Teachers' Self-Leadership and Organizational Citizenship Behavior: Mediating Role of Self-Efficacy in China High Schools

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Abstract

This research investigates the impact of teachers' self-leadership skills (TSLS) on their organizational citizenship behavior (OCB), with teacher self-efficacy (TSE) serving as a mediator in the context of star-rated high schools in Guangxi Province, China. The primary objective was to assess the impact of self-leadership on Organizational Citizenship Behavior (OCB) and investigate the role of teacher self-efficacy as a mediator in this relationship. This study employs a quantitative method involving 588 samples collected through a questionnaire survey. The Data Analysis was done using structural equation modeling with AMOS 26.0 (SEM-AMOS). From this analysis, significant evidence has been found in the interconnectedness of variables. Teachers' self-leadership competencies have a positive and substantial contribution to self-efficacy (standardized estimate = 0.413, $p < 0.001$), supporting Hypothesis H1. Additionally, the self-leadership skill has a significant positive correlation with OCB (standardized estimate = 0.302, $p < 0.001$), supporting Hypothesis H2. Teacher self-efficacy plays a strong role in OCB (standardized estimate = 0.423, $p < 0.001$), supporting Hypothesis H3. Finally, the mediating effect of self-efficacy was significant, and the indirect effect of self-leadership on OCB via self-efficacy was 0.175 ($p < 0.001$), which explained 36.65% of the total effect. The total effect of TSLS on OCB was 0.477 ($p < 0.001$), with 63.35% of this effect being due to the direct effect. This means that teachers' self-leadership capacity not only affects their organizational citizenship behavior directly but also indirectly through the consolidation of their self-efficacy. This research, thus, concludes that the development of teachers' self-leadership capacity can enhance their value contributions to schools. It would be ideal for schools to launch programs that build teachers' self-leadership competence, thereby fostering organizational citizenship behavior and overall school effectiveness.

Keywords: teachers' self-leadership skills, organizational citizenship behaviors, self-efficacy, mediation analysis, star-rated high schools

1. Introduction

Education represents a key driver of national modernization and is an essential mechanism for achieving national prosperity. Senior high school education serves as a transitional pathway for developing talents to pursue higher education (Jiang & Qin, 2023), implementing system-level reforms aligned with China's evolving human capital development goals within the "New-Quality Productive Forces" (NQPF) initiative (Zhang, 2024). These reforms—specifically, the novel assessments related to the restructuring of the National College Entrance Examination (Gaokao) (Cheng & Hamid, 2025) require paradigm shifts in pedagogies and governance structures, creating challenges for high school leaders (Jian, 2020; You & Hu, 2013). The Chinese government's promulgation of the Outline of the Plan for Building a Powerful Education Nation (2024-2035) delineates strategic directives for senior high school education, mandating a transition toward "high-quality, innovative, and autonomous" institutional paradigms. This transformation requires educators to move beyond traditional instructional responsibilities by actively engaging in curriculum innovation, student development guidance, and participatory school governance (Xu, 2022). These informal responsibilities, although challenging to integrate into individual performance evaluations

during reforms, support organizational development and are encompassed in teachers' organizational citizenship behavior (TOCB).

TOCB refers to teachers' acts beyond their formal responsibilities, which support improvements in the school's overall functioning or student development (Gnanarajan et al., 2020; Ma et al., 2010; Somech, 2016). However, research has shown that externally driven management, in traditional terms, is not an effective way to sustain teachers' intrinsic motivation to engage in this behavior, prompting scholars to examine teachers' internal drive mechanisms as a means of understanding their impact on the world and their organizational citizenship behavior (Berkovich, 2024; Bismala et al., 2024; Knotts & Houghton, 2021). Among these teachers' self-efficacy (TSE) their confidence and belief in their ability to complete teaching tasks successfully. According to Bandura's (1977) social cognitive theory, self-efficacy is an individual's judgment of their ability to perform a specific task, influenced by factors such as personal experience, observation of others' behavior, and social persuasion (Bandura & Walters, 1977). Numerous studies have shown that teachers' self-efficacy has a significant impact on their teaching behavior and student academic performance. Crucially, TSE also has a direct effect on organizational citizenship behavior and often acts as an intermediary, converting other factors into the intrinsic motivation needed for TOCB. This mediating role of self-efficacy is pivotal; if teachers' belief in their capabilities can be strengthened, their motivation to contribute beyond their formal duties is likely to increase. Consequently, the focus of inquiry shifts toward identifying practical, self-driven strategies that can cultivate a robust sense of self-efficacy in teachers. Teachers with high self-efficacy are more likely to use positive teaching strategies to improve student achievement (Tschannen-Moran & Hoy, 2001). Teachers' self-efficacy plays a crucial role in their organizational citizenship behavior, with much research confirming its direct impact (Choong & Ng, 2024; Gnanarajan et al., 2020). Moreover, self-efficacy often acts as an intermediary, converting internal and external factors into intrinsic motivation for organizational citizenship behavior. Also included is Self-leadership, a proactive self-influence process, is widely recognized for its potential to help individuals succeed in their fields (Houghton & Neck, 2002). Self-efficacy is also considered one of the most common outcome variables of self-leadership (Goldsby et al., 2021).

