Retraction

Retracted: Characterization of Self-Efficacy Model Using Social Cognitive Theory for Students' Learning Abilities and Decision-Making Based on IoT

Wireless Communications and Mobile Computing

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] L. Ma, "Characterization of Self-Efficacy Model Using Social Cognitive Theory for Students' Learning Abilities and Decision-Making Based on IoT," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 5265239, 8 pages, 2022.

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Research Article

Characterization of Self-Efficacy Model Using Social Cognitive Theory for Students' Learning Abilities and Decision-Making Based on IoT

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Aiming at the problem that the career decision-making self-efficacy model cannot accurately mine the implicit relationship between students and career decision-making, resulting in the low structural validity and reliability of the model, a career decision-making self-efficacy model of flight attendant students under social cognitive theory is proposed. This paper analyzes the characteristics of self-efficacy under the social cognitive theory, reduces the dimension of student career decision-making score matrix into two matrices: student implicit feature and implicit feature career decision-making, and excavates the implicit relationship between flight attendant students and career decision-making. Students are described as a multidimensional decision vector to determine the professional cognitive level of flight attendant students. The self-efficacy model of students' career decision-making is established from five aspects: self-evaluation, collecting information, selecting goals, making plans, and solving problems, which is solved by the particle swarm optimization algorithm. The experimental results show that the structural validity and reliability of the model constructed in this paper are higher than those based on cluster analysis and user portrait. Therefore, it can effectively evaluate and measure the career decision-making self-efficacy of flight attendant students.

1. Introduction

Career decision-making is an individual's judgment on whether he has the ability to engage in the job and whether to choose the job in a certain job selection situation. Career decision-making will directly affect individual career development. Individual career decision-making is affected by many aspects, such as their own ability, learning behavior, social or family environment, and career development prospect. [1]. Contemporary college students' awareness of career planning is weak, there is no clear career goal, and they cannot formulate a detailed and feasible action plan. Even if they are barely employed, they cannot carry out career development smoothly, which eventually leads to the failure of employment. The stage of choosing a career is the key turning point of life. The decision and improvement of a career critically affect a singular's life arrangement. Social cognition theory is the hypothetical premise of career decision-making research. It brings up that

there is a cozy connection between career decision-creators' way of behaving and cognition, and career interest is one of the key elements influencing individual career decision-making. The environment and the attitude of the surrounding people will also affect the individual's career choice and career decision-making results to a certain extent. Social cognitive theory also believes that if individuals perceive that the growth space of the job is limited, and the surrounding obstacles and other factors need to compromise to personal interests, then individual career decision-making is mainly affected by job availability, self-efficacy, and other factors. If individuals clarify their professional interests, they will form an internal driving force, which urges individuals to take positive exploration behavior, formulate appropriate career planning, and finally achieve stable career development [2]. People with a high sense of career decision-making self-efficacy are often full of self-confidence, keen on challenges and good at tapping their potential, so as to realize the value of life. Therefore, changing college

students' employment concept and value orientation is a feasible way to solve college students' employment dilemma, especially to help college students establish systematic and rational career planning [3]. If scientific and reasonable career planning is implemented as soon as possible, college students will have initiative and full preparation in the face of employment problems, and the employment success rate will naturally increase. With the quick advancement of China's economy, China's air transport industry will keep a typical yearly development pace of around 10%, the quantity of air terminals per million square kilometers will increment altogether, and different markers, for example, flight thickness and traveler volume will increment quickly. The advancement pattern of China's thoughtful flying as of late is improving, and the entire business keeps on making new turns of events. The demand scale of the aviation market for China's civil aviation service talents and aviation management talents has also begun to expand simultaneously. Therefore, we should launch the construction of a high-tech talent team, steadily implement the construction of young and middle-aged civil aviation science and technology leading talents and innovation teams in key fields, and increase the construction of key disciplines with civil aviation characteristics, teacher training, and development. It is urgent to cultivate high-quality talents with good service awareness and air crew skills. Subsequently, this paper concentrates on the career decision-making self-efficacy model of flight attendants under the social cognitive theory and profoundly investigates the connection between career decision-making and self-efficacy. The research results are conducive to provide the basis for reasonably cultivating excellent flight attendants and scientifically developing human resources. At the same time, they are conducive to providing effective countermeasures and methods for flight attendants to choose jobs, enhance students' employment confidence, and alleviate employment pressure.

