Brand Image Model for Student Citizenship Behaviors in Higher Education in Shanxi Province of China

Wenjin Dong [1], Supaluk Satpretpry [2] and Xizhe Zhang [3]

[1] Ph.D. in Educational Administration, Faculty of Business Administration, Southeast Asia University, Bangkok 10160, Thailand. Email: 992322164@qq.com

[2] Assoc. Prof., Ph. D., Faculty of Business Administration, Southeast Asia University, Bangkok 10160, Thailand. Email: Supaluk@sau.ac.th

[3] Ph. D., Faculty of Business Administration, Southeast Asia University, Bangkok 10160, Thailand. Email: xizhez@sau.ac.th

ARTICLE INFO	ABSTRACT
	As global sustainability concerns increase, higher education institutions (HEIs) play an important role in fostering social responsibility and driving innovation. This study examines how sustainable management practices-social media activities (SMAs), green campus management, and university social responsibility (USR)-influence student civic behavior (SCB) through university brand image (UBI). Data were collected from 455 university students in Shanxi Province through an online survey, and the direct and mediated effects were analyzed using Smart PLS. The results showed that SMAs, green management and USR significantly and positively affected UBI (p<0.05), and UBI positively affected SCB (p<0.01), and partially mediated between SMAs and green management and SCB, and fully mediated between USR and SCB (p<0.05). The study extends the theoretical application to reveal the key mediating role of brand image and suggests recommendations for university administrators to optimize sustainable strategies, including enhancing social media interactions, promoting green initiatives, and strengthening social responsibility. Limitations include geographical constraints and cross-sectional data, which could be extended to multiple regions and a longitudinal design in the future. This study provides theoretical and practical insights into sustainability in higher education. **Keywords:** Student Citizenship Behaviors, University Brand Image, Social Media Activities, Green Campus Management, University Social Responsibility

Research Article

Background

In recent years, sustainable development (SD) and its Sustainable Development Goals (SDGs) have become a global focal point (Carroll, 2021). The global digital transformation has created development opportunities for sustainable university development (Mohamed Hashim et al., 2022), and in digital age, social media activities have become an important way for universities to interact with students, alumni, and communities. Consequently, social media has become an important tool for institutional branding, with institutions crafting and communicating desirable core values, activities, and accomplishments to the public and various target groups (Bamberger et al., 2020), thus further establishing their reputation in the educational community (Shah et al., 2021).

In addition to sustainable initiatives within the campus such as social media activities and green campus management, an external initiative, university social responsibility, is equally significant. University social responsibility reflects the crucial role of universities in society.

University brand image represents the reputation and perception of a university among students, faculty, staff, alumni, and the wider public. It can be considered the university's "calling card" and directly influences its attractiveness and competitiveness (Ali et al., 2024; Schlesinger et al., 2016). University brand image is a crucial factor in students' enrollment decisions as it reflects the university's reputation, culture, and values.

Lastly, this study also focuses on the civic behavior of students within universities. Student citizenship behavior refers to students fulfilling civic responsibilities in both campus and society (Blondheim & Somech, 2019). This includes engagement in activities such as community service, environmental conservation, and community involvement.

Research Objectives

RQ1. What are the impacts of sustainable management practices (social media activities, green campus management, and university social responsibility) on university brand image?

RQ2. What are the impacts of university brand image on student citizenship behaviors?

RQ3. What is the role of brand image in the relationship between sustainable management practices and student citizenship behaviors?

Thus, this paper's three main research objectives (RO) are as follows:

RO1. to analyze the impacts of three sustainable management practices on university brand image in Shanxi province, China;

RO2. to analyze the mediating effects of brand image between sustainable management practices and student citizenship behaviors in Shanxi Province, China.

Research Article

Research Hypotheses

H1 Social media activities are indirectly affecting to Student citizenship behaviors through university brand image.

H2 Green campus management is indirectly affecting to Student citizenship behaviors through university brand image.

H3 University social responsibility is indirectly affecting to Student citizenship behaviors through university brand image.

H4 University brand image is directly affecting to student citizenship behaviors.

H5 Green campus management is directly affecting to student citizenship behaviors.

H6 University social responsibility is directly affecting to student citizenship behaviors.