It is in this context that teachers' self-leadership skills (TSLS) emerge as a critical area of investigation. Teachers' self-leadership skills (TSLS) refer to the skills that enable teachers to guide and manage themselves in educational settings, grounded in self-leadership theory. This theory emphasizes achieving goals through self-direction and self-motivation. Neck & Houghton (2006) defined self-leadership as "the process by which individuals influence themselves to behave and perform in an ideal way." It is a key part of teachers' skills, helping them adapt to changing educational environments (Matahela & Van Rensburg, 2021). Self-leadership skills consist of three complementary strategy categories: behavior-centered, natural rewards, and constructive thinking patterns. People employ these strategies to regulate their actions and thoughts, thereby achieving personal and organizational goals (Neck et al., 2017; Neck & Houghton, 2006). These strategies are based on Bandura's (1977) social learning theory, which states that both external factors and personal self-regulatory processes influence behavior. Self-leadership strategies are designed to boost an individual's sense of control and competence, which directly enhances self-efficacy, one of the most common outcomes of effective self-leadership. This paper refers to Ho & Nesbit (2014) self-leadership model, which is based on three strategies and comprises 11 factors as applied in the Chinese context. This model will be tested in the paper. Previous studies have shown that teachers' self-leadership is significantly related to self-efficacy (Munawaroh et al., 2021; Özdemir, 2020) and organizational citizenship behavior (Bismala et al., 2024; Knotts & Houghton, 2021; Sesen et al., 2017). Self-efficacy is also considered a crucial variable influencing organizational citizenship behavior (Çelik & Konan, 2021; Choong & Ng, 2024; Ullah et al., 2021).

Therefore, there may be correlations between these three variables. Some scholars have studied their relationships in Malaysia and Indonesia (Mansor et al., 2013; Munawaroh et al., 2021). However, further research is needed in the Chinese context, especially in senior secondary schools. Guangxi, as one of the pilot provinces for college entrance examination reform in China, has star-rated high schools that play a key role in the development of high school education. These schools are at the forefront of implementing reforms and cultivating students' distinctive development, aiming to provide high-quality educational resources and a good learning environment. They also actively participate in educational reforms, exploring new teaching models and talent-cultivation methods to build a modern socialist country with firm talent reserves.

2. Literature Review and Hypotheses Development

2.1 Teachers' Self-Leadership Skills and Teachers' Self-Efficacy

According to self-leadership theory, teachers can enhance their self-efficacy through self-leadership skills. Neck &

Houghton (2006) noted that a key goal of self-leadership strategy is to boost self-efficacy and work performance. As self-control strengthens, individuals develop a more positive perception of their efficacy, thereby increasing self-efficacy (Ein-Gar & Steinhart, 2017). The stronger the teachers' self-leadership skills, the higher their self-efficacy (Kılıç et al., 2023). Some studies have confirmed the positive correlation between self-leadership and self-efficacy (Festa & Knotts, 2021; Khan et al., 2023; Kunz, 2023). Lucke & Furtner (2015) found that self-leadership training can increase participants' self-efficacy.

H1: TSLS has a significant positive impact on TSE.

2.2 Teachers' Self-Efficacy (TSE) and Teachers' Organizational Citizenship Behavior (TOCB)

Social cognitive theory posits that self-efficacy influences behavior, making individuals with high self-efficacy more likely to take positive actions to complete tasks (Bandura & Walters, 1977). In education, teachers with high self-efficacy are more likely to exhibit organizational citizenship behavior, with their OCB being more proactive (Dussault, 2006; Gnanarajan & Kengatharan, 2023). Teachers' self-efficacy can promote TOCB by influencing work attitudes and behaviors (Hidayat & Patras, 2013). Many studies have confirmed the significant positive correlation between TSE and TOCB (Choong & Ng, 2024; Gnanarajan & Kengatharan, 2023; Ullah et al., 2021).

H2: TSE has a significant positive impact on TOCB.

2.3 Teachers' Self-Leadership Skills (TSLS) and Teachers' Organizational Citizenship Behavior (TOCB)

Self-determination theory posits that intrinsic motivation is fundamental to OCB, and self-leadership can be utilized to enhance intrinsic motivation, thereby promoting OCB. (Deci & Ryan, 2008) theorized that teachers' self-leadership skills improve intrinsic motivation, subsequently increasing organizational citizenship behaviors (OCB). Some studies have confirmed the positive relationship between teachers' self-leadership and TOCB, with higher self-leadership resulting in higher proactive OCB (Knotts, 2018). TSLS can enhance TOCB through increasing intrinsic motivation (Bismala et al., 2024; Liu & Zhou, 2024).

H3: TSLS has a significant positive impact on TOCB.

