

The Impact of Personal Motivation on Volunteering Service Behaviour Among Public University Students in Heilongjiang Province, China: The Mediating Role of Volunteering Service Intention

SongQingnan^{1,2}, Mohd Shukri Bin Ab Yajid^{3*}, Jacqueline Tham⁴

¹. SongQingnan, PhD candidate, Faculty of Business Management and Professional Studies, Graduate School of Management GSM), No 4, University Drive, Off Persiaran Olahraga, Seksyen 13, 40100 Shah Alam, Selangor, Malaysia.

². SongQingnan, Lecturer, Qiqihar University, Qiqihar161006, Heilongjiang Province, China.

³. Ab Yajid, Mohd Shukri, Professor, Faculty of Business Management and Professional Studies, Graduate School of Management GSM), No 4, University Drive, Off Persiaran Olahraga, Seksyen 13, 40100 Shah Alam, Selangor, Malaysia.

⁴. Tham, Jacqueline, Associate Professor, Faculty of Business Management and Professional Studies, Graduate School of Management GSM), No 4, University Drive, Off Persiaran Olahraga, Seksyen 13, 40100 Shah Alam, Selangor, Malaysia.

HOW TO CITE: ABSTRACT

Song Qingnan, Mohd Shukri Bin Ab Yajid, Jacqueline Tham (2026). The Impact of Personal Motivation on Volunteering Service Behaviour Among Public University Students in Heilongjiang Province, China: The Mediating Role of Volunteering Service Intention. International Journal of Special Education, 41(22s), 1192 - 1213

This study develops and validates an integrated structural model to examine youth volunteerism among undergraduates in Heilongjiang Province. Drawing on Self-Determination Theory (SDT) and the Theory of Planned Behaviour (TPB), the model explores the direct and indirect effects of personal motivation on volunteering service intention and behaviour. Survey data from 521 students were analysed using structural equation modelling (SEM) in Amos with bias-corrected bootstrapping. Measurement testing confirmed robust reliability and validity, with the structural model demonstrating excellent fit (CMIN/df=1.334, RMSEA=0.025, GFI=0.940). Structural path analysis revealed that personal motivation significantly and positively influences both service intention ($\beta=0.823, p<0.001$) and actual service behaviour ($\beta=0.354, p<0.001$), while service

intention directly predicts service behaviour ($\beta=0.476, p<0.001$). Mediation analysis confirmed that volunteering service intention acts as a complementary partial mediator, accounting for 60.31% of the total effect ($IDE=0.538, Total\ Effect=0.892$).

Theoretically, this study extends TPB and SDT by demonstrating that volunteering service intention serves as a key psychological transmission mechanism through which multidimensional personal motivation translates into sustained volunteer behaviour among Chinese university students. Practically, because intention carries more than 60% of the motivational impact, higher education administrators optimizing "Second Classroom" systems should strengthen commitment-building activities, foster volunteer identity development, and establish structured volunteer mentorship programs. Methodological limitations, including the cross-sectional design and regional sample, highlight the need for future longitudinal and multi-regional validation studies.

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the
terms and conditions
of the Creative Commons Attribution
(CC BY)
license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: Youth Volunteerism; Personal Motivation; Volunteering Service Intention; Volunteering Service Behaviour; Structural Equation Modeling; Second Classroom

1. Introduction

Voluntary service has emerged as a fundamental driver of global social development, functioning as a primary mechanism to strengthen social cohesion, enhance governance, and advance public welfare (Davies et al., 2024). Operating within the global frameworks outlined in the United Nations 2030 Agenda, national state authorities increasingly integrate volunteering into strategic civic action plans to build community resilience and resolve regional development crises. Parallel to these global trends, China's volunteer service sector has undergone a systemic transition from grassroots, informal initiatives toward deep standardization

and refinement. According to the China Volunteer Service Development Report, registered volunteers nationwide reached 232 million by 2023, reflecting an expanding trajectory of civil society participation and modern social civilization (Zhang, 2024). Within this national structure, higher education institutions serve as a vital incubator for youth volunteerism. In northeastern China, specifically in Heilongjiang Province, the institutionalized volunteer service framework has grown to encompass 5.284 million registered volunteers, with undergraduate students from public universities constituting the largest, most active, and academically specialized segment (Yang, 2021). These students contribute irreplaceable

human capital to essential public services, environmental conservation, and high-profile international events, including the Harbin China-Russia Expo and the Asian Winter Games (Yang, 2021).

Despite the growing scale of student registration, institutional youth volunteerism in Heilongjiang Province faces persistent structural constraints that severely impede sustainable development. Frontline voluntary practice is heavily plagued by a low rate of sustained participation, high volunteer attrition, and a prevalent "intention-behaviour gap". Undergraduate students frequently demonstrate a strong initial willingness to participate in high-profile, short-term experiential initiatives or event-based volunteering, yet they exhibit a critical lack of continuous engagement in regular, daily community services. This behavioural instability indicates that initial positive intentions are failing to transform into stable, long-term volunteering behaviour. According to Self-Determination Theory, this intention-behaviour breakdown primarily stems from ambiguous, inconsistent, or poorly regulated personal motivational orientations (Ryan & Deci, 2020). When university students lack autonomous motivation and operate under a fragmented mixture of intrinsic and extrinsic motivational drivers, their behavioural willingness becomes less stable and highly susceptible to academic pressure or time constraints. Insufficient intrinsic motivation not only depresses the stability of volunteering intentions but also accelerates emotional burnout, directly driving early withdrawal from continuous service (Zheng et al., 2021).

While international scholarship extensively validates that individual motivational quality is closely associated with stable volunteer identity formation and long-term prosocial outcomes, existing empirical research exhibits a significant geographic and theoretical imbalance. Quantitative analyses mapping Chinese university volunteer dynamics remain heavily concentrated within economically developed eastern and southern metropolitan regions (Wu et al., 2024). Few empirical studies have systematically unpacked the multi-dimensional internal motivational profiles of university students within the specific economic and geographic context of northeastern China, where high volunteer turnover routinely destabilizes local rural education, ecological conservation, and vulnerable group support systems. Furthermore, regional scholarship has historically evaluated personal motivations and participation outcomes in isolation, failing to test the exact internal mediating pathways operating through volunteering service intentions within a unified quantitative framework. Consequently, educational authorities and volunteer organizations lack the precise context-specific evidence required to transform perfunctory, mandatory mobilization into an autonomous, self-sustaining youth volunteer culture (Liu, 2024).

