Research Article

The relationship between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions based on group dynamics and its application in educational management

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ABSTRACT

This study examines the relationship between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions. The research is grounded in group dynamics theory. We adopted an embedded mixed-method design. The participants included 1,087 students from four ethnic minority universities in western China. Data collection involved questionnaires, in-depth interviews, and multilevel statistical analysis. The findings reveal several patterns. First, group norms, group identity, and group cohesion exerted significant influence on learning motivation. They accounted for 18.5%, 23.2%, and 21.4% of motivation variance respectively. Second, policy support perception showed a significant positive correlation with learning motivation (r=0.52, p<0.001). Different policy dimensions had differentiated effects on different motivation types. Third, teacher professional identity played a partial mediating role in this relationship. The mediating effect represented 34.6% of the total effect. Fourth, group cohesion significantly moderated the impact of policy perception on learning motivation (γ=0.15, p<0.01). The policy effect in high-cohesion classes was 1.94 times that in low-cohesion classes. Fifth, the integrated structural equation model explained 58.7% of the variance in learning motivation. The study unveils the psychological transformation mechanism of "policy support → professional identity → learning motivation". It also demonstrates the contextual moderating role of group dynamics elements. These findings provide theoretical foundation and practical guidance for educational management in ethnic minority institutions and the cultivation of government-funded normal university students.

Keywords: group dynamics; government-funded normal university students; learning motivation; policy support perception; ethnic minority institutions; teacher professional identity; group cohesion

1. Introduction

China's education has developed continuously in recent years. Teacher workforce construction in ethnic minority regions has become a strategic project. It promotes educational equity and ethnic unity. The government-funded normal university student policy serves as an important national measure for cultivating teachers in basic education. This policy plays a key role in ensuring teacher supply and improving education

quality in ethnic minority regions[1].Government-funded normal university students in ethnic minority institutions constitute a special group. Their learning motivation requires both stimulation and maintenance. Their perception of and response to policy support are influenced by individual factors. Group contexts also shape these processes significantly[2]. Group dynamics theory has gained increasing attention in higher education in recent years. Existing studies have confirmed its explanatory power and practical value. The theory has been applied to employment competency enhancement, teacher workforce development, and innovation and entrepreneurship education performance evaluation[3]. Core elements include group norms, group identity, and group cohesion. These elements form an important analytical framework for understanding educational phenomena. They provide a new theoretical perspective for exploring the psychological and behavioral mechanisms of government-funded normal university students in ethnic minority institutions. Existing literature has paid some attention to the learning motivation and policy perception of normal university students. However, most studies are limited to individual-level analysis. They neglect the profound influence of group contexts on individual psychology and behavior. Ethnic minority institutions represent a special environment where diverse cultures converge. Government-funded normal university students face career choices under policy constraints. They are also embedded in complex group interaction networks[4]. Group dynamics theory emphasizes that individual behavior results from the interaction between individual characteristics and group contexts. This provides important insights for understanding how learning motivation forms under the influence of group norms. It also helps explain how policy support perception functions through group identity[5]. Nevertheless, few studies have systematically explored the relationship mechanism between learning motivation and policy support perception from the perspective of group dynamics. This theoretical gap limits our deep understanding of the cultivation patterns of government-funded normal university students in ethnic minority institutions[6].Based on these considerations, this study aims to apply group dynamics theory to systematically examine the relationship between learning motivation and policy support perception. The research subjects are government-funded normal university students in ethnic minority institutions. We seek to reveal the mechanisms of group dynamics elements such as group norms, group identity, and group cohesion. A multilevel theoretical model will be constructed[7]. The research contributes to enriching the application of group dynamics in educational management. It expands the theoretical boundaries of social psychology and environmental psychology. The study also has important practical value. It identifies group-level factors that affect the learning motivation of government-funded normal university students. The findings provide empirical evidence and decision-making references for optimizing cultivation models in ethnic minority institutions. They also inform the improvement of policy support systems and the enhancement of educational management effectiveness. Ultimately, the research promotes the overall improvement of teacher education quality in ethnic minority regions and the realization of educational equity goals.

Based on group dynamics theory and self-determination theory, this study proposes the following hypotheses: H1: Policy support perception has a significant positive effect on learning motivation; H2: Teacher professional identity plays a mediating role between policy support perception and learning motivation; H3: Group cohesion moderates the impact of policy support perception on learning motivation. Meanwhile, this study operationally defines "environment" as the classroom social environment, which serves as a proximal context. It includes three dimensions: group norms, group identity, and group cohesion. These elements constitute a direct situational force field that influences individual psychology and behavior.

2. Literature review

Group dynamics has been an important branch of social psychology since Lewin proposed it. It has become a core theoretical framework for understanding group behavior and individual interaction. The theory emphasizes that individual behavior results from the interaction between individual characteristics and group contexts. Group norms, group identity, and group cohesion constitute the basic dimensions of group dynamics[8]. In recent years, the application of group dynamics theory in education has deepened. It provides new perspectives for understanding and improving educational practice. Liu Xu and Tang Zhangwei constructed a blended learning community model based on group dynamics theory. Their work revealed the promoting effect of group interaction on learning outcomes[9]. Gu Xuan and Lu Yun explored the construction mechanism of teacher network learning communities from the perspective of group dynamics. They emphasized the importance of group cohesion and shared goals for teacher professional development[10]. In vocational education, Zhang Heting analyzed the construction path of teacher learning communities in vocational colleges from the group dynamics perspective. She pointed out that the formation and internalization of group norms are key to promoting teacher collaborative learning[11]. Liu Weihu et al. applied group dynamics to innovation and entrepreneurship education for college students. They found that group support atmosphere could significantly enhance students' innovation willingness and entrepreneurial ability[12]. It is worth noting that Tutor et al. provided strong evidence through empirical research. They confirmed that optimizing group dynamics processes could effectively enhance medical students' physiology learning outcomes and learning experiences[13]. This supports the application of group dynamics in professional education. In addition, Hou Wenxiao explored the "fermentation" effect of Chinese national community consciousness from the perspective of group dynamics. This study revealed the shaping mechanism of group identity in multicultural environments. It has important implications for understanding the characteristics of group dynamics in ethnic minority institutions[14].Learning motivation has been a focus of educational psychology research. It is a core variable affecting learning behavior and learning outcomes. Self-determination theory distinguishes learning motivation into intrinsic motivation and extrinsic motivation. The theory emphasizes that satisfying three basic psychological needs is key to generating intrinsic motivation. These needs are autonomy, competence, and relatedness[15]. However, traditional research mostly examines the influencing factors of learning motivation from the individual level. Less attention has been paid to the role of group contexts in motivation formation and maintenance. In fact, group norms profoundly influence individual motivation levels through social comparison and conformity mechanisms. As Liu Yu pointed out, the enhancement of group cohesion can strengthen members' identification with group goals. This becomes internalized into individual behavioral motivation[16].Among normal university students, policy support perception serves as an important source of external motivation. Its influence mechanism on learning motivation has not been fully explored. Policy support perception originates from organizational support perception theory. It refers to individuals' subjective evaluation of the degree of support provided by organizations or policies in economic aspects, professional development, and employment security[17]. Existing studies show that policy support perception not only directly affects individual attitudes and behaviors. It also functions through mediating mechanisms such as psychological contract and organizational identification. However, from the perspective of group dynamics, some questions remain. How does policy support perception spread and share at the group level? How does it affect individual motivation through group interaction? These issues still lack systematic research[18]. This is particularly true in ethnic minority institutions where diverse cultures converge. Students from different ethnic backgrounds and regional origins form complex group structures. Group identity may exhibit multiplicity and conflict. This makes the relationship between policy support perception and learning motivation more complex[19].A review of

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existing literature shows that research applying group dynamics theory in education has become increasingly rich. However, obvious research gaps still exist[20]. First, existing studies mostly focus on general learning community construction or teacher professional development. Research specifically targeting government-funded normal university students in ethnic minority institutions is extremely limited[21]. Government-funded normal university students face career choices under policy constraints. They also undertake the mission of serving educational development in ethnic minority regions. The stimulation and maintenance of their learning motivation have unique group context characteristics[22]. Second, some studies have examined the influence of group cohesion and group norms on individual behavior. However, few studies have systematically explored how group dynamics elements moderate the relationship between learning motivation and policy support perception[23]. Finally, the application of cross-level analysis methods in educational management research is still insufficient. It is difficult to effectively capture the interaction effects between individual-level variables and group-level variables[24].Therefore, this study aims to address these gaps. We will use group dynamics theory to systematically examine the relationship mechanism between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions. Through multilevel modeling techniques, we will reveal the action paths of group dynamics elements such as group norms, group identity, and group cohesion. The research will provide theoretical foundation and practical guidance for optimizing the cultivation model of government-funded normal university students in ethnic minority institutions and enhancing educational management effectiveness.