2.4 Teachers' Self-Leadership Skills (TSLS), Teachers' Self-Efficacy (TSE), and Teacher Organizational Citizenship Behavior (TOCB)

The proposed model, which posits that teachers' self-efficacy (TSE) mediates the relationship between teachers' self-leadership skills (TSLS) and their organizational citizenship behavior (TOCB), is underpinned by an integration of complementary psychological theories. The overall framework is rooted in Bandura's (1977) Social Cognitive Theory, particularly the concept of triadic reciprocal causation, which suggests a continuous interaction between personal factors (like self-efficacy), external influences, and behaviors (like TOCB). The first stage of the path, TSLS → TSE, is explained by connecting Self-Leadership Theory with Social Cognitive Theory. Self-Leadership Theory describes the specific strategies (e.g., self-goal setting, self-reward) that individuals use to direct themselves; according to Social Cognitive Theory, the successful application of these strategies builds mastery experiences, which are the most powerful source for developing robust self-efficacy beliefs. The second stage, TSE → TOCB, is also explained by Social Cognitive Theory, which posits that individuals with high self-efficacy are more likely to initiate and persist in positive actions, including proactive behaviors that benefit the organization, such as TOCB. Finally, Self-Determination Theory complements this pathway by focusing on motivation. It suggests that the autonomy and competence fostered through self-leadership and high self-efficacy enhance teachers' intrinsic motivation, providing the underlying drive to voluntarily engage in TOCB. Together, these theories provide a comprehensive lens, clarifying how self-leadership fosters a belief in one's capabilities, which in turn motivates teachers to contribute beyond their formal duties.

In accordance with the triadic reciprocal causation framework of social cognitive theory, it is proposed that external, personal, and behavioral factors influence individual behavior. TSLS may influence TOCB indirectly through TSE. Prior research has demonstrated that teachers' self-efficacy mediates the connection between TSLS and OCB (Koo, 2022; Mansor et al., 2013), and other studies suggest that TSE moderates the relationship between TSLS and TOCB (Munawaroh et al., 2021). Thus, the following hypothesis is proposed:

H4: TSE has a mediating effect between TSLS and TOCB.

Based on the existing literature and the hypotheses regarding the relationships between teachers' self-leadership skills, self-efficacy, and organizational citizenship behavior, the following conceptual model is proposed.

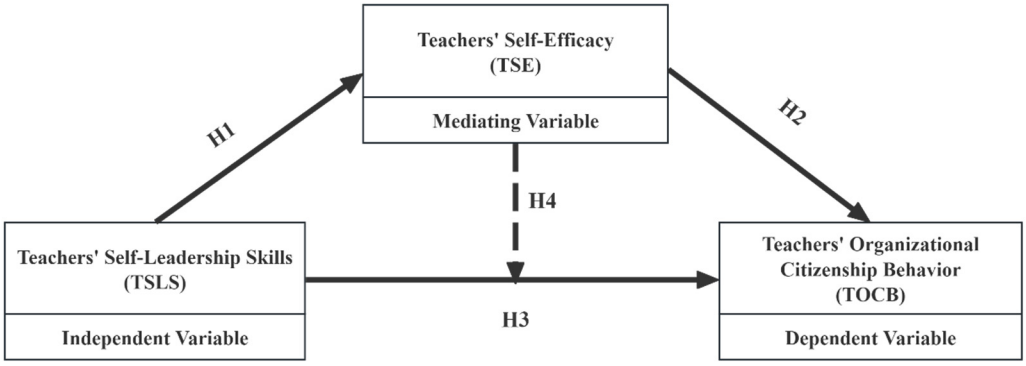

Figure 1. Conceptual Framework

3. Materials and Methods

3.1 Research Design

This study employed a quantitative, cross-sectional, and correlational research design to investigate the relationships among teachers' self-leadership skills (TSLS), teachers' self-efficacy (TSE), and teachers' organizational citizenship behavior (TOCB). A survey method was utilized to collect data at a single point in time from teachers in their natural school environment, making it a non-experimental design. This approach is appropriate for testing the hypothesized relationships and examining the predictive influence of TSLS on both TSE and TOCB without manipulating any variables. Data were gathered through a structured questionnaire, and the relationships within the proposed conceptual framework were analyzed using Structural Equation Modeling (SEM).

3.2 Participants

In this study, teacher samples were obtained from five-star high schools in Guangxi, China, through stratified random sampling. Before the survey, a pilot study was conducted with a sample of 188 teachers from these schools using convenience sampling. The full survey collected data from 600 teachers with more than one year of experience from 20 schools in Guangxi through stratified random sampling, resulting in 588 usable questionnaires.

3.3 Research Instrument

This study utilized a questionnaire as the principal instrument for data collection. The questionnaire comprised 94 questions, divided into four sections: demographic characteristics (5 questions), teachers' self-leadership skills (38 questions), teachers' self-efficacy (24 questions), and teachers' organizational citizenship behavior (27 questions). The demographic questions were focused on gender, age, educational level, teaching experience, and job title. The teachers' self-leadership skills scale was an adapted scale based on the RSLQ developed by (Houghton & Neck, 2002), the MSLQ developed by (Pintrich & De Groot, 1990), and (Wu, 2009) Chinese teacher leadership scale. This adapted teachers' self-leadership skills scale was grounded in the three interdependent strategies of self-leadership theory (behavior-focused, natural reward, and constructive thinking), with a total of 11 Teacher Self-determination Skills proposed: Individual-oriented evaluation of beliefs and assumptions (IEBS), Relation-based natural rewards (RNR), Self-goal setting (SGS), Task & relation-based self-observation (TSO), Task-based natural reward (TNR), Relation-based evaluation of beliefs and assumptions (REBS), Self-punishment (SP), Self-reward (SR), Self-talk (ST), Visualizing successful performance (VSP), and Self-cueing (SC). The 11 teachers' self-determination skills were adapted from MSLQ.

