The Influence and Mechanism of Emotional Intelligence on Group Decision Support System

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Keywords: Group Decision Support System, Emotional Intelligence, Team Trust Perception, Virtual Community

Abstract. This study takes the team members as a sample and the team trust perception as the intermediary. In the virtual team scene, from the perspective of social psychology, the influence of emotional intelligence on the group decision support system and its mechanism are discussed; Using the survey data of 208 individuals from 21 teams, the empirical test of the proposed model is carried out to explore the direct utility of emotional intelligence to the group decision support system and the intermediary utility of team trust perception. The results show that: (1) Emotional intelligence has a positive impact on team trust perception. (2) Team trust perception has a positive impact on the effectiveness of the group decision support system. (3) Team trust perception plays an intermediary role in the process of emotional intelligence affecting the group decision support system.

1. Introduction

GDSS is an information system formed on the basis of DSS. When team members make decisions for a common team goal, GDSS uses modern network, communication technologies and a standardized process to collaborate with each other to find solutions to problems. When making group decisions among team members, especially when the team is discussing some controversial and complex issues, Using GDSS can overcome the limitations of time and space, so that participants in the team can effectively coordinate and make decisions. The obvious characteristic of the virtual team is that each member is strange to each other, the space is far away, and there is no trust between the members of the team. This situation is difficult to communicate effectively. Will lead to less than satisfactory decision-making efficiency and quality in the team. Most of the research topics are about the impact of technological changes on the group decision support system, and whether GDSS has the same role in different task nature, However, almost no one has conducted relevant research on the differences in the users of the group decision support system. In the field of management psychology, the most important factor for user differences is emotional intelligence. Emotional intelligence refers to the traits and abilities associated with individual emotions and emotions. In today's emphasis on interpersonal skills, emotional intelligence is particularly important. Although artificial intelligence is advanced, it cannot penetrate the individual's psychological level. And the perception of team trust reveals the activities of people's minds from the perspective of social psychology. This study focuses on the impact of individual emotional intelligence differences on the group decision support system in the virtual community. The two purposes of this paper are: (1) Through the perspective of social psychology, the individual emotional intelligence of team members can play an important role in GDSS. (2) Through the introduction of the trust perception of the psychological variable team, the relevant research results of the previous researchers are expanded, and a new interpretation path mechanism is proposed.

1.1 Emotional Intelligence and Community Identity

Scholars have two definitions of emotional intelligence: one is the definition of the ability model. In this definition of emotional intelligence, it is mainly to regard emotional intelligence as an ability of an individual to be born or acquired, including cognition of things, understanding of content and production of themselves in specific situations. The management of emotions and the use of
positive aspects of emotions to promote their ability to think about problems. The second is to add new traits on the basis of the original, such as internal and external pressure, emotional appeal management and conflict control, but also include positive, active, cheerful, stimulating and other emotional aspects. Based on previous studies, this paper argues that there are broader definitions that enhance people's ability to understand more complex behaviors. For the definition of community identity, March & Simon (1985) believe that community identity is the psychological emotion of people's desire for a sense of belonging to their group. When discussing issues, the higher the degree of recognition, the more positive the influence of team members on other members' perceptions, their attitudes and reaction behaviors. The existing research shows that the team members are satisfied with the work and other members in the process of completing the goal, the enthusiasm for the work, the willingness to accomplish the goal in the work process and other members, and the completion of the goal. The impact of team members' community identity. This study believes that community identity in a virtual team scenario is a mentality of the team's internal members on the psychological level of their team or community. According to a study by Wolff et al., managers with empathy are more precise in their judgment of the needs of team members. Pagonis believes that leaders with higher emotional intelligence can quickly and sensitively discover the emotional state of members and use this to adjust their management behavior. This helps to create a positive working atmosphere and achieve a higher level of motivation, resulting in stronger organizational identity. Hooijberg, Hunt, and Dodge's research points out that individuals with high emotional intelligence in the process of completing a task can quickly discover the needs of other members and effectively provide members with the necessary social support. This will encourage team members to work together and strengthen the team's recognition.

In summary, it is proposed that Hypothesis 1: The emotional intelligence of users of GDSS in the virtual team has a positive impact on the community identity of members.

