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Impact of RATR Scale on Branding of Management Institutes in India

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ABSTRACT

Introduction: Education is a significant institution and transition to a knowledge-based economy makes education noteworthy. Students are becoming increasingly more concerned as consumers of higher education institution. Indian education system is multifaceted; the focal point encompasses quality, accessibility, obstacles, legislative changes, and expectations for the future. An institution may build a feeling of community and loyalty among stakeholders and draw in students, staff, and money with the support of a great brand. The brand image and reputation of management institutes are highly influenced by service quality elements such as tangibility, dependability, responsiveness, assurance, and empathy. ***Scope of the study:*** The branding of management institutes is critical in today's highly competitive educational landscape. Service quality factors play a significant role in shaping the brand image of these institutes, influencing both their reputation and attractiveness to prospective students. This study explores the dimensions of service quality such as 'reliability, assurance, tangibility and responsiveness' that impact the branding of management institutes. The empathy dimension is not included in this study. ***Objectives of the Study:*** To study the impact of reliability, assurance, tangibility and responsiveness factors on brand building of Higher Management Institutes ***Methodology***: The authors collected data collected from both, primary and secondary sources. Primary data was collected through survey and interview from 412 respondents which included stakeholders in the management institutes and the students. The population under study were the stakeholders of higher education institutes like students, faculties, recruiters and non-teaching staff. The data was analysed using SPSS Software. Regression and correlation models were used to test the relation between various factors that influence brand building of HEIs. Secondary data was collected from journals, periodicals and various research studies conducted on brand building of service industries, particularly the education sector. ***Result***: This paper clearly showcases the significance of RATR dimensions analysed by prospective and current stakeholders while choosing a higher management institute. ***Practical Implications:*** This study throws light on how reliability, assurance, tangibility and responsiveness are an inevitable part for branding of any management institutes. The better services offered positively impacts the management institute's reputation, leading to rise in student enrolments and enhances stakeholder engagement. Originality Value: This research study is the outcome of original research survey.

Keywords: ERVQUAL MODEL, RATR, Brand Building, Higher Management Institutes, Higher Education Institutes (HEIs).

INTRODUCTION

Education is a significant institution and transition to a knowledge-based economy makes education noteworthy because of which, students are becoming increasingly more concerned as consumers of higher education institution (Khanchitpol, Y., 2013). Indian education system is multifaceted; the focal point encompasses quality, accessibility, obstacles, legislative changes, and expectations for the future. An institution may build a feeling of community and loyalty among stakeholders and draw in students, staff, and money with the support of a great brand. The calibre of services offered by management institutes greatly influences their branding in a fiercely

competitive market of higher education institutions (HEIs). The brand image and reputation of management institutes are highly influenced by service quality elements such as tangibility, dependability, responsiveness, assurance, and empathy. Strong word-of-mouth is boosted, and the chances of student retention and future enrolment are increased when high service quality adds to student contentment and loyalty. Management institutes that prioritize providing superior service quality services are more likely to have a strong brand identity, enhancing their ability to compete in the market. (Foroudi et al., 2017) While dependability and timeliness in academic services foster trust in the institution's brand, tangible factors like the condition of facilities, infrastructure, and technology have a direct impact on perceptions of quality (Joseph, Mullen, & Spake, 2012). In HEIs, the relationship between branding and service quality emphasizes how crucial it is to meet beyond students' expectations to improve an institution's standing in the marketplace (Alshurideh, Alhadid, & Al Kurdi, 2015). The brand strength plays a vital role in attracting students, faculty, and industry partnerships, thereby amplifying the institution's market presence.

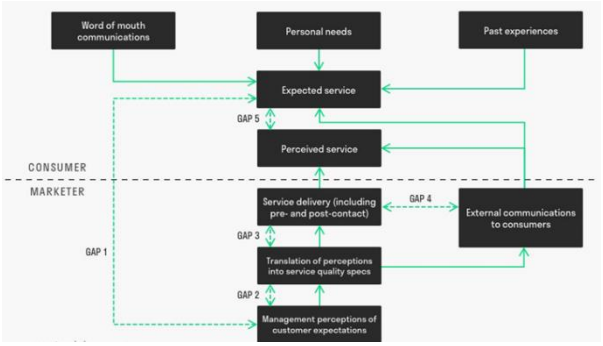
Scope of the study

The branding of management institutes is critical in today's highly competitive educational landscape. Service quality factors play a significant role in shaping the brand image of these institutes, influencing both their reputation and attractiveness to prospective students. This study explores the various dimensions of service quality such as 'reliability, assurance, tangibility and responsiveness' that impact the branding of management institutes, focusing on aspects such as academic quality, administrative efficiency, infrastructure, student support services, and overall student satisfaction. A positive service experience can lead to increased satisfaction, loyalty, and positive word-of-mouth, which are crucial for building a strong and sustainable brand. In this research article, the authors did not include empathy dimension.