To resolve these empirical and practical omissions, this study establishes a targeted quantitative model to investigate the direct and indirect impacts of personal motivation on volunteering service behaviour among public university students in Heilongjiang Province, with volunteering service intention positioned as

the core mediating variable. Drawing upon the theoretical intersections of the Theory of Planned Behaviour and Self-Determination Theory, personal motivation is conceptualized as a multi-dimensional construct comprising six distinct functional dimensions: learning and understanding, career development, value expression, self-improvement, self-protection, and social interaction. By systematically collecting and analyzing empirical data from undergraduate cohorts across public higher education institutions in Heilongjiang, this research aims to accomplish three main objectives: first, to determine how specific motivational dimensions directly predict the execution of continuous volunteering behaviour; second, to evaluate the structural stability of students' volunteering service intentions under different motivational profiles; and third, to isolate the precise mathematical indirect pathways through which motivation shapes actual service behaviour via the mediating mechanism of service intentions (Chen & Su, 2025). Ultimately, the findings of this study seek to deliver evidence-based, actionable guidance for university administrations to optimize second-classroom credit systems, refine volunteer incentive frameworks, and effectively bridge the regional intention-behaviour gap.

2. Literature review

2.1 Theoretical Foundation

To explain how university students' volunteering motivations are translated into actual participation, this study integrates the Theory of Planned Behaviour (TPB) and Self-Determination Theory (SDT). The two

theories provide complementary explanations of the volunteering process. SDT explains why students are motivated to volunteer, whereas TPB explains how such motivation is translated into behavioural intention and subsequent behaviour. Their integration therefore provides a sequential framework linking the motivational basis of volunteering with its behavioural enactment.

The TPB, developed by Ajzen (1991), proposes that behavioural intention is the most immediate antecedent of actual behaviour. Intention reflects an individual's willingness and readiness to perform a particular behaviour and therefore represents an important psychological step between a person's internal orientation and observable action. This mechanism is particularly relevant to university student volunteering because students may value voluntary service but still face competing academic, personal, and social demands. Thus, possessing positive reasons for volunteering does not necessarily result in participation unless these reasons are translated into a sufficiently strong intention to act. In the present study, Volunteering Service Intention is therefore positioned as the central psychological mechanism linking Personal Motivation to Volunteering Service Behaviour. This approach extends the TPB perspective by focusing on the motivational origins of intention rather than treating intention-related determinants as conceptually isolated factors.

SDT complements TPB by explaining the motivational foundation underlying students' willingness to volunteer. SDT proposes that behaviour is more likely to be initiated and

maintained when individuals perceive it as personally meaningful and consistent with valued goals and psychological needs (Ryan & Deci, 2000). Consistent with the functional approach to volunteering, Personal Motivation in this study encompasses learning and understanding, career development, value expression, self-improvement, self-protection, and social interaction. These dimensions reflect different functions that volunteering may fulfil for university students (Clary et al., 1998). Volunteering may therefore be attractive not only because students wish to help others, but also because it provides personally relevant developmental, relational, and psychological benefits.

Two motivational functions are particularly relevant to the formation of volunteering intention. Career development motivation gives volunteering future-oriented value because participation can provide opportunities to acquire practical experience and transferable competencies relevant to students' future employment. When volunteering is perceived as contributing to personally important career goals, students may regard participation as more worthwhile and consequently develop stronger intentions to volunteer. Social interaction motivation, in contrast, reflects the relational value of volunteering. Participation provides opportunities to interact with peers, organisers, and community members, which may satisfy students' need for social connection and belonging. Thus, volunteering can become meaningful not only through what students contribute, but also through the interpersonal relationships and social experiences it provides.

The integration of SDT and TPB consequently establishes a motivation–intention–behaviour pathway. SDT explains the reasons that make volunteering personally valuable, while TPB explains how these reasons become a behavioural commitment and are subsequently enacted. Importantly, the framework allows Personal Motivation to influence Volunteering Service Behaviour both directly and indirectly through Volunteering Service Intention. The direct pathway recognises that strongly internalised motives may encourage participation, whereas the indirect pathway captures the process through which motivation is first converted into behavioural readiness. This integrated framework therefore moves beyond asking whether students are motivated to volunteer and examines how their motivations are translated into actual volunteering behaviour.

2.2 Definition of variables

Personal Motivation

Grounded primarily in Self-Determination Theory (SDT), personal motivation in this study refers to the psychological motives that initiate and support public university students' engagement in voluntary services to fulfil personally relevant needs and goals. Consistent with the functional approach to volunteer motivation, this variable is conceptualized as a multi-dimensional construct encompassing six functional dimensions: learning and understanding, career development, value expression, self-improvement, self-protection, and social interaction. These dimensions reflect the different personal functions that

volunteering may fulfil for university students (Clary et al., 1998). In particular, career development motivation may make volunteering valuable as an opportunity to gain practical experience and transferable competencies relevant to future employment, whereas social interaction motivation reflects the relational benefits obtained through interaction and social connection during volunteering. Thus, personal motivation represents the primary internal basis through which students perceive volunteering as personally meaningful and develop willingness to participate (Yip et al., 2024; Mento et al., 2023).

Volunteering Service Intention

Grounded in the behavioural logic of the Theory of Planned Behaviour (TPB), volunteering service intention refers to the degree to which university students are willing and prepared to participate in volunteer activities. It represents an individual's behavioural readiness and conscious commitment to allocate time and effort to voluntary service without direct monetary compensation (Cao et al., 2021). In the present research framework, volunteering service intention is positioned as the key psychological mediator between personal motivation and actual volunteering service behaviour. While personal motivation provides the underlying reasons for participation, intention represents the extent to which these motives are translated into a concrete willingness to act. Therefore, intention provides the psychological link between students' internal motivations and their subsequent volunteering behaviour.

Volunteering Service Behaviour

Volunteering service behaviour is operationally defined as the actual participation of public university students in voluntary activities through the contribution of their time, effort, knowledge, or skills for the benefit of others, communities, or public welfare without direct monetary compensation (Wilson, 2012). Positioned as the final dependent variable in the study's framework, volunteering service behaviour represents the behavioural enactment of students' motivational orientations and intentions. Unlike intention, which reflects psychological readiness, behaviour reflects the actual implementation of that willingness through participation in voluntary service activities. Accordingly, this construct enables the study to examine whether students' personal motivations and volunteering service intentions are translated into actual volunteering participation.