Researchers have shown that when people's judgments and decisions become more ambiguous, their dependence on social influence rises. The IoT world brings inescapable trade-offs between risks and rewards, and this uncertainty is particularly pervasive in privacy decision-making. Personal privacy assistants that are incorporated into IoT devices, such as smartphones and smart watches, will, in our opinion, assist in managing these selections [4] .

2. Career Decision-Making Self-Efficacy Model of Flight Attendant Students under Social Cognitive Theory

2.1. Analysis of Self-Efficacy under Social Cognitive Theory. Social cognitive theory is one of the old style hypotheses of instructional method and social brain research. Its principal contents are ternary intuitive determinism, observational learning, and self-efficacy. The theory holds that singular way of still up in the air by the inward factors of the individual and the outer climate—individual determinism and ecological determinism [5]. Individual elements, ecological variables, and social variables are viewed as autonomous and intelligent hypothetical substances, as displayed in Figure 1.
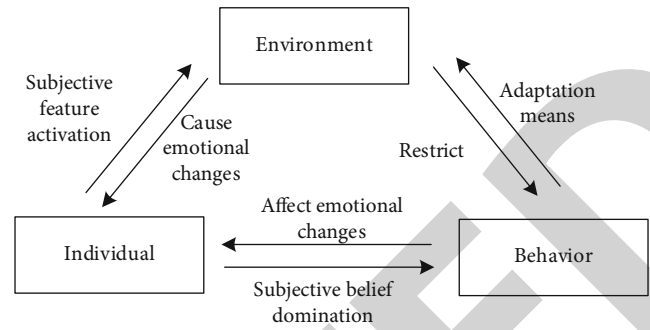

Figure 1: Theoretical basis of social cognition.

Individuals direct and control their actions through their subjective beliefs and initiatives, and the outcome of their actions influences the changes in their subjective emotions. Individuals provoke and activate environmental reactions through their subjective traits. Reactions of different environments also cause changes in an individual's subjective emotions. Behavior acts as an intermediary between humans and the environment. It is a means for individuals to change and adapt to their environment. Behavior is not only dominated by the individual but also constrained by the environment. There is an inevitable relationship between self-efficacy and teachers' pressure. Good self-efficacy helps to alleviate teachers' professional pressure, make them more able to deal with the changes of the environment, bear the pressure brought by work, and more clearly understand themselves and the relationship between their own development and professional pressure. Similarly, when college students have a high sense of career decision-making self-efficacy, they are full of self-confidence when choosing a career and can better deal with the employment pressure, which will help them succeed in their career in the future. On the contrary, if college students' career decision-making self-efficacy is not high, they will easily become frustrated and feel inferior in employment, and their job search will be rejected frequently. The operational definition is broken down into specific processes that cover the entire personal career decision process. Self-assessment represents an individual's understanding of their interest in their careers, their assessment of their career abilities, their ability requirements, and the career value of their contributions. When individuals show a high sense of career decision-making self-efficacy, they will show a more obvious fighting spirit in order to achieve the goal. In this process, because they move towards the goal step by step, they feel less employment pressure. Career decision-making is a complex cognitive process. In this process, individuals collect information about themselves and career environment, consider the prospects and development of various possible careers, and evaluate their confidence in achieving career development. This confidence ultimately determines the degree of effort and persistence of individuals in the process of action. Individuals' perception of whether they can successfully perform various tasks can effectively explain the different factors in the career decision-making process; that is, individuals with a high sense of efficacy are easier to make decisions in the career field [6]. Career decision-making assumes that when individuals choose
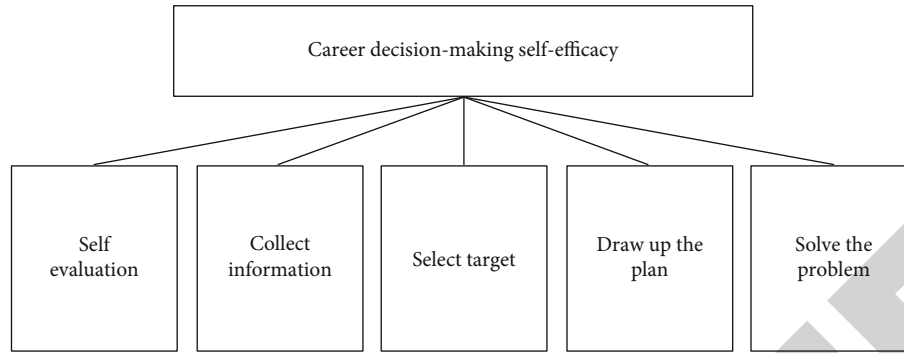
Figure 2: Career decision-making self-efficacy.

career goals, they aim to obtain the maximum benefit and the minimum loss, and finally make career decisions by recognizing themselves, collecting information, exploring career environment, and comparing career advantages and disadvantages [7]. The content of students' career decision-making self-efficacy model is shown in Figure 2.

