Application of HR Scorecard in Higher Educational Institutions in India: A Study of a Selected University

Abstract

Committees and Commissions formed on higher education since independence talked about the structural changes in higher education but a very few of them talked about incorporating Human Resource Management practices in higher education. In education system the human resource is the most important aspect for its growth and sustenance, but it is quite surprising that various committees and commissions focussed on education through structural changes without considering improvement in teachers' quality through human resource management interventions. In an era of strategic human resource management, it is inevitable to focus on teachers, who are responsible for teaching, research, and development in higher education, to be managed professionally. Professional management of human resource, i.e. teachers and other staff members, has become essential due to students' reliability on teachers and staff for building them personally and professionally to make them future-ready. Thus, the present study tries to introduce HR Scorecard in higher education system as managing human resource improves performance of employees is well documented through research (Cunningham & Kempling, 2011). The Balanced scorecard is a management measurement tool in general and HR Scorecard is a measurement tool of the HR function in specific. There is a dearth of research on studies on HR Scorecard in India, specifically and its influence on higher education in Indian universities, institutions and/or colleges.

Keywords: Higher education in India, Committees and Commissions on higher education, HRM practices in higher education, HR Scorecard in higher education.

Table of Contents

CHAPTER 1

Introduction	1
Problem of the study	3
Rationale of the study	4
Objectives of the study	4
Methodology	4
Research Hypothesis	5
Data Analysis	7
Scope and Limitations of the study	7
Managerial Implications under the study	7
Chapter Scheme	7

CHAPTER 2

Review of Literature	9
Higher Education in India: Pre independence	10
Higher Education in India: Post-independence	11
Committees and Commissions on Higher Education	12
Human Resource Management Functions	12
Cost Effectiveness in Higher Education Institutions	12
HR Aspects in HEIs and Quality Improvement	13
Performance and Training based compensation in HEIs	13
Grievance handling of teachers' issues and Benchmarking	14
Quality Standards in Higher Education	14
Improving Teachers' Quality through National Education Policy, (NEP), 2020 and its recommendations	15
Challenges faced by teachers	15
Evolving roles of HR	16
HRM Practices in Higher Education	16
The HR Scorecard	18
Implementation of the HR Scorecard	19
Consumerism in Higher Education	20
Enhancing customer delight	21

How to improve Teachers' Quality in HEIs through the HRSC 21
HRSC and Teachers' Quality 22
Continuous Professional Development (CPD) for teachers in HEIs 23
Competencies by Teachers for improving Quality through the HRSC 23
Digital Transformation of HEIs: Need of the hour 24
Impact of HRM practices on the performance of institutions 25
Models to improve and enhance teachers' quality in Higher Education 25
Models of Service quality in HEIs: SERVQUAL 25
HESQUAL Model for service quality in HE 26
HEDPERF Model for service quality in Higher education 26
Models used to measure and enhance performance in HEIs 26
Balanced Scorecard 26
How HRSC fills in the gaps of the BSC 27
Malcolm Bridge Model 28
3P model of Teaching-learning in higher education 29
Blooms Taxonomy 29
TQM in Higher Education 30
Exploring Scorecards other than the HRSC 30
Workforce Scorecard (WSC) (2005) 30
WSC and its key elements 30
Human Resource Development Scorecard (HRDSC) 31
The BSC, WSC and HRSC 31
The HRSC Model 32
Vision/ mission 33
Customer Perspective 33
HPWS: The learning and development (L&D) perspective 33
HR Operations Perspective 34
Why the HRSC? 34
Creating an HR Scorecard 35
Why to create the HR Scorecard? 35
Creating a system for measuring HR 35
Identifying HR Deliverables 35
High-Performance Work System 36

Determining HR system alignment 36
Model of the HR Scorecard for HEIs 37
Creating the HRSC for teachers and staff of the Maharaja Sayajirao University of Baroda (MSU) 38
Vision of the M.S. University 38
Mission of the M.S. University 38
HR Operations 38
Measuring HR and Implement 39
Students' Feedback 40
High-Performance Work Systems 40
HR Systems 40
HR Competencies 40
Management of HPWS 41