The impact of Personal motivation on Volunteering Service Intentions

The relationship between personal motivation and volunteering service intention is primarily grounded in Self-Determination Theory (SDT), which explains how personally meaningful motives influence individuals' willingness to engage in a behaviour. When individuals perceive an activity as relevant to their personal needs, values, or goals, they are more likely to regard that activity as worthwhile and develop a stronger willingness to participate (Ryan & Deci, 2000). In the context of university volunteering, students may be motivated by learning opportunities, career development, value

expression, self-improvement, self-protection, or social interaction. These different functions provide students with personally relevant reasons for engaging in voluntary service.

For example, career-oriented students may perceive volunteering as an opportunity to develop practical skills and experience relevant to their future employment, while students motivated by social interaction may value opportunities to establish interpersonal relationships and experience social connection. When volunteering satisfies such personally meaningful functions, students are more likely to develop a stronger willingness to participate. Thus, personal motivation provides the motivational foundation from which volunteering service intention can develop.

This argument is also consistent with the behavioural logic of TPB, which identifies intention as the immediate psychological antecedent of behaviour (Ajzen, 1991). Rather than assuming that personal motivation automatically produces behaviour, the present study proposes that motivation first contributes to the formation of a behavioural intention. Accordingly, stronger personal motivation should be associated with stronger volunteering service intention.

The Impact of Volunteering Service Intentions on Behaviour

The relationship between volunteering service intention and actual volunteering service behaviour is grounded primarily in the Theory of Planned Behaviour (TPB), which identifies behavioural intention as the immediate

psychological antecedent of behaviour (Ajzen, 1991). Intention reflects an individual's willingness and readiness to perform a particular behaviour and therefore represents an important psychological step through which internal preferences are translated into action. In the context of university student volunteering, students may have positive motivations toward volunteering, but actual participation requires those motivations to be transformed into a sufficiently strong behavioural commitment.

This distinction is particularly important because university students often face competing academic, personal, and social demands. Consequently, being motivated to volunteer does not necessarily guarantee actual participation. Volunteering service intention provides a behavioural direction by indicating that students are not only motivated by the potential benefits of volunteering but are also willing to allocate time and effort to participate. In this sense, intention functions as a psychological bridge between motivation and behaviour, transforming a general motivational orientation into behavioural readiness.

Previous research also suggests that volunteering experiences, social influences, and organisational conditions can affect the extent to which intentions are translated into actual participation (Adejimi et al., 2022; Haski-Leventhal et al., 2018; Zhou et al., 2024). Such factors may facilitate or constrain behavioural enactment, but the formation of intention remains an important proximal condition for participation. Therefore, students with stronger volunteering service intentions are expected to demonstrate higher levels of actual

volunteering service behaviour.

3. Conceptual Framework and hypothesis

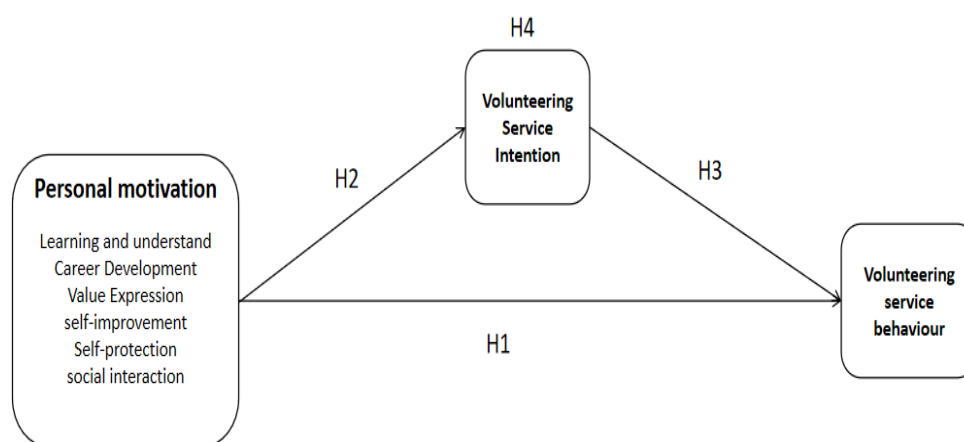
The primary objective of this study is to examine the structural relationships underlying youth volunteerism by identifying the direct and indirect pathways between personal motivation, volunteering service intention, and volunteering service behaviour. Based on the theoretical integration of the Theory of Planned Behaviour (TPB) and Self-Determination Theory (SDT), a unified conceptual framework is established.

In this framework, Personal Motivation, comprising learning and understanding, career development, value expression, self-improvement, self-protection, and social interaction, is positioned as the primary multi-dimensional independent variable. Volunteering Service Intention serves as the psychological mediator through which personal motivation is expected to be translated into behavioural readiness, while Volunteering , but also how this influence is translated through volunteering service intention.

Service Behaviour constitutes the final dependent variable representing actual volunteering participation. The framework therefore proposes a sequential relationship in which personally meaningful motivations contribute to the formation of volunteering intentions, which in turn facilitate the enactment of volunteering behaviour.

Importantly, the framework also allows for a direct relationship between personal motivation and volunteering service behaviour. This reflects the possibility that strongly internalised motivations may encourage students to participate directly, while the mediating pathway captures the extent to which motivation is first converted into behavioural intention. The conceptual framework therefore enables the study to examine not only whether personal motivation influences volunteering behaviour

Figure 1: Conceptual Framework



To empirically test the structural linkages mapped within this conceptual framework, the following research hypotheses are proposed:

H1: Personal motivation has a significant positive direct effect on the volunteering service behaviour of public university students in Heilongjiang Province.

H2: Personal motivation has a significant positive direct effect on the volunteering service intentions of public university students in Heilongjiang Province.

H3: Volunteering service intention has a significant positive direct effect on the volunteering service behaviour of public university students in Heilongjiang Province.

H4: Volunteering service intention plays a significant mediating role in the relationship between personal motivation and volunteering service behaviour among public university students in Heilongjiang Province.