Information collection corresponds to the ability of individuals to collect information related to job hunting. Individuals should have the ability to obtain information about career development trends and industry development prospects. Determine goals and the ability of individuals to make career decisions and develop confidence according to personal interests and professional abilities. Planning represents the ability of individuals to make plans in their chosen career direction, improve their vocational skills, and develop their career. Problem solving is the ability to overcome difficulties that individuals will encounter in the process of employment, such as family arrangement, social consensus, economic difficulties, and organizational threshold.

2.2. Explore the Implicit Relationship between Flight Attendant Students and Career Decision-Making. Social cognitive theory holds that an individual's career choice is affected by resources and obstacles, and individual's self-efficacy and expectation of results indirectly affect individual career decision-making by affecting individual's goal choice and action. Social cognitive theory mainly focuses on three variables in career development: self-efficacy, outcome expectation, and personal goal. The interaction between the three ultimately determines the direction of individual career development. In the previous student labeling categories based on labels and other methods, it mainly adopts the way of artificial division, which cannot fully represent the opinions of all kinds of students in most cases and cannot well excavate the implicit relationship between student career decision-making. In addition, the number of classified category data of career decision-making is not easy to control. When the total number of categories of career decision-making is more, the more factors that career decision-making is measured are considered [8]. However, it is difficult to control the granularity of this classification. Some career decisions can belong to multiple categories. There is no good measurement standard under which category the career decision is divided, and it is difficult to define the proportion of a career decision in the classification. Based on the implicit semantic

model, this paper classifies students' historical behavior data and uses the data to show whether students are interested in career decision-making. The student career decision-making score matrix is reduced to two matrices: student implicit feature and implicit feature career decision. The number of classifications, that is, the number of implicit features, is formulated through system design. The larger the number of implicit features, the more specific the classification will be. The smaller the number of implicit features, the coarser the classification granularity will be. By calculating the interest among students and career decision-making, we can judge students' preference for a certain career. The calculation formula is as follows:

$$\delta = \sum_s A_i B_j. \tag{1}$$

In formula (1), δ represents the degree of interest between students and career decisions; s represents the total number of categories; A_i represents the degree of interest of student i in the implicit meaning; and B_j represents the weight of career decision j in the implicit meaning. The higher the weight, the more the corresponding career decision can be used as the representative of the implicit type. Individuals come from different sources (family, peers, and environment) to obtain certain support and help, such as family companionship, peer information sharing, and professional teacher recognition. These supports related to professional activities either make individuals feel supported and understood emotional experience or provide individuals with effective help resources, so as to enhance their confidence in job selection and employment. Therefore, individuals have good expectations for the prospect of the corresponding career, so they have a deeper interest in the corresponding career and are willing to work hard for it and realize career development. Career decision-making self-efficacy totally intervenes the connection between future time understanding and career development and, to some extent, intercedes the connection between self-regard and career development. In any case, it does not play an interceding job in self-regard and career anxiety [9]. People with elevated degree of work self-assurance can further develop their career decision-making self-efficacy through successful career decision-making preparation, to make people show more grounded flexibility in the work field or career advancement. Accordingly, the higher their ability to cope with the changes of career roles and maintain a

balance with them, and this ability is career adaptability [10]. According to the nearest neighbor set of students' individual roles in the work field or career, the prediction score of students on career decision-making is generated. The calculation formula is as follows:

$$q = c_0 + \frac{\sum \tau (c - c_0)}{\sum \tau}. \tag{2}$$

In formula (2), q represents the prediction score; c_0 and c represent the historical average score and the adjacent set score, respectively; and τ represents the similarity between students and the adjacent set. The scoring results are sorted from high to low, and the top n career decisions are recommended to students. Career decision-making self-efficacy plays a total mediator capacity between work self-assurance and career versatility. In the act of career advancement, to further develop the career versatility of people with various degrees of work self-assurance, it tends to be acknowledged by developing their career decision-making self-efficacy [11]. These completely interceded ways likewise recommend that when the help we give cannot actually upgrade individual career decision-making self-efficacy, the effect of their help on career interest will be hindered. Therefore, the support given by parents and peers to college students should be effective for them, so as to finally promote the development of their professional interests; if this support is not what the individual really wants, it may be futile or even counterproductive.