CHAPTER 3
Research Methodology 42
Research Design 42
Independent Variables under the study 42
Dependent Variables under the study 43
Sampling Plan 43
Target Population 43
Research Methodology 43
Data 43
Sources of Data Collection 43
Data Analysis 43
Sample Size Determination 44
Basis of quota sampling 44
Tool for collecting the data 46
Data Collection instrument 46
Development of the instrument for collecting data 46
Biographical information details 46
Questionnaire details 47
Instrument for measuring perception of students about teachers 47

Instrument Validity Procedures 50
Statistics used for data analysis 50
Delimitation of the study 51
Limitations of the study 51
Managerial implications under this study 51
Future Scope of the Study 51
Statistical Tools and Techniques 51

CHAPTER 4
Data Analysis and Interpretation 52
Data analysis 52
Descriptive statistics 52
Normality of data 52
Validity and reliability of the instrument 52
Parametric and non-parametric tests 53
Respondents' Demographic Profile 53
Awareness about grade of the university 54
Awareness about rank of the university 54
Total students per faculty per Annual Report 2019-2020 55
Explanation of Demographic Profile of Respondents 55
Age profile of respondents 55
Gender profile of respondents 55
Previous medium of instruction profile of respondents 56
Name of the faculty to which respondents belong to 56
Program/ course the respondents are currently pursuing 56
Awareness level about grading of The M.S. University 56
Relationship between awareness of ranking/grading and various categories of respondents 57
Perception of students towards 'Teachers' and 'Curriculum' 64
Factor Analysis for 2 components 'CA' and 'TPT' 65
KMO and Bartlett's test of sphericity 65
Anti-image matrix and communalities table 65
Components extracted based on Factor Analysis 66

Rotated component matrix table	66
Extraction Method: Principal Component Analysis	67
Analysis of Tech-pro teachers and Curriculum appropriateness	68
Perception of students towards Teachers' Various Traits	95
Students Perception about Traits of Teachers Based on Components – 'Soft Skills' and 'Technical Skills'	97
Analysis of 'Soft Skills' and 'Technical Skills' of teachers	99
Perception of Students towards 'Pedagogy' of teachers and 'Teacher Engagement' with students	127
Analysis of 'Pedagogy' of teachers and 'Teacher engagement' with students	128
Perception of students on Leadership Qualities of Teachers' (LQT)	153
Analysis of Leadership Quality of Teachers	154
Improvement in 'Perception of teachers' from the current position among various areas	168
Perception of students towards Abilities' enhancing tools: Curriculum, Teaching Methods, and Assessment Methods	183
Perception of students towards 'Soft Skills of Staff'	190
Analysis of Soft Skills of Staff	191
Best practices of universities across India: MSU vs other universities	196
A comparative analysis of The Maharaja Sayajirao University of Baroda and other universities	196
Current Employment Structure at universities	196
Guidelines followed for recruitment of teachers	197
Areas of Training for newly appointed teachers	198
Training provided to Teaching and Non-teaching Staff	199
Sources of Funds for Faculty Development Programs (FDPs)	201
HR Practices in Universities	202
Development Centres for Orientation programs and Refresher courses	205
Maintaining Teacher-student ratios	206
Developing competencies of teachers through various methods	206
Developing competencies of Teachers: Other universities vs MSU	207
Factors contributing to ROI of universities	208

Factors Measuring Teachers' Performance 209
Analysis of the Expert Interview with the Registrar of The Maharaja Sayajirao University of Baroda 211

CHAPTER 5
Discussion and Findings of the Study 212
Biographical Data 212
Awareness about Ranking among students 212
Awareness about Grading among students 212
Perception towards 'Curriculum Appropriateness' (CA) and 'Tech-pro teachers' (TPT) among students 212
Perception towards 'Soft skills' and 'Technical skills' of teachers 213
Perception towards 'Pedagogy' (P) of 'Teacher Engagement' with students 214
For Leadership Qualities of Teachers (LQT) 214
Improvement in 'Perception of teachers' from the current position among various faculties 215
Ability enhancing tools: Curriculum, Teaching methods (TM), and Assessment methods (AM) for enhancing abilities of students 215
Soft Skills of Staff (SSS) 216
Current Employment Structure at universities 216
Guidelines followed for recruitment of Teachers 217
Training to newly appointed Teachers 217
Training to teaching and non-teaching staff in other universities 218
Sources of funds for Faculty Development Programs 219
HR practices 220
Motivation 220
Empowerment and Participation 221
Career Development 221
Recognition and Rewards 222
Feedback System 222
Teachers going for Orientation and Refresher courses 223
Teacher-student ratios 223
Developing competencies of teachers through various methods 223