Theoretical Framework and Literature Review

Service Quality Gaps Model

The focal point of Parasuraman's Gap Model and SERVQUAL Scale is also on the functional aspect of quality (Gronroos, 1984). Parasuraman et al. (1985) proposed that prior to encountering any service, customers come with certain expectations which is compared to those with the actual experience or perception after receiving the service. Given below is the famous 'Gaps Model, proposed by (Parasuraman et al., 1985a) which highlights the key essentials for delivering a high level of service quality by identifying five 'gaps' that can result in unsuccessful delivery of service.



Source: SERVQUAL model by Parasuraman, Zeithaml, and Berry (1985)

Gap 1: Knowledge Gap or Customer expectation - management perception gap.
Gap 2: Standard Gap or Management perception - service quality specifications gap.
Gap 3: Delivery Gap or Service quality specification - service delivery gap.
Gap 4: Communication Gap or Service delivery - external communication gap.
Gap 5: Expected service - perceived service gap.
Gap 5 addresses the difference between the consumer's expectation and perceived service. It depends on the size and direction of the four gaps associated with the delivery of service quality on the marketer's side.

Perception Expectation Gap Measurement (SERVQUAL Model)

The SERVQUAL scale has been proposed by Parasuraman et al. (1988) for measuring Gap 5. Parasuraman et al. (1985) identified ten factors for evaluating service quality. However, due to high correlation between some of these dimensions, ten dimensions were simplified and reduced to five dimensions naming tangibles, reliability, responsiveness, assurance, and empathy. The convergence of five variables has been confirmed by various researchers (Carman, 1990; Cronin & Taylor, 1992).

Rapid deregulation and increased competition have prompted service organizations to look for lucrative methods to set themselves apart. Effective student relationship management (SRM) practices significantly raise student and parent

happiness that leads to better retention, advocacy, and institutional success (Talereja, B., et al, 2024). Service quality and student loyalty are significantly positively correlated (Shurair and Pokharel, 2019) which also demonstrates that there is a statistically significant relationship between the institution's reputation and perceived service quality, as well as between the institution's student culture and values and overall service quality. Delivering superior service quality appears to be a prerequisite for success, if not survival, of such businesses in the 1980s and beyond. Several research articles delved with the famous SERVQUAL Model which were used to study the quality parameters of various service industries. In the study carried out by (Sahney, S., 2016) results of several approaches were combined and put out as a comprehensive TQM model for higher education which assisted in identifying the quality components that would aid in the design of higher education from the customer perspectives.

Reliability is the service provider's ability to deliver the promised service dependably and accurately (Smith et al., 2007) wherein it was stated that assurance is the competency and courtesy of employees and their ability to convey trust and confidence. Tangible is the physical evidence of the service and relates to the appearance of physical facilities, equipment, personnel, and communication materials (Suresh Chandar et al., 2002). Empathy is the ease of access, caring and individualized attention provided by the service firm to each customer (Robledo, 2001). Responsiveness is the firm's willingness or commitment to help customers and provide prompt service (Buttle, 1996). Providing excellent customer service is one tactic that has been linked to these companies' success (Rudie and Wansley 1985; Thompson, et al, 1985).

If the experience/perception meets or exceeds the expectation of the consumer then he is assumed to be satisfied whereas, if the perception is less than expectations, then the consumer is dissatisfied. Mathematically, service quality is equal to the difference between the perception and expectations, i.e., Service Quality = Perceptions – Expectations. Parasuraman et al. (1988) contended that the SERVQUAL instrument could be used to assess service quality in most service organizations. The authors of this article listed down some of these research papers which are mentioned below in Table 1.

Table 1: Research Papers on SERVICE and SERVQUAL

Sr. No.	Researcher	Period of Study	Instrument Used	Tools Used for Analysis	Conclusion on Dimensions of Service Quality
1	R. Mehta	2024	Modified SERVQUAL scale with added dimensions for online platforms	Multi-level regression analysis	Findings highlighted that reliability and security are the most significant factors affecting online service quality .
2	N. Gupta	2023	Questionnaire with dimensions of perceived value and trust	Path analysis	Results indicated that trust and perceived value are critical dimensions influencing customer satisfaction and loyalty.
3	J. Sharma & A. Das	2021	SERVQUAL scale with additional dimensions of technology	Structural Equation Modelling	The study revealed that technological advancements in service delivery significantly enhance customer satisfaction in urban areas.
4	K. Madavan & Dr. C. Vethirajan	2020	Questionnaire with five-point Likert's scale	Structural Equation Modelling	It was revealed by the findings that factors of E-service quality affect customer satisfaction.
5	D. Srinivas	2018	SERVQUAL scale	Percentage analysis	Study found that responsiveness and empathy are the main dimensions for poor quality of services.
6	K. Kelil	2019	SERVPERF Scale	Descriptive statistics with linear regression	The results indicate that customer satisfaction was affected by service quality positively.
7	S. Malviya	2016	Service quality	Descriptive statistics	The findings show that some factors like efficiency,

			questionnaire with 32 statements with seven-point Likert's scale	with factor analysis	assurance, and responsiveness are predictors of mobile banking in Indore.
8	S. Vijay Anand	2015	SERVQUAL scale	Factor analysis & chi-square	Results indicate that all dimensions of the SERVQUAL scale show a gap between customers' expectations and perceptions.
9	M. Rajasekhar	2015	E-SERVQUAL Model	ANOVA, Factor analysis, and Regression	Service quality of the bank will not be much important to the customers of rural areas.