2.3. Determine the Professional Cognitive Level of Flight Attendant Students.
Social cognitive theory assumes that the result of individual's career choice is mainly affected by external factors. Therefore, individual learning ability for specific work and perceived belief that they can complete a certain task are very important for their career decision-making. Due to the difference in individual experience, different individuals have different expectations for the same task, resulting in different career development paths. The influence of career cognition on college students' career interest occurs simultaneously through two paths, one is the intermediary path and the other is the direct effect of social support [12]. This shows that piece of the prescient impact of career cognition on career interest is acknowledged through the mediator of career decision-making self-efficacy. The confidence of individuals with high level of career cognition can promote career interest [13]. At the sub aspect level, self-assurance, feeling of mission, and career versatility and its sub aspects, career concern, career interest, career control, and career certainty are fundamentally decidedly corresponded with career cognition. Limitations are fundamentally emphatically associated with career flexibility, career consideration, and career cognition [14]. There is a critical connection between flight attendant students' career cognition and career decision-making self-efficacy. Students are described as a multidimensional career decision-making mastery vector, and cognitive diagnosis is carried out according to students' actual answers. As indicated by the fundamental data of understudy clients (like grade data and subject data), channel the repetitive information with little connections, to acquire the underlying understudy client set and career decision set, characterize that

every understudy can get a career cognition, and lastly get the understudy career cognition framework. Introduce the time factor into these two factors at the same time, and the calculation formula is as follows:

$$t = \frac{w(1 - \mathrm{ht}_0)}{u}. \tag{3}$$

In formula (3), t is the time factor; w is the students' historical career cognition; h is the constant parameter; t_0 is the initial time parameter; and u is the number of historical career cognition. Students' personal information has a great impact on career cognition. Combined with their own conditions, students' cognitive level is obtained. The formula is as follows:

$$z = \frac{w(1 - \mathrm{ht}_0)}{u}(1 - g_1)^v g_2^{(1-v)}. \tag{4}$$

In formula (4), z indicates students' professional cognition level; v indicates users' mastery of professional cognition; and g_1 and g_2 indicate students' obtained and not obtained professional cognition, respectively. Professional cognition level can promote professional interest; that is, when individuals perceive external support and help related to professional activities, their interest in corresponding occupations will be enhanced, which this process does not need to go through the transmission of career decision-making self-efficacy [15]. Self-regard is a moderately steady character quality. People with various self-regard levels show different career decision-making self-efficacy. Hence, self-regard can influence career development through the go-between factor of career decision-making self-efficacy [16]. Career decision-making self-efficacy plays a total go-between job between work cognitive level and career flexibility, demonstrating that people with undeniable level work self-assurance have better career decision-making self-efficacy, to show better versatility in their career [17]. Individuals with high self-esteem have a higher evaluation of themselves and a higher degree of recognition of themselves. In the face of job selection problems, they are also more confident and able to make choices, thus showing less anxiety level [18]. Career cognition plays a complete intermediary role between job self-determination and career adaptability. Individuals with more career cognition will be more mature in career decision-making. Therefore, individuals with high level of job cognition have a higher level of sense of mission, so as to show a higher level of career adaptability.