With regard to teachers' self-efficacy beliefs, the six dimensions (Instruction (IN), Adapting Education to Individual Students' Needs (AEIN), Motivating Students (MS), Keeping Discipline (KD), Cooperating with Colleagues and Parents (CWCP), Coping with Changes and Challenges (CWCC)), as adapted from Skaalvik & Skaalvik (2007)'s teacher self-efficacy scale, represented Chinese context. For the teachers' organizational citizenship behavior scale, Wang (2009) provided seven dimensions (Caring about Students' Thoughts and Communication (CSTC), Personal initiative in Assisting Colleagues (PI), Caring about Students' Lives and Learning (CSLL), Protecting and Conserving School Resources (PCSR), Self-improvement (SI), Supporting and maintaining the school's image (SMSI)). This scale has been previously validated for consistency in terms of reliability and validity in the Chinese educational context (Deng (2020); Xuan (2017); Geng (2017)). To validate and ascertain reliability, a content validity

analysis was conducted with six experts in educational management, and all items were deemed acceptable. To assist respondents' understanding of the content validity analysis, a bilingual questionnaire was used. The translation and back-translation procedures, in accordance with Brislin's (1980) methods, were completed by experts in English and Chinese. In addition, participants were asked to respond to all questionnaire items via a 5-point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree), except for the demographic items.

3.4 Validity and Reliability of Research Instrument

To determine the Validity and Reliability of the research instrument, a pilot test was conducted with 188 teachers from star-rated secondary schools. The teachers completed the test, which utilized exploratory factor analysis for validity and Cronbach's alpha, along with item factor loading, for reliability. For self-leadership skills, the pilot study results showed Cronbach's alpha values in the range of 0.823 to 0.885, with a KMO of 0.755, and factor loadings greater than 0.690. In terms of self-efficacy for teachers, the results showed that Cronbach's alpha ranged from 0.871 to 0.908, KMO was 0.774, and the factor loadings were greater than 0.694. In terms of the organizational citizenship behavior of teachers, the results showed Cronbach's alpha values in the interval of 0.862 – 0.919, with a KMO of 0.811 and factor loadings above 0.777. These findings demonstrate the validity and reliability of the scales employed in the research (Hair, 2009).

3.5 Data Collection and Processing Method

Stratified random sampling was employed to collect data from teachers in 20-star-rated secondary schools in the Guangxi region. It was made clear to them that their participation was voluntary and that anonymity, confidentiality, and evaluative purposes would be upheld in a non-biased manner.

The evaluation will utilize structural equation modeling to examine the relationships between the three variables, with data analysis conducted in SPSS 25.0 and AMOS 26.0, applying a 5% significance level for all analyses. Confirmatory factor analysis will be performed to determine the validity of the measurement tools. The model fit indices will include RMSEA, RMR, IFI, CFI, and TLI. Structural equation modeling and bootstrapping will be applied to assess the mediating effects for the parameters set by the model in this study, including testing for statistically significant mediation within the parameters established by this study.

4. Results

4.1 Descriptive Statistics and Correlations

To prevent the impact of insufficient work experience on the results, respondents were required to have over one year of teaching experience. This study gathered 588 valid questionnaires. Female respondents (406, 69.05%) outnumbered male respondents (182, 30.95%), which is consistent with the demographic structure of high school teachers in China. In terms of age, the majority of the respondents were between 31 and 40 years old (39.63%), and a significant proportion had 11 to 15 years of teaching experience (27.89%). The table below outlines the demographic characteristics of the sample.

Table 1. Demographic Information

Variable	option	Frequency	Percent
Gender	Male	182	30.95%
	Female	406	69.05%
Age	≤30	115	19.56%
	31-40	233	39.63%
	41-50	171	29.08%
	>50	69	11.73%
Years of teaching	1-5years	67	11.39%
	6-10years	126	21.43%
	11-15years	164	27.89%
	16-20years	133	22.62%
	>20years	98	16.67%

Confirmatory factor analysis (CFA) was conducted, which helps verify whether the existing model aligns with the original factor structure (Suhr, 2006). The data collected were then assessed to determine whether there were extreme values, and in this case, none were found. In addition, the skewness and kurtosis of each subdimension were also examined. All values were in the range of -1.5 to +1.5, indicating that the data met the requirements of a multivariate normal distribution (Hu & Bentler, 1999). Furthermore, when examining the correlation value, no relationship was detected, indicating potential multicollinearity. Thus, the data collected was considered appropriate (Tabachnick & Fidell, 2007).