Factors that measure ROI 224
Factors measuring Teachers' performance 225
Attributes of teachers that help to make university students friendly 225

Recommendations 227
Conclusion 233
References 236
Annexures 245

Index of Tables

Table No.		Page No.
1	Points of comparison between HRSC and other scorecards reviewed	32
2	Faculty-wise Frequency Distribution of Respondents	44
3	Details of Respondent Universities	45
4	Dimensions, Measures, and Scales used in the Students' Perception towards Teaching and non-teaching staff questionnaire	48
5	Dimensions, Measures, and Scales used in the Vice chancellors/ registrars of universities' questionnaire	49
6	Reliability Test	50
7	Statistics used in analysis	50
8	Respondents' Demographic Profile	53
9	Respondents' NAAC Rating Awareness	54
10	NIRF Ranking Awareness	54
11	Total Students per faculty 2019-2020	55
12	Awareness about grading of the M.S. University	57
13	Awareness about the ranking of The M.S. University	57
14	Gender vs awareness about ranking	58
15	Awareness about Ranking vs Age	58
16	Medium of instruction vs awareness about rank	59
17	Ranking vs Program/ course	60
18	Gender vs Awareness about grading	61
19	Awareness about grading vs age	61
20	Grading vs Medium of Instruction	62
21	Program/course the respondent vs grading	63
22	Mean and SD for 'Curriculum Appropriateness' (CA) and Tech-Pro Teachers' (TPT)	64
23	Factor Loadings from Principal Component Analysis with Varimax Rotation for Factors considered regarding perception of students (n = 1949)	66
24	Extraction Method: Principal Component Analysis	67

25	Descriptive Statistics for 2 components: ‘TPT and CA’	67
26	One-Sample Test of Curriculum Appropriateness (CA) and Tech Pro Teachers (TPT)	68
27	Descriptive Statistics for ‘TPT’ and ‘CA’	69
28	Independent Sample t-test for Tech-pro teachers and curriculum appropriateness: Gender	70
29	Test of homogeneity of variance for ‘tech-pro teachers’ and ‘curriculum appropriateness’: Age	71
30	Descriptive Statistics based on Age Groups	71
31	ANOVA Test for Tech-pro teachers and Curriculum appropriateness	72
32	Post-Hoc Tukey HSD based on Age	72
33	Test of homogeneity of variance for ‘tech-pro teachers’ and ‘curriculum appropriateness’: Medium of instruction	73
34	Descriptive Statistics for CA and TPT: MOI	73
35	ANOVA Test for Tech-pro teachers and Curriculum appropriateness	74
36	Post Hoc Test Tukey HSD: MOI	74
37	Test of homogeneity of variance for ‘tech-pro teachers’: Program/course	75
38	Descriptive Statistics of program/ course for ‘TPT’	76
39	Welch test for Tech-pro teachers	76
40	Games- Howell Post Hoc Test for TPT	77
41	Descriptive Statistics for CA: Program/Course	77
42	ANOVA Test for Curriculum appropriateness	78
43	Post-Hoc Tukey HSD test for CA	78
44	Test of homogeneity of Variance: ‘CA’ and ‘TPT’	78
45	Faculty-wise Descriptive Statistics for CA and TPT	79
46	Results of ANOVA Test for Tech-pro teachers and Curriculum appropriateness: Faculty wise	80
47	Post-Hoc Tukey HSD for CA and TPT: Faculty wise	81
48	Opinions for improvement	95
49	Descriptive Statistics (Composite) for ‘SS’ and ‘TS’	96