4. Methodology

Sampling Design and Data Collection

The target population of this study consists of 471,995 undergraduate students (aged 18–22) enrolled across 27 public undergraduate universities in Heilongjiang Province. Considering the regional non-uniformity of volunteer resources between the provincial capital, Harbin, and prefecture-level cities, the study adopts a stratified cluster sampling method. First, according to geographical locations, the universities were divided into two independent strata: Harbin (16 institutions) and non-Harbin prefecture-level cities (11 institutions). Approximately 50% of the

universities within each stratum were then randomly drawn as sampling clusters, resulting in the selection of 14 representative universities (including 8 Harbin-based institutions and 6 regional institutions) that cover multi-disciplinary institutional types. According to the sample size calculation formula by Cochran (1977), the theoretical minimum sample size required at a 95% confidence level is 384 individuals. To overcome potential invalid responses, the final questionnaire distribution scale was determined to be 550 individuals. Subsequently, the sample size was allocated proportionally based on the actual undergraduate enrollment of the 14 sampled universities. The distribution and collection of questionnaires were completed uniformly with the assistance of the Youth Volunteer Associations of each university, ultimately gathering 522 valid data points for data analysis.

Measurement Instruments

The scale development in this study strictly follows the standardized procedure of "literature introduction, localized adaptation, expert review, and pre-test modification." All measurement items for latent variables were adapted from well-validated mature scales both domestically and internationally, utilizing a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Personal Motivation: As a multi-dimensional independent variable, its operational definition and measurement constructs are deeply rooted in Self-Determination Theory (SDT). It was adapted from the Volunteer Functions Inventory (VFI) by Clary et al. (1998) and the

localized scale by Law et al. (2011), encompassing six dimensions: learning and understanding, career development, value expression, self-improvement, self-protection, and social interaction.

Volunteering Service Intention: As the core mediating variable, it was designed based on the baseline logics of the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB). It was adapted from the psychological inclination scale by Cao et al. (2021) to measure students' behavioral probability and subjective willingness inclination to engage in uncompensated voluntary services.

Volunteering Service Behaviour: As the final dependent variable, it was adapted from the prosocial behavior scale by Wilson (2012), focusing on the continuity and depth of the actual execution of voluntary services among public university students, rather than isolated or episodic participation.

Data Analysis Strategy

This study adopts a two-stage statistical analysis strategy, utilizing SPSS and Amos software to process the 522 recovered valid sample data points. In the first stage, descriptive statistical analysis is conducted using SPSS. In the second stage, reliability analysis and Exploratory Factor Analysis (EFA) are performed to verify the Cronbach's alpha and KMO values. Subsequently, Amos software is utilized to conduct Confirmatory Factor Analysis (CFA) to test the measurement model and the structural model, as well as to verify the direct hypotheses. Finally, the Bootstrap sampling method (set at 5,000 resamples) is employed to verify the

mediation hypotheses.

5. Result

Descriptive statistical analysis

A comprehensive descriptive statistical analysis was conducted on the 41 measurement items to evaluate data distribution characteristics and verify the univariate normality assumption required for Structural Equation Modeling. Across all constructs, item mean values ranged from 3.57 to 3.86 on a 5-point Likert scale, reflecting moderately high overall levels of personal motivation, service intention, and service behavior among public university students in Heilongjiang Province. Specifically, the Social Interaction dimension recorded the highest mean scores ($M = 3.78$ – 3.81 , $SD = 1.053$ – 1.074) among motivation sub-constructs, while Volunteering Service Intention achieved strong positive evaluations ($M = 3.78$ – 3.86 , $SD = 1.039$ – 1.103), led by item VI2 ($M = 3.86$). The primary dependent variable, Volunteering Service Behaviour, also demonstrated high, stable engagement ($M = 3.79$ – 3.82 , $SD = 0.995$ – 1.061). Standard deviations across all items fell between 0.995 and 1.239, confirming adequate data variability without extreme dispersion or uniform response bias.

The univariate normality of the dataset was assessed against established criteria requiring absolute skewness values under 2.0 and absolute kurtosis values under 7.0. The skewness values for all 41 items ranged from -1.117 to -0.547 , indicating a slight left-skewed distribution toward positive responses while remaining well beneath the threshold of 2.0. Concurrently, kurtosis values ranged from -0.723 to 0.942 ,

remaining well within the standard range of pm 2.0. These statistical indices confirm that the empirical data satisfies the assumption of univariate normal distribution, establishing a

robust foundation for subsequent Confirmatory Factor Analysis and Structural Equation Modeling using Amos.

Table 1: Descriptive statistical

	N	Mean	Std. Deviation	Skewness	Kurtosis
LU1	521	3.63	1.192	-.835	-.273
LU2	521	3.65	1.231	-.787	-.422
LU3	521	3.65	1.197	-.797	-.355
CD1	521	3.66	1.144	-.795	-.279
CD2	521	3.69	1.154	-.857	-.165
CD3	521	3.68	1.155	-.809	-.244
VE1	521	3.66	1.227	-.825	-.395
VE2	521	3.68	1.172	-.778	-.357
VE3	521	3.62	1.191	-.775	-.371
SIM1	521	3.62	1.147	-.547	-.723
SIM2	521	3.68	1.158	-.715	-.424
SIM3	521	3.69	1.157	-.783	-.280
SP1	521	3.65	1.188	-.930	-.065
SP2	521	3.68	1.177	-.870	-.160
SP3	521	3.71	1.179	-.861	-.185
SIN1	521	3.78	1.063	-1.006	.412
SIN2	521	3.81	1.074	-.986	.305
SIN3	521	3.79	1.053	-.910	.167
ES1	521	3.64	1.155	-.781	-.271
ES2	521	3.63	1.201	-.746	-.395
ES3	521	3.63	1.156	-.818	-.205
ES4	521	3.61	1.239	-.818	-.361
IS1	521	3.78	1.150	-1.010	.211
IS2	521	3.79	1.139	-.943	.064
IS3	521	3.78	1.142	-.897	-.090
IS4	521	3.80	1.119	-.981	.206