4.2 Measurement Model Analysis

4.2.1 Fit of Measurement Model

The confirmatory factor analysis (CFA) results indicate an acceptable model fit for the three variables. TSLS has an X^2/Df of 2.620, RMSEA of 0.053, and IFI, TLI, and CFI values of 0.960, 0.957, and 0.960, respectively. TSE shows an X^2/Df of 2.358, an RMSEA of 0.048, and IFI, TLI, and CFI values of 0.967, 0.963, and 0.967, respectively. TOCB has an X^2/Df of 2.348, an RMSEA of 0.048, and IFI, TLI, and CFI values of 0.967, 0.963, and 0.967, respectively.

Moreover, the overall measurement model, comprising these three variables, also demonstrates an excellent fit, with an X^2/Df of 1.552, an RMSEA of 0.031, and IFI, TLI, and CFI values of 0.958. These results suggest that all three variables and the overall measurement model have good fit and reliability, providing a solid foundation for subsequent analysis. In the evaluation of model fit goodness, an X^2/Df less than 5, RMSEA less than 0.08, and IFI, TLI, and CFI greater than 0.9 all indicate good model fit (Peugh et al., 2023; Ryu, 2014)

Table 2. Model Fit of TSLS, TSE, TOCB, and Measure Model

	X^2	Df	X^2/Df	RMSEA	IFI	TLI	CFI
TSLS	1713.477	654	2.620	0.053	0.960	0.957	0.960
TSE	580.140	246	2.358	0.048	0.967	0.963	0.967
TOCB	744.241	317	2.348	0.048	0.967	0.963	0.967
Measure model	5895.989	3800	1.552	0.031	0.958	0.957	0.958
Criterion	-	-	<5	<0.08	>0.9	>0.9	>0.9

4.2.2 Validity of the Measurement Model

AMOS 26.0 was used to perform a confirmatory factor analysis to assess the model's construct validity. According to Table 6, all variables exhibited standardized factor loadings greater than 0.7, indicating that the measurement items effectively captured the latent variables. The values of composite reliability (CR) also exceeded the benchmark of 0.7, with scores ranging from 0.939 to 0.970 (Tabachnick & Fidell, 2007). The scale's strong convergent validity was supported by the average variance extracted (AVE), which measured between 0.63 and 0.859, surpassing the 0.5 threshold (Bagozzi & Yi, 1988).

Table 3. Convergent Validity Analysis

Path relationship			Factor loading	CR	AVE
VSP	<---	TSLS	0.868	0.97	0.749
SGS	<---	TSLS	0.845		
ST	<---	TSLS	0.872		
SR	<---	TSLS	0.868		
SP	<---	TSLS	0.876		
SC	<---	TSLS	0.844		
TNR	<---	TSLS	0.881		
RNR	<---	TSLS	0.873		
TSO	<---	TSLS	0.859		

Table 3. Convergent Validity Analysis(continued)

Path relationship			Factor loading	CR	AVE
IEBS	<---	TSLS	0.876		
REBS	<---	TSLS	0.861		
IN	<---	TSE	0.87	0.939	0.719
AEIN	<---	TSE	0.873		
MS	<---	TSE	0.843		
KD	<---	TSE	0.831		
CWDP	<---	TSE	0.853		
CWCC	<---	TSE	0.817		
CSLL	<---	TOCB	0.911	0.953	0.744
CSTC	<---	TOCB	0.875		
SI	<---	TOCB	0.866		
PI	<---	TOCB	0.841		
AC	<---	TOCB	0.842		
PCSR	<---	TOCB	0.85		
SMSI	<---	TOCB	0.851		

The discriminant validity of the model can be tested by comparing the square roots of the AVE with the correlation coefficients among latent variables. As shown in Table 4, the square roots of the AVE (on the diagonal) for all latent variables are greater than their correlations with other latent variables. This indicates significant differences among the measurement items and confirms that the discriminant validity of each latent variable is acceptable.

Table 4. Discriminant Validity Analysis

	TSLS	TSE	TOCB
TSLS	**0.865**		
TSE	0.413	**0.848**	
TOCB	0.477	0.548	**0.863**

Note: The bold-faced fonts represent the square roots of AVE.

4.3 Structural Model Verification

The present research aims to investigate the impact of teachers' self-leadership skills on their self-efficacy and organizational citizenship behavior. To this end, a structural equation model was constructed to represent the relationship among these three variables, as shown in Figure 2.