1.2 Emotional Intelligence and Community Interaction

HILTZ et al. believe that community interaction refers to the active participation of members in the virtual community through community activities, so that the relationship, interest sharing, trust perception or psychological sense of belonging in the activity is obtained. Community interactivity refers to the mental ability to interact with a team or community. This mental ability is influenced by the ability of emotions, behaviors, and cognition. Teams with lower individual emotional intelligence generally adopt negative treatments when solving problems, such as high-pressure strategies and avoidance strategies, which are unfavorable for interactions among members of the team. Teams with higher individual emotional intelligence will adopt a positive approach to cooperation and negotiation when solving problems, which will help the effective interaction between team members and solve problems quickly. Based on this, hypothesis 2 is proposed. The emotional intelligence of users of GDSS in the virtual team has a positive impact on the community interaction of members.

1.3 Emotional Intelligence and Team Trust Perception

Vargo Williams' research shows that, in the virtual team scenario, the higher the individual emotional intelligence of the members of the team, the more they can gain team trust perception from the team. And according to Fredrikson's theory of expanding construction, the ability to think instantaneously among team members can be extended by our positive emotions. Therefore, individuals with high emotional intelligence are more able to positively expect team members' kindness, honesty, reliability, and ability to be able to perceive team trust. So, hypothesis 3 is proposed: the emotional intelligence of individuals in a virtual team has a positive relationship with the individual's perception of trust in the team.

1.4 Team Trust and Community Interaction

Formal and informal regular communication between team members is an important channel for information transfer, which is conducive to the establishment of trust and emotion among team
members, and lays the foundation for further mutually beneficial cooperation. In the early stage of team building, the trust between team members has an accelerator effect on the interaction and communication within the team, and it is quickly familiar among members. In the later stages of team building, the familiarity between team members will be easy to interact, and the more frequent the interaction, the more the team's trust perception will be enhanced. Active and repetitive team interaction can increase team appeal and reduce team rejection RIDINGS et al believe Team members will make more interactions for more trusted people. In the virtual team, some members of the team send out some information about the work of the team. If there is a high sense of trust among other members of the team, other members will respond quickly.

Based on this, hypothesis 4 is proposed: the individual's perception of trust in the team positively affects the degree of interaction between members using GDSS.

1.5 Team Trust and Community Identity

Van Nieberger et al. found that the trust of a team member in a team is a very important dimension that affects community identity. Qiu et al. found that the trust of each member of the organization in the organization played a pivotal role in the organization's identity. The findings of Xiao Boke et al. pointed out that both team cognitive trust and team emotional trust have a positive impact on organizational identity. Studies have shown that high-level team trust perception can reduce uncertainty in the work environment, and high team emotional trust can provide social psychological resources that meet the psychological requirements of members, thus promoting employee community identity.

Based on this, hypothesis 5 is proposed: the individual's perception of trust in the team is positively affecting the recognition of the virtual community by the GDSS members.

2. Research Methods

In order to verify the hypothesis, we use the real-time communication software TIM as the group decision-making system. First, we measure the emotional intelligence of 208 samples. According to the emotional intelligence measurement results, we divide them into three groups: high, medium and low, and divide each group into groups. Into 7 teams, there are a total of 21 virtual teams. The team is created on TIM. The virtual teams formed by individuals who don’t know each other are given the same and controversial issues for each team to discuss in a limited time. And require each group to draw conclusions of identity;

Finally, a team survey of team trust, community interaction, and community identity is conducted for each team member. Combined with the results of team trust perception and community identity, the team's measurement of team trust perception and team identity are measured. Verify that emotional intelligence has an impact on the group decision support system and whether team trust perception plays an intermediary role.
2.1 Measurement Tools

2.1.1 Emotional Intelligence

This study used the WLEIS questionnaire developed by Wong and Law [83]. Four dimensions of the four-dimensional structure of emotional intelligence are proposed. This is based on the original emotional intelligence concept proposed by Mayer and Salovey (1990). This research survey uses this questionnaire to use the Li Kete scale from "very Agree to "measure at 7 points of "very disagree". In this survey analysis, the reliability of each dimension of this scale is between 0.76 and 0.89, and the overall reliability of the scale is 0.865.