	N	Mean	Std. Deviation	Skewness	Kurtosis
TS1	521	3.62	1.233	-.885	-.231
TS2	521	3.57	1.239	-.800	-.416
TS3	521	3.64	1.229	-.768	-.418
TS4	521	3.60	1.219	-.814	-.309
VI1	521	3.80	1.099	-1.037	.589
VI2	521	3.86	1.049	-1.117	.942
VI3	521	3.78	1.103	-1.056	.607
VI4	521	3.79	1.090	-1.004	.532
VI5	521	3.84	1.039	-1.087	.867
VI6	521	3.82	1.094	-.950	.322
VB1	521	3.81	1.061	-.739	-.016
VB2	521	3.79	1.056	-.773	.143
VB3	521	3.82	.995	-.802	.530
VB4	521	3.81	1.033	-.891	.448
VB5	521	3.79	1.043	-.772	.148

Reliability Analysis

An internal consistency reliability analysis was conducted on the empirical dataset (N=521) to assess the measurement stability and internal coherence of all latent constructs. In line with established methodological standards, a Cronbach's alpha (α) coefficient above 0.70 indicates acceptable reliability, while values exceeding 0.80 reflect excellent internal consistency. As shown in the results, all latent variables achieved high reliability scores ranging from 0.863 to 0.930, well above the conservative threshold of 0.70. Specifically, the six sub-dimensions of Personal Motivation demonstrated strong stability: Learning and

Understanding ($\alpha=0.871$), Career Development ($\alpha=0.877$), Value Expression ($\alpha=0.885$), Self-Improvement ($\alpha=0.904$), Self-Protection ($\alpha=0.863$), and Social Interaction ($\alpha=0.930$). In addition, Volunteering Service Intention ($\alpha=0.900$) and Volunteering Service Behaviour ($\alpha=0.899$) both exhibited robust internal reliability. These findings confirm that all measurement items consistently represent their respective latent constructs, with no evidence of redundancy or measurement error, thereby providing a solid statistical foundation for subsequent exploratory and confirmatory factor analyses.

Table 2: Reliability Analysis Scale

Variable	Name	Cronbach's alpha coefficient
Learning and Understanding	LU1	0.871
	LU2	
	LU3	
Career Development	CD1	0.877
	CD2	
	CD3	
Value Expression	VE1	0.885
	VE2	
	VE3	
Self-improvement	SIM1	0.904
	SIM2	
	SIM3	
Self-protection	SP1	0.863
	SP2	
	SP3	
Social interaction	SIN1	0.930
	SIN2	
	SIN3	
	TS2	
	TS3	
	TS4	
Volunteering service Intentions	VI1	0.900
	VI2	
	VI3	
	VI4	
	VI5	
	VI6	
Volunteering service behaviour	VB1	0.899
	VB2	
	VB3	
	VB4	
	VB5	

Measurement Model evaluation

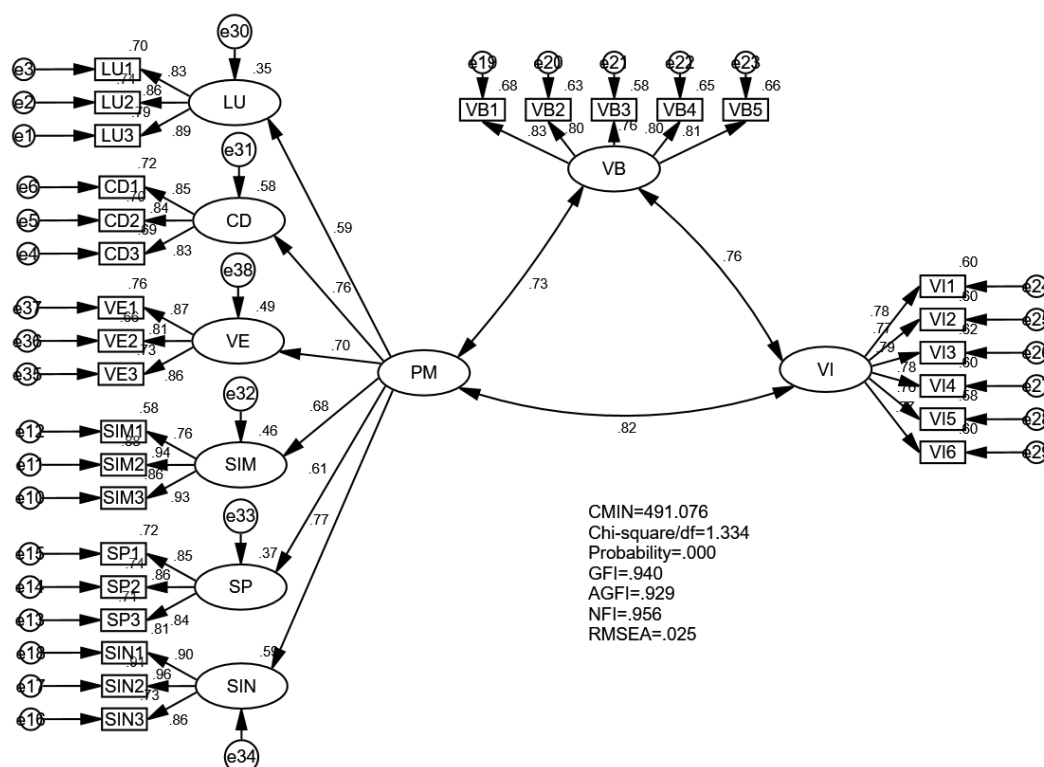
An evaluation of the model fit indices generated by Amos indicates a strong correspondence between the empirical data and the proposed structural framework (CMIN=491.076, $p=0.000$). The relative chi-square ($\chi^2/df=1.334$) is well below the conservative cutoff of 3.0, confirming minimal discrepancy between the observed and implied covariance matrices (Hair et al., 2010; Kline, 2016). Absolute fit measures

demonstrate excellent performance, with the Goodness of Fit Index (GFI=0.940) and Adjusted Goodness of Fit Index (AGFI=0.929) both exceeding the recommended threshold of 0.90. Incremental fit is likewise robust, as reflected in the Normed Fit Index (NFI=0.956), which surpasses the benchmark of 0.90. Most importantly, the Root Mean Square Error of Approximation (RMSEA=0.025) is far below the stringent cut-off of 0.05, indicating

extremely low residual error and strong model parsimony. Collectively, these statistics confirm that the structural equation model exhibits

highly satisfactory goodness-of-fit, providing a rigorous foundation for subsequent path estimation and hypothesis testing.