Table 2: Factors Influencing Brand Building Table 2: Factors Influencing Brand Building

Sr. No.	Name of the Researcher	Period of Study	Variables / Factors influencing Brand Building	Research Gap
1	Singh, N.	2024	AI-driven tools for teaching • Personalized learning experiences •Research ecosystem • Student diversity • Global rankings • CSR and societal impact initiatives	The study focused primarily on urban areas and did not address the branding challenges faced by regional and rural HEIs.
2	Kumar, R. & Sharma, M.	2023	• Industry-academia collaboration • Digital adoption • Alumni network • Faculty retention • Sustainability initiatives • International partnerships	The study focused on technology's role in brand building but lacked analysis of cultural and regional influences on HEI branding in rural India.
3	Verma, Akansha	2022	• Institutional autonomy • Teaching and research • Management structure and commitment • Employee involvement and training • Resistance to change • Lack of infrastructure • Inadequate funding • Lack of human resource management	The study is conducted only for colleges affiliated o University of Mumbai in geographical area of Mumbai. It can we undertaken to consider deemed universities, open universities and private universities in the same region.
4	Abbas,J.	2020	• Teaching quality • Facilities • Support staff quality • Employability links • Safety and security • Extra-curricular activities	The existing literature lacks to provide qualitative data on SQ in HEIs from students' perspectives in Asian countries including India.
5	Anupal Mongia	2020	• Quality of faculty • Infrastructure • Pedagogy • Course fee • Industry exposure • Training and placement • Support and research • Regulatory and accreditation bodies	The present study was concerned only with the management colleges affiliated under Devi Ahilya' University in management stream in Indore city. It emphasis on image building of the management institutes with only 8 factors taken into consideration. Other factors such as syllabus, examination, and social factors which exert impact

				on the students and academic professionals is not taken into consideration.
6	Ana Claudia Braun Endo, Luiz Alberto de Farias, Pedro Simoes Coelho	2019	• Combination of services offered • Brand reputation • Leadership involvement • Framing and implementation of strategic guidelines • Strong value propositions and credibility	This study can be conducted with more variables of service quality affecting branding of higher education institutes.
7	Holkar, Smita	2016	• Student performance • Students' achievement • College grade & ranking • Infrastructure & campus • Placement & training • Academic team • Pedagogy • Student facilities	This study is conducted on engineering colleges. The impact of this study on management colleges can be considered for further studies.
8	Nair, Neela B	2011	• Reliability • Tangibility • Responsiveness • Assurance • Empathy	This study can be conducted for Mumbai and Pune region which pockets maximum number of B schools in India.
9	Rajalakshmi, P	2011	• Placement • Safe environment for women • Faculty and teaching • Up-to-date facilities and classrooms • Opportunities for social activities • Regional college ranking • Attractive and appealing website • Quality of the programmes/academic excellence • Reputation and prestige • Appearance of campus • Convenience of close to home • Favourable campus • Employment Opportunities/placement • Opportunities for social activities • Regional college ranking Quality of the programmes/academic excellence • Availability of degrees and majors • Encourage for innovation • Job security and good rewarding system • Great scope for research activities	It focussed on total quality management principles among higher education institutes specifically located in Uttar Pradesh.

Source: Authors' Compilation

RESEARCH METHODOLOGY

The authors collected data collected from both, primary and secondary sources. Primary data was collected through survey and interview from 412 respondents which included stakeholders in the management institutes and the students. The data was analysed using SPSS Software. Regression and correlation models were used to test the relation between various factors that influence brand building of HEIs. Statistical tools such as multiple regression and simple linear regression tools were used to analyse the data. The population under study were the stakeholders of higher education institutes like students, faculties, recruiters and non-teaching staff. Secondary data was collected from journals, periodicals and various research studies conducted on brand building of service industries, particularly the education sector.

Research Objectives

- The objectives of this research article are
- To evaluate the impact of reliability factor on brand building of HEIs.

- To assess the impact of assurance factor on brand building of HEIs.
- To measure the impact of tangibility factor on brand building of HEIs.
- To evaluate impact of responsiveness factor on brand building of HEIs.