H7 Social media activities is directly affecting to student citizenship behaviors.
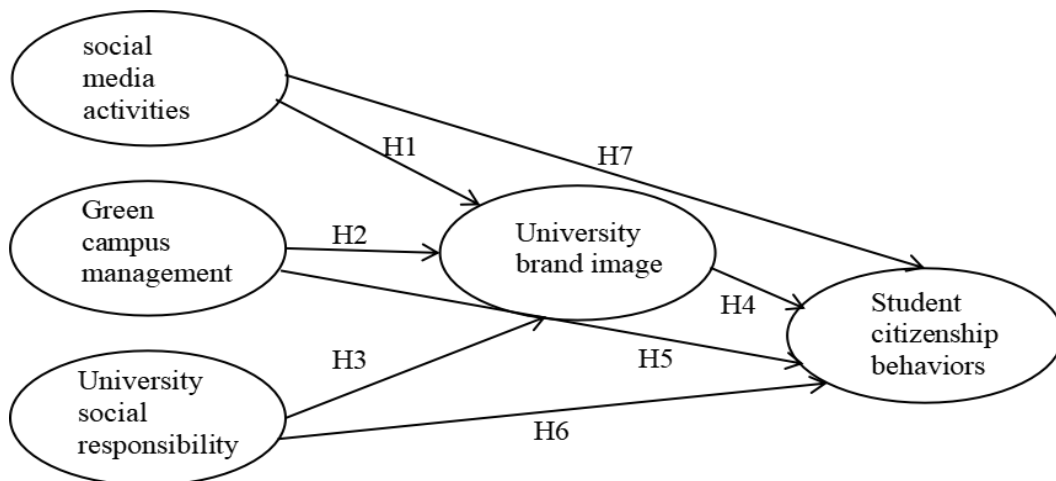
Research conceptual framework

Figure 1.1 Research conceptual framework.

Research Scope

This study focuses on students as the primary population of interest. Specifically, it examines universities that have implemented sustainable management practices, including social media activities, green campus management, and university social responsibility initiatives. The research will consider universities across different regions and types to ensure diversity in the sample. The sample size for analysis should include no fewer than 455 samples.

Research Article

Research methodology

1.Population and Sample

Population

The 2023 Statistical Bulletin on the Development of Education in Shanxi Province shows that there are 91 higher education institutions in the province. Among them, there are 32 general undergraduate schools (including 3 independent colleges), 2 vocational schools at the undergraduate level, 49 higher vocational (specialized) schools, and 8 adult colleges and universities. There are also 4 scientific research institutions that train postgraduate students. There are 60,500 postgraduate students, 550,700 general undergraduate students, 22,400 vocational undergraduate students, and 389,700 higher vocational (specialized) students. There are 204,900 students enrolled in adult undergraduate programs. The number of full-time students is about 1,023,300. Compared with other cities in Shanxi Province, Taiyuan, the capital of Shanxi Province, has the largest number of colleges and universities. Therefore, this paper mainly selects some college students enrolled in colleges and universities in Taiyuan, the capital city of Shanxi Province, as the research object.

Sample

To ensure the statistical validity of the research, the sample size for analysis should include no fewer than 400 samples. The quantitative phase will involve a broader population of universities. A stratified random sampling method will be used to select a representative sample of universities from different regions and types to ensure diversity.

According to the official data of Shanxi Province Department of Education, up to now, there are 111 colleges and universities in Shanxi Province, with 1,980,400 students and 75,000 college teachers.

Sample size is calculated using Yamane formula, Yamane formula with the confidence 95% was used to calculate minimum sample size in questionnaire.

$$n = \frac{N}{1 + Ne^2}$$

Where n = Sample size; N = Population size is 1,023,300; e= Sampling error assumed as 0.05.

Determining sample size by following application:

Sample size = 1,023,300 / (1+1,023,300 * (0.05)2) = 400.

According to Yamane formula, the number of samples should be 400 or more. Considering the sufficiency of samples, the final sample size is 455.

2.Research instruments

Qualitative research tools: In-depth semi-structured individual interviews will be conducted with the participants. The interviews will be audio-recorded with participants' consent to ensure accuracy in data

analysis. The language is then converted into text, and finally text analysis is performed with the help of Nvivo software, including categorization, summarization and distillation.

Quantitative research tools: Used to collect students' perceptions and opinions about the brand image and related factors of the university in China. The construct measurements in the questionnaire all derive from established scales. We measured social media activities encompassing four dimensions: entertainment, interaction, trendiness, and customization (Kethüda & Bilgin, 2023). Green campus management was measured using six items from Dabija et al. (2023). University social responsibility was measured by four items adapted from Rasoolimanesh et al. (2024).University brand image was measured by Schlesinger et al. (2016). Student citizenship behaviors was adopted by Yao et al. (2019).