Figure 1: Measurement Model



An evaluation of the convergent validity and construct reliability was conducted based on the standardized factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE) generated from Confirmatory Factor Analysis (CFA). According to established methodological guidelines, convergent validity and scale reliability are well-established when standardized factor loadings exceed 0.50 (ideally above 0.70), Composite Reliability (CR) values surpass the 0.70 threshold, and Average Variance Extracted (AVE) values strictly exceed 0.50. As detailed in Table 3, the standardized factor loadings across all items ranged from 0.761 to 0.956, demonstrating strong item-level

convergent properties. The Composite Reliability (CR) values for all latent variables—including the six sub-dimensions of Personal Motivation (LU: 0.91, CD: 0.91, SIM: 0.93, SP: 0.91, SIN: 0.95, VE: 0.91), Volunteering Service Intention (VI: 0.91), and Volunteering Service Behaviour (VB: 0.89)—ranged from 0.89 to 0.95, far exceeding the 0.70 criterion and confirming superior internal coherence. Furthermore, the AVE values across all constructs ranged from 0.59 to 0.85, comfortably surpassing the 0.50 benchmark. This confirms that each latent variable accounts for more than 50% of its measurement indicators' variance, establishing

robust convergent validity across the entire measurement model and providing empirical

justification for structural path analysis.

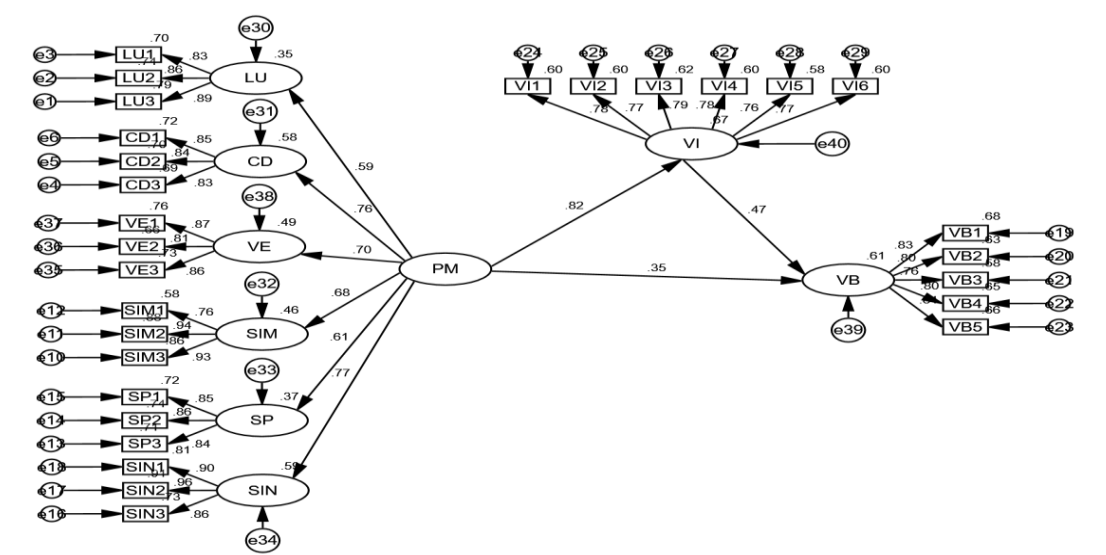
Table 3: Composite Reliability (CR) and Average Variance Extracted (AVE)

Construct	Items	Loading Range	CR	AVE
LU	3	0.834–0.889	0.91	0.75
CD	3	0.829–0.850	0.91	0.71
SIM	3	0.761–0.936	0.93	0.80
SP	3	0.841–0.858	0.91	0.73
SIN	3	0.856–0.956	0.95	0.85
VB	5	0.763–0.827	0.89	0.65
VI	6	0.764–0.790	0.91	0.59
VE	3	0.815–0.874	0.91	0.74

Structural model assessment

Following the confirmation of measurement model validity, the structural model assessment evaluates the significance, strength, and predictive capability of the hypothesized relationships among latent constructs.

Figure 2: Structural model



Direct Effect of Personal Motivation on Volunteering Behavior (H1: PM→VB)

The direct path from Personal Motivation to

Volunteering Service Behaviour is statistically significant

($\beta=0.354, S.E.=0.114, C.R.=4.234, p<0.001$),

supporting H1. This result indicates that internal motivational drivers—encompassing functional dimensions such as social interaction, career preparation, and self-improvement—directly translate into active, sustained participation in public welfare activities. For every unit increase in personal motivation, student volunteer behavior increases by 0.354 units, establishing intrinsic motivation as a fundamental, direct driver of youth prosocial behavior.

Effect of Personal Motivation on Volunteering Intention (H2: PM→VI)

Personal Motivation exerts a remarkably strong direct positive influence on Volunteering Service Intention ($\beta=0.823, S.E.=0.100, C.R.=11.083, p<0.001$), supporting H2. The exceptionally high Critical Ratio (C.R.=11.083) demonstrates that self-determined internal needs are the dominant antecedent shaping students' psychological readiness and behavioral intent.

When students perceive that volunteering satisfies core personal needs (e.g., skill acquisition or social engagement), their cognitive willingness to commit personal time and effort increases substantially.

Direct Effect of Volunteering Intention on Volunteering Behavior (H3: VI→VB)

The structural path from Volunteering Service Intention to Volunteering Service Behaviour is highly significant ($\beta=0.476, S.E.=0.081, C.R.=6.030, p<0.001$), confirming H3. Aligned with the baseline assumptions of the Theory of Planned Behaviour (TPB), behavioral intention acts as a robust, proximal predictor of actual behavior. Students who express a high subjective inclination to volunteer are significantly more likely to execute continuous, deep volunteer actions.

Table 4: Structural Model Results

Path	β	S.E.	C.R.	P	Result
PM→VB(H1)	0.354	0.114	4.234	***	Supported
PM→VI(H2)	0.823	0.100	11.083	***	Supported
VI→VB(H3)	0.476	0.081	6.030	***	Supported

Testing for Mediation Effects

To empirically test H4, a bias-corrected bootstrapping procedure with 5,000 resamples was executed at a 95% confidence level. As shown in Table 5, the total effect of Personal Motivation on Volunteering Service Behaviour is statistically significant, with an indirect effect via Volunteering Service Intention estimated at

0.538. Because the confidence interval [0.307, 0.848] excludes zero, H4 receives clear empirical support, confirming that service intention serves as an essential psychological bridge converting motivational drives into active engagement.