Data Analysis and Findings

Demographic data of sample (N=146)

Age Group	Age Group	No. of Respondents	Percent (%)
	18 – 25	66	45.2
	26 – 35	21	14.4
	36 – 45	25	17.1
	46 – 55	21	14.4
	56 – 60	11	7.5
	Above 60	2	1.4
	Total	146	100
Gender	Gender	No. of Respondents	Percent (%)
	Male	74	50.7
	Female	72	49.3
	Total	146	100
Occupation	Occupation	No. of Respondents	Percent (%)
	Student	68	46.6
	Parent of Student	25	17.1
	Alumni	19	13
	Faculty/Employee	28	19.2
	Recruiter	6	4.1
	Total	146	100
Annual Income	Annual Income	No. of Respondents	Percent (%)
	Below 3 LPA	28	19.2
	3 – 6 LPA	51	34.9
	6 – 9 LPA	47	32.2
	Above 9 / Above 14 LPA	19	13
	Total	146	100

The demographic analysis of the 146 respondents highlights a youthful skew, with the largest proportion (45.2%) belonging to the 18–25 age group, indicating that students form the primary stakeholder group. This is followed by participants aged 36–45 (17.1%) and 26–35 (14.4%), representing early to mid-career professionals. Respondents aged 46–60 make up a moderate 21.9%, while only 1.4% are above 60. Gender distribution is nearly equal, with 50.7% male and 49.3% female, ensuring balanced representation.

Occupationally, students constitute the majority (46.6%), reaffirming their central role in the study. Faculty and employees account for 19.2%, followed by parents (17.1%), alumni (13%), and recruiters (4.1%), indicating a diverse academic and institutional ecosystem. Regarding income levels, a significant share (34.9%) earns between 3–6 LPA, while 32.2% fall in the 6–9 LPA bracket. Lower income (below 3 LPA) accounts for 19.2%, and only 13% report earnings above 9 LPA. This distribution suggests a concentration in the mid-income segments, with representation from both lower and higher income groups.

RO 1: To evaluate impact of reliability factor on brand building of HEI.

Variable: Reliability and branding with respect to reliability (BReliability).

Table 3: Descriptive Statistics of Reliability Factor

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Reliability	146	3	5	4.33	.560	-.053	.350

BReliability	146	2	5	4.57	.620	-1.719	.350
Valid N (listwise)	146						

The data indicates that the perception of reliability is positive among respondents, with branding efforts further elevating this perception. The high mean and negative skew for branding with respect to reliability underscore the effectiveness of branding in strengthening the association with reliability. HEIs could leverage this insight by continuing to focus on branding strategies that emphasize reliability, ensuring consistency and addressing the slight variation in perceptions.

Table 4: Correlation Coefficient of Reliability Factor

		Reliability	BReliability
Reliability	Pearson Correlation	1	.353*
	Sig. (2-tailed)		.016
	Sum of Squares and Cross-products	14.109	5.522
	Covariance	.314	.123
	N	146	146
BReliability	Pearson Correlation	.353*	1
	Sig. (2-tailed)	.016	
	Sum of Squares and Cross-products	5.522	17.304
	Covariance	.123	.385
	N	146	146

*. Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlation coefficient (r=0.353) between Reliability and BReliability indicates a moderate positive relationship, implying that higher perceptions of Reliability are associated with higher perceptions of BReliability. The correlation is statistically significant at the 0.05 level (p=0.016), confirming that the observed relationship is unlikely to be due to chance. This suggests that the two variables share a meaningful connection, though the strength of the relationship is moderate rather than strong.

Table 5: Relationship between Reliability and BReliability

		BReliability	Reliability
Pearson Correlation	BReliability	1.000	.353
	Reliability	.353	1.000
Sig. (1-tailed)	BReliability	.	.008
	Reliability	.008	.
N	BReliability	146	146
	Reliability	146	146

The correlation table shows the relationship between Reliability and BReliability. The Pearson correlation coefficient is r=0.353, indicating a moderate positive relationship between the two variables. This means that higher scores on Reliability are associated with higher scores on BReliability. The significance value for the correlation (p=0.008, 1-tailed) confirms that the relationship is statistically significant at the 0.05 level, suggesting the likelihood of this correlation occurring by chance is very low. The sample size for both variables is consistent (N=146).

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.353a	.125	.105	.587	.125	6.279	1	44	.016	1.745

a. Predictors: (Constant), Reliability
b. Dependent Variable: BReliability

The model summary indicates that Reliability explains 12.5% of the variance in BReliability (R2=0.125), which is a small but meaningful contribution. The adjusted R2 value (0.105) slightly accounts for potential model overfitting, reinforcing the robustness of the results. The standard error of the estimate (0.587) suggests a moderate level of accuracy in predicting BReliability from Reliability. The F-change statistic (F=6.279F = 6.279) confirms the model's significance, implying that Reliability is a significant predictor of BReliability.