3. Research methods

3.1. Research design

This study adopted an embedded mixed-method design. Quantitative research served as the main framework. Qualitative research provided supplementary and deepening means. The relationship between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions is complex. A single method cannot fully capture the interaction mechanism between individual psychology and group contexts. The research proceeded in three stages. The first stage was the preliminary research phase. We interviewed 15 government-funded normal university students from different grades and ethnic backgrounds. We also interviewed 5 educational administrators. This helped us understand the specific content of policy support and students' actual perceptions. Based on this, we revised measurement tools and identified key variables. The second stage involved large-scale questionnaire survey. We used stratified cluster sampling method. We selected 36 classes of government-funded normal university students as group analysis units from four ethnic minority institutions in western China. We distributed 1,200 questionnaires. These measured individual-level learning motivation and policy support perception. They also measured group-level variables including group norms, group identity, and group cohesion. The questionnaire data were used to test research hypotheses and construct cross-level models[25]. The third stage was the in-depth interview phase. We selected typical cases based on questionnaire results. We conducted semi-structured interviews with 20 students who showed significant differences in learning motivation levels. This deeply explored the psychological process of policy perception transforming into learning motivation and the specific manifestations of group influence[26].The entire research followed a logical path from exploration to verification and from macro to micro. Quantitative data revealed statistical relationships between variables and group effects. Qualitative materials explained the mechanisms behind these relationships. The two types of data were integrated in the analysis stage. This formed a three-dimensional understanding of the research questions.

3.2. Research subjects

This study selected government-funded normal university students from four ethnic minority institutions in western China as research subjects. These institutions were Southwest Minzu University, Northwest Minzu University, Inner Mongolia Normal University, and Yunnan Minzu University. We used stratified cluster sampling method. First, we stratified by grade (from freshman to senior). Then we randomly selected classes from each grade as survey units. A total of 36 teaching classes were selected. We distributed 1,200 questionnaires and collected 1,087 valid questionnaires. The effective recovery rate was 90.6%. The sample included 428 male students (39.4%) and 659 female students (60.6%). This gender ratio conforms to the actual situation of normal university majors. Regarding ethnic distribution, there were 612 Han students (56.3%) and 475 ethnic minority students (43.7%). The sample covered 26 ethnic groups including Mongolian, Tibetan, Uyghur, Yi, and Zhuang. Grade distribution was relatively balanced: 271 freshmen, 289 sophomores, 264 juniors, and 263 seniors. In terms of place of origin, 18.2% of students came from provincial capital cities, 31.5% from prefecture-level cities, 33.8% from county towns, and 16.5% from townships and rural areas. Regarding family annual income, 42.1% had income below 50,000 yuan, 35.7% between 50,000-100,000 yuan, 17.3% between 100,000-200,000 yuan, and 4.9% above 200,000 yuan[27].In the in-depth interview stage, we used purposive sampling to select 20 students based on learning motivation questionnaire scores and policy support perception scores. We ensured coverage of four typical combinations: high motivation with high perception, high motivation with low perception, low motivation with high perception, and low motivation with low perception. We also considered representativeness across different ethnicities, grades, and genders. Each interview lasted 40 to 60 minutes.

3.3. Research instruments

This study used four measurement tools and one interview guide to collect data. The Learning Motivation Scale was adapted from the Academic Motivation Scale (AMS). It included three dimensions: intrinsic motivation, extrinsic motivation, and amotivation. It contained 18 items in total. A 5-point Likert scale was used (1=completely disagree, 5=completely agree). The pre-test showed that the scale's Cronbach's alpha coefficient was 0.89. The reliability of each dimension ranged from 0.82 to 0.91[28].The Policy Support Perception Scale was self-designed based on organizational support perception theory. Combined with the characteristics of government-funded normal university student policy, it included four dimensions: economic support perception, professional training perception, employment security perception, and development prospect perception. It contained 16 items in total. The same 5-point scoring system was used. Exploratory factor analysis verified good structural validity. The total scale coefficient was 0.93.The Group Norms Scale was adapted from group norms measurement tools. It included two subscales: learning norms and value norms, with 12 items in total. The Group Identity Scale was adapted from the organizational identity scale developed by Mael and contained 6 items. The Group Cohesion Scale was compiled with reference to the Seashore team cohesion scale. It included three aspects: interpersonal attraction, task commitment, and group pride, with 10 items in total. All three scales used 5-point scoring. The pre-test reliability coefficients were 0.85, 0.88, and 0.91 respectively[29].The interview guide focused on five core questions: understanding and feelings about government-funded normal university student policy, main sources of learning motivation, the influence of class atmosphere on personal learning, how peer interaction affects policy views, and expectations and concerns about future teaching. Each question included 2 to 3 follow-up questions to gain deeper understanding of students' true thoughts. The scale development underwent three stages: (1) Based on organizational support perception theory and interviews with 20 teachers and students, an initial item pool of 32 items was formed; (2) After expert review by 5 specialists, 16 items were retained; (3) A pilot test (n=80) was conducted for item analysis, and items with factor

loadings <0.50 were deleted. Confirmatory factor analysis showed that factor loadings for each dimension ranged from 0.68 to 0.85, and HTMT values were all <0.85, supporting discriminant validity.

3.4. Data collection procedures

Data collection was completed in three rounds from September to November 2024. The first round was the pre-survey stage (early September). We selected 80 government-funded normal university students from a certain ethnic minority university for pilot testing. Based on feedback, we modified items with unclear expressions. We eliminated items with low discrimination. This formed the final questionnaire. The second round was the formal survey stage (mid-September to late October). The research team communicated and coordinated with the academic affairs offices and student affairs offices of the four institutions. After obtaining survey permission, we contacted class counselors to determine testing times[30]. Questionnaires were distributed using centralized completion method. Trained research assistants entered classrooms during evening self-study or class meeting time. They explained the research purpose, confidentiality principles, and completion requirements to students. They emphasized that questionnaires were anonymous and would not affect any evaluation. Completion time was about 20 minutes. Questionnaires were collected on-site and checked for completeness. For questionnaires with missing answers or patterned responses, students were asked to supplement or refill them immediately. To ensure the validity of class-level data, each class was required to collect at least 25 valid questionnaires. The third round was the in-depth interview stage (November). We screened interview subjects based on questionnaire analysis results. We contacted students through counselors and explained the interview purpose. After obtaining consent, we scheduled time and location. Interview locations were quiet conference rooms or coffee shops. This created a relaxed atmosphere conducive to students expressing true thoughts[31]. The entire interview process was recorded. A recorder also took written notes as backup. Within 24 hours after each interview, we completed audio transcription to form verbatim transcripts. These were returned to interviewees for confirmation to ensure the materials accurately reflected their views. The entire data collection process strictly followed research ethics standards. All participants signed informed consent forms. This study has been approved by the ethics committees of the four institutions (Approval Numbers: SWMU-2024-IRB-085, NWMU-2024-ETH-042, IMNU-2024-EC-031, YNMU-2024-REC-056).

3.5. Data analysis methods

Quantitative data analysis was completed using SPSS 27.0 and Mplus 8.3 software. First, we performed data cleaning. We deleted invalid questionnaires with too short completion time (less than 5 minutes) and continuous identical options exceeding 80%. Then we conducted descriptive statistics. We calculated the mean, standard deviation, skewness, and kurtosis of each variable. We tested the normality of data distribution. For reliability and validity testing, we evaluated the internal consistency of scales through Cronbach's alpha coefficient and composite reliability. We used confirmatory factor analysis to test construct validity. We used average variance extracted (AVE) to judge convergent validity. Considering that the data had a nested structure (students nested within classes), we needed to calculate the intraclass correlation coefficient (ICC) to evaluate group-level variance. If the ICC value was greater than 0.05, we would conduct multilevel linear model analysis[32]. Specifically, we constructed a null model to determine random effects. A random intercept model tested the role of individual-level predictor variables. An intercept and slope as random model explored cross-level interaction effects. In addition, we used structural equation modeling to test the relationship path between learning motivation and policy support perception. We tested the significance of mediating effects through Bootstrap procedure (5,000 repeated samplings). We used multi-group analysis to examine the stability of the model across different ethnic groups and different grades. Qualitative data analysis used thematic analysis method. NVivo 12 software assisted coding. Two

researchers independently read interview texts for open coding. They extracted initial concepts. Then through comparative discussion, they formed secondary coding. Finally, they summarized core themes. Coding consistency was evaluated by calculating Cohen's Kappa coefficient, which was required to reach above 0.80. In the mixed data integration stage, we compared qualitative themes with quantitative results. They mutually verified or explained differences. For the aggregation of class-level variables, we calculated the within-group agreement coefficient rwg(j), ICC(1), and ICC(2) to verify the aggregation appropriateness. The mean rwg(j) for group norms was 0.89, ICC(1)=0.18, ICC(2)=0.76; for group identity, rwg(j)=0.87, ICC(1)=0.23, ICC(2)=0.81; for group cohesion, rwg(j)=0.91, ICC(1)=0.21, ICC(2)=0.79, all meeting acceptable standards (rwg>0.70, ICC(2)>0.70). Mean aggregation was employed to form class-level variables.