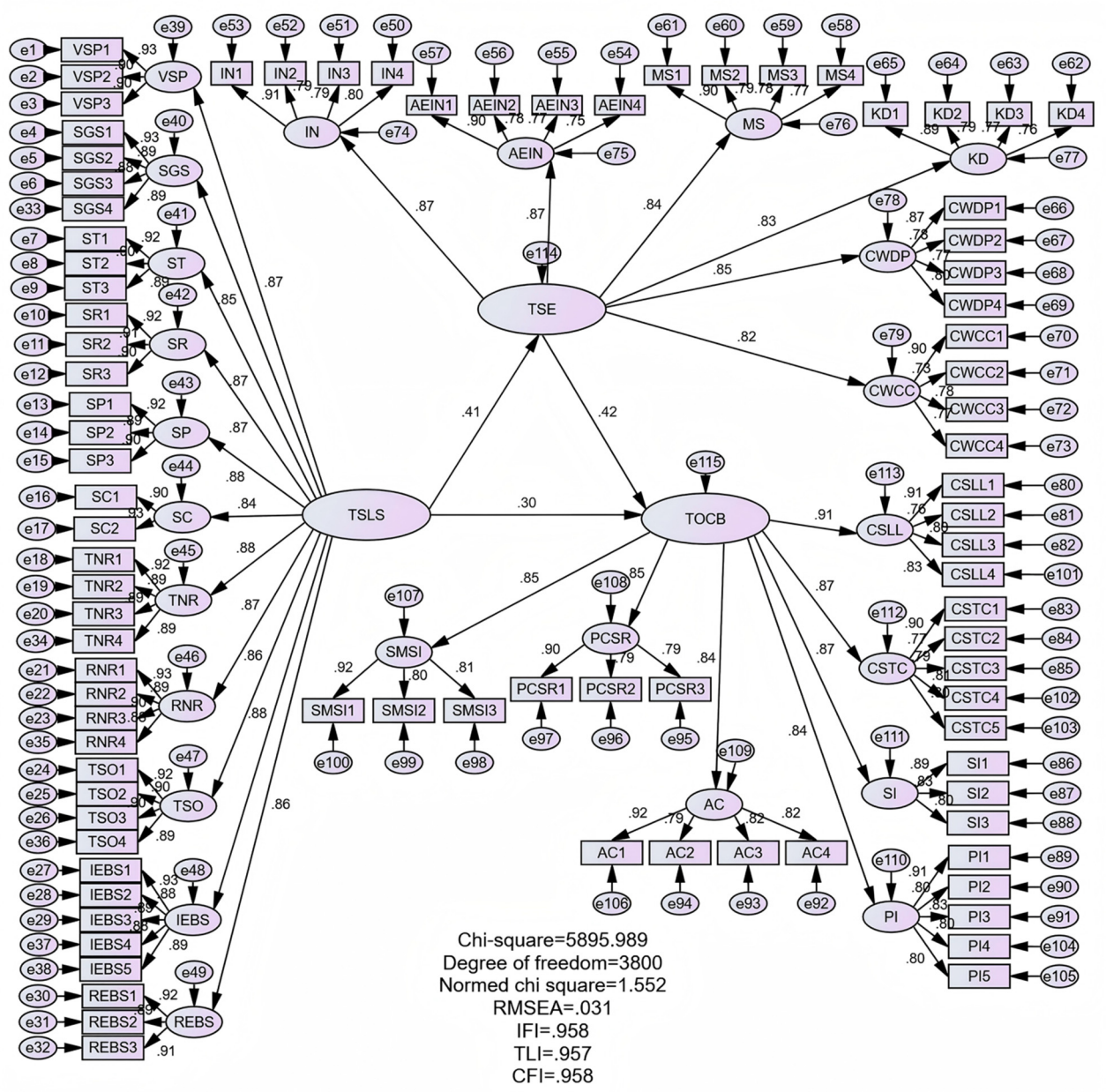

Figure 2. Path Diagram for the Model Created

4.3.1 Verification of Model Fit

The structural model integrates TSLS, TSE, and TOCB with three latent variables and 24 observed ones. Fit indices about the structural model are provided in Table 3. The fitting of a structural model produced a chi-square of 5895.989 when the freedom's degree was set at 3800. Other fit indices, including CFI = 0.958, TLI = 0.957, and IFI = 0.958, which exceed the 0.9 threshold, also confirmed a statistically reasonable fit. With the value of 0.031, the RMSEA is below the more conservatively set limit of .08 (Hu & Bentler, 1999), suggesting a close fit instead. The ratio of the chi-square to degrees of freedom is 1.552, which is below the five thresholds, thus confirming that we met the standard for a well-fitting model. Most of the model fit criteria suggest that the overall fit of the model is acceptable.

4.3.2 Verification of Direct Effect

The proposed structural model revealed acceptable fit indices and was therefore deemed a suitable representation of

the observed data. A number of direct effects between latent variables contained within the study model were evaluated through Regression values, standard error, and critical ratio and are presented in Table 5.

Table 5. Regression Values, Standard Error, and Critical Ratio

Path relationship			Std. estimate	Estimate	S.E.	C.R.	P-value
TSLS	--->	TSE	0.413	0.242	0.027	9.116	0.000
TSLS	--->	TOCB	0.302	0.258	0.035	7.334	0.000
TSE	--->	TOCB	0.423	0.617	0.066	9.354	0.000

As shown in the table above, TSLS has a significant positive influence on TSE, with an influence coefficient of 0.413 and a P-value less than the significance critical level of 0.05. Therefore, Hypothesis H1 holds. TSLS has a significant positive influence on TOCB, with an influence coefficient of 0.302 and a significance P-value less than the significance critical level of 0.05. Therefore, Hypothesis H2 holds. TSE has a significant positive influence on TOCB, with an influence coefficient of 0.423 and a significance P-value less than the significance critical level of 0.05. Therefore, Hypothesis H3 holds.