2.4. Establishing Students' Career Decision-Making Self-Efficacy Model Based on Particle Swarm Optimization Algorithm.
Career decision-making self-efficacy can emphatically anticipate individual's career flexibility, or at least, the higher the self-efficacy, the higher the degree of versatility. In actuality, the lower the singular's self-efficacy or self-trust in decision-making, the lower their career versatility is. When individuals get more professional help and support, these support can enhance individual's career interest and make individuals show stronger tendency and preference for the corresponding career types. However, the performance of professional social support on various paths of professional interest is inconsistent, and
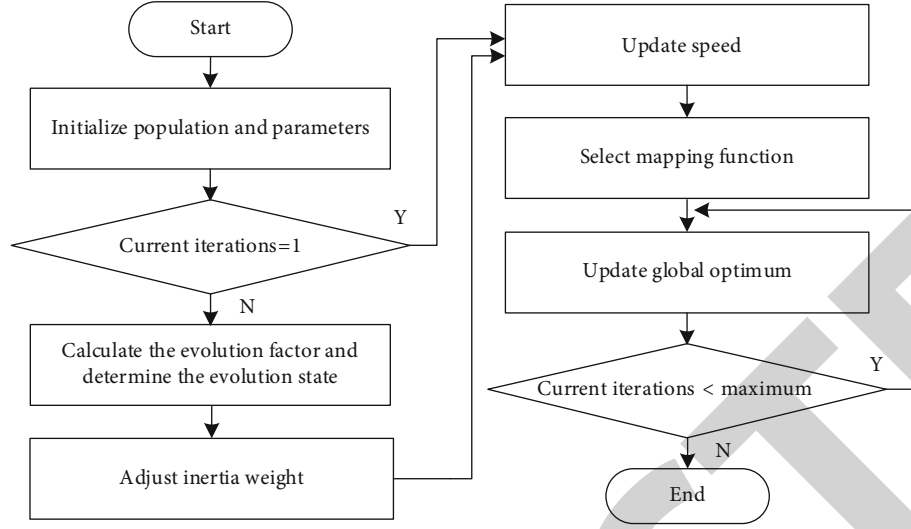
FIGURE 3: Particle swarm optimization algorithm flow.

different supports provide advantageous support for different types of interest [19]. That is, to give support to students with different professional interests with corresponding advantageous contributions, so as to maximize the effectiveness of professional social support and help college students complete their employment tasks to the greatest extent. Students' career decision-making self-efficacy model is a multiobjective optimization problem, which mainly includes five objective functions: self-evaluation, collecting information, selecting goals, making plans, and solving problems. In this paper, the molecule swarm enhancement calculation is utilized to tackle the goal capability of the model. The progression of molecule swarm enhancement calculation is displayed in Figure 3.

The student career decision-making self-efficacy model belongs to discrete problem. In this paper, binary particle swarm optimization algorithm is used to map the velocity value in continuous search space to binary discrete space. Through the sigmoid mapping function, the particle velocity value is mapped to the probability of bit taking 1, so as to update the particle position. The convergence performance of two different mapping mechanisms is used to ensure the balance of speed, as shown in Figure 4.

The updated method of particle position in binary particle swarm optimization can be expressed as:

$$\alpha_{n+1} = \varphi \alpha_n + \gamma_1 \chi_1 (\mu_1 - \alpha_n) + \gamma_2 \chi_2 (\mu_2 - \alpha_n). \tag{5}$$

In formula (5), α_n and α_{n+1} represent the particle position before and after updating; n represents the number of updates; φ represents the inertia weight; γ_1 and γ_2 represent the acceleration factor; χ_1 and χ_2 are [0,1] random numbers satisfying uniform distribution between; μ_1 represents the individual historical optimal solution of the particle; and μ_2 is the current optimal solution searched by the whole population. Using evolutionary state information can effectively improve the convergence performance of the algorithm. The development condition of every age of the calculation is constrained by
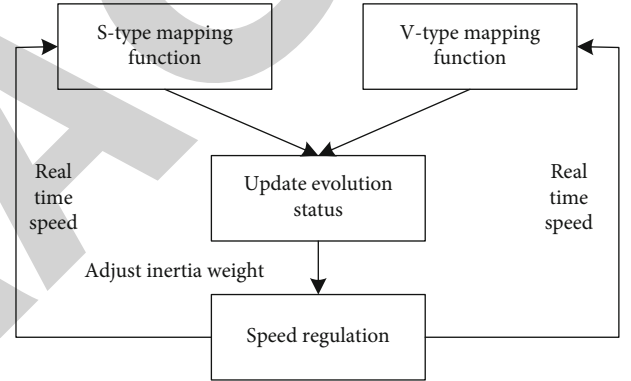

FIGURE 4: Mapping mechanism.

the advancement state factor. Compute the typical distance between a molecule and different particles under the ongoing number of cycles. Considering the 0,1 coding characteristics of the binary particle swarm optimization algorithm, the distance between them is expressed by the Hamming distance. The calculation formula is as follows:

$$|\beta_1 - \beta_2| = \mathrm{hd}(\beta_1, \beta_2). \tag{6}$$

In formula (6), (β_1, β_2) represents any two particles; hd is a function for calculating the Hamming distance and its value is the number of different bits in two binary bit strings. When calculating the mean Hamming distance, in order to reduce the computational complexity, only the mean distance between each particle and the globally optimal particle is calculated. As indicated by this component and the direct connection between the mean Hamming distance and the quantity of cycles, it characterizes development factors as follows:

$$p = \frac{e^{-((m(\mathrm{hd}))/\varepsilon)} \eta}{\eta_{\max}}. \tag{7}$$

TABLE 1: Structural validity of the model with 1000 students.

