

EXPLORING THE INFLUENCE OF GREEN ATTITUDE OF INTERNAL AND EXTERNAL STAKEHOLDERS ON PROMOTION OF GREEN IMAGE OF EDUCATIONAL INSTITUTE

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Abstract: Greening institutional image has witnessed growing attention among scholars, policy makers, institutions and organizations in the recent years. Stakeholders' participation in educational institutions has increased in this novel effort to meet the green standards of its institution. Attempt has been made to investigate the influence of internal and external stakeholders' attitude to promote the green image of educational institutions. Structural equation modelling has been used to analyze the data collected through questionnaire survey from a central university in India. The results suggest that though all stakeholders play a critical role in building the green image of an institution but the role of internal stakeholders become prominent in exerting pressure on the institution to adopt green practices.

Keywords: Green Image, stakeholders, higher educational institution, Sustainability, India

1. INTRODUCTION

Developing sustainable societies is exerting significant and urgent challenges worldwide. The global society as a whole is going through a phase where individuals, groups, organizations, industries and governments are facing environmental challenges. Educational institutions are likely to play an active role to address the sustainable development goals. Academic institutions considerably influence the attitude of their stakeholders (Karpudewan *et al.*, 2009).

Green education is believed to be crucial to increase the understanding of global community about sustainability. Green education is defined as the process of reducing the multitude of on-site and off-site environmental impacts resulting from campus decisions and activities as well as raising environmental awareness within the

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university. Consequently, development of green culture and green practices has become a fundamental and major concern of the global fraternity. Curriculum renewal and research orientations, campus greening and community development are the strategies opted by number of universities in promotion of green culture to move towards more sustainable society (Cortese, 2003). Urgent need is to promote green attitude and commitment of all stakeholders through green education leading to green image of educational institutions.

The present paper makes an attempt to explore the factors influencing green image of an educational institution. The paper is structured as follows. Section 2 presents the literature of the theoretical framework and hypothesis deduced, while section 3 describes the research methodology employed. Section 4 presents empirical results and analysis. Discussion and conclusion is covered in section 5.

2. LITERATURE REVIEW

Prior research shows that stakeholder's participation can enhance the green image of universities in emerging countries (Wang *et al.*, 2013). Developing green image is a unique challenge for long run success of the educational institutions and it is highly dependent on the attitude of both internal and external stakeholders. Various studies have found that stakeholders' attitude can influence their attention to environmental issues (Henriques and Sadorsky, 1999; Agle *et al.*, 1999). Higher educational institutions mainly focus on change and modify the behaviour of not only their students but also its related stakeholders by integrating sustainability into its various dimensions to create a more sustainable society.

Subsequently, the institutions must reconsider their relationships with stakeholders in an attempt to develop and maintain their green image (Plewa and Quester 2008).

2.1. Green attitude of internal stakeholders

Internal stakeholders of educational institutions primarily include students, faculty members, administration and other non-teaching staff members. Students are considered as the primary stakeholders who have direct influence on the decisions and performance of the institution (Green, 2013; Zsoka *et al.*, 2013). Faculty, as internal stakeholders play various roles for adopting sustainability in higher education. They deliver knowledge, develop skills and abilities of the students and interact with many other stakeholders of the institution. Therefore, building a green attitude through training and development programmes enables to incorporate sustainability not only into the courses and curriculum but also in other aspects of university life building a green image for their organization (Lozano-García *et al.*, 2009). University administration and management develop plans, policies and strategies and play an active role in the adoption of change (Comm and Mathai, 2005). Thus administration and other staff members support are essential to promote a green image of the institution.