Table 7: ANOVA Table of Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.161	1	2.161	6.279	.016b
	Residual	15.143	44	.344		
	Total	17.304	45			

a. Dependent Variable: BReliability
b. Predictors: (Constant), Reliability

The ANOVA table assesses the overall fit of the regression model. The regression sum of squares (2.161) compared to the residual sum of squares (15.143) indicates that the model explains a meaningful portion of the variability in BReliability. The F-statistic (F=6.279, p=0.016) is statistically significant, showing that the model provides a better fit to the data than a model with no predictors. This supports the conclusion that Reliability significantly predicts BReliability.

Table 8: Coefficient Table of Reliability Factor

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.872	.681		4.216	.000					
	Reliability	.391	.156	.353	2.506	.016	.353	.353	.353	1.000	1.000

a. Dependent Variable: BReliability

The coefficients table reveals the predictive power of Reliability for BReliability. The unstandardized coefficient (B=0.391) indicates that a one-unit increase in Reliability is associated with a 0.391 increase in BReliability, on average. The standardized beta coefficient (β=0.353) shows the strength of this relationship, matching the earlier correlation results. The predictor is statistically significant (p=0.016), confirming its meaningful contribution to the model. The collinearity statistics (Tolerance=1, VIF=1.000) indicate no multicollinearity issues, further validating the robustness of the regression model.

Table 9: Coefficient Correlations of Reliability

Model			Reliability
1	Correlations	Reliability	1.000
	Covariances	Reliability	.024

a. Dependent Variable: BReliability

The coefficient correlations table shows that Reliability has a perfect correlation with itself (r=1.000r = 1.000r=1.000) and a covariance of 0.024. This indicates that there is no multicollinearity concern within the variable itself. Since this table focuses on one predictor (Reliability), the absence of other variables ensures no cross-correlations or covariances are present.

Table 10: Collinearity Diagnostics of Reliability Factor

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Reliability
1	1	1.992	1.000	.00	.00
	2	.008	15.687	1.00	1.00

a. Dependent Variable: BReliability

The collinearity diagnostics table confirms the absence of multicollinearity in the model. The first dimension has an eigenvalue of 1.992 with a condition index of 1.000, which indicates a strong, stable model. The second dimension, with a much smaller eigenvalue (0.008) and a high condition index (15.687), does not significantly affect the model because all variance proportions for both the constant and Reliability are within acceptable limits (1.00 each). This suggests that the predictor (Reliability) is uniquely contributing to the model without overlap or redundancy.

Table 11: Residual Statistics of Reliability Factor

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.05	4.83	4.57	.219	146

Residual	-2.438	.954	.000	.580	146
Std. Predicted Value	-2.368	1.204	.000	1.000	146
Std. Residual	-4.155	1.626	.000	.989	146

a. Dependent Variable: BReliability

The table 11 evaluates the distribution and fit of the residuals in the regression model. The predicted values for BReliability range from 4.05 to 4.83 with a mean of 4.57, closely aligned with the actual mean of BReliability. The residuals (differences between predicted and actual values) vary from -2.438 to 0.954, with a mean of 0, confirming no systematic bias in the model. The standard deviation of residuals (0.580) is moderate, indicating that the model predictions are fairly accurate. The standardized residuals, with a range from -4.155 to 1.626, suggest the presence of some outliers but generally fall within an acceptable range.

RO 2: To assess the impact of assurance factor on brand building of HEIs

Table 12: Descriptive Statistics of Assurance Factor

	Mean	Std. Deviation	N
BAssurance	4.50	.691	146
Assurance	4.52	.547	146

The descriptive statistics show that both BAssurance (mean = 4.50, SD = 0.691) and Assurance (mean = 4.52, SD = 0.547) have high average values on their respective measurement scales, indicating favourable responses overall. The smaller standard deviations suggest limited variability in the responses, with scores clustered around the mean. The sample size is consistent across variables (N=146).77

Table 13: Pearson Correlation of Assurance Factor

		BAssurance	Assurance
Pearson Correlation	BAssurance	1.000	.646
	Assurance	.646	1.000
Sig. (1-tailed)	BAssurance	.	.000
	Assurance	.000	.
N	BAssurance	146	146
	Assurance	146	146

The Pearson correlation coefficient between BAssurance and Assurance is r=0.646, indicating a strong positive relationship. This suggests that higher ratings on Assurance are strongly associated with higher ratings on BAssurance. The correlation is statistically significant (p=0.000, 1-tailed), confirming that the relationship is unlikely to be due to chance. The consistent sample size (N=146) further strengthens the reliability of these findings.

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.646a	.418	.404	.533	.418	31.544	1	44	.000	1.880

a. Predictors: (Constant), Assurance

b. Dependent Variable: BAssurance

The model summary reveals that Assurance accounts for 41.8% of the variance in BAssurance (R2=0.418), indicating a substantial explanatory power. The adjusted R2=0.404 confirms the model's robustness, with a slight adjustment for potential overfitting. The standard error of the estimate (0.533) suggests moderate accuracy in predicting BAssurance from Assurance. The FFF-change statistic (F=31.544, p=0.000) confirms the overall statistical significance of the model. The Durbin-Watson value (1.880) indicates that there is no major concern of autocorrelation in the residuals.

