainty and change [45], [76], [77]. Meta-analytic evidence also supports the career construction model by showing that career adaptability is associated with adaptive responses, such as career planning and exploration, and adaptation outcomes, such as employability and career satisfaction [11].

This study extends prior research in several approaches. First, it impacts the literature by positioning belief in a just world not merely as a general worldview but as a motivational belief relevant to vocational students' career development. Prior research among higher vocational students in China found that belief in a just world mediated the relationship between social support and learning motivation [21]. More directly related to career development, Wang et al. [12] found, using three-wave longitudinal data, that belief in a just world strengthened the indirect effect of career-related parental support on proactive career behavior through career adaptability among vocational college students. The present study extends these findings by identifying career exploration as another adaptive career-related outcome associated with just-world beliefs.

Second, the findings propose that a future time perspective may serve as a useful complement to career construction processes. Although Career Construction Theory traditionally emphasizes career flexibility, resources, interest, control, curiosity, and self-confidence, a future time perspective may help explain how students translate general beliefs and motivations into specific exploratory actions. Students who perceive the future as valuable and connected to present effort may be more likely to engage in exploration because they understand its instrumental value for future career decision-making. This is particularly important for vocational college students, whose school-to-work transition may involve uncertainty, competition, and pressure to demonstrate the practical value of vocational education. Recent studies on Chinese vocational education similarly emphasize the importance of professional identity, career adaptability, perceived employability, learning adaptability, and school–industry collaboration in supporting students' career development and transition readiness [78]–[81].

Third, this study enriches the application of Career Construction Theory among vocational college students in Guangxi, China. Much career development research has focused on university students or general adolescent populations. In contrast, vocational college students may encounter distinct challenges related to social recognition, regional economic opportunity, and perceived limits of vocational credentials. By focusing on this group, the present study highlights the importance of socio-cognitive and temporal resources in vocational career development. The findings suggest that career interventions should not only provide occupational information and job-search skills, but also help students develop constructive beliefs about effort, a realistic understanding of opportunity structures, and clearer connections between present learning and future career possibilities.

The findings also have practical implications. Career guidance programs in vocational colleges may benefit from integrating fairness-related and future-oriented components. For example, counselors and teachers can help students recognize how effort, skills, internships, certifications, and networking can increase career opportunities, while also acknowledging that structural barriers and labor-market inequalities exist. Such balanced guidance is important because strengthening belief in a just world should not mean encouraging naïve assumptions that all outcomes are perfectly fair. Instead, interventions should help students develop realistic agency: the belief that although social and structural conditions influence career outcomes, purposeful preparation and exploration can still improve future opportunities. Future-oriented activities such as career timelines, possible-self exercises, goal mapping, alumni mentoring, occupational information searches, and reflective internship tasks may strengthen students' ability to connect current learning with future work roles. These activities may be especially beneficial for students with a weaker future time perspective or low confidence in the value of vocational education.

Nevertheless, the mediation result should be interpreted cautiously. Because the data were cross-sectional, this study cannot establish temporal or causal ordering among belief in a just world, future time perspective, and career exploration. Although the proposed pathway is theoretically plausible, alternative explanations are possible. For instance, students who frequently engage in career exploration may develop clearer future goals, stronger perceptions of personal agency, and stronger beliefs that effort can lead to fair outcomes. Methodological research cautions that cross-sectional mediation may produce biased estimates when researchers infer longitudinal processes from data collected at a single time point [82]–[84]. Therefore, future studies should use longitudinal, experimental, or intervention designs to clarify causal direction and test whether strengthening future time perspective can increase career exploration.

6. IMPLICATIONS, LIMITATIONS & FUTURE RESEARCH DIRECTIONS

6.1. Implications

This study contributes to Career Construction Theory by identifying belief in a just world as a potential adaptive readiness aspect and future time perspective as a cognitive-regulatory mechanism that promotes career exploration. The findings suggest that vocational students' career exploration is influenced not only by career-related skills but also by broader beliefs about fairness, effort, and future attainability. By showing that future time perspective mediates the relationship between belief in a just world and career exploration, this study clarifies how general socio-cognitive beliefs may be translated into concrete career-related behaviors.

In practice, the findings propose that vocational schools should design career education programs that strengthen students' realistic agency and future-oriented planning. Career guidance should help students recognize the value of proactive behaviors, such as skill development, occupational information seeking, internships, and networking, while also acknowledging structural barriers in the labor market. Interventions such as goal-setting workshops, possible-self reflection, career timeline planning, alum mentoring, and internship-based reflection may help students connect present learning with future career goals. Strengthening school–industry collaboration may further support students' career exploration by providing authentic exposure to occupational environments.

6.2. Limitations and Future Research Directions

This study has several limitations. First, its cross-sectional design prevents causal conclusions regarding the relationships among belief in a just world, future time perspective, and career exploration. Future studies should use longitudinal, experimental, or intervention designs to test the proposed mediation process more rigorously. Second, dependence on self-report data may raise concerns about common-method bias and social desirability bias. Future studies should incorporate multiple data sources, behavioral indicators, and qualitative methods to capture career exploration more comprehensively.