4. Results analysis

4.1. Analysis of group characteristics of learning motivation among government-funded normal university students

4.1.1. Overall level and structural characteristics of learning motivation

We measured the learning motivation of 1,087 government-funded normal university students in ethnic minority institutions. The results showed that the overall learning motivation of this group was at a medium-to-high level (M=3.68, SD=0.52). From the perspective of motivation structure, intrinsic motivation scored highest (M=3.89, SD=0.61). This indicated that government-funded normal university students had strong interest and value identification with the teaching profession. Extrinsic motivation scored 3.72 (SD=0.58). This suggested that external factors such as policy guarantee and employment stability had significant driving effects on learning. Amotivation scored lower (M=2.43, SD=0.74). This reflected that most students held positive attitudes toward learning[33].Grade difference analysis showed significant patterns. Freshmen's intrinsic motivation and extrinsic motivation scores were significantly higher than other grades (p<0.01). This might relate to the freshness of policy and idealized perception of the teaching profession in the early enrollment period. See **Table 1** below. Sophomore and junior students showed a declining trend in motivation levels. Senior students experienced a renewed increase in extrinsic motivation as internship and employment approached. Regarding gender, female students' intrinsic motivation score (M=3.94) was significantly higher than male students (M=3.81, t=2.87, p<0.01). Ethnic difference comparison found that ethnic minority students' extrinsic motivation score (M=3.81) was slightly higher than Han students (M=3.66, t=2.34, p<0.05). This might relate to ethnic minority students having higher dependence on policy support and stronger sense of mission to return home for teaching. See **Figure 1** below. Urban-rural background analysis indicated meaningful differences. Students from townships and rural areas had significantly higher extrinsic motivation scores than urban students. Intrinsic motivation showed no significant difference. This suggested that economic factors and employment security had greater attraction for students from rural origins[34]. Overall, government-funded normal university students in ethnic minority institutions exhibited structural characteristics with both intrinsic and extrinsic motivation. Intrinsic motivation was dominant. However, different groups showed significant differences in motivation levels and structures.

Table 1. Descriptive statistics and group difference tests of learning motivation among government-funded normal university students.

Variable Category	Grouping	Intrinsic Motivation M(SD)	Extrinsic Motivation M(SD)	Amotivation M(SD)	Overall Motivation M(SD)
Overall	Full Sample (N=1087)	3.89(0.61)	3.72(0.58)	2.43(0.74)	3.68(0.52)

Variable Category	Grouping	Intrinsic Motivation M(SD)	Extrinsic Motivation M(SD)	Amotivation M(SD)	Overall Motivation M(SD)
Grade	Freshman (N=271)	4.12(0.55)	3.95(0.52)	2.28(0.68)	3.91(0.48)
	Sophomore (N=289)	3.84(0.59)	3.68(0.57)	2.45(0.72)	3.65(0.51)
	Junior (N=264)	3.76(0.63)	3.58(0.61)	2.52(0.78)	3.56(0.55)
	Senior (N=263)	3.85(0.64)	3.74(0.59)	2.47(0.75)	3.65(0.53)
Gender	Male (N=428)	3.81(0.63)	3.69(0.61)	2.48(0.77)	3.64(0.55)
	Female (N=659)	3.94(0.59)**	3.74(0.56)	2.40(0.72)	3.71(0.50)
Ethnicity	Han (N=612)	3.91(0.60)	3.66(0.57)	2.41(0.73)	3.68(0.51)
	Ethnic Minority (N=475)	3.87(0.62)	3.81(0.59)*	2.46(0.76)	3.69(0.54)
Origin	Urban (N=198)	3.92(0.58)	3.55(0.54)	2.39(0.71)	3.64(0.49)
	County-Town (N=550)	3.88(0.61)	3.72(0.58)*	2.43(0.74)	3.68(0.52)
	Rural (N=339)	3.89(0.63)	3.84(0.60)**	2.47(0.76)	3.71(0.54)

Table 1. (*Continued*)
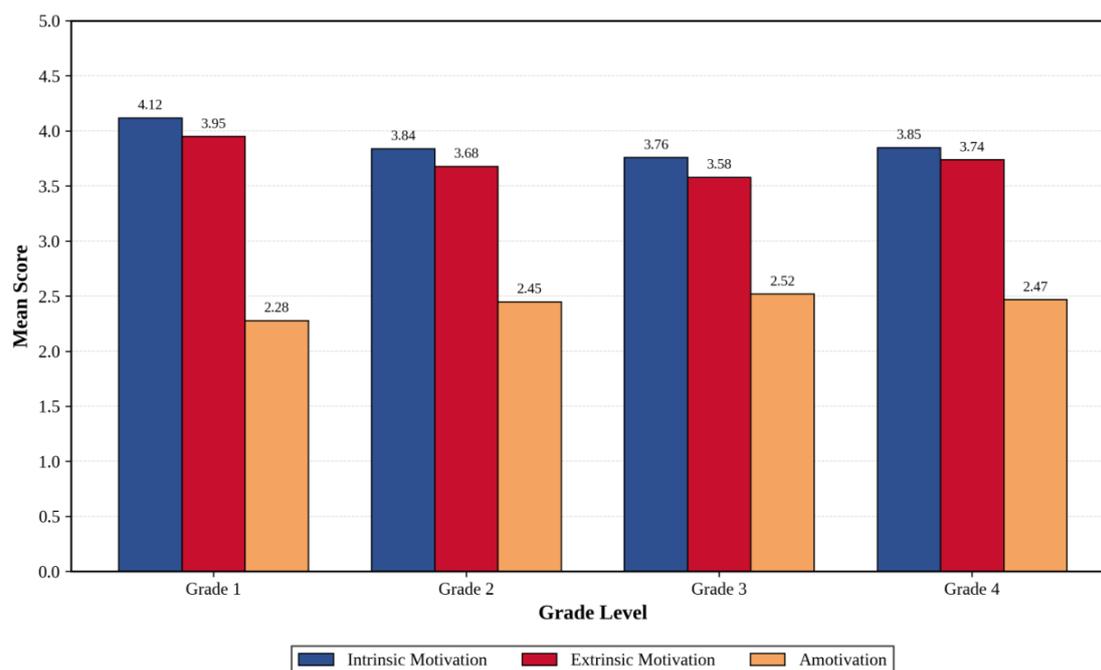
Note: *p<0.05, **p<0.01, ***p<0.001

Figure 1. Comparison of learning motivation types among government-funded normal university students across grades.

4.1.2. The shaping effect of group norms on learning motivation

Group norms serve as informal behavioral rules. They profoundly influence individual learning motivation through social comparison and conformity mechanisms. This study used classes as group analysis units. We divided 36 classes into three types through cluster analysis: high norm intensity classes (n=12), medium norm intensity classes (n=15), and low norm intensity classes (n=9).The results showed a significant positive correlation between group norm intensity and learning motivation level (r=0.58, p<0.001). Specifically, students in high norm intensity classes had intrinsic motivation scores (M=4.15, SD=0.52)

significantly higher than medium norm classes (M=3.82, SD=0.59, t=4.83, p<0.001) and low norm classes (M=3.52, SD=0.68, t=7.21, p<0.001). See **Table 2** below. Extrinsic motivation showed a similar trend. High norm classes scored 3.98 (SD=0.51), medium norm classes scored 3.69 (SD=0.56), and low norm classes scored 3.43 (SD=0.62). Differences between groups were significant (F=13.47, p<0.001).Further analysis revealed important patterns. The influence of learning norms was greater than value norms. For every 1 standard deviation increase in learning norm scores, intrinsic motivation increased by 0.42 standard deviations (β=0.42, p<0.001). The standardized regression coefficient of value norms was 0.28 (p<0.01)[35]. Norm consistency analysis indicated that individual identification with group norms was a key mediating variable. High identification students (top 25%) had learning motivation scores 0.87 points higher than low identification students (bottom 25%) (Cohen's d=1.34). See **Figure 2** below. Qualitative interviews revealed three norm transmission mechanisms. First was role modeling. "Opinion leaders" who were active in learning influenced others through words and actions. Second was collective atmosphere. An environment where "everyone is working hard" created upward pressure. Third was mutual assistance culture. Academic mutual assistance among class members strengthened the intrinsic value of learning. It is worth noting that overly coercive norms (such as unified schedules and mandatory self-study) actually weakened intrinsic motivation. This suggests that establishing autonomy-supportive norms should be emphasized. These findings confirm the group dynamics theory hypothesis about group norms shaping individual behavior. They provide empirical evidence for enhancing learning motivation through optimizing class norm systems. Interview coding identified three themes: (1) Role modeling mechanism: "There are several students in our class who study exceptionally well, and their self-discipline makes me feel pressure but also motivates me to keep up" (S07, sophomore, Tibetan); (2) Collective atmosphere creation: "Everyone is working hard, so if you slack off alone, you feel embarrassed" (S15, junior, Han); (3) Mutual assistance culture: "We form study groups and help each other solve problems, which makes learning meaningful" (S22, senior, Yi).