Number of experiments	Self-efficacy model of career decision-making in this paper/%	Self-efficacy model of career decision-making based on cluster analysis/%	Self-efficacy model of career decision-making based on user portrait/%
1	0.889	0.812	0.816
2	0.892	0.806	0.822
3	0.879	0.825	0.831
4	0.886	0.824	0.807

TABLE 2: Structural validity of the model with 5000 students.

Number of experiments	Self-efficacy model of career decision-making in this paper/%	Self-efficacy model of career decision-making based on cluster analysis/%	Self-efficacy model of career decision-making based on user portrait/%
1	0.854	0.804	0.805
2	0.862	0.798	0.814
3	0.869	0.801	0.799
4	0.846	0.812	0.803

In formula (7), p represents the evolution factor; e is the natural constant; $m(\text{hd})$ represents the mean Hamming distance; ε is used to adjust the sensitivity of the exponential function to the mean Hamming distance; and η and $\eta_{\max}$ represent the current iteration times and the maximum iteration times of the population, respectively. In order to maintain the balance of search, the inertia weight adopts the real-time adjustment method of evolutionary dynamic nonlinearity, and the calculation formula is as follows:

$$\varphi = \varphi_{\min} + \left(1 - e^{-((m(\text{hd}))/\varepsilon)}\right)\left(1 - \frac{\eta}{\eta_{\max}}\right)(\varphi_{\max} - \varphi_{\min}). \quad (8)$$

In formula (8), $\varphi_{\min}$ and $\varphi_{\max}$ are the minimum and maximum values of inertia weight. Through the above formula, the inertia weight can be dynamically increased or decreased according to the evolutionary state of the search process, which is more in line with the iterative process of the population. The calculation results of flight attendant students' professional decision-making self-efficacy are produced after addressing the five objective functions of self-evaluation, gathering information, selecting objectives, developing plans, and solving difficulties. In the relationship between career social support and college students' professional interest, career decision-making self-efficacy plays an intermediary role, although its mechanism on each path is not totally constant [20]. The impact of career social support on career interest is completely realized through the intermediary role of career decision-making self-efficacy. Individual professional decision-making self-efficacy is enhanced by career social support, which then indirectly improves college students' career interest through the beneficial role of career decision-making self-efficacy [21–24]. Career versatility is a singular's capacity to answer and keep an offset with the progressions of career jobs, and career decision-making self-efficacy addresses a person's emotional encounter or self-trust in being skilled for the picked career. Therefore, individuals with a high level of career decision-making self-efficacy are more likely to choose their own career and can also achieve

relatively high work performance in their chosen career. Therefore, they also show a higher degree of career adaptation; that is, the stronger their ability to cope with the changes of career roles and maintain a balance with them. So far, the research on the career decision-making self-efficacy model of flight attendants under the social cognitive theory has been completed.

3. Experiment

3.1. Experimental Preparation. This paper proposes a career decision-making self-efficacy model of flight attendants under the social cognitive theory. The viability of the model is tried underneath. To adjust the impact of the subjects' own elements on the feeling of career decision-making self-efficacy, the variables, for example, orientation, grade, and spot of beginning are adjusted in the choice. The specific method is to adopt the method of hierarchical selection to make the number of subjects evenly distributed in gender, grade, and two types of place of origin. The exploratory climate is Windows 10 working framework, and every calculation is coded in MATLAB. The equipment climate is Intel Core Processor i5-4570, the primary recurrence is 3.20 GHz and the memory is 16 GB.

3.2. Experimental Results and Analysis. To check the prevalence of the model planned in this paper, the assessment results are contrasted and the career decision-making self-efficacy model in light of group examination and client representation. The test was conducted with 1000 and 5000 students. Firstly, the structural validity of each model is tested. Structural validity was measured by KMO index. The comparison test results are shown in Tables 1 and 2.

