

relationship between enterprises or service providers, but it is rarely studied from the perspective of consumers or customers. In addition, previous studies focused on the dimensions of service quality and customer loyalty, rather than the way and type of service contact, the content of customer relationship interest or the voluntary performance of customers. In the tourism industry, which mainly provides services through interpersonal communication, the development of intelligent technology reduces the cultivation of interpersonal emotion. Will it also reduce the perceived relationship benefits of consumers or customers, thereby reducing customer loyalty and voluntary performance? The main research problem of this study is to verify the relationship between service encounter, relationship benefit and customer voluntary performance from the perspective of labor emotion, and take Taiwan and Chinese restaurant consumers as the survey object to verify whether there is homogeneity and stability between multi group models.

**Research Objects and Methods:** Firstly, this study reviews the dimensions of service contact, relationship benefit and customer voluntary performance, and establishes a measurement scale. 100 questionnaires from Taiwan and Chinese Mainland were pre-tested and analyzed. After revising the questionnaire, 400 formal questionnaires were distributed in the two places, and 547 valid questionnaires were recovered. The effective questionnaire recovery rate was 68%. The follow-up study process used Spss20.0, Amos20.0 software for item analysis, relationship validation, multi-group modeling, and mediating effect validation.

**Results:** A two-tier structural equation model of service encounter, relationship benefit and customer voluntary performance was constructed; The service encounter dimension includes the ease of use of technical services, the economy of technical services, the economy of interpersonal services and the initiative of interpersonal services; The dimension of relationship benefit includes six sub dimensions: trust interests, social interests, special treatment interests, honor interests, knowledge interests and identity interests; Customer voluntary performance means loyalty, cooperation and participation. In the verification of the relationship part, the hypothesis is valid, the relationship interest plays an intermediary role in service encounter and customer voluntary performance, and the multi cluster model is also homogeneous and stable. The simple slope test of the posterior path showed that the expression inhibition in the high and low regulation difficulty groups could significantly and positively predict the explicit positive emotion. When the level of regulation difficulty is low, expression inhibition predicts the predictive coefficient of explicit positive emotion ( $\beta = 0.54$ ,  $t = 10.18$ ,  $p < 0.001$ ); When the adjustment difficulty level is high, the prediction coefficient ( $\beta = 0.90$ ,  $t = 7.11$ ,  $p < 0.001$ ). The analysis of direct effect and mediating effect shows that the mediating effect of expression inhibition in the relationship between interpersonal emotion regulation and explicit positive emotion also increases at the three levels of emotion regulation difficulty, that is, with the increase of the level of emotion regulation difficulty, Interpersonal emotion regulation is easier to increase explicit positive emotion by enhancing individual expression inhibition.

**Conclusion:** This study verifies the models of service encounter, relationship interest and customer spontaneous behavior from the perspective of Chinese society, and verifies the homogeneity and stability of the models between Taiwan and Chinese restaurant consumer groups. Relationship benefits play an intermediary role in the dimensions of service encounter and customer voluntary performance, and the verification results of multiple groups of models are also homogeneous and stable. From the above results, we can see that Chinese society is influenced by Confucianism

and differential sequence model. The concept of relational interest pays more attention to emotional exchange and hierarchy than the western society with social exchange theory as the core, which leads to the differences between Chinese and Western societies. In addition, in the research of service encounter, the provision of technical services is gradually trusted and accepted by consumers, which improves consumers' voluntary performance, which indicates that technology is gradually developing in the direction of personification. In the people-oriented tourism industry, technological progress leads to the change of catering industry mode, the change of consumers' dining behavior, and how to effectively combine the interaction between people and technology to improve service and experience. Therefore, this study suggests establishing a catering process suitable for human-computer interaction and technological interaction based on the characteristics of the company's core products, such as using an artificially intelligent machine for service, which in turn improves consumer trust, a trust that is sufficient for the AI one-to-one system to function as a psychological intervention. We need to fully recognize the importance of AI robots in emotional factors and actively improve their role psychological capabilities, paying special attention to their impact on life attitudes and healthy behaviors, and being a healthy self-manager, coordinator and collaborator. According to the psychological characteristics of these groups, we should actively and flexibly organize colorful activities, strive to create a relaxed and harmonious living atmosphere, create friendly and mutually beneficial AI emotional relationships, encourage and guide these groups, adjust their psychology to the best state, and promote their good cognition and healthy development of life.

## STRUCTURAL EVOLUTION OF KNOWLEDGE NETWORK AND BEHAVIOR VARIATION OF KNOWLEDGE SUBJECT DRIVEN BY EMOTIONAL BEHAVIOR

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**Background:** The perception behavior of the knowledge subjects can get certain feedback and enlightenment from the trend variation of knowledge level. The change of the psychological expectation and behavior of the knowledge subjects is of great significance to the evolution and utilization of the knowledge network structure in the complex system. At present, there have been many mature researches on the content of knowledge flow and knowledge diffusion between organizations based on network structure. This article combines the relevant theories of micro-behavioral psychology from the perspective of complex system evolution, to further explore the influences of four typical complex network structures evolution on the knowledge transfer behavior of the knowledge subjects and the knowledge level of the subjects.