Table 2. Comparison of learning motivation among government-funded normal university students under different group norm intensities.

| Group Norm Intensity	Number of Classes	Number of Students	Intrinsic Motivation M(SD)	Extrinsic Motivation M(SD)	Amotivation M(SD)	Overall Motivation M(SD)	Learning Norms M(SD)	Value Norms M(SD)
High Norm Intensity	12	358	4.15(0.52)***	3.98(0.51)***	2.18(0.65)***	3.95(0.45)***	4.32(0.41)	4.18(0.48)
Medium Norm Intensity	15	453	3.82(0.59)	3.69(0.56)	2.41(0.71)	3.68(0.51)	3.76(0.52)	3.65(0.58)
Low Norm Intensity	9	276	3.52(0.68)	3.43(0.62)	2.71(0.79)	3.38(0.58)	3.21(0.64)	3.15(0.67)
F value	-	-	28.54***	22.17***	15.83***	31.46***	-	-
Intraclass Correlation Coefficient (ICC)	-	-	0.18	0.15	0.12	0.21	-	-

Note: ***p<0.001*
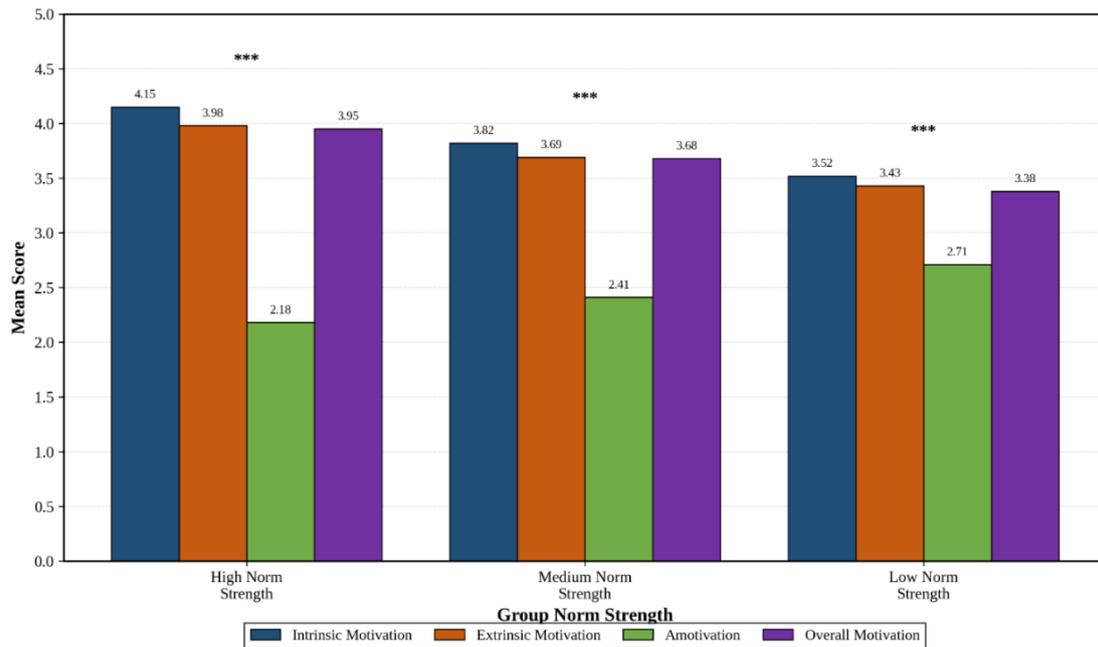
Figure 2. The effect of group norm intensity on learning motivation of government-funded normal university students.

4.1.3. The association between group identity and learning motivation

Group identity serves as a core variable connecting individuals with groups psychologically. It plays a key role in learning motivation formation. This study measured group identity from three dimensions: professional identity, sense of belonging to ethnic minority institutions, and teacher professional identity. The results showed that all three dimensions had significant positive correlations with learning motivation. Teacher professional identity had the highest correlation coefficient with intrinsic motivation (r=0.64, p<0.001). Professional identity came second (r=0.56, p<0.001). School sense of belonging had a correlation of 0.48 with intrinsic motivation (p<0.001). See **Table 3** below. Hierarchical regression analysis showed meaningful results. After controlling for demographic variables, the three types of identity jointly explained 43.6% of the variance in learning motivation (R²=0.436, F=102.34, p<0.001). Teacher professional identity made the largest unique contribution (β=0.38, p<0.001). Professional identity contributed β=0.24 (p<0.001). School sense of belonging contributed β=0.15 (p<0.01)[36].Further mediating effect testing found important patterns. Teacher professional identity played a partial mediating role between policy support perception and learning motivation. The mediating effect accounted for 35.7% of the total effect (95% CI [0.28, 0.43]). This indicated that policy support indirectly enhanced learning motivation by strengthening professional identity. Ethnic difference analysis revealed interesting patterns. Ethnic minority students' school sense of belonging (M=4.02) was significantly higher than Han students (M=3.78, t=3.45, p<0.01). This related to the cultural inclusiveness of ethnic minority institutions. Han students' professional identity was slightly higher but the difference was not significant. Qualitative interviews further revealed distinct patterns. High-identity students closely linked personal learning goals with collective missions (such as "cultivating excellent teachers for hometown"). This sense of mission became an intrinsic driving force for continuous learning[37]. Low-identity students mostly viewed the government-funded normal university student status as a "passive choice". They lacked emotional investment in the teaching profession. See **Figure 3** below. It is worth noting that identity formation is dynamic. Freshmen's professional identity was mainly based on idealized imagination. After educational internship, seniors' identity became more pragmatic and stable. These

findings support the core view of social identity theory. Group identity becomes an important force driving individual behavior by providing psychological sense of belonging and value significance.

Table 3. Correlation and regression analysis between dimensions of group identity and learning motivation.

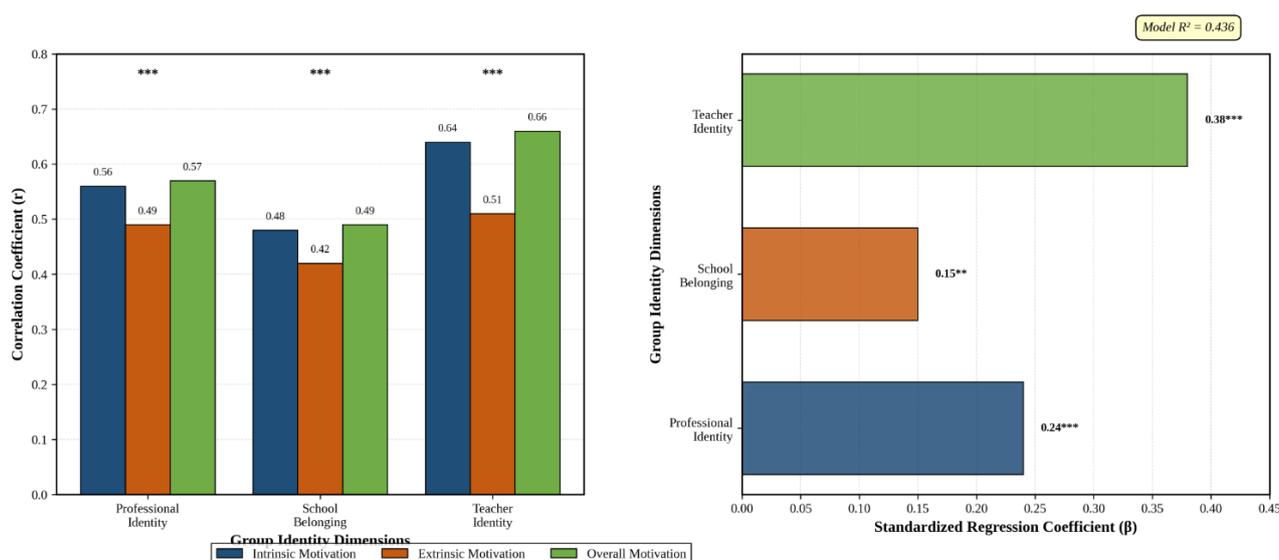| Variable	Intrinsic Motivation	Extrinsic Motivation	Amotivation	Overall Motivation	M(SD)
Professional Identity	0.56***	0.49***	-0.38***	0.57***	3.86(0.64)
School Sense of Belonging	0.48***	0.42***	-0.31***	0.49***	3.88(0.68)
Teacher Professional Identity	0.64***	0.51***	-0.46***	0.66***	3.92(0.62)

Note: ***p<0.001*

Figure 3. Correlation and regression analysis between dimensions of group identity and learning motivation.

4.2. Group differences and influencing factors of policy support perception

4.2.1. Multidimensional assessment of policy support perception

Policy support perception represents government-funded normal university students' subjective evaluation of national and institutional policy systems. This study measured it from four dimensions: economic support perception, professional development support perception, employment security support perception, and development prospect perception. Descriptive statistics showed that government-funded normal university students' overall perception of policy support was at a medium-to-high level (M=3.74, SD=0.58). See **Table 4** below. Economic support perception scored highest (M=4.12, SD=0.63). This reflected that economic policies such as tuition waiver and living subsidies had the strongest perceptibility. Employment security perception came second (M=3.89, SD=0.61). This indicated that establishment guarantee and directional employment policies received good recognition. Professional development support perception was 3.65 (SD=0.68). This suggested that students' recognition of professional training quality and development opportunities was relatively low. Development prospect perception scored lowest (M=3.31, SD=0.74). This showed that students had certain concerns about long-term career development[38].Confirmatory factor analysis supported the four-factor model (χ^2/df=2.87, CFI=0.94, TLI=0.93, RMSEA=0.05). The average variance extracted (AVE) of each dimension ranged from 0.52 to 0.61. Composite reliability (CR) ranged from 0.81 to 0.88. This indicated that the measurement tool had good reliability and validity. Correlation analysis between dimensions revealed patterns. The four

dimensions showed significant positive correlations with each other (r=0.42-0.68, p<0.001). Economic support had the highest correlation with employment security perception (r=0.68). Development prospect perception had relatively lower correlations with other dimensions (r=0.42-0.51). This suggested it might be influenced by more external factors[39].Grade difference analysis revealed interesting patterns. Freshmen had significantly higher perception scores on all dimensions than other grades (p<0.01). This related to freshness and idealized cognition of policy among new students. Junior students' policy perception dropped to the lowest point. This might relate to reality shock brought by educational internship. Senior students showed some recovery in employment security perception as employment approached. However, their development prospect perception remained low. See **Figure 4** below. These findings indicate that policy support perception is a multidimensional complex psychological construct. Different dimensions play differentiated roles at different stages of government-funded normal university student cultivation.