2.1.2 Team Trust Perception and Community Interaction and Identity.

Use the community participation and interaction (4 questions), community identity (3 questions) and community trust (5 questions) proposed by CHIU to measure the interaction, identity and trust of each participant (both 7 scale). In this survey, the reliability of each dimension of the scale is between 0.81 and 0.95, and the overall reliability of the scale is 0.89. Finally, using SPSS22.0 software to carry out correlation analysis and regression analysis on each statistical variable to test the previous hypothesis.

3. Research Results

3.1 Reliability and Validity Analysis.

Firstly, the factor analysis of each variable of emotional intelligence is carried out, and the dimension reduction is carried out to obtain the main factors of four dimensions. The factor load is between 0.22-0.95, so the factor load below the recommended value is deleted. The rest are above the recommended value. Secondly, the KMO test statistic of each variable is above 0.7, indicating that the partial correlation between the variables is strong, suitable for factor analysis, and the spherical test p<0.001, indicating that there is an associated relationship between the variables. The reliability of each measurement tool basically meets the requirements of psychometrics. From the results of the reliability and validity test, the data collected by each measurement tool in this study has strong reliability. Finally, from the results of data analysis and processing, the Cronbachα coefficients of each variable are above 0.7, and the mean and median values of the intra-group consistency coefficients are higher than the recommended value of 0.7, which has good reliability.

3.2 Correlation Analysis

By using SPSS22.0 to analyze the correlation between the two variables, Pearson correlation analysis method is used to analyze the correlation between all the extracted factor independent variables, mediator variables and dependent variables. The results show that emotional intelligence Each factor variable has a significant correlation with community trust variables (r>0.3, P<0.01), and team trust perception is significantly correlated with community identity and community interaction (r>0.3, P<0.01); emotional intelligence and Community identity and community interaction were significantly correlated (r>0.3, P<0.01). They provide initial support for research hypotheses.

3.3 Hypothesis Testing.

Regression analysis of the social identity and community interaction of the dependent variable was carried out with the emotional intelligence as the independent variable. It was found that the emotional intelligence had a positive influence on the community identification and community interaction of the members in the group decision support system (β= The results of 0.412, P<0.01) verified hypothesis 1, hypothesis 2, respectively. Secondly, regression analysis was conducted on the social trust as mediators with emotional intelligence as the independent variable. It was found that emotional intelligence had a positive influence on the community trust of members (β=0.589, P<0.01), and the result verified hypothesis 3. Thirdly, using community trust as an independent variable to conduct regression analysis on the community identification and community interaction
of the dependent variable, it is found that community trust has a positive impact on community identity and community interaction among members ($\beta=0.624, P <0.01$) The results of the verification verify hypothesis 4 and hypothesis 5. Finally, the results of the emotional intelligence grouping test results, using ANOVA to test the difference between the average of the three groups of different emotional intelligence groups in community trust, community interaction and community identity, the results are the same.

4. Discussion and Enlightenment

Theoretical contributions, while high-tech is concerned by many researchers, this article opens up a new path, adding a new psychological variable - team trust perception as an intermediary mechanism while researching high technology. From the perspective of social psychology, it reveals the specific process of emotional intelligence affecting the group decision support system through team trust perception. Let people start from the source and make better use of high technology to seek welfare for human beings.

Practical implications: The more emotionally intelligent members are more likely to build team trust. It can be concluded that the organization can select members with high emotional intelligence when establishing a virtual team, and the trust between the teams can be quickly established, thereby improving the efficiency of the team and better achieving organizational goals. In the process of developing human resources, we can consciously change the psychology and behavior of members through training, so that individual members can actively and actively have positive expectations for the strength, sincerity and reliability of members of the virtual team from the bottom of their hearts. Play a positive impact of emotional intelligence in the group decision system.

5. Limitations and Future Research

This study may have three limitations in the investigation and research process: (1) The problem of the sample. Since the sample source is all college students, it is relatively simple, and whether the final research results can be extended to the real work environment needs further verification. (2) Failure to fully understand the level of concern and understanding of members on the issue will affect the community identity of the members, which may affect the quality of the group decision support system. (3) Study design issues. In the actual situation, the path of emotional intelligence affecting the group decision support system may be different in different contexts, may be positive, may be reversed, or may influence the group decision support system through other intermediary factors.

Acknowledgment

This research was supported by Ministry of Education Humanities and Social Sciences Project. (14YJA630068)

References