50	Soft skills and Technical Skills of Teachers	98
51	Descriptive Statistics of ‘SS’ and ‘TS’	99
52	One-Sample test of Soft-skills (SS) and Technical skills of teachers (TE)	99
53	Descriptive Statistics for SS and TS	100
54	Independent Sample t-test for soft skills of teachers and technical skills of teachers: Gender	100
55	Descriptive Statistics of ‘SS’ and ‘TS’ with age	101
56	Test of homogeneity of variance for ‘soft skills of teachers’ and ‘technical skills of teachers’: Age	101
57	Welch test for Equality of Means	102
58	Post Hoc test: Games-Howell	102
59	One-way ANOVA for technical skills of teachers: Age	103
60	Post-Hoc Tukey HSD test	103
61	Descriptive Statistics for ‘SS’ and ‘TS’ components for Medium of instruction (MOI)	104
62	Test of homogeneity of variance for ‘soft skills of teachers’ and ‘technical skills of teachers’: MOI	104
63	ANOVA for soft skills and technical skills of teachers	105
64	Post-Hoc Tukey HSD test for ‘soft skills of teachers’ and ‘technical skills of teachers’ based on MOI	106
65	Descriptive Statistics for ‘soft skills of teachers’ and ‘technical skills of teachers’: Program/ Course	106
66	Test of homogeneity of variance for ‘Soft skills of teachers’ and ‘Technical skills of teachers’: program/ course	107
67	Welch test for soft skills of teachers	107
68	Games- Howell Post-Hoc Test for ‘soft skills of teachers (SS)’	107
69	ANOVA for technical skills of teachers: Program/ course	108
70	Post Hoc Tukey HSD test for ‘Technical skills of teachers’: program/ course	109
71	Descriptive Statistics for SS and TS: Name of the faculty	111
72	Test of homogeneity of variance for ‘soft skills of teachers’ and ‘technical skills of teachers’: Name of faculty	112

73	ANOVA for soft skills of teachers: Name of faculty	112
74	Post-Hoc Tukey HSD for SS: Name of faculty	113
75	Welch test for technical skills (TS) of teachers: Name of faculty	119
76	Games-Howell for 'TS' of teachers: Name of faculty	119
77	Weighted mean scores	126
78	Mean and SD for variables: 'Pedagogy' and 'Teacher Engagement'	127
79	Descriptive Statistics for 2 components (n=1949)	128
80	One-Sample Test of Pedagogy (P) and Teacher engagement with students (TE)	129
81	Descriptive Statistics for P and TE	130
82	Independent Sample t-test for Pedagogy and Teacher engagement: Gender	130
83	Descriptive Statistics of 2 Components: Age	131
84	Test of homogeneity of variance for 'pedagogy 'of teachers and 'teacher engagement with students': Age	131
85	ANOVA for Pedagogy and Teacher engagement with students	132
86	Post-Hoc Tukey HSD for 'Teacher engagement' with students	132
87	Descriptive Statistics for 'P' and 'TE': MOI	133
88	Test of homogeneity of variance for 'Pedagogy' and 'Teacher engagement with students': Medium of instruction (MOI)	133
89	Welch Test for Equality of Means for 'P' and 'TE': MOI	134
90	Games-Howell Post Hoc Test for 'P' and 'TE': MOI	135
91	Descriptive Statistics for 'P' and 'TE': Program/ course	135
92	Test of homogeneity of variance for 'Pedagogy' and 'Teacher engagement with students': Program/ course	136
93	ANOVA for Pedagogy of teachers: Program/ Course	136
94	ANOVA for Teacher Engagement with students: Program/ Course	136
95	Post Hoc Tukey HSD	137
96	Descriptive Statistics for 'Pedagogy' and 'Teacher' engagement' with students: Name of faculty	138

97	Test of homogeneity of variance for ‘Pedagogy’ and ‘teacher engagement with students’: Name of faculty	139
98	ANOVA for Pedagogy: Name of faculty	140
99	Post Hoc Tukey HSD: Name of the Faculty	140
100	Welch test for ‘TE’: Name of faculty	146
101	Post- Hoc Games Howell for ‘teachers’ engagement with students: Name of faculty	147
102	Weighted Mean Scores	153
103	Descriptive Statistics (Composite) for ‘LQT’: Mean, SD, Cronbach’s Alpha	154
104	One-Sample t Test for Leadership qualities of teachers (LQT)	155
105	Descriptive Statistics for ‘LQT’: Mean and SD	155
106	Descriptive Statistics for Male and Female: ‘LQT’	156
107	Independent Sample t-test for Leadership qualities of teachers: Gender	156
108	Descriptive Statistics for Age: LQT	156
109	Test of homogeneity of variance for ‘Leadership qualities of teachers’: Age	157
110	ANOVA for ‘Leadership qualities of teachers’	157
111	Post-Hoc Tukey HSD: Age	157
112	Descriptive Statistics for MOI: LQT	158
113	Test of homogeneity of variance for ‘Leadership qualities of teachers’: Medium of instruction	158
114	ANOVA for Leadership qualities of teachers	158
115	Post-Hoc Tukey HSD: MOI	159
116	Descriptive Statistics for Program/Course: LQT	159
117	Test of homogeneity of variance for ‘Leadership qualities of teachers’: Program/ course	159
118	ANOVA for ‘leadership qualities of teachers’	160
119	Post-Hoc Tukey HSD: Program/ course	160
120	Descriptive Statistics for LQT: Name of faculty	161
121	Test of homogeneity of variance for ‘Leadership qualities of teachers (LQT)’: Name of faculty	161