Table 4. Descriptive statistics and grade difference tests of dimensions of policy support perception.

| Dimension	M(SD)	Skewness	Kurtosis	AVE	CR	Cronbach's α
Economic Support Perception	4.12(0.63)	-0.58	0.32	0.61	0.88	0.87
Professional Development Support Perception	3.65(0.68)	-0.21	-0.15	0.54	0.84	0.83
Employment Security Support Perception	3.89(0.61)	-0.42	0.18	0.58	0.86	0.85
Development Prospect Support Perception	3.31(0.74)	0.12	-0.28	0.52	0.81	0.80
Overall Policy Support Perception	3.74(0.58)	-0.26	0.08	-	-	0.91
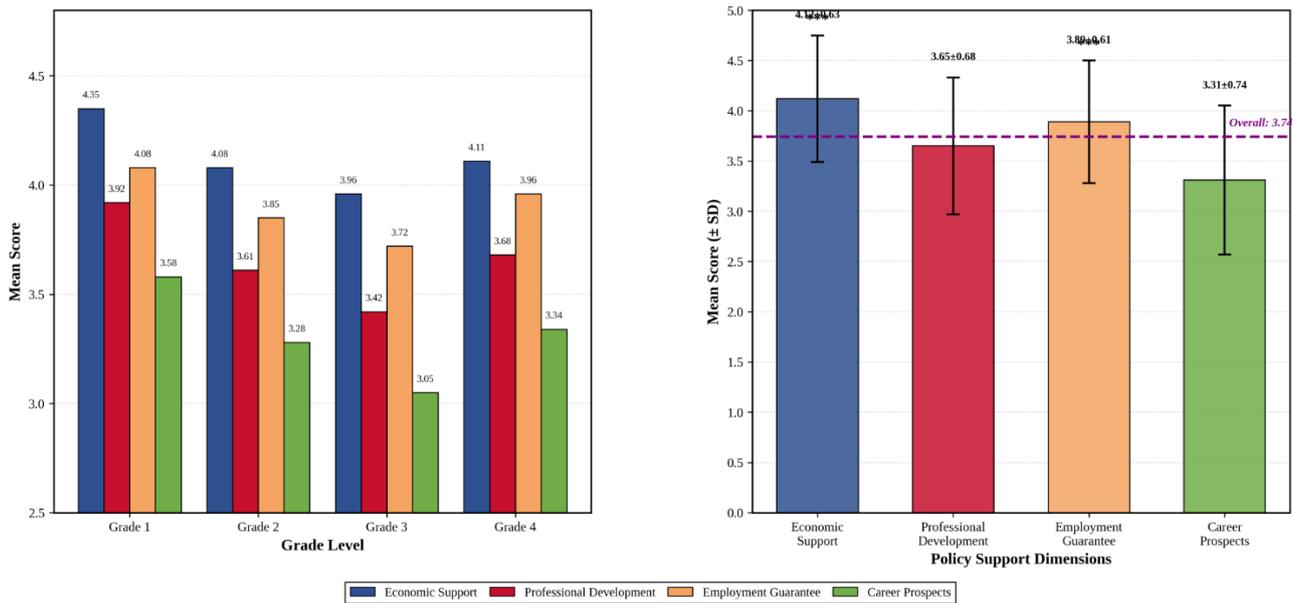
Figure 4. Multidimensional assessment of policy support perception.

4.2.2. Policy perception differences among different groups

Policy support perception showed significant differences among different groups. This reflected the uneven effectiveness of policy implementation and the moderating effect of group characteristics on policy perception. In terms of urban-rural background, students from rural areas had significantly higher policy support perception (M=3.89, SD=0.54) than county-town students (M=3.72, SD=0.57, t=3.45, p<0.01) and urban students (M=3.58, SD=0.62, t=5.87, p<0.001). This difference was particularly prominent in the economic support dimension (F=18.42, p<0.001). Rural students scored 4.28 while urban students scored

only 3.85. See **Table 5** below. This phenomenon might stem from rural students' higher dependence on economic assistance. They had stronger sense of actual benefits brought by the policy[40].Ethnic difference analysis showed distinct patterns. Ethnic minority students' overall policy perception (M=3.82, SD=0.56) was slightly higher than Han students (M=3.68, SD=0.59, t=2.67, p<0.01). This was particularly true in the development prospect dimension. Ethnic minority students scored 3.45, significantly higher than Han students' 3.21 (t=3.58, p<0.001). This related to ethnic minority students having a stronger sense of mission to return home for teaching and serving their hometown. The influence of family economic status was equally significant. We divided students into three groups according to family annual income: low income (<50,000 yuan), medium income (50,000-100,000 yuan), and high income (>100,000 yuan). The results showed that low-income family students had the highest policy perception score (M=3.91, SD=0.52). Medium-income families came second (M=3.73, SD=0.57). High-income families scored lowest (M=3.52, SD=0.64). Differences among the three groups were significant (F=16.78, p<0.001).Multivariate analysis of variance showed an interaction effect between urban-rural background and family economic status (F=4.23, p<0.05). Students from rural areas with economic difficulties had the strongest perception of policy support. See **Figure 5** below. Regarding gender differences, female students' policy perception (M=3.77, SD=0.57) was slightly higher than male students (M=3.69, SD=0.60). However, the difference did not reach statistical significance (t=1.68, p=0.093).These findings reveal the social stratification characteristics of policy support perception. Economically disadvantaged groups had higher sensitivity and recognition of policies. This both affirms the precision of the policy and suggests the need to address insufficient policy perception among advantaged groups.

Table 5. Comparison of policy support perception among government-funded normal university students from different groups.

Place of Origin	Sample Size	Economic Support M(SD)	Professional Development M(SD)	Employment Security M(SD)	Development Prospect M(SD)	Overall Perception M(SD)
Urban	198	3.85(0.68)	3.52(0.71)	3.71(0.67)	3.22(0.76)	3.58(0.62)
County-Town	550	4.08(0.61)	3.64(0.67)	3.88(0.60)	3.28(0.73)	3.72(0.57)
Rural	339	4.28(0.58)***	3.72(0.66)	4.02(0.58)**	3.42(0.73)*	3.89(0.54)***
F value		18.42***	2.86*	8.45***	2.41*	13.67***

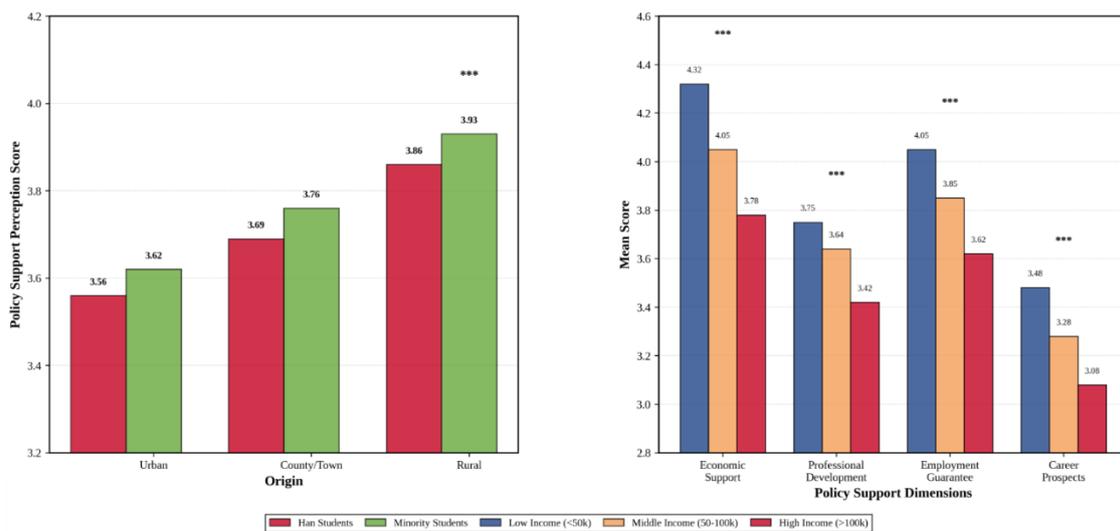***Note:*** **p<0.05, **p<0.01, ***p<0.001*

Figure 5. Policy support perception differences among government-funded normal university students from different groups.