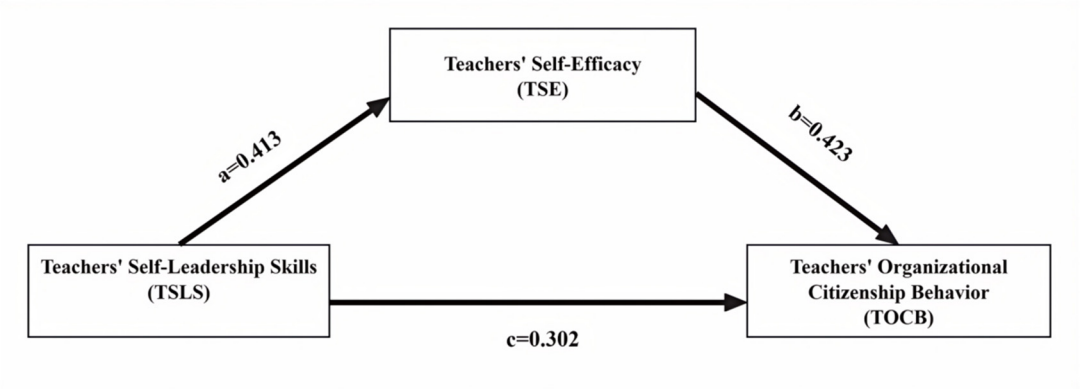

Figure 3. Path Relationship

4.3.3 Mediating

In this study, to test the mediating effect of teachers' self-efficacy (TSE) between teachers' self-leadership skills (TSLS) and teachers' organizational citizenship behavior (TOCB), the Bootstrap method was used. Specifically, we drew 5,000 Bootstrap samples, as suggested by (Hayes, 2013), to estimate the 95% confidence interval, with results presented in the table below.

Table 6. Results of Indirect Effects

	Effect	BootLLCI	BootULCI	P	Percent
Total effect	0.477	0.326	0.487	0.000	-
Direct effect	0.302	0.19	0.331	0.000	63.35%
Indirect effect	0.175	0.099	0.211	0.000	36.65%

The results show a significant total effect of teachers' self-leadership skills on their organizational citizenship behavior (0.477, $p < 0.001$), indicating a positive predictive relationship. The direct effect is 0.302 ($p < 0.001$), accounting for 63.35% of the total effect. This means teachers' self-leadership skills can directly drive more organizational citizenship behaviors, such as helping colleagues and engaging in school activities.

Additionally, the indirect effect of teachers' self-leadership skills on organizational citizenship behavior, mediated by teachers' self-efficacy, is 0.175 ($p < 0.001$), accounting for 36.65% of the total effect. This implies that higher self-leadership skills enhance teachers' self-efficacy, which in turn promotes their organizational citizenship behavior. When teachers possess strong self-leadership skills, they often exhibit higher self-efficacy, which provides them with the confidence and motivation to engage in organizational citizenship behavior.

The confidence intervals for the total effect (0.326-0.487), direct effect (0.19-0.331), and indirect effect (0.099-0.211)

all exclude zero, confirming the significance of these effects.

As the table shows, the mediating effect of TSLS→TSE→TOCB is 0.175. The confidence interval does not include 0, and the p-value is less than 0.05, indicating a statistically significant mediating effect. Thus, Hypothesis H4 is verified.

In summary, teachers' self-leadership skills not only directly promote organizational citizenship behavior but also indirectly enhance it through increased teacher self-efficacy. This finding offers educational managers valuable insights. By developing teachers' self-leadership skills, work behaviors can be directly improved, and through increased self-efficacy, greater positive contributions to schools can be fostered. All four hypotheses of this study are supported, as shown in Table 7, the Summary of Hypotheses Findings.

Table 7. Summary of Hypotheses Findings

NO.	Hypothesis	Results
H1	TSLS has a significant positive impact on TSE.	Supported
H2	TSE has a significant positive impact on TOCB.	Supported
H3	TSLS has a significant positive impact on TOCB.	Supported
H4	TSE has a mediating effect between TSLS and TOCB.	Supported

5. Discussion

This study investigated the relationships among star-rated high school teachers' self-leadership skills, self-efficacy, and organizational citizenship behavior. While self-leadership skills are known to influence teachers' behavior and organizational performance (Sesen et al., 2017), research on their specific impact on teachers' organizational citizenship behavior has been limited (Knotts & Houghton, 2021). This study tested the hypothesis that teachers practicing self-leadership skills are more likely to voluntarily exhibit organizational citizenship behavior and examined the mediating role of teacher self-efficacy in this relationship. The results indicate that self-leadership skills have a positive effect on teachers' organizational citizenship behavior, with self-efficacy acting as a mediator. The study's findings confirmed H1: teachers' self-leadership skills affect their self-efficacy, aligning with previous research (Ibus, 2021; Kılıç et al., 2023; Özdemir, 2020). When teachers utilize self-leadership skills for self-regulation, they develop stronger beliefs and confidence in their abilities, which in turn leads to more positive teaching behaviors and higher performance. Thus, teachers with self-leadership skills are more likely to have higher self-efficacy (Hussain & Khan, 2022), consistent with Neck & Houghton (2006) view that the natural reward strategy and positive thinking patterns in self-leadership skills enhance teachers' beliefs and confidence. Self-efficacy, a common outcome of self-leadership skills, is confirmed in this study to be promoted by teachers' self-leadership skills in China's educational context.