122	Welch Test for Equality of Means	162
123	Post-Hoc Games-Howell for Leadership qualities of teachers: Name of faculty	162
124	Mean ranks of Kruskal Wallis test	168
125	Results of Kruskal Wallis test w.r.t. statements of what should have been better in your faculty from the current position	182
126	Mean ranks of Abilities enhancing tools: Curriculum, Teaching methods, and Assessment methods	183
127	Kruskal Wallis test for Abilities of students: Curriculum, TM, AM	185
128	Two-Sample Kolmogorov-Smirnov Test: Comparisons of Curriculum, TM, and AM	187
129	Mean and SD of Statements on Soft Skills of Staff	190
130	Descriptive Statistics of the component: 'Soft skills of staff'	191
131	One-Sample t Test for soft skills of staff (LD)	192
132	Descriptive Statistics for Soft skills of Staff (SSS): Gender	192
133	Independent Sample t-test for soft skills of staff: Gender	192
134	Descriptive statistics for SSS: Age	193
135	Levene's test of homogeneity of variance for 'Soft skills of staff': Age	193
136	ANOVA for 'Soft skills of staff': Age	193
137	Test of homogeneity of variance for 'Soft skills of staff': Medium of instruction	194
138	Levene's Test of Homogeneity of Variance: Medium of instruction	194
139	ANOVA for Soft skills of staff: MOI	194
140	Descriptive Statistics for 'Soft skills of staff': Program/ course	195
141	Test of Homogeneity of Variance: Program/ course	195
142	Welch Test: Program/ course	195
143	Grades of universities across India	196
144	Current Employment Structure at Universities	196
145	Guidelines followed for Recruitment of Teachers	198

146	Frequency distribution for training given to newly appointed teachers in other universities is compared with MSU (n=8).	198
147	Frequency Distribution of Areas of training	199
148	Sources for funds spent for faculty development programs	201
149	Descriptive Statistics for HR practices	202
150	Orientation programs in Human Resource Development centres	205
151	Refresher courses in Human Resource Development centres	206
152	Mean and SD of Developing competencies of teachers	207
153	Frequency Distribution of Factors measuring ROI	208
154	Factors measuring Teachers' performance: Frequency Distribution	209

Annexures

1	Committees and Commissions that did not consider HR aspects	245
2	The HR aspects covered by Committees/ Commissions formed for higher and technical education	246
3	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment methods	253
4	Two-Sample Kolmogorov-Smirnov Test: Problem-solving skills	254
5	Two-Sample Kolmogorov-Smirnov Test: Teaching methods and Assessment methods	254
6	Two-sample Kolmogorov-Smirnov Test: Problem-solving skills	254
7	Two-Sample Kolmogorov-Smirnov Test: Teaching methods and Assessment Methods	254
8	Two-Sample Kolmogorov-Smirnov Test: Critical thinking skills	254
9	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching methods	254
10	Two-Sample Kolmogorov-Smirnov Test: Critical thinking skills	255
11	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	255
12	Two-Sample Kolmogorov-Smirnov Test: Engagement in deeper learning	255
13	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching methods	255
14	Two-Sample Kolmogorov-Smirnov Test: Engagement in deeper learning	255
15	Two-Sample Kolmogorov-Smirnov Test: Teaching methods and Assessment Methods	255
16	Two-Sample Kolmogorov-Smirnov Test: Strengths and weaknesses of students can be identified through	256
17	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	256
18	Two-Sample Kolmogorov-Smirnov Test: Strengths and weaknesses of students can be identified through	256
19	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	256