4.2.3. The moderating effect of group cohesion on policy perception

Group cohesion serves as a contextual variable at the class level. It plays an important moderating role in the formation and dissemination of policy support perception. This study divided 36 classes into three groups according to cohesion score tertiles: high cohesion classes (n=12, M=4.28, SD=0.35), medium cohesion classes (n=12, M=3.65, SD=0.28), and low cohesion classes (n=12, M=3.02, SD=0.38).Hierarchical regression analysis showed meaningful results. After controlling for individual-level variables, group cohesion had a significant main effect on policy support perception (β=0.32, p<0.001). The interaction term between group cohesion and individual policy information contact frequency was also significant (β=0.18, p<0.01). It explained an additional 3.2% of variance (ΔR^2=0.032). This confirmed the existence of a moderating effect[41].Simple slope test showed distinct patterns. In high cohesion classes, the positive effect of policy information contact on policy perception was strongest (β=0.58, t=8.45, p<0.001). Medium cohesion classes came second (β=0.42, t=5.67, p<0.001). Low cohesion classes were weakest (β=0.26, t=3.21, p<0.01). The differences in slopes among the three groups were significant (F=12.34, p<0.001). See **Table 6** below. This indicated that group cohesion amplified the effect of policy information by promoting information sharing and emotional support among members. Further analysis found additional patterns. The standard deviation of policy perception in high cohesion classes (SD=0.42) was significantly smaller than in low cohesion classes (SD=0.68, Levene's test F=15.67, p<0.001). This suggested that members within classes with strong cohesion had more consistent cognition of policies[42].Qualitative interviews revealed three mechanisms. First was the social learning mechanism. Members in high cohesion classes shared their understanding and experiences of policies through frequent interaction. Second was the social comparison mechanism. Members adjusted their evaluation of policies by comparing with peers. Third was the collective norm mechanism. A consensual evaluation of policies formed within the class. Individuals tended to stay consistent with the group. See **Figure 6** below. Multilevel linear model analysis further confirmed these patterns. Group cohesion could explain 9.6% of between-class variance in policy perception (ICC=0.096). This indicated that group context had substantial influence on policy perception formation. These findings reveal that policy perception is not only an individual cognitive process. It is also a social construction process embedded in group interaction. "Our class is very united, and everyone shares their understanding of the policies, which makes me more confident about the future" (S11, high-cohesion class). In contrast, students from low-cohesion classes stated: "The policies are quite good, but everyone in the class minds their own business, and there's not much discussion" (S28).

Table 6. Analysis of the moderating effect of group cohesion on policy support perception.

Predictor Variables	Model 1	Model 2	Model 3	VIF
Control Variables				
Gender	0.08*	0.06	0.05	1.08
Grade	-0.14***	-0.11**	-0.10**	1.12
Place of Origin	0.12**	0.09*	0.08*	1.18
Family Income	-0.16***	-0.13**	-0.12**	1.15
Individual-Level Variables				
Policy Information Contact Frequency		0.45***	0.42***	1.42
Policy Understanding Level		0.28***	0.26***	1.68
Group-Level Variables				
Group Cohesion			0.32***	0.29***

Predictor Variables	Model 1	Model 2	Model 3	VIF
Interaction Term				
Information Contact × Cohesion			0.18**	2.12
R²	0.068	0.346	0.378	
ΔR²		0.278***	0.032**	
F	19.45***	67.82***	71.56***	

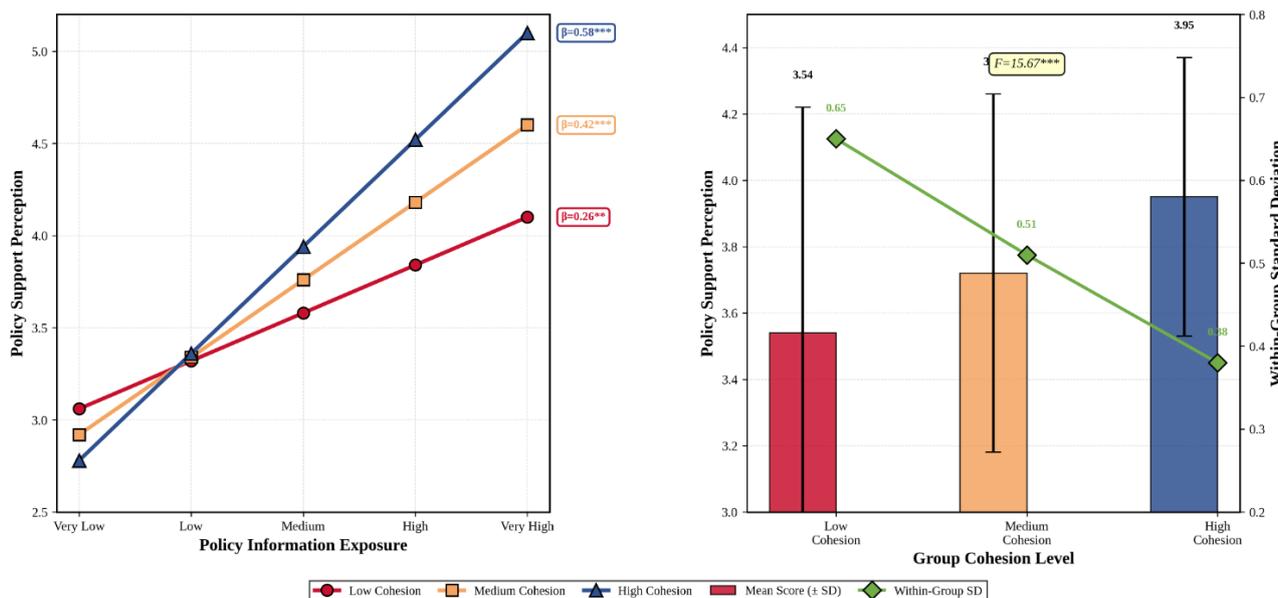***Note:*** **p<0.05, **p<0.01, ***p<0.001*

Figure 6. The moderating effect of group cohesion on policy support perception.

4.3. The relationship model between learning motivation and policy support perception

4.3.1. Individual-level relationship testing

We tested the relationship between policy support perception and learning motivation at the individual level. Bivariate correlation analysis showed a significant positive correlation between the two (r=0.52, p<0.001). This indicated that stronger policy support perception corresponded to higher learning motivation levels. Further distinction of motivation types revealed specific patterns. The correlation coefficient between policy support perception and intrinsic motivation was 0.48 (p<0.001). The correlation with extrinsic motivation was 0.56 (p<0.001). It showed a significant negative correlation with amotivation (r=-0.42, p<0.001). The four dimensions of policy support had different correlations with learning motivation. Employment security perception had the highest correlation with overall motivation (r=0.54, p<0.001). Economic support perception came second (r=0.51, p<0.001). Professional development perception was 0.47 (p<0.001). Development prospect perception was 0.44 (p<0.001). See **Table 7** below. Hierarchical regression analysis showed meaningful results. After controlling for demographic variables (gender, grade, ethnicity, place of origin, family income), overall policy support perception had significant predictive power for learning motivation (β=0.49, t=17.82, p<0.001). It explained 23.8% of the variance (R²=0.238, F=317.52, p<0.001). When policy support was decomposed into four dimensions and entered into the regression equation simultaneously, employment security perception had the largest standardized regression coefficient (β=0.28, p<0.001). Economic support perception came next (β=0.21, p<0.001), followed by professional development perception (β=0.15, p<0.01). The unique contribution of development prospect perception was

relatively small (β=0.11, p<0.05). The four dimensions jointly explained 26.5% of motivation variance[43].Regression analysis for different motivation types revealed differentiated patterns. Extrinsic motivation was mainly influenced by economic support (β=0.32, p<0.001) and employment security (β=0.29, p<0.001). Intrinsic motivation was more influenced by professional development support (β=0.26, p<0.001) and development prospects (β=0.22, p<0.001). See **Figure 7** below. These findings support the self-determination theory regarding the differentiated impact of external support on motivation. Material support mainly promotes extrinsic motivation. Development-oriented support better stimulates intrinsic motivation. It is worth noting that the influence of policy support perception on intrinsic motivation was smaller than on extrinsic motivation. However, it remained significant and substantial. This suggested that reasonable policy design could simultaneously promote the development of both types of motivation.

