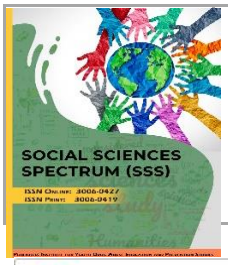

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Effect of Institutional Management Practices on Postgraduate Students' Academic Outcomes: A Comparative Study of a Public and a Private University in Pakistan

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Abstract

The present study investigated impact of institutional management on the academic achievements of postgraduate students in the University of the Punjab (UOP) (a public university) and Superior University Lahore (SU) (a private university) in Lahore, Pakistan. The practices of management play a significant role in the overall teaching and learning environment but not enough quantitative evidence has yet been produced to verify its impact on postgraduate students' academic performance in Pakistan. A descriptive-correlational research design was utilized to collect data from 253 postgraduate students by applying a structured questionnaire that quantified eight managerial dimensions and composite academic outcome; statistical analysis was performed using correlation, t-test and multiple regression analysis. The findings demonstrated that the overall management and academic performance levels were higher at SU than those at UOP. There was a positive relationship of all eight managerial aspects with academic performance both at UOP (r= .63) and at SU (r= .71) respectively. Management practices at SU and UOP was significantly different (p< .001). The results of regression analysis highlighted curriculum quality, academic interaction quality and physical academic facilities as the best predictors, accounting for 58% of variance. Thus, curriculum review and updating and enhancement of physical resources is a crucial step for both Universities and the HEC.

Keywords: Institutional Management Practices, Academic Outcomes, Higher Education, Public and Private Universities, Pakistan.

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Introduction

In higher education, the activities that take place inside the classroom cannot be fully divorced from the other operations and management system that envelop it. Teaching quality, curriculum design, an operational library system and effective and an accommodating administrative framework, all are cogs of the system in which students learn. In a country such as Pakistan in which universities are assumed to be caretakers of the nation's future this association can bear real weight (Shah et al., 2021).

Effective management, the deployment of all the relevant resources-financial, human, academic and physical-to the pursuit of institutional objectives will make a crucial difference to whether a productive teaching environment results or whether students are failed through poor learning outcomes, or are not retained by the institution, or suffer due to their wellbeing being adversely impacted by the learning