Table 15: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.977	1	8.977	31.544	.000b

	Residual	12.523	44	.285		
	Total	21.500	45			

Dependent Variable: BAssurance

b. Predictors: (Constant), Assurance

The ANOVA table confirms the significance of the regression model (F=31.544,p=0.000). The regression sum of squares (8.977) compared to the residual sum of squares (12.523) indicates that the model explains a significant portion of the total variability in BAssurance. This supports the hypothesis that Assurance is a meaningful predictor of BAssurance.

Table 16: Coefficient of Assurance Factor

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zeroorder	Partial	Part	Tolerance	VIF
(Constant)	.810	.662		1.224	.228					
Assurance	.816	.145	.646	5.616	.000	.646	.646	.646	1.000	1.000

a. Dependent Variable: BAssurance

The coefficients table shows that the unstandardized coefficient (B=0.816) indicates that for every one-unit increase in Assurance, BAssurance increases by 0.816 units on average. The standardized beta coefficient (β=0.646) demonstrates a strong relationship between the variables. The predictor (Assurance) is statistically significant (p=0.000), confirming its importance in predicting BAssurance. Collinearity statistics (Tolerance=1.000,VIF=1.000) show no multicollinearity issues.

Table 17: Coefficient Correlation of Assurance

Model			Assurance
1	Correlations	Assurance	1.000
	Covariances	Assurance	.021

a. Dependent Variable: BAssurance

The coefficient correlations table indicates no multicollinearity concerns, as Assurance has a perfect correlation with itself (r=1.000) and a covariance of 0.021. This ensures that the predictor contributes uniquely to the regression model.

Table 18: Collinearity Diagnostics of Assurance Factor

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Assurance
1	1	1.993	1.000	.00	.00
	2	.007	16.767	1.00	1.00

a. Dependent Variable: BAssurance

The collinearity diagnostics table shows that the eigenvalue for the first dimension (1.993) with a condition index of 1.000 confirms model stability. The second dimension has a small eigenvalue (0.007) with a higher condition index (16.767), but it does not significantly impact the results. Both variance proportions for the constant and Assurance are acceptable (1.00 each), indicating no collinearity concerns.

Table 19: Residual Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.26	4.89	4.50	.447	146
Residual	-1.258	.926	.000	.528	146
Std. Predicted Value	-2.781	.874	.000	1.000	146
Std. Residual	-2.358	1.735	.000	.989	146

a. Dependent Variable: BAssurance

The residuals statistics table highlights that the predicted values for BAssurance range from 3.26 to 4.89 with a mean of 4.50, closely aligning with the actual mean. The residuals (difference between observed and predicted values) range from −1.258 to 0.926 with a mean of 0.000, indicating no systematic bias. The standard deviation of residuals (0.528) is moderate, confirming that the model provides reasonably accurate predictions. The standardized residuals (−2.358 to 1.735) fall within an acceptable range, suggesting no extreme outliers in the data.

RO 3: To measure the impact of tangibility factor on brand building of HEIs.

Variable: Tangibility and branding with respect to tangibility (Btangibility).

Table 20: Descriptive Statistics of Tangibility Factor

	Mean	Std. Deviation	N
BTangibility	4.26	.773	146
Tangibility	4.37	.679	146

The descriptive statistics reveal that the mean value for BTangibility is 4.26 (SD = 0.773), while the mean value for Tangibility is slightly higher at 4.37 (SD = 0.679). This suggests that both variables have high ratings on the measurement scale, with relatively low variability, indicating that the responses are clustered around the mean.

Table 21: Pearson Correlation of Tangibility Factor

		BTangibility	Tangibility
Pearson Correlation	BTangibility	1.000	.490
	Tangibility	.490	1.000
Sig. (1-tailed)	BTangibility	.	.000
	Tangibility	.000	.
N	BTangibility	146	146
	Tangibility	146	146

The Pearson correlation coefficient between BTangibility and Tangibility is r=0.490, indicating a moderate positive relationship between the two variables. This suggests that higher scores in Tangibility are moderately associated with higher scores in BTangibility. The correlation is statistically significant (p=0.000, 1-tailed), confirming that the relationship is not due to random chance.

Table 22: Model Summary of Tangibility Factor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.490a	.240	.223	.681	.240	13.916	1	44	.001	2.320

a. Predictors: (Constant), Tangibility
b. Dependent Variable: BTangibility

The regression model shows that Tangibility accounts for 24.0% of the variance in BTangibility (R2=0.240), indicating a moderate level of explanatory power. The adjusted R2=0.223 suggests that the model is slightly less effective after accounting for the number of predictors. The standard error of the estimate (0.681) indicates a moderate level of accuracy in predicting BTangibility. The FFF-change statistic (F=13.916, p=0.001) confirms that the model is statistically significant. The Durbin-Watson value (2.320) suggests no significant autocorrelation in the residuals.