The questionnaire will consist of several sections including personal information, assessment of sustainable management practices (social media activities, green campus management, and university social responsibility), university brand image, and student citizenship behaviors. These questionnaires will be distributed to the students participating in the study. Statistical analysis software: used to statistically analyze the quantitative data collected.

3.Data Collection

This study used questionnaires to measure five core variables, all based on well-established questionnaires with good reliability and validity. The questionnaires for social media activities, green campus management, university social responsibility, university brand image, and student citizenship behaviors were revised based on references to related questionnaires. Then, this study conducted a preliminary data collection to validate and revise the questionnaires for each variable, ensuring their good reliability and validity, thereby forming the formal questionnaires for formal testing. Among them, the questionnaires for university social responsibility and student citizenship behaviors each had two items removed.

This study invited college students from Shanxi Province, China, to participate. Initially, the study aimed to obtain a sample size of 1000 individuals through random sampling techniques and successfully contacted 620 college students. To enhance the sample coverage, we plan to increase the number of students contacted and distribute questionnaires through various channels such as social media and campus online platforms. Subsequently, both offline and online questionnaires were distributed, yielding 476 responses, resulting in a response rate of 76.77%. However, 21 questionnaires were excluded due to missing or incomplete information, leaving 455 samples for further analysis.

4.Data Analysis

Quantitative data analysis: Statistical analysis, including direct and mediation effect analysis with SEM technique, will be conducted to test the research hypotheses. The quantitative data analysis will assess the relationships between sustainable management practices, university brand image, and student citizenship behaviors, as well as the mediating effects of university brand image.

Research Article

Reliability Test

The Social Media Activities scale consisted of 12 items. As is shown in Table 3.1, the Cronbach's α is 0.957, which indicates that the reliability of SMA scale is very high.

Table 3.1 Reliability Statistics of Social Media Activities

Reliability Statistics of SMA Scale		
n of Items	n	Cronbach's Alpha
12	455	0.927

It can be seen from the reliability test results in Table 3.6 that the Cronbach's alpha coefficients of green campus management is greater than 0.9. According to the reliability judgment criteria, the scale has good internal consistency.

Table 3.2 Reliability Statistics of Green Campus Management

Reliability Statistics of GCM Scale		
n of Items	n	Cronbach's Alpha
6	455	0.912

Table 3.3 Reliability Statistics of University Social Responsibility

Reliability Statistics of GCM Scale		
n of Items	n	Cronbach's Alpha
6	455	0.923

Table 3.4 Reliability Statistics of University Brand Image

Reliability Statistics of UBI Scale		
n of Items	n	Cronbach's Alpha
3	455	0.890

Research Results

The findings demonstrate that universities' sustainable management practices, including social media activities, green campus management, and university social responsibility, significantly enhance their brand image. These results provide strong support for hypotheses H1, H2, and H3, aligning with previous

studies such as those conducted by Kethüda & Bilgin (2023) and Dabija et al. (2023).

University brand image has a significantly positive impact on student citizenship behaviors, supporting hypotheses H4, H5, H6, and H7. These findings align with prior studies that emphasize the role of brand image in influencing stakeholder loyalty and engagement behaviors (e.g., Rather, 2017; Schlesinger et al., 2021).

1.Structural Equation Modeling

This research used SmartPLS 3 (Ringle et al., 2015) to estimate partial least squares (PLS-SEM) parameters, which can be used to estimate parameters well under violation of multivariate normal distribution conditions and test hypotheses using the Bootstrap method and the samples were resampled 5,000 times. The analysis process is as follows:

Table 4.1 CR, Alpha and, ρ A , and AVE of Latent Variables

	Cronbach's Alpha	CR	ρ A	AVE
Customization	0.861	0.915	0.861	0.783
Entertainment	0.876	0.924	0.878	0.801
Green Campus Management	0.913	0.933	0.917	0.697
Interaction	0.919	0.949	0.920	0.861
Social Media Activities	0.927	0.938	0.929	0.558
Student Citizenship Behaviors	0.905	0.926	0.905	0.677
Trendiness	0.923	0.951	0.925	0.866
University Brand Image	0.890	0.932	0.893	0.820
University Social Responsibility	0.913	0.932	0.921	0.696

Structural model/Inner model evaluation between latent and passive variables using path coefficient and determination coefficient (R²), each indicator has acceptable criteria as shown in Figure 4.1. This study also examined variance inflation factor (VIF) and found that none of them exceeded 5, indicating that multicollinearity is not an issue.