2.2. Green attitude of external stakeholders

Institutions of higher education play a crucial role not only in teaching, research and operational sustainability but also in fostering sustainability outside institutional boundaries, taking responsibility and helping wider society to cope with existing problems related to sustainable development (Wells *et al.*, 2009). External stakeholders of educational institution contribute to rhetoric change and promote environmental responsive behaviour and commitment to the environment (Cortese, 2003). External stakeholders includes industries, regulators and policy makers, funding bodies, local communities, environmental NGOs, placement agencies, alumni, parents and prospective students. Alumni are the biggest source of private contributions to education, and there has been a growing trend in directing their contributions in funding sustainability projects on campus (Ghosh, 2011). Alumni are key university stakeholders and their attitudes play a critical role for the institution (Mochizuki and Fadeeva, 2010). In contrast, regulators, funding bodies, placement agencies and members of environmental groups are viewed as secondary stakeholders that can indirectly influence university actions. Parents and prospective students are seen as external stakeholders for whom university commitment and sustainability orientations facilitate their university selection decisions. Varying attitude and perception of these stakeholder groups towards green image may observe due to the differences in legitimacy and influence on decisions.

2.3. Green image

The image of higher educational institutions is critical for building the attitude of the stakeholders towards the institution (Landrum *et al.*, 1998). They need to develop and maintain a distinct image in the growing competitive market (Parameswaran & Glowacka, 1995). Green image is perceived as the sustainability practices incorporated into various dimensions of the institution and the extent of environmental disclosures included in the annual reports or information published in university website (DJSI, 2015). Cortese (2003) proposed four dimensions: course and curriculum, campus operations, research and development, outreach activities for incorporating sustainability in universities. A fifth dimension named as assessment and reporting has been further identified (Lozano, 2006). Restructuring higher education curriculum integrating sustainability and environmental concern has become the need of the hour to create an environmental attitude and sustainable orientation among the future decision makers (Marcinowski, 2010). Universities' research activities inspire social and environmental innovation and deliver solutions to the unsustainable issues (Duderstad and Weber, 2011). The combined effort of curriculum and research represents universities' sustainability performance (Vagnoni & Cavicchi, 2015). University campuses are like small cities and campus greening initiatives like efficient use of resources, waste reduction and treatment, recycling need to be focused

(Hutcherson, 2013). Sustainability practices can be also promoted through the use of networking and collaborations. Universities integrating green practices as an institution within the community and other outreach programs impart principles of sustainability upon students and the community as a whole (Wright, 2007).

Green university involves the environmental or green-related features of the university that stakeholders perceive. Stakeholders are the main target audience of the sustainability reports as they are found to show their concern towards environmental communication. By disclosing sustainability information, universities are able to increase transparency, enhance institution image and reputation, legitimacy, enable benchmarking against competitors, motivate internal staff and support institution information and control processes.

3. RESEARCH METHODOLOGY

A questionnaire survey was conducted during the summer session in the month of April and May 2015 among the students of a central university in India. The questionnaire was composed of two sections. Section I covers information related to students' demographics. Section II presents eighteen items where each item conjoins individual attitude with environmental focus considering different dimensions of a higher educational institution such as curriculum, campus operations, research and outreach activities. A five-point Likert scale was adopted with 1 representing "strongly disagree" to 5 representing "strongly agree" for data collection.

A prior study was administered with twenty students during the month of April to comprehend, evaluate and criticize the items in the questionnaire for ambiguity, clarity and appropriateness. Based on pre-test feedback, instrument was modified. Finally, the survey instrument was distributed among 356 students by random visit to their respective classrooms. The students were asked to respond the same items for two groups, internal stakeholders and external stakeholders. A total of 332 effective responses have been received, exhibiting a valid response rate of 93.26 percent (as shown in Table 1).

4. EMPIRICAL RESULTS AND ANALYSIS

This section examines the descriptive statistics, reliability and validity of the constructs. Structural equation modelling (SEM) was applied to test the causal relationship between the green attitude of the stakeholders and green image of educational institution.

4.1. Descriptive statistics

Table 1 provide the descriptive statistics of the constructs. The mean value and standard deviation of the constructs were calculated to elaborate the green attitude (internal

stakeholders and external stakeholders) and green image of the two classified groups of stakeholders.