Table 7. Correlation and regression analysis between policy support perception and learning motivation.

| Variable	1	2	3	4	5	6	7	8
1. Intrinsic Motivation	1							
2. Extrinsic Motivation	0.58***	1						
3. Amotivation	-0.54***	-0.42***	1					
4. Overall Motivation	0.92***	0.86***	-0.68***	1				
5. Economic Support Perception	0.45***	0.54***	-0.38***	0.51***	1			
6. Professional Development Perception	0.52***	0.44***	-0.41***	0.47***	0.56***	1		
7. Employment Security Perception	0.48***	0.58***	-0.39***	0.54***	0.68***	0.62***	1	
8. Development Prospect Perception	0.46***	0.42***	-0.37***	0.44***	0.51***	0.58***	0.42***	1
9. Overall Policy Perception	0.48***	0.56***	-0.42***	0.52***	0.87***	0.85***	0.88***	0.79***

Note: ****p<0.001*
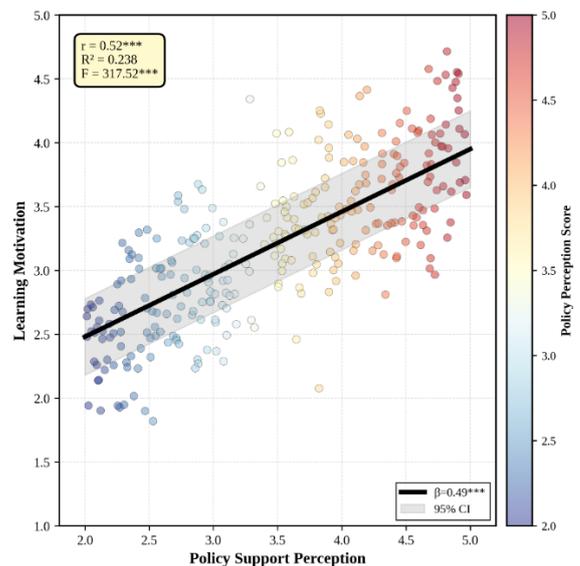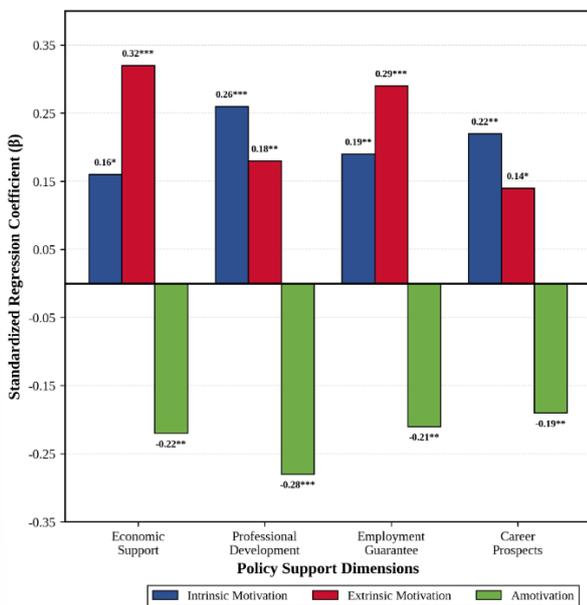
Figure 7. Individual-level impact of policy support perception on learning motivation.

4.3.2. Cross-level analysis at the group level

Multilevel linear model analysis revealed the significant influence of group-level variables on the relationship between policy perception and learning motivation. The null model showed that 15.8% of the

variance in learning motivation existed at the class level (ICC=0.158). This provided a foundation for cross-level analysis. After adding individual-level policy perception (Model 1), the regression coefficient of individual policy perception was 0.47 (p<0.001). Class-level variance decreased from 0.082 to 0.055. This explained 32.9% of between-class variance. See **Table 8** below. Model 2 introduced group-level variables. The results showed significant cross-level direct effects. Group norms (γ=0.24, p<0.01), group identity (γ=0.18, p<0.05), and group cohesion (γ=0.31, p<0.001) all had significant effects on class average learning motivation. The three variables jointly explained an additional 45.5% of between-class variance. More importantly, cross-level interaction effect testing (Model 3) found meaningful patterns. Group cohesion significantly moderated the impact of individual policy perception on learning motivation (γ=0.15, p<0.01). In high cohesion classes, the slope of policy perception was 0.62. In low cohesion classes it was only 0.32. The slope difference reached statistical significance ($\Delta\gamma$=0.30, χ^2=15.42, p<0.001)[44]. The moderating effect of group norms was also significant (γ=0.12, p<0.05). However, the interaction term for group identity did not reach significance (γ=0.08, p=0.12).Variance decomposition analysis showed clear results. The complete model (Model 3) explained 63.2% of individual-level variance and 78.6% of class-level variance. Model fit was significantly better than the model containing only individual variables (Δ-2LL=48.35, p<0.001). The intraclass correlation coefficient decreased from the initial 0.158 to 0.048. This indicated that group-level variables effectively explained most between-class differences. See **Figure 8** below. These findings confirm that the relationship between policy perception and learning motivation does not operate only at the individual level. It is profoundly influenced by group contexts. Group dynamics elements jointly shape individual motivation patterns through direct effects and moderating effects. It is particularly worth noting that group cohesion played the most prominent role. It could both directly enhance learning motivation and strengthen the conversion efficiency of policy perception. This reflects the core value of group dynamics in educational management. The cross-level interaction model equations are: Level 1: $Y_{ij}=\beta_{0j}+\beta_{1j}$(Policy Perception$_{ij}$)+$r_{ij}$; Level 2: $\beta_{0j}=\gamma_{00}+\gamma_{01}$(Group Cohesion$_j$)+$u_{0j}$, $\beta_{1j}=\gamma_{10}+\gamma_{11}$(Group Cohesion$_j$)+$u_{1j}$. Robust standard errors were employed to correct for clustering effects.

Table 8. Multilevel linear model analysis results of learning motivation.

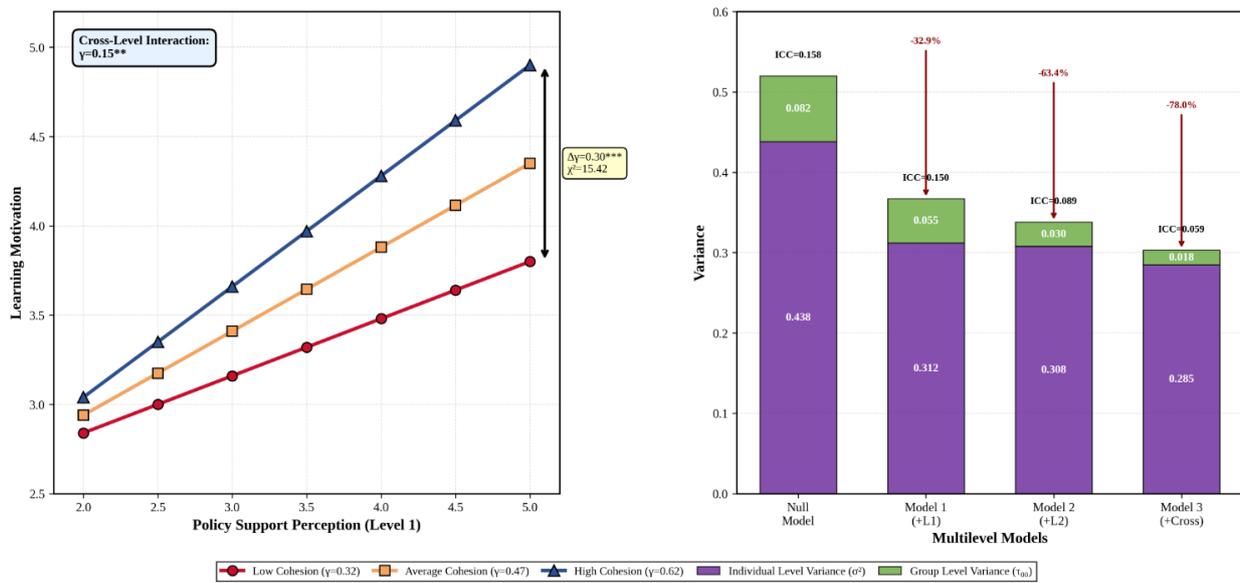| Model	Fixed Effects	Random Effects		Model Fit		
		σ^2(Individual Level)	τ_{00}(Class Level)	ICC	-2LL	AIC
Null Model	Intercept only	0.438	0.082	0.158	2845.32	2849.32
Model 1	+Individual Policy Perception	0.312	0.055	0.150	2562.48	2570.48
Model 2	+Group-Level Variables	0.308	0.030	0.089	2518.76	2532.76
Model 3	+Cross-Level Interaction	0.285	0.018	0.059	2470.41	2490.41

Figure 8. Cross-level analysis of learning motivation: interaction effects and variance decomposition.

4.3.3. Construction and validation of the integrated model

Based on the previous individual-level and cross-level analyses, this study constructed an integrated structural equation model. The model included direct effects, mediating effects, and moderating effects. Policy support perception served as the independent variable. Learning motivation was the dependent variable. Teacher professional identity was the mediating variable. Group cohesion was the moderating variable. Model fit indices showed good data compatibility. The values were: $\chi^2/df=2.85$ (<3.00), CFI=0.95, TLI=0.94, RMSEA=0.048 (<0.05), and SRMR=0.052 (<0.08). This indicated that the model fitted the data well. Path analysis results showed important findings. The total effect of policy support perception on learning motivation was 0.52 (p<0.001). The direct effect was 0.34 (95% CI [0.28, 0.40]). The indirect effect through teacher professional identity was 0.18 (95% CI [0.13, 0.24]). The mediating effect accounted for 34.6% of the total effect. See **Table 9** below. Specifically, policy support perception significantly and positively predicted teacher professional identity (β=0.54, p<0.001). Professional identity further significantly predicted learning motivation (β=0.34, p<0.001)[45]. The moderating effect of group cohesion on the "policy perception → learning motivation" path was significant (β=0.16, p<0.01). In high cohesion groups, the direct effect increased to 0.48 (p<0.001). In low cohesion groups it was only 0.20 (p<0.01).Multi-group analysis tested the stability of the model across different groups. The results showed that the model had measurement invariance between Han and ethnic minority students (ΔCFI=0.008<0.01). However, there were some differences in path coefficients. The mediating effect was stronger for ethnic minority students (β=0.22 vs 0.15, Δχ²=6.82, p<0.01).Bootstrap resampling was conducted 5,000 times to test the stability of indirect effects. The 95% confidence interval did not include 0. This confirmed that the mediating effect was significant and stable. The model explained 58.7% of the variance in learning motivation (R²=0.587) and 29.1% of the variance in teacher professional identity (R²=0.291). See **Figure 9** below. This integrated model reveals important mechanisms. Policy support perception influences learning motivation through both a direct path and a professional identity mediation path. This influence process is significantly moderated by group cohesion. The findings validate the theoretical hypotheses based on group dynamics. Due to the cross-sectional design of this study, teacher professional identity demonstrated a significant indirect association

between policy support perception and learning motivation (β=0.18, 95% CI [0.13, 0.24]), rather than a causal mediation mechanism.