Overall, all the goodness-of-fit indicators of the Partial Least Squares Structural Equation Model (PLS-SEM) developed in this study met and exceeded the general standard values, which fully demonstrated that the SEM was validly developed and had a good match with the collected questionnaire data. See Table 4.2

4.2 Model Evaluation Indicators

Evaluation	Indications	Acceptable values	Actual values	Cite
Overall model	SRMR	< .08	0.074	(Henseler et al., 2009)
Measurement model	Factor loading, α, ρA	> .50	Factor loading > 0.72, α > 0.90, ρA > 0.86	(Henseler et al., 2009)
	AVE	> .50	> .60	(Fornell & Larcker, 1981)

	HTMT	< 0.85	0.474 - 0.792	(Henseler et al., 2015)
Structural Model	p-value of the path coefficient	< .05	< .05	(Hair et al., 2017)
	R 2	Close 1	Close 1	(Henseler et al., 2009)
	VIF	< 5	< 5	(Hair et al., 2011)

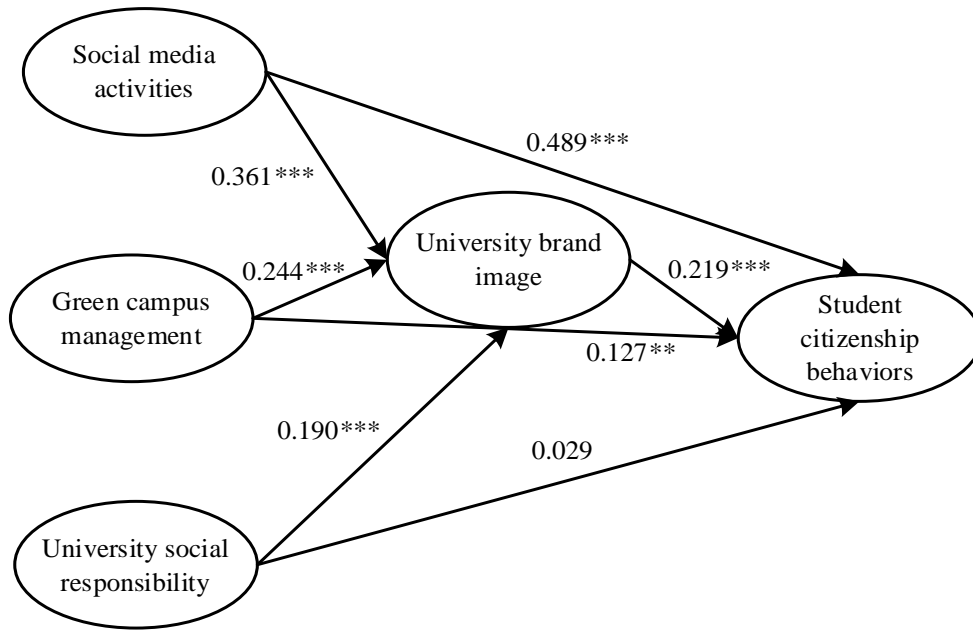
Figure 4.1 Complete Structural Equation Modeling Path Coefficients

2.Testing Mediating Effect

The following table is the test and analysis of whether there is a significant mediating effect between the variables in the data by using the Smart PLS 3.9 software in this study.

Table 4.3 Results Summary of Hypothesis Testing

Codes	Hypothesis Content	Variables	Coefficient value	Results
H1	Social media activities are positively related to university brand image.	II→SE	0.217	Accepted
H2	Green campus management is positively related to university brand image.	II→HO	0.221	Accepted
H3	University social responsibility is positively related to university brand image.	II→RE	0.243	Accepted
H4	University brand image significantly influences student citizenship behaviors.	II→OP	0.315	Accepted
H5	University brand image mediates social media activities and student citizenship behaviors.	II=>SE=>JS	0.024	Accepted