Since the direct effect remains statistically significant (0.354, $p=0.002$), Volunteering Service Intention functions as a complementary

partial mediator, accounting for 60.31% of the total effect. This demonstrates a dual-path mechanism in student volunteerism: while personal motivation directly prompts

participation, more than 60% of its total impact operates indirectly by solidifying service intentions to sustain long-term engagement.

Table 5: Mediation Analysis Results

Error! Reference source not found.	Estimate	Lower CI	Upper CI	P-value
Direct Effect (DE)	.354	.188	.836	.002
Indirect Effect (IDE)	.538	.307	.848	.000
Total Effect	0.892	.833	1.268	.001

. Conclusion and Discussion

This study contributes to the understanding of university student volunteerism by demonstrating that personal motivation is translated into volunteering behaviour through both direct and intention-mediated pathways. Rather than simply confirming that motivated students are more likely to volunteer, the findings identify the psychological process through which motivation becomes behaviourally actionable. Personal motivation had a positive effect on both volunteering service intention and volunteering service behaviour, while volunteering service intention was positively associated with actual volunteering behaviour. More importantly, the mediation analysis showed that volunteering service intention transmitted 60.31% of the total effect of personal motivation on volunteering service behaviour (indirect effect = 0.538; total effect = 0.892). This indicates that the principal contribution of the study lies not in establishing another simple motivation–behaviour relationship, but in

demonstrating that behavioural intention functions as the dominant psychological transmission mechanism through which students' motivations are converted into volunteering behaviour.

This finding provides a more precise interpretation of the complementary relationship between SDT and TPB. SDT explains why volunteering becomes personally meaningful through different motivational functions, including learning, career development, value expression, self-improvement, self-protection, and social interaction. In particular, career-oriented motivation can give volunteering future-oriented value by providing opportunities for practical experience and transferable skills, while social interaction motivation gives volunteering relational value through interpersonal connection and social engagement. TPB complements this motivational explanation by identifying intention as the immediate behavioural readiness through which these personally meaningful motives can be enacted.

The findings therefore extend the two theories beyond parallel application by linking them through a sequential motivation–intention–behaviour mechanism.

The mediation result further provides new knowledge concerning the intention–behaviour gap in student volunteerism. Although personal motivation retains a direct influence on volunteering behaviour, the larger proportion of its total effect operates through volunteering service intention. This suggests that possessing reasons to volunteer is not sufficient for behavioural participation; motivational value must first be transformed into a concrete willingness and readiness to act. The study therefore shifts attention from the question of whether students are motivated to volunteer to the more important question of how their motivations are translated into actual participation. This mechanism helps explain why strong initial motivation may not always result in corresponding behavioural engagement when intention is insufficiently developed.

The findings also have practical implications for higher education institutions. Volunteer programmes should not focus solely on increasing students' general motivation to participate. Instead, universities should design opportunities that connect volunteering with students' developmental and relational needs while making participation accessible and actionable. Career-related volunteering can emphasise skill development and practical experience, whereas socially oriented activities can strengthen peer interaction and a sense of belonging. More importantly, institutional strategies should facilitate the conversion of

motivation into intention by providing clear participation opportunities, appropriate organisational support, and recognition of students' contributions.

Overall, the study advances existing volunteerism research by identifying volunteering service intention as the dominant psychological pathway linking multidimensional personal motivation with actual volunteering behaviour. The finding that 60.31% of the total motivational effect is transmitted through intention provides empirical evidence for the central role of behavioural readiness in this process. Thus, the study's main theoretical contribution is the development and empirical validation of a more integrated explanation in which personal motivation provides the reason for volunteering, intention provides the behavioural commitment, and behaviour represents the enactment of that commitment.

7.Implications and Contributions

7.1 Theoretical Contributions

This study advances the empirical literature on youth volunteerism by constructing and validating a robust, sequential framework that bridges the conceptual gap between cognitive readiness and internal motivational drive. By establishing a direct structural pathway from Self-Determination Theory (SDT) to the Theory of Planned Behaviour (TPB), this research addresses a long-standing fragmentation in behavioral theory, where internal needs and cognitive planning are traditionally analyzed in isolation. Specifically, this study extends TPB and SDT by demonstrating that volunteering intention serves

as a key psychological transmission mechanism through which multidimensional personal motivation translates into sustained volunteer behaviour among Chinese university students. This theoretical synthesis moves scholarship beyond simplistic rational-choice models, providing a more comprehensive psychological lens that explains not just whether university students engage in public service, but the exact self-determined pathways through which internal values stabilize behavioral intentions and translate into sustained physical action.

7.2 Practical Implications

The empirical findings offer highly actionable strategies for higher education administrators and student affairs offices within Heilongjiang Province to optimize their "Second Classroom" experiential learning credit systems and volunteer management frameworks. Because volunteering service intention carries more than 60% (60.31%) of the total motivational impact on sustained behavior, institutional interventions must directly target the intention-solidification phase through concrete systems and strengthened incentives.

First, universities should strengthen commitment-building activities within the Second Classroom platform. To prevent volunteer attrition caused by academic scheduling conflicts or motivation decay, administrators should move away from episodic, one-off mobilization. Instead, institutions should implement structured, multi-stage volunteer programs requiring incremental goal setting, service milestone tracking, and formal pledge mechanisms that solidify students'

long-term cognitive commitment.

Second, higher education management must systematically provide volunteer identity development. To capitalize on students' internal value expression and self-improvement drives, universities should cultivate a strong prosocial identity. This can be achieved by integrating structured reflective portfolios into Second Classroom assessments, establishing regional honor commendations, and embedding volunteer achievements into scholarship evaluations and graduate recommendation files, thereby reinforcing students' perceived social value and self-worth.

Third, institutional frameworks should establish structured volunteer mentorship programs. Universities should create peer-led support systems by pairing senior, experienced student volunteers with incoming underclassmen. Peer mentors can provide practical guidance, navigate operational hurdles, and foster a supportive social environment, ensuring that initial personal motivations smoothly transition into habitual, continuous voluntary service.

8. Limitations and Future Directions

This study presents several structural limitations that offer productive pathways for future academic inquiry.