Table 1
Descriptive statistics of constructs

<i>Constructs</i>	<i>Total</i>	
	N=332 (100%)	
	Mean Value	Std Deviation
GAIS	3.60	0.86
GAES	3.99	0.69
GI	3.95	0.66

GAIS [Green Attitude of Internal Stakeholders]; GAES [Green Attitude of Internal Stakeholders]; GI [Green Image]

Exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) was employed to identify the underlying dimensions in the scale. EFA tries to identify possible constructs using maximum likelihood method with promax rotation and CFA validate the identified constructs (Child, 2006). A total of eighteen items with three constructs were identified for the measurement model and path analysis (as shown in Table 2). To test the sampling adequacy, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy & Bartlett's Test of Sphericity is computed. The KMO value of sampling adequacy (0.934) is acceptable (Kaiser, 1974) and Bartlett's Test of Sphericity is highly significant ($p < 0.001$).

4.2. Construct reliability and validity

The reliability and validity measures of constructs were examined using Cronbach's Alpha value, Average Variance Extracted (AVE) and inter-construct correlation matrix. Firstly, composite reliability (CR) is examined in connection with internal reliability, which is analogous to cronbach alpha. Table 2 shows cronbach alpha values for green attitude of internal stakeholders (GAIS) : 0.921, green attitude of external stakeholders (GAES) : 0.941 and green image (GI): 0.845, all above 0.7 satisfies the rule of thumb (Hair et al; 2013). Secondly, factor loadings associated with each accepted item were all greater than the threshold level of 0.5. Thus, reliability of the constructs is acceptable and consistent in the study.

Table 2
Reliability and validity of constructs

<i>Constructs</i>	<i>Items</i>	<i>Factor Loadings</i>	<i>Cronbach's Alpha</i>	<i>AVE</i>
GAIS	7	0.656-0.860	0.921	0.630212
GAES	7	0.669-0.938	0.941	0.682441
GI	4	0.687-0.783	0.845	0.538187

AVE: Average Variance Extracted; GAIS [Green Attitude of Internal Stakeholders]; GAES [Green Attitude of Internal Stakeholders]; GI [Green Image]

The AVE value of each construct marked above 0.5 (see Table 2) and square root of AVE for each construct exceeds the inter-correlation of other constructs (as shown in Table 3). This adequately supports construct validity of the measures in the study.

Table 3
Inter-construct correlation matrix

Constructs	GAIS	GAES	GI
GAIS	0.794		
GAES	0.466	0.826	
GI	0.487	0.568	0.734

GAIS [Green Attitude of Internal Stakeholders]; GAES [Green Attitude of Internal Stakeholders]; GI [Green Image]

4.3. Measurement model and path analysis

Structural equation modelling (SEM) was used to test the significance of the causal relationship among each construct. The overall fit of the model was assessed by goodness of fit test using multiple fit criteria (Hair *et al.* 1998). The absolute fit indices were employed in the study to evaluate overall model fitness (see Table 4). Ratio of Chi Square (χ^2) and degree of freedom (df) statistics (χ^2/df) of 1.941 indicate good fit in the specified model. In general, χ^2 is recognized as the measure of fit, it is influenced by the sample size (Byrne, 2001).

Table 4
Goodness-of-fit statistics of the structural model

Goodness-of-fit statistics	Recommended Range	Structural Model
$(\chi^2)/f$	<3.0	1.941
GFI	>0.90	0.899
CFI	>0.90	0.960
IFI	>0.90	0.960
NFI	>0.90	0.921
TLI	>0.90	0.954
RMSEA	<0.08	0.053
CAIC	<saturated model and Independent Model	859.643
CAIC (saturated Model)		2041.54
CAIC (Independent Model)		6142.453

Due to the limitation of sample size, it is replaced by the ratio of χ^2 to the degree of freedom (χ^2/df), and it is acceptable if the value is less than 3.0 (Marsh *et al.*, 1985). The Goodness-of-fit index (GFI) of 0.899 indicates moderate fit being between 0.800 and 0.900. In baseline comparisons, comparative fit index (CFI) is used to calculate improvement over competing models and having a value of 0.960 suggest good-fit of the model. The incremental fit index (IFI) is 0.960 and normed fit index (NFI) used to estimate the model fitness based on small sample sizes (Bentler 1990) is 0.921 imply a

good fit to the data. Tucker Lewis index (TLI) value is 0.954 which is equal to the recommended range, considered as a good indicator of fit indices (Hu and Bentler, 1995). The root mean square error approximation (RMSEA) value of 0.053 being within the acceptable range of less than or equal to 0.08 indicate a close fit of the model. Moreover, smaller value for Consistent Akaike's Information criterion (CAIC) than saturated and independence model have been observed in the model. The goodness of fit statistics of structural model are within the permissible limit suggests the suitability of the model where parameters are estimated and interpreted readily even under the limitation of a small sample size (Bentler, 1990; Hu and Bentler, 1995).