Codes	Hypothesis Content	Variables	Coefficient value	Results
H6	University brand image mediates green campus management and student citizenship behaviors.	IM=>SE=>JS	0.022	Accepted
H7	University brand image mediates university social responsibility and student citizenship behaviors.	IC=>SE=>JS	0.024	Accepted

Discussions

Through empirical analysis, social media activities (SMAs), green campus management (GCM), and university social responsibility (USR), as external stimuli, significantly affect student civic behavior (SCB) through the psychological mechanism of university brand image (UBI), supporting the "stimulus-organism-response" pathway of S-O-R theory. in the S-O-R theory. Meanwhile, the strong effect of USR on UBI (β=0.35) indicates that students' perceived social value triggers mutual supportive behaviors, which is in line with the resource exchange principle of social exchange theory. Consistent with the research on the impact of university facilities on satisfaction, this study further reveals the mediating role of UBI in education, introduces the theory of organizational citizenship behavior into the university context, and fills the theoretical gap of brand image as a psychological bridge. This finding not only enriches the research on the intersection of brand management and educational management, but also lays the groundwork for subsequent exploration of other mediating variables such as trust or affective connection.

At the practice level, this study provides university administrators with specific strategies to enhance brand image and student engagement through sustainable management practices. In the context of China's collectivist culture, students view the university as an extension of their identity, and perceptions of UBI (mean score of 5.6) are more likely to be translated into SCBs, such as recommending the school or participating in community activities.

References

[1] Alkan, Y. (2022). Assessment of sustainable green campus in terms of students with disabilities and landscaping: Çanakkale Onsekiz Mart University, Çanakkale, Turkey. *Environment, Development and Sustainability*, *25*(10), 11367-11395.

[2] Alshuwaikhat, H. M. & Abubakar, I. (2008). An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices. *Journal of Cleaner Production*, *16*(16), 1777-1785.

[3] Alves, H. & Raposo, M. (2010). The influence of university image on student behaviour. *International Journal of Educational Management*, *24*(1), 73-85.

[4] Amaral, A. R., Rodrigues, E., Gaspar, A. R., & Gomes, Á. (2020). A review of empirical data of sustainability initiatives in university campus operations. *Journal of Cleaner Production*, *250*, 119558.

Research Article

[5] Bamberger, A., Bronshtein, Y., & Yemini, M. (2020). Marketing universities and targeting international students: a comparative analysis of social media data trails. *Teaching in Higher Education*, *25*(4), 476-492.

[6] Blau, P. M. (1964). *Exchange and power in social life*. (ed.). New York: John Wiley.

[7] Blondheim, G. F. & Somech, A. (2019). Student organizational citizenship behavior: Nature and structure among students in elementary and middle schools. *Teaching and Teacher Education*, *83*, 110-119.

[8] Buchanan, F. R., Jose, S., & Khare, N. (2022). Systemic shock, cultural differences, and customer satisfaction: lessons from student perceptions in shift to non-classroom education during initial phases of pandemic. *Journal of Marketing for Higher Education*, *ahead-of-print*(ahead-of-print), 1-20.

[9] Busalim, A., Fox, G., & Lynn, T. (2022). Consumer behavior in sustainable fashion: A systematic literature review and future research agenda. *International Journal of Consumer Studies*, *46*(5), 1804-1828.

[10] Carlson, B. D. & Donavan, D. T. (2013). Human Brands in Sport: Athlete Brand Personality and Identification. *Journal of Sport Management*, *27*(3), 193-206.

[11] Dabija, D.-C., Campian, V., Stanca, L., & Tiron-Tudor, A. (2023). Generating students' loyalty towards the sustainable university during the later COVID-19 pandemic. *International Journal of Sustainability in Higher Education*, *24*(8), 1858-1876.

[12] Islam, T., Islam, R., Pitafi, A. H., Xiaobei, L., Rehmani, M., Irfan, M., & Mubarak, M. S. (2021). The impact of corporate social responsibility on customer loyalty: The mediating role of corporate reputation, customer satisfaction, and trust. *Sustainable Production and Consumption*, *25*, 123-135.

[13] Kaushal, V., Jaiswal, D., Kant, R., & Ali, N. (2021). Determinants of university reputation: conceptual model and empirical investigation in an emerging higher education market. *International Journal of Emerging Markets*, *18*(8), 1846-1867.

[14] Kethüda, Ö. & Bilgin, Y. (2023). The role of social media marketing activities in converting existing students into university advocates. *Journal of Marketing for Higher Education*, 1-22.