The significance level of the model created in this paper is higher than the career decision-making self-efficacy model based on cluster analysis and user picture, according to the structural validity test results. Taking the experimental test with 5000 students as an example, the structural validity of this model is 0.858, which is 0.054 and 0.053 higher than the model based on cluster analysis and user portrait [25,

TABLE 3: Reliability of the model with 1000 students.

Number of experiments	Self-efficacy model of career decision-making in this paper/%	Self-efficacy model of career decision-making based on cluster analysis/%	Self-efficacy model of career decision-making based on user portrait/%
1	0.837	0.755	0.746
2	0.823	0.758	0.752
3	0.846	0.763	0.748
4	0.852	0.759	0.761

TABLE 4: Reliability of the model with 5000 students.

Number of experiments	Self-efficacy model of career decision-making in this paper/%	Self-efficacy model of career decision-making based on cluster analysis/%	Self-efficacy model of career decision-making based on user portrait/%
1	0.817	0.716	0.725
2	0.822	0.714	0.736
3	0.806	0.722	0.728
4	0.814	0.735	0.733

26]. Therefore, the data structure fitting degree of the model in this paper is more in line with the actual situation, indicating that the model can be accepted. Then the reliability of each model is tested. Reliability test was measured by Cronbach's α index. The comparison test results are shown in Tables 3 and 4.

According to the reliability test results, the reliability level of the model constructed in this paper is significantly higher than the career decision-making self-efficacy model based on cluster analysis and user portrait. Taking the experimental test with 5000 students as an example, the reliability of this model is 0.815, which is 0.093 and 0.084 higher than the model based on cluster analysis and user portrait. Therefore, this model has good criterion related validity and can evaluate and measure the career decision-making self-efficacy of flight attendants.

4. Conclusion

A professional's capacity to evaluate whether he can finish a job task based on his understanding of his own competence is known as career decision-making self-efficacy. Self-efficacy in career decision-making can influence the outcome of an individual's job choice and is one of the most critical aspects impacting the smooth progression of career activities. This paper studies the career decision-making self-efficacy model of flight attendants under the social cognitive theory. The model has high structural validity and detection reliability and fits well with the data as a whole, reaching an acceptable level. Be that as it may, there are still lacks in this review. Future exploration ought to choose subjects from different regions, urban communities, age gatherings, and professional foundations to additionally test the career decision-making self-efficacy model. The modeling and examination of college students' career decision-making self-efficacy is primarily a cross-sectional exploration, yet has not laid out a dynamic and long haul model to gauge its relationship. Therefore, longitudinal research design could be used in future research.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author declares that they have no conflicts of interest.

References

[1] M. E. N. G. Fang and Z. H. A. I. Jian-li, "Learning simulation of network database based on big data visualization of learning behavior," *Computer Simulation*, vol. 38, no. 9, pp. 216–220, 2021.

[2] Q. I. A. O. Shanshan and S. H. I. Meixia, "The relationship between proactive personality and career adaptability of medical students: mediating effect of career decision-making self-efficacy," *Chinese Journal of Social Medicine*, vol. 37, no. 1, pp. 59–62, 2020.

[3] J. G. Kim, H. J. Kim, and K. H. Lee, "Understanding behavioral job search self-efficacy through the social cognitive lens: a meta-analytic review," *Journal of Vocational Behavior*, vol. 112, no. 6, pp. 17–34, 2019.

[4] P. Emami Naeini, M. Degeling, L. Bauer et al., "The influence of friends and experts on privacy decision making in IoT scenarios," *Proceedings of the ACM on human-computer interaction*, vol. 2, pp. 1–26, 2018.

[5] M. Albert, "World ordering: a social theory of cognitive evolution," *International Affairs*, vol. 95, no. 4, pp. 925–926, 2019.

[6] M. Cristofaro, ""I feel and think, therefore i am": an affect-cognitive theory of management decisions," *European Management Journal*, vol. 38, no. 2, pp. 344–355, 2020.

[7] I. Sverko and T. Babarovic, "Applying career construction model of adaptation to career transition in adolescence: a two-study paper," *Journal of Vocational Behavior*, vol. 111, no. 4, pp. 59–73, 2019.

[8] A. Ray, P. K. Bala, and S. A. Dasgupta, "Role of authenticity and perceived benefits of online courses on technology based career choice in India: a modified technology adoption model

based on career theory," *International Journal of Information Management*, vol. 47, no. 8, pp. 140–151, 2019.