First, the empirical scope is geographically and institutionally restricted. The research population is explicitly confined to undergraduate students within public higher education institutions in Heilongjiang Province. Because the socioeconomic landscape and volunteer resource allocation in Northeast China possess distinct regional characteristics, these

findings may not directly generalize to private universities or higher education cohorts in other provinces across China. Future studies should broaden the sampling frame to include private colleges and diverse geographical regions to verify the cross-regional validity of the model.

Second, the conceptual framework deliberately focuses on individual psychological mechanisms, creating a theoretical boundary. By isolating the path from personal motivation to volunteering intention and subsequent behavior, this study excludes the potential impact of external

environmental factors. Real-world student volunteerism is frequently embedded in broader social ecologies, where factors like multi-dimensional social support networks, including family encouragement, institutional incentives, and peer dynamics, play a critical role. Future research should integrate these social support variables as parallel predictors or structural moderators to establish a more holistic framework for explaining youth volunteer persistence.

Reference

- Adejimi, A., Okunade, K., Odukoya, O., Roberts, A., Odugbemi, B., & Osibogun, A. (2022). Willingness and motivations towards volunteering during the COVID-19 pandemic: A cross-sectional survey among final year medical students in Lagos, Nigeria. *Dialogues Health*, 1, 100038. <https://doi.org/10.1016/j.dialog.2022.100038>
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Cao, Y., Yue, X. G., Hu, X., Cai, L., & Yang, H. (2021). Research on college students' tourism volunteer service intention based on theory of planned behaviour. *Proceedings of the 2021 4th International Conference on E-Business, Information Management and Computer Science*. 28,33-43. <https://doi.org/10.1145/3511716.3511723>
- Chen, C., & Su, W. (2025). The impact of agreeableness trait on volunteer service motivation and behaviour: A moderated mediation study of Chinese college students. *Behavioural Sciences*, 15(10), 1308. <https://doi.org/10.3390/bs15101308>
- Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., & Miene, P. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74(6), 1516–1530. <https://doi.org/10.1037/0022-3514.74.6.1516>
- Davies, B., Abrams, D., Horsham, Z., & Lalot, F. (2024). The causal relationship between volunteering and social cohesion: A large scale analysis of secondary longitudinal data. *Social Indicators Research*. 171, 809–825. <https://doi.org/10.1007/s11205-023-03268-6>
- Gross, H., & Rottler, M. (2019). Nonprofits' internal marketing and its influence on volunteers' experiences and behaviour: A multiple mediation analysis. *Nonprofit and Voluntary Sector*

- Quarterly, 48(2), 388-416. <https://doi.org/10.1177/0899764018815614>
- Haski-Leventhal, D., Meijs, L., Lockstone-Binney, L., Holmes, K., & Oppenheimer, M. (2018). Measuring volunteer ability and the capacity to volunteer among non-volunteers: Implications for social policy. *Social Policy & Administration*, 51(7), 1073–1090. <https://doi.org/10.1111/spol.12342>
- Jiang, M. (2020). The ideological and political education function and realization path of university volunteer service under the background of "double first-class". *Education Research*, 3(9), 149. <https://doi.org/10.32629/er.v3i9.3137>
- Law, B.M.F., Shek, D.T.L. & Ma, C.M.S. (2011) Exploration of the Factorial Structure of the Revised Personal Functions of the Volunteerism Scale for Chinese Adolescents. *Social Indicators Research*, 100, 517-537. <https://doi.org/10.1007/s11205-010-9627-2>
- Liu, J. (2024). Innovative research on the volunteer service work of college students' civilization practice in the context of the new era. *Applied Mathematics and Nonlinear Sciences*, 9(1), 1089–1096.
- Luo, Z., & Peng, X. (2026). What drives university students' sustained participation in volunteering? A thematic analysis from the ecological systems theory perspective. *Behavioural Sciences*, 16(3), 471. <https://doi.org/10.3390/bs16030471>
- Mento, C., Silvestri, M., Zanghi, D., Bitto, F., Lakmehsari, A., & Pira, F. (2023). Choking effect, learning school performance: What role do emotional and motivational processes play? *Lubelski Rocznik Pedagogiczny*, 42(1), 7–25. 10.17951/lrp.2023.42.1.7-25
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Sheldon, K. M., Titova, L., Osin, E., & Bratcher, B. (2023). Understanding the motivations of food bank volunteers: Applying self-determination theory and functional motivations theory. *Journal of Community & Applied Social Psychology*, 33(3), 708–718. <https://doi.org/10.1002/casp.2656>
- Wilson, J. (2012). Volunteerism research : A Review Essay. *Nonprofit and Voluntary Sector Quarterly*, 41(2), 176–212. <https://doi.org/10.1177/0899764011434558>
- Wu Y, Liu S, Song Y, Zhang Z and Liu Y (2024). The influencing factors of participation in time banking volunteer service for older adults among university students in Nanjing, China. *Frontiers in Public Health*, 11, Article 1289512. <https://doi.org/10.3389/fpubh.2023.1289512>
- Yang, L. L. (2021). Research on development countermeasures of college students' volunteer service in Heilongjiang Province [Master's thesis]. 10.27064/d.cnki.ghasu.2021.000580
- Yip, L., Thomas, E. F., Amiot, C., Louis, W. R., & McGarty, C. (2024). Autonomous Motives Foster Sustained Commitment to Action: Integrating Self-Determination Theory and the Social Identity Approach. *Personality and Social Psychology Bulletin*, 50(5), 750-765. <https://doi.org/10.1177/01461672221148396>
- Zhang, Y. (Ed.). (2024). Report on the development of voluntary services in China (2022–2023). Social

Sciences Academic Press.

- Zheng, S., Yao, M., Zhang, L., Li, J., & Xing, H. (2021). Does basic psychological need satisfaction matter to college students' sustained volunteering? A mixed-methods study. *International Journal of Environmental Research and Public Health*, 18(24), 13229. <https://doi.org/10.3390/ijerph182413229>
- Zheng, S., Yao, M., Zhang, L., Li, J., & Xing, H. (2021). Does basic psychological need satisfaction matter to college students' sustained volunteering? A mixed-methods study. *International Journal of Environmental Research and Public Health*, 18(24), 13229. <https://doi.org/10.3390/ijerph182413229>
- Zhou, J., Yue, S., & Xiao, Z. (2024). How does perceived calling influence sustained volunteering intention? The role of volunteering norm and COVID-19 pandemic strength. *SAGE Open*, 14(2). <https://doi.org/10.1177/21582440241255948>