Table 23: Anova of Tangibility Factor

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.456	1	6.456	13.916	.001b
	Residual	20.413	44	.464		
	Total	26.870	45			

Dependent Variable: BTangibility
Predictors: (Constant), Tangibility

The ANOVA table confirms that the regression model is statistically significant (F=13.916,p=0.001). The regression sum of squares (6.456) compared to the residual sum of squares (20.413) indicates that the model explains a meaningful portion of the total variance in BTangibility. This supports the conclusion that Tangibility is a significant predictor of BTangibility.

Table 24: Coefficient for Tangibility Factor

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.822	.662		2.754	.009					
	Tangibility	.558	.150	.490	3.730	.001	.490	.490	.490	1.000	1.000

a. Dependent Variable: BTangibility

The unstandardized coefficient for Tangibility (B=0.558) indicates that for every one-unit increase in Tangibility, BTangibility increases by 0.558 units on average. The standardized beta coefficient (β=0.490) confirms a moderate positive relationship. The predictor (Tangibility) is statistically significant (p=0.001), validating its importance in predicting BTangibility. The collinearity statistics (Tolerance=1.000,VIF=1.000) indicate no multi-collinearity concerns in the model.

Table 25: Coefficient Correlations of Tangibility Factor

Model			Tangibility
1	Correlations	Tangibility	1.000
	Covariances	Tangibility	.022

a. Dependent Variable: BTangibility

The coefficient correlations table shows that Tangibility has a perfect correlation with itself (r=1.000) and a covariance value of 0.022 These values confirm the consistency and reliability of the predictor in the model.

Table 25: Collinearity Diagnostics of Tangibility Factor

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Tangibility
1	1	1.988	1.000	.01	.01
	2	.012	13.098	.99	.99

a. Dependent Variable: BTangibility

Table 25 indicates that the eigenvalue for the first dimension (1.988) with a condition index of 1.000 confirms model stability. The second dimension, with a smaller eigenvalue (0.012) and a higher condition index (13.098), does not pose significant concerns. Variance proportions for the constant and Tangibility (0.01 and 0.99 respectively) suggest no multicollinearity issues.

Table 26: Residual Statistics of Tangibility

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.94	4.61	4.26	.379	146
Residual	-1.055	1.504	.000	.674	146
Std. Predicted Value	-3.492	.929	.000	1.000	146
Std. Residual	-1.548	2.208	.000	.989	146

a. Dependent Variable: BTangibility

Table 26 illustrated that the predicted values for BTangibility range from 2.94 to 4.61 with a mean of 4.26, which closely aligns with the actual mean. The residuals range from −1.055 to 1.504, with a mean of 0.000, indicating no systematic bias. The standard deviation of the residuals (0.674) is moderate, confirming the model's accuracy. The standardized residuals (−1.548 to 2.208) fall within an acceptable range, indicating no extreme outliers in the dataset.

RO 4: To evaluate impact of responsiveness factor on brand building of HEIs
Variable: Responsiveness and branding with respect to responsiveness (BResponsiveness).

Table 27: Descriptive Statistics of Responsiveness Factor

	Mean	Std. Deviation	N
BResponsiveness	4.46	.690	146
Responsiveness	4.70	.511	146

The mean value for BResponsiveness is 4.46 with a standard deviation of 0.690, while the mean for Responsiveness is higher at 4.70 with a lower standard deviation of 0.511. Therefore table 27 suggests that participants rated Responsiveness slightly higher on average and with less variability compared to BResponsiveness, indicating a more consistent perception of Responsiveness among the participants.

Table 28: Pearson Correlations of Responsiveness Factor

		BResponsiveness	Responsiveness
Pearson Correlation	BResponsiveness	1.000	.529
	Responsiveness	.529	1.000
Sig. (1-tailed)	BResponsiveness	.	.000
	Responsiveness	.000	.
N	BResponsiveness	146	146
	Responsiveness	146	146

Table 28 illustrates Pearson correlation between BResponsiveness and Responsiveness is 0.529, which is statistically significant ($p < 0.001$). This moderate positive correlation implies that higher levels of Responsiveness are associated with higher levels of BResponsiveness. The sample size (N) for both variables is 146, ensuring sufficient data for the correlation analysis.

Table 29: Model Summary of Responsiveness Factor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.529a	.280	.264	.592	.280	17.121	1	44	.000	1.984

a. Predictors: (Constant), Responsiveness
b. Dependent Variable: BResponsiveness

The regression model in table 29 shows an R value of 0.529, indicating a moderate linear relationship between Responsiveness (predictor) and BResponsiveness (dependent variable). The R Square value is 0.280, meaning that approximately 28% of the variance in BResponsiveness can be explained by Responsiveness. The Durbin-Watson statistic is 1.984, suggesting no significant autocorrelation in the residuals.