20	Two-Sample Kolmogorov-Smirnov Test: Team building attributes can be enhanced through	256
21	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching Methods	257
22	Two-Sample Kolmogorov-Smirnov Test: Team building attributes can be enhanced through	257
23	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	257
24	Two-Sample Kolmogorov-Smirnov Test: Innovation can be enhanced through	257
25	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching Methods	257
26	Two-Sample Kolmogorov-Smirnov Test: Innovation can be enhanced through	257
27	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	258
28	Two-Sample Kolmogorov-Smirnov Test: Creativity can be enhanced through	258
29	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching Methods	258
30	Two-Sample Kolmogorov-Smirnov Test: Creativity can be enhanced through	258
31	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	258
32	Two-Sample Kolmogorov-Smirnov Test: Confidence building gets better through	258
33	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching Methods	259
34	Two-Sample Kolmogorov-Smirnov Test: Confidence building gets better through	259
35	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	259

36	Two-Sample Kolmogorov-Smirnov Test: Professional (skill) education is enriched through	259
37	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching Methods	259
38	Two-Sample Kolmogorov-Smirnov Test: Professional (skill) education is enriched through	259
39	Two-Sample Kolmogorov-Smirnov Test: Assessment and Teaching Methods	260
40	Two-Sample Kolmogorov-Smirnov Test: Chances of students' employability are enhanced through	260
41	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	260
42	Two-Sample Kolmogorov-Smirnov Test: Chances of students' employability are enhanced through	260
43	Two-Sample Kolmogorov-Smirnov Test: Assessment and Teaching Methods	260
44	Two-Sample Kolmogorov-Smirnov Test: Business and entrepreneurial skills are enhanced through	260
45	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	261
46	Two-Sample Kolmogorov-Smirnov Test: Business and entrepreneurial skills are enhanced through	261
47	Two-Sample Kolmogorov-Smirnov Test: Assessment Methods and Teaching Methods	261
48	Two-Sample Kolmogorov-Smirnov Test: Research orientation of students gets boosted through	261
49	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment Methods	261
50	Two-Sample Kolmogorov-Smirnov Test: Research orientation of students gets boosted through	262
51	Two-Sample Kolmogorov-Smirnov Test: Assessment Methods and Teaching methods	262

52	Two-Sample Kolmogorov-Smirnov Test: Ethics and values can be taught through	262
53	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Assessment methods	262
54	Two-Sample Kolmogorov-Smirnov Test: Ethics and values can be taught through	262
55	Two-Sample Kolmogorov-Smirnov Test: Assessment methods and Teaching methods	263
56	Two-Sample Kolmogorov-Smirnov Test: Basic concepts of students can be cleared through	263
57	Two-Sample Kolmogorov-Smirnov Test: Curriculum and Teaching methods	263
58	Two-Sample Kolmogorov-Smirnov Test: Basic concepts of students can be cleared through	263
59	Survey on Students' perception on current performance of M S University's employees (Teaching and Non-Teaching)	264
60	Questionnaire for VC's/ Registrars of Universities	270
61	Krejcie and Morgan: Table on Sample size determination	277
62	A Post COVID phenomena of e-learning in higher education: ensuring teachers' quality through the HR scorecard (UGC CARE LIST)	278
63	The IUP Journal of Management Research (SCOPUS)	279
64	ARIV – International Journal of Business	280
65	Sankalpa Journal of Management Research (ProQuest)	281

List of Figures

Model of the HR Scorecard for HEIs 37

List of Abbreviations

AM	Assessment Methods
BSC	Balanced Scorecard
CA	Curriculum Appropriateness
HEI	Higher Educational Institutions
HRM	Human Resource Management
HRDSC	Human Resource Development Scorecard
HRSC	Human Resource Scorecard
L&D	Learning and Development
LQT	Leadership Quality of Teachers
NAAC	National Assessment and Accreditation Council
NIRF	National Institutional Ranking Framework
SERVQUAL	Service Quality
TQM	Total Quality Management
WSC	Workforce Scorecard
POA	Programme of Action
UGC	University Grants Commission
CABE	Central Advisory Board of Education
NPE	National Policy on Education
CA	Curriculum Appropriateness
TPT	Tech-Pro Teachers
SS	Soft Skills
TS	Technical Skills
P	Pedagogy
TE	Teacher Engagement
SSS	Soft Skills of Staff
TM	Teaching Methods
AM	Assessment Methods
C	Curriculum
HEDPERF	Higher Education Performance
Arts	FoA
Commerce	FoC