**Subjects and Methods:** In this paper, a simulation research process is designed based on a complex knowledge network model. The calculation indicators mainly include three aspects: network value, node coupling costs, and weight values of relational edges. The node coupling costs are composed of three dimensions: the psychological distance cost between network nodes, the difference in cooperation value between network nodes, and the difference in connectivity between network nodes. Using programming, four programs are used to simulate and analyze the evolution

of complex network structure based on the coupling cost of the knowledge subjects and the psychological expectations and behavior changes of the knowledge subjects.

**Results:** The results of this paper show that the more frequent the interaction between network subjects, which is not necessarily greater beneficial to the knowledge subjects. In addition, the fair distribution of knowledge resources is not conducive to the growth of knowledge level. Among the four types of typical network evolution, the development of the small-world network structure is relatively stable, and the adaptive behavior of the knowledge subjects has produced relatively high expected value.

**Conclusions:** The stability of the network environment has an exogenous impact on the expectation and value level of the knowledge subjects. The development environment of the evolution of the small-world network structure is relatively stable, which can generate high psychological expectations for the adaptive behavior of the knowledge subjects. It provides a reference value for the knowledge transfer of the knowledge subjects in the evolution of the knowledge network. This article discusses the behavioral changes of network subjects from the perspective of the psychology of knowledge subjects, which has certain practical significance. However, it does not consider the initial endowment differences between the nodes and the alternate evolution process between complex networks. Therefore, follow-up researches can further optimize the understanding on the differences between subjects in the complex network and analyze the adaptive behavior of knowledge subjects.

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## APPLICATION OF COMPARATIVE TEACHING METHOD BASED ON EMOTION REGULATION AND DRIVE IN SHIP AUXILIARY MACHINERY TEACHING

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**Background:** Ship auxiliary machinery is one of the core courses for marine engineering students to participate in the crew qualification examination. It is also a subject that students generally feel difficult. At present, the passing rate of maritime group ability certificate is low. How to improve the passing rate of students' courses is a problem that every front-line teacher must face. In particular, we should pay attention to the application of comparative teaching method in teaching.

**Subjects and Methods:** The reasons for the above phenomena include the difficulty of crew certificate examination, insufficient time for relevant professional courses, weak cultural foundation of students, lack of learning perseverance, etc. With the help of the research platform of the cultural quality education committee and school level projects, the ship auxiliary machinery teaching team of our university has carried out a special research on ship auxiliary machinery teaching according to the cognitive characteristics of higher vocational students. The three course team members are respectively responsible for the three teaching links of raising problems, analyzing problems and solving problems in the sub topic research. Through the arrangement of knowledge structure, Case

Supplement and table making, the comparative teaching method is applied to the curriculum reform of ship auxiliary machinery. The effect of the curriculum reform is tested by the examination results of four-wheel engineers who participated in the crew qualification examination organized by the State Maritime Administration. At the same time, the study investigated the role of this teaching method in emotional behavior regulation. This study uses Watson and friend's fear of negation scale (1969) for measurement. The study defines "fear of negation evaluation" (fne) as taking advantage of others' evaluation, being distressed by others' negative evaluation, and expecting to be negatively evaluated by others. The items of this scale are completely consistent with the above concepts. The prototype of fne scale (Watson and friend, 1969) contains 30 "yes and no" items, of which the positive and negative scores are roughly the same. The revised concise scale (Leary, 1983) contains 12 items in the original scale and is rated at level 5 (1 = completely inconsistent with me: 5 = very consistent with me). The score range of the original fne scale is from. (minimum fne) to 30 (maximum fne). The concise scale ranged from 12 to 60. The opposite of high fne is that there is no guarantee of excellence in the evaluation of others, but not necessarily the expectation or need for positive evaluation. The mean value of the original table score of 205 groups was 15.5 (SD = 8.6), and the score was rectangular distribution. The average score of another sample composed of 128 subjects was 13.6 (SD = 7.6) A. The average score of the sample (n = 150) used to compile the 12 item concise scale was 35.7 (SD = 8.1)

**Results:** According to the examination results of four wheeled vehicle qualification certificate of Marine Engineering Specialty in recent two years, the average score of the experimental class is 30% higher than that of the ordinary class. We believe that the comparative teaching method can better match the ship auxiliary machinery curriculum and students' cognitive characteristics, create a relaxed and active learning environment for students, and is an effective way to improve the efficiency of ship auxiliary machinery teaching. The results showed that fne score was moderately correlated with other scales related to social occasion anxiety, such as social avoidance (SAD) scale ( $r = 0.51$ ) and Interaction Anxiety Scale ( $r = 0.32$ ). Compared with those with low scores, those with high fne scores are more uneasy when evaluated, are more likely to agree with the "unreasonable belief" that it is important to be liked, and are more concerned about making a good impression (friend and Gilbert, 1973; Smith and Sarason, 1975). Similarly, people with high fne scores experienced higher anxiety when evaluated and were more annoyed by possible negative evaluations. The original fne scale was low correlated with Marlowe crown social expectation scale ( $r = -0.25$ ).

**Conclusions:** From the results of students' feedback, this study has achieved the expected goal. However, it should be noted that since the research has not been carried out for a long time and the selected student objectives have not been popularized, it is necessary for students majoring in marine engineering in sister colleges to test the results in practice. At the same time, strengthen the deep integration of comparative teaching method and ship auxiliary equipment course, enrich the teaching content with richer cases, clearer forms and more exquisite courseware, and create excellent professional courses to stimulate students' thinking and cultivate professional ability. Improving the comprehensive quality is the next work direction of the research group.

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