Table 30: ANOVA score of Responsiveness Factor

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5.998	1	5.998	17.121	.000b
	Residual	15.415	44	.350		
	Total	21.413	45			

a. Dependent Variable: BResponsiveness
b. Predictors: (Constant), Responsiveness

The ANOVA results as depicted in Table 30, reveal that the regression model is statistically significant ($F = 17.121$, $p < 0.001$). This indicates that the predictor variable (Responsiveness) significantly predicts the dependent variable (BResponsiveness). The proportion of variance explained by the model (28%) is substantial.

Table 31: Regression Coefficients of Responsiveness Factor

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.100	.816		1.348	.184					

	Responsiveness	.715	.173	.529	4.138	.000	.529	.529	.529	1.000	1.000

a. Dependent Variable: BResponsiveness

Table 31 shows the regression coefficient for Responsiveness 0.715 with a standard error of 0.173, and it is statistically significant ($p < 0.001$). This indicates that for every one-unit increase in Responsiveness, BResponsiveness is expected to increase by 0.715 units. The standardized coefficient (Beta) is 0.529, reinforcing the moderate effect size. No multicollinearity issues are present, as tolerance is 1.000 and VIF is 1.000.

Table 32: Pearson Correlation of Responsiveness

Model			Responsiveness
1	Correlations	Responsiveness	1.000
	Covariances	Responsiveness	.030

a. Dependent Variable: BResponsiveness

As illustrated in table 32, correlation coefficient for Responsiveness within the regression model is 1.000, confirming its sole contribution to predicting BResponsiveness. The covariance value is 0.030, showing low shared variance, likely due to the simplicity of the model.

Table 33: Collinearity Diagnostics for Responsiveness Factor

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Responsiveness
1	1	1.994	1.000	.00	.00
	2	.006	18.644	1.00	1.00

a. Dependent Variable: BResponsiveness

The eigenvalues and condition indices as illustrated in Table 33 do not indicate multicollinearity concerns. The variance proportions for both the constant and Responsiveness are evenly distributed, further supporting the robustness of the regression model.

Table 34: Descriptive Statistics of Responsiveness Factor

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.24	4.67	4.46	.365	146
Residual	-1.674	1.041	.000	.585	146
Std. Predicted Value	-3.320	.596	.000	1.000	146
Std. Residual	-2.828	1.758	.000	.989	146

a. Dependent Variable: BResponsiveness

The predicted values (Table 34) for BResponsiveness range from 3.24 to 4.67, with a mean of 4.46 and a standard deviation of 0.365, closely aligning with the actual data. The residuals show a mean of 0.000, indicating no systematic bias in the predictions. The standardized residuals fall within acceptable limits (-2.828 to 1.758), suggesting no significant outliers having the strongest impact, reinforcing its strategic significance

RESULT:

The analysis confirms that Responsiveness, Tangibility, Assurance, and Reliability significantly influence their respective branding perceptions (BResponsiveness, BTangibility, BAssurance, and BReliability). Assurance has the strongest impact, explaining 41.8% of BAssurance's variance, while Responsiveness (28%), Tangibility (24%), and Reliability (12.5%) also play crucial roles. All regression models are statistically significant, with no multicollinearity or residual issues, ensuring reliable and valid results. Branding efforts significantly enhance customer perceptions across all dimensions, reinforcing the importance of strategic brand positioning.

Recommendations and Practical Implications

Prioritize Assurance in Branding – Since Assurance has the highest impact, service industries, especially the management institutions need to emphasize trust, expertise, and credibility in branding strategies.

Enhance Responsiveness for Stronger Brand Perception – HEIs should focus on quick response times, keeping the customer engaged to boost branding effectiveness.

Improve Tangibility Elements – Investing in tangible assets such as infrastructure, service environments, visual branding, and product presentation which positively impact brand perception.

Strengthen Reliability through Consistency – Building customer trust through consistent service delivery, and clear brand positioning shall reinforce reliability perceptions.

Integrated Branding Strategy- A holistic approach that combines responsiveness, tangibility, assurance and reliability will maximize branding impact and customer trust.

CONCLUSION

Reliability moderately predicts BReliability, explaining 12.5% of variance, emphasizing the role of branding in strengthening reliability perceptions. Responsiveness significantly predicts BResponsiveness, explaining 28% of its variance, with no statistical issues, making it a key factor in branding. Tangibility moderately predicts BTangibility, accounting for 24% of variance, confirming its role in shaping branding perception. Assurance strongly predicts BAssurance, with a high correlation (r = 0.646) and 41.8% variance explained, highlighting its critical importance.

Overall, branding effectively enhances perceptions across all dimensions, with Assurance having the strongest impact, reinforcing its strategic significance.

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