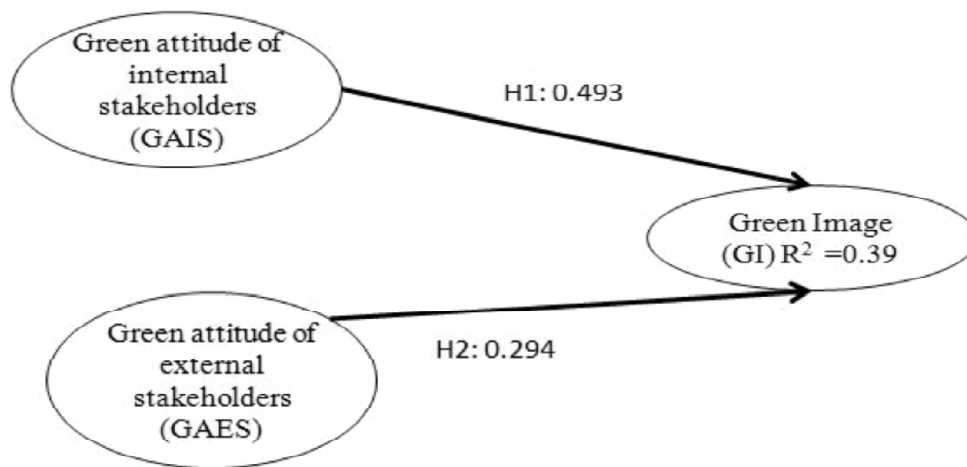


Figure 1: Measurement Model with Path Coefficients

The final model with path coefficients shown in Fig. 1 is standardized solution. The path coefficients were considered significant to support hypotheses, if t-value exceeds ± 1.96 at 0.05 significance level as depicted in Table 5.

Table 5
Standardized regression estimates

Hypothesis	path coefficients	Supported Yes/No
H1: There is a significant positive association between green attitude of internal stakeholders and green image.	0.493*	Yes
H2: There is a significant positive association between green attitude of external stakeholders and green image.	0.294*	Yes

* $p < 0.001$

GAIS (H1) and GAES (H2) have shown positive path association with green image ($\beta = 0.493, 0.294$ respectively; $p < 0.001$). Thus, the green attitudes of internal stakeholders

and external stakeholders have significant impact on green image of university is supported.

5. DISCUSSION AND CONCLUSION

With the variance of 39%, green attitude of external stakeholders and green attitude of internal stakeholders exhibits considerable explanatory power as a determinant of green image. The findings suggest that green attitude among the internal stakeholders will exert a higher pressure on the university to promote green incorporation in its policies and practices. A positive relationship between the green attitude of internal stakeholders and green image is identified which establish that students, faculties, administration and other non-teaching staff's green intention and behaviour will enhance the green image of an institution in student's viewpoint.

Students are key stakeholders and student initiatives are key features of bottom-up approaches for sustainable development in higher education (Dahle and Neumayer, 2001; Fonseca *et al.*, 2011). Further institution's action is required to educate internal stakeholders about the criticality sustainable development play for securing present and future generations. Initiatives should be taken regarding green capacity building of the faculty members. Regulators and policy makers play a vital role in adoption of green behaviour by the higher educational institutes of the country. Therefore, more effort is needed to increase their awareness, engagement and empowerment to make important changes in the institutional green image.

India has ambitious sustainable development goals and has developed strategic plans to achieve this goal, evident in the sustainable oriented governmental policies. The critical role of the higher educational sector, in promotion of sustainable development is increasingly recognized by the government and society. This study contributes towards the existing body of knowledge of sustainable development in higher education by covering both internal and external stakeholders' attitude towards the promotion of green image of the educational institutes.

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