This study's results support H2, which states that teachers' self-efficacy can significantly impact their organizational citizenship behavior. School managers can enhance teachers' enthusiasm and sense of belonging regarding school affairs, encouraging them to voluntarily go beyond their basic duties and exhibit more organizational citizenship behavior (Choong et al., 2024; Choong & Ng, 2024). These findings also support Deci (1972) view that intrinsic task motivation primarily stems from perceiving the value and impact of one's work, and that enhancing competence and autonomy can further strengthen this motivation, leading to more positive behaviors.

The results confirm H3, aligning with prior studies that show a significant positive link between teachers' self-leadership skills and organizational citizenship behavior (Zhou & Huang, 2025). This study validates the relationship between self-leadership skills and teachers' organizational citizenship behavior, indicating that self-leadership skills can encourage teachers to increase such behavior. Moreover, it extends existing research on enhancing teachers' organizational citizenship behavior by showing that developing teachers' self-awareness and self-regulation can effectively boost this behavior. Consistent with past research, teachers practicing self-leadership skills can better respond to environmental changes and positively influence external behaviors (Konuk, 2017). This may be because practicing self-leadership skills strengthens teachers' self-motivation, leading to more organizational citizenship behavior (Munawaroh et al., 2021).

The findings support H4, showing that teachers' self-efficacy partially mediates the relationship between self-leadership skills and organizational citizenship behavior. When teachers practice self-leadership skills, they gain stronger beliefs and confidence, feeling they can contribute more to organizational development and thus exhibit more organizational citizenship behavior. These results align with the empirical research of (Koo, 2022) and

Munawaroh et al. (2021). Although some studies have explored the impact of self-leadership skills on teachers' organizational citizenship behavior, research in China's educational context is limited, and the mediating role of teachers' self-efficacy has been overlooked. Therefore, this study expands prior research by confirming the partial mediating effect of teachers' self-efficacy on the relationship between self-leadership skills and organizational citizenship behavior. In addressing the broader scientific context, it is also necessary to provide an explanation regarding possible controversies. A key controversy in this field revolves around whether the influence of internal psychological states, like self-efficacy, is overshadowed by powerful situational pressures (Crane et al., 2017). For example, one could argue that in a high-stakes educational environment like that created by China's Gaokao reform, teachers' behaviors are dictated primarily by external demands. In this view, a teacher's personal belief in their capabilities (TSE) might not translate into extra-role behaviors (TOCB) because all their efforts are channeled towards mandated teaching tasks, rendering the mediating pathway ineffective. However, the findings from this study provide a compelling counterargument. By demonstrating that TSE significantly mediates the relationship between TSLS and TOCB even within this high-pressure context, this research suggests that the pathway is robust. It supports the position that self-leadership and the resulting self-efficacy are not negated by external pressures but may in fact equip teachers with the resilience and intrinsic motivation necessary to engage in TOCB. Through self-leadership skills, teachers develop stronger beliefs, confidence, autonomy, and competence, which in turn prompts them to exhibit more organizational citizenship behavior. These findings deepen our understanding of the underlying mechanisms of how self-leadership skills affect teachers' organizational citizenship behavior.

6. Conclusions

In summary, this study significantly expands the research on self-leadership skills in China's education system. It finds that teachers' self-leadership skills are positively related to their self-efficacy and organizational citizenship behavior, which is consistent with studies conducted in other cultural contexts. Thus, these findings can be extended to China's cultural context, promoting the cross-cultural adoption of self-leadership skills, especially in education. However, this study has limitations. The research was conducted only in star-rated high schools in Guangxi province, which may limit the generalizability of the findings to other types of schools or regions in China. Additionally, the cross-sectional design does not allow for causal inferences. Future research should include a more diverse sample and employ a longitudinal design to validate these findings.

The findings have important practical and policy implications for educational reform in China, particularly in light of the "New-Quality Productive Forces" initiative and the ongoing evolution of the National College Entrance Examination. Given that teachers' self-leadership enhances their organizational citizenship behavior both directly and indirectly through self-efficacy, it would be beneficial for schools to implement programs aimed at developing these skills. Such initiatives could foster greater intrinsic motivation and proactive engagement from teachers, supporting the transition to "high-quality, innovative, and autonomous" institutional models as mandated by the government. By cultivating self-leadership, schools can better equip teachers to handle the challenges of educational reform, thereby improving overall school effectiveness and helping to build a strong talent reserve for the nation.

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Authors contributions

Mr. GY, Dr. FKCY, and Dr. AA were responsible for study design. Dr. FKCY and Dr. AA was responsible for supervising. Mr GY and Mr HAM was responsible for data collection. Mr. GY, Dr. FKCY, dan Dr. AA drafted the manuscript and Mr. HAM revised it. All authors read and approved the final manuscript. In this paragraph, also explain any special agreements concerning authorship, such as if authors contributed equally to the study.

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