Table 9. Path coefficients and effect decomposition of the integrated structural equation model.

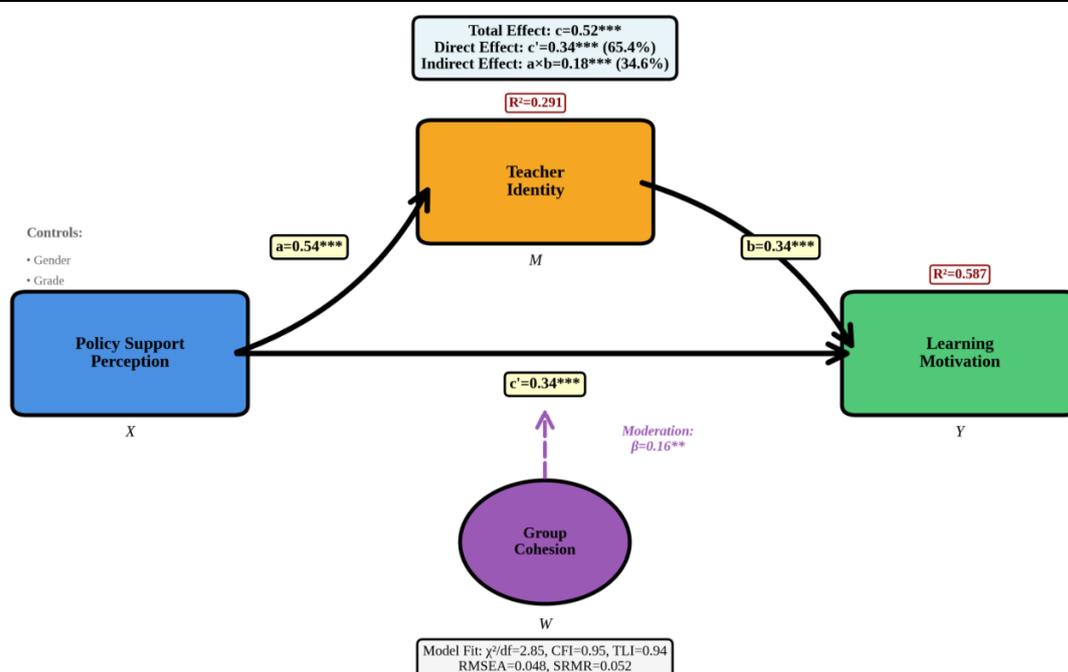| Fit Index	Observed Value	Recommended Standard	Evaluation
χ²	342.58	-	-
df	120	-	-
χ²/df	2.85	<3.00	Good
CFI	0.95	>0.90	Excellent
TLI	0.94	>0.90	Excellent
RMSEA	0.048	<0.08	Excellent
SRMR	0.052	<0.08	Good
AIC	3645.82	Lower is better	-

Figure 9. Integrated structural equation model.

5. Discussion

5.1. Interpretation of research findings based on group dynamics

This study systematically examined the relationship between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions from the perspective of group dynamics. The research findings fully validate Lewin's core proposition that "behavior is a function of the person and the environment" (B=f(P,E)).The research reveals important patterns. The formation of individual learning motivation is not an isolated cognitive process. Rather, it is deeply embedded in group contexts. It is profoundly influenced by group dynamics elements such as group norms, group identity, and group cohesion. Specifically, group norms shape individual motivation levels through social comparison and conformity mechanisms. Students in high norm intensity classes had intrinsic motivation scores 17.9% higher than low norm classes. This finding confirms the constructive role of group

norms as "social reality" on individual psychology[46].Group identity serves as a psychological bond between individuals and collectives. It drives learning behavior by providing a sense of belonging and value significance. The research found that teacher professional identity played a significant mediating role between policy perception and learning motivation. The mediating effect accounted for 34.6% of the total effect. This indicates that policy support needs to be transformed into intrinsic motivation by strengthening collective identity. Group cohesion is a core element of group dynamics. It not only directly enhanced learning motivation ($\gamma=0.31$, $p<0.001$). More importantly, it significantly moderated the impact of policy perception on motivation ($\gamma=0.15$, $p<0.01$). In high cohesion classes, the effect of policy perception was nearly twice that of low cohesion classes. This interaction effect reveals the amplifying effect of group contexts on individual cognitive processing[47].Cross-level analysis further confirmed these patterns. 15.8% of motivation variance existed at the class level. Group dynamics elements explained 78.6% of between-class differences. These findings break through the limitations of traditional individualistic perspectives. They demonstrate the shaping power of group contexts as a "force field" on members' psychology and behavior. This study not only validates the applicability of classical group dynamics theory in contemporary educational contexts. More importantly, it reveals the key role of group dynamics mechanisms in learning motivation formation under a collectivist cultural background. This provides a new theoretical perspective for educational management practice.

5.2. Deep mechanisms of the relationship between learning motivation and policy perception

The relationship between policy support perception and learning motivation is not simply a linear correlation. It involves complex psychological mechanisms and motivation transformation processes. From the perspective of self-determination theory, policy support promotes motivation by satisfying three basic psychological needs: autonomy, competence, and relatedness. The differentiated influence pattern found in this study reflects this mechanism. Economic support and employment security mainly satisfy safety needs. Therefore, they promote extrinsic motivation more ($\beta=0.32$ and 0.29). Professional development support and development prospect perception satisfy competence and autonomy needs. They more effectively stimulate intrinsic motivation ($\beta=0.26$ and 0.22)[48].This finding reveals the dual pathway of policy effects. Material support reduces survival anxiety and thus releases psychological resources for learning. Development-oriented support directly endows learning with meaning and value. The mediating role of teacher professional identity further clarifies the psychological process of motivation internalization. Policy support first strengthens individual identification with the teaching profession ($\beta=0.54$). This makes individuals internalize the professional role as part of their self-concept. This then produces learning behaviors consistent with the role ($\beta=0.34$). This transformation chain of "external support → identity identification → intrinsic motivation" reflects the motivation internalization process from external regulation to identified regulation and integrated regulation[49].The moderating effect of group cohesion reveals the amplification mechanism of social contexts on motivation formation. In high cohesion groups, policy information is fully disseminated and shared through frequent interactions among members. Group members form consensual evaluations of policies through social comparison and collective discussion. This social validation process enhances the certainty and credibility of policy perception. This amplifies its impact on motivation. Additionally, the emotional support and sense of belonging provided by high cohesion groups themselves satisfy relatedness needs. This creates a favorable psychological environment for motivation internalization. The stronger mediating effect among ethnic minority students ($\beta=0.22$ vs 0.15) suggests the role of cultural values in motivation formation. Collectivist tendencies make them place more emphasis on group identity and social roles. Therefore, the influence of professional identity on motivation is more significant. These findings jointly reveal important processes. The formation of learning motivation results from the interactive

effects of multiple factors: policy support, psychological need satisfaction, identity identification, and group contexts.

6. Conclusion

This study systematically examined the relationship between learning motivation and policy support perception among government-funded normal university students in ethnic minority institutions based on group dynamics theory. The main conclusions are as follows:

(1) Group dynamics elements significantly influenced learning motivation formation. Group norms, group identity, and group cohesion explained 18.5%, 23.2%, and 21.4% of motivation variance respectively. This verified the core role of group contexts in individual psychological development.

(2) Policy support perception showed a significant positive correlation with learning motivation ($r=0.52$, $p<0.001$). Different policy dimensions had differentiated impacts on different motivation types. Material support mainly promoted extrinsic motivation. Development-oriented support better stimulated intrinsic motivation.

(3) Teacher professional identity played a partial mediating role between policy perception and learning motivation. The mediating effect accounted for 34.6% of the total effect. This revealed the transformation mechanism of "external support → identity identification → intrinsic motivation."

(4) Group cohesion significantly moderated the impact of policy perception on learning motivation ($\gamma=0.15$, $p<0.01$). The policy effect in high cohesion classes was 1.94 times that in low cohesion classes. This confirmed the amplifying effect of group contexts.

(5) The integrated structural equation model showed good fit (CFI=0.95, RMSEA=0.048). It explained 58.7% of the variance in learning motivation. A complete theoretical framework was constructed. This framework included direct effects, mediating effects, and moderating effects. It provided empirical evidence for educational management based on group dynamics.

This study has the following limitations: (1) Cross-sectional data cannot establish causal relationships; (2) Self-report measures may suffer from common method bias. Although Harman's single-factor test showed that the first factor explained 28.3% of the variance (<40% threshold), and we controlled for a marker variable (social desirability), future research is still recommended to employ longitudinal designs and multi-source data for robustness checks.

Conflict of interest

The authors declare no conflicts of interest.

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