Education and Psychology	FoE&P
Engineering and Technology	E&T
Family and Community Science	F&CS
Fine Arts	FoFA
Journalism and Communication	FoJ&C
Law	FoL
Management Studies	FoMS
Performing Arts	PA
Pharmacy	FoP
Science	FoSc
Social Work	FoSW

Statistical symbols used in data analysis

EFA	Exploratory Factor Analysis
PCA	Principal Factor Analysis
M	Mean
SD	Standard Deviation
f	Value of t-test statistic
n	Number of Observations

Acknowledgement

Embarking on this PhD journey has been akin to navigating a labyrinth; thrilling yet challenging, and I could not have reached the end without my guiding lights. At the forefront is Dr. Sunita Upendra Sharma, my guide, whose unwavering support, and mentorship illuminated my path. Her belief in me not only fuelled my aspirations but also taught me the essence of academic rigor. Dr. Sunita Sharma, your guidance was the beacon that led me through the intricacies of this voyage, and for that, I am eternally grateful. I am also in your debt for the confidence you showed in me and for holding my hand through the entirety of my Ph.D.

Additionally, I extend my heartfelt thanks to Dr. C. J. Panchal, Dr. B.S. Ratanpal, Prof. (Dr.) Niti A. Chopra, Dr. Nidhi Shendurnikar, Mr. Debraj Goswami, Ms. Swati Dhruv, and Dr. Hemantkumar K. Valand. Your assistance during my data collection across the diverse faculties of the M. S. University was invaluable. Each of you, in your unique capacity, contributed to my research, adding colour and depth beyond measure.

I would also like to thank Dr. Sunita Sharma for recommending my name for the UGC Scholarship. My academic journey was further bolstered by this generous scholarship. The financial support over three years, coupled with the annual contingency grant, was not just a monetary relief but a testament to the faith vested in my research.

On the home front, the support I received was nothing short of extraordinary. To my husband, my best friend, who has been my rock who supported my decision of pursuing PhD and held my hand throughout the journey, shouldered me in the toughest of times and encouraged me to keep moving despite all the hardships. To my entire family, whose understanding and continuous support were the calm in the storm of this gruelling journey, I owe a huge debt of gratitude. A special mention to Mrs. Ila Kanagat and Mr. Rohit Kanagat, my mother- and father-in-law for their unwavering support in caring for my son, allowing me to focus on my research with a clear mind. To my own parents, Dr. Ashok Sharma and Mrs. Neena Sharma, your constant moral support has been the silent force behind my every stride.

Gathering data from the 13 faculties under MSU was a herculean task, akin to scaling the academic equivalent of Everest. This six-month odyssey, marked by daily faculty visits, was as challenging as it was enlightening. The data collection odyssey extended beyond MSU, taking me across various states to meet with Vice Chancellors, an endeavour that tested both my resolve and my travel planning skills.

In this context, I must express my profound gratitude to Dr. Rahul Kanagat. Your unparalleled support in liaising with Registrars and VCs across India was a lifeline. Dr. S. B. Medhi, your exceptional assistance in securing data from top universities in Assam was invaluable. At over 75, your zeal and commitment to aiding my research were inspiring and played a pivotal role in the fruition of my work.

This thesis stands as a testament to the collective effort and belief of many. From Dr. Sunita Sharma, who shepherded me through the Ph.D. journey to the administrative and library staff at the Faculty of Management Studies, each of you played a unique part in this academic voyage. May our paths cross again in the corridors of academia or perhaps, more whimsically, in the less daunting aisles of a supermarket!

In the end, I want to dedicate this to my loving son and my supportive husband. The unwavering support and love from the two of you has enabled me to tread this path without the fear of missing out. To Ayaan, my son, I owe the greatest deal of debt to you. In the entirety of the Ph.D., you made it easy for me. Your love, support, and understanding have been much beyond your years, and I promise to make up on all the time that we missed out on.

Vartika Kanagat
Vadodara
31/01/2024

I dedicate this thesis to Ayaan (my son) and Abhinav (my husband) without whose support this would not have been possible.