Third, the model was limited to vocational college students in Guangxi, China, which may restrict the generalizability of the findings. Future research should examine the model across different regions, institutional types, educational levels, and cultural contexts. Fourth, future studies should include additional variables such as career adaptability, career decision-making self-efficacy, perceived employability, parental career support, internship quality, professional identity, and perceived labor market barriers. Finally, potential moderators, including gender, grade level, major, socioeconomic status, rural–urban background, and internship experience, should be examined. Future research may also extend the outcome variables beyond career exploration to include employability, job-search behavior, person–job fit, employment quality, and long-term career satisfaction.

7. CONCLUSION

This study examined the relationship among belief in a just world, future time perspective, and career exploration among vocational college students in Guangxi, China. The findings showed that belief in a just world was positively associated with career exploration and future time perspective, while future time perspective was positively associated with career exploration. Future time perspective also statistically mediated the association between belief in a just world and career exploration.

The study contributes to Career Construction Theory by positioning belief in a just world as an adaptive readiness factor and future time perspective as a cognitive-regulatory resource associated with career exploration. The findings suggest that students' fairness-related beliefs and future-oriented cognition are important psychological correlates of proactive career development behavior. For vocational education practice, the results highlight the importance of strengthening students' future planning, goal orientation, and the perceived connection between present effort and future career opportunities.

Because the study used a cross-sectional design, the findings should be interpreted as evidence of theoretically grounded associations rather than causal relationships. Future longitudinal, experimental, and cross-cultural studies are needed to verify the temporal and causal mechanisms underlying the proposed model. Overall, this study provides evidence that belief in a just world and future time perspective are meaningful psychological factors associated with career exploration among vocational college students.

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CONFLICTS OF INTEREST

The authors declare that no conflicts of interest are associated with this study. All aspects of the research were conducted with the utmost integrity and transparency.

DATA AVAILABILITY

The datasets utilized and analyzed during this research are available from the corresponding author upon reasonable request.

ETHICAL STATEMENTS

The authors confirm that the study complied with all applicable local laws, ethical standards, and institutional guidelines, including obtaining approval from relevant ethics committees.

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SUPPLEMENTARY

Table S1. Full item wording and source references for all adapted measurement scales.

Construct	Item Code	Questionnaire Item	Adapted from
Belief in a Just World	BJW1	I believe that, by and large, I deserve what happens to me.	Adopted from Dalbert (2001) [17]; Dalbert (1999) [39].
	BJW2	I feel that I am treated fairly in life.	
	BJW3	I believe that I usually get what I deserve.	
	BJW4	I feel my efforts are fairly rewarded.	
	BJW5	I believe that outcomes in my life are generally fair.	
	BJW6	I believe that justice prevails in my personal life.	
	BJW7	I feel that life treats me in a fair way.	
Future Time Perspective	FTP1	I think about what my future will be like.	Adopted from Husman and Shell (2008) [22]
	FTP2	I consider how my current actions will affect my future.	
	FTP3	I set goals for my future.	
	FTP4	I think about long-term career plans.	
	FTP5	I believe my future depends on what I do now.	
	FTP6	I often think about where I want to be in the future.	
	FTP7	I plan ahead for my future career.	
	FTP8	I am motivated by future goals.	
	FTP9	I consider future consequences before making decisions.	
	FTP10	I have a clear image of my future career.	
Career Exploration	CE1	I have been exploring career opportunities.	Adopted from Stumpf et al. (1983) [4]; Stumpf and Lockhart (1987) [46] ; Rowold and Staufenbiel (2010) [47]
	CE2	I seek information about different careers.	
	CE3	I gather information about job requirements.	
	CE4	I reflect on my strengths and interests for career decisions.	
	CE5	I actively search for career-related information.	
	CE6	I talk to others about career options.	
	CE7	I evaluate different career alternatives.	
	CE8	I attend career-related activities or events.	
	CE9	I try to learn more about occupations that interest me.	
	CE10	I explore different career paths before making decisions.	
	CE11	I actively think about my future career direction.	

Table S2. Full item standardized factor loadings, internal consistency, composite reliability, and average variance extracted.

Construct	Item	Standardized Loading Factor	Cronbach's Alpha	CR	AVE
Belief in a Just World	BJW1	0.71	0.91	0.91	0.59
	BJW2	0.74			
	BJW3	0.68			
	BJW4	0.77			
	BJW5	0.73			
	BJW6	0.79			
	BJW7	0.75			
Future Time Perspective	FTP1	0.72	0.93	0.93	0.57
	FTP2	0.76			
	FTP3	0.74			
	FTP4	0.78			
	FTP5	0.80			

Construct	Item	Standardized Loading Factor	Cronbach's Alpha	CR	AVE
	FTP6	0.77			
	FTP7	0.75			
	FTP8	0.79			
	FTP9	0.73			
	FTP10	0.81			
Career Exploration	CE1	0.70	0.92	0.92	0.56
	CE2	0.74			
	CE3	0.72			
	CE4	0.76			
	CE5	0.78			
	CE6	0.73			
	CE7	0.75			
	CE8	0.71			
	CE9	0.77			
	CE10	0.79			
	CE11	0.74			

Note. CR = composite reliability; AVE = average variance extracted.