[9] M. B. Alazzam, H. Mansour, F. Alassery, and A. Almulihi, "Machine learning implementation of a diabetic patient monitoring system using interactive E-app," *Computational Intelligence and Neuroscience, Volume*, vol. 2021, 2021.

[10] A. Jeon, S. M. Lee, and J. M. Roig, "Effects of career barriers on career self-efficacy and career preparation behavior among undergraduates majoring in aviation tourism," *Service Business*, vol. 13, no. 4, pp. 715–735, 2019.

[11] A. Shimoni, T. Gutentag, and I. Gati, "Assessing career preference cohesiveness," *Journal of Vocational Behavior*, vol. 112, no. 6, pp. 51–63, 2019.

[12] E. Trevor-Roberts, P. Parker, and J. Sandberg, "How uncertainty affects career behaviour: a narrative approach," *Australian Journal of Management*, vol. 44, no. 1, pp. 50–69, 2019.

[13] L. R. Muoz, "Graduate student self-efficacy: implications of a concept analysis," *Journal of Professional Nursing*, vol. 37, no. 4, pp. 112–121, 2020.

[14] A. Love, M. D. Toland, E. L. Usher, J. M. Campbell, and A. D. Spriggs, "Can I teach students with autism spectrum disorder?: investigating teacher self-efficacy with an emerging population of students," *Research in Developmental Disabilities*, vol. 89, no. 2, pp. 41–50, 2019.

[15] L. María-José, L. P. José-M, and R. Z. Paula, "Adaptation of the teacher efficacy scale to measure effective teachers' educational practices through students' ratings: a multilevel approach," *Psicothema*, vol. 33, no. 3, pp. 509–517, 2021.

[16] S. Emirza, E. B. Ztürk, and A. S. Engnül, "The quality of international mobility experiences, general self-efficacy and job search self-efficacy: a time-lagged investigation," *Current Psychology*, vol. 40, no. 4, pp. 1580–1591, 2021.

[17] I. E. Simonsen and T. Rundmo, "The role of school identification and self-efficacy in school satisfaction among Norwegian high-school students," *Social Psychology of Education*, vol. 23, no. 6, pp. 1565–1586, 2020.

[18] M. B. Alazzam, F. Alassery, and A. Almulihi, "Federated deep learning approaches for the privacy and security of IoT systems," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 1522179, 7 pages, 2022.

[19] S. S. Boswell and S. L. Sohr-Preston, "I checked the prof on ratemyprofessors: effect of anonymous, online student evaluations of professors on students' self-efficacy and expectations," *Social Psychology of Education*, vol. 23, no. 4, pp. 943–961, 2020.

[20] T. D. Reeves and J. L. Chiang, "Effects of an asynchronous online data literacy intervention on pre-service and in-service educators' beliefs, self-efficacy, and practices," *Computers & Education*, vol. 136, no. 7, pp. 13–33, 2019.

[21] L. Shuyi and C. Jinrong, "Research on relationship between human capital investment and career decision-making self-efficacy of higher vocational students," *Journal Of Qingyuan Polytechnic*, vol. 13, no. 6, pp. 83–90, 2020.

[22] M. Maray, M. Alghamdi, and M. B. Alazzam, "Diagnosing cancer using IoT and machine learning methods," *Computational Intelligence and Neuroscience*, vol. 2022, Article ID 9896490, 9 pages, 2022.

[23] Z. Yun and M. Luo, "Research on the influence mechanism of social support on career decision-making difficulties for higher vocational students," *Journal of Yueyang Vocational and Technical College*, vol. 34, no. 2, pp. 4–7, 2019, 53.

[24] D. H. Hou, W. W. Yao, and M. Chen, "Relation of college students' social support and self-efficacy of career decision-making," *Journal of Harbin University*, vol. 35, no. 1, pp. 135–137, 2021.

[25] D. S. Bond, L. Durrant, K. B. Digre, S. K. Baggaley, and C. Rubingh, "Impact of a self-help intervention on performance of headache management behaviors: a self-efficacy approach," *Internet Journal of Allied Health Sciences and Practice*, vol. 2, no. 1, p. 4, 2004.

[26] L. Yang, "Fuzzy cluster correlation mapping for online evaluation of teaching efficacy towards IoT study," *Cognitive Systems Research*, vol. 52, pp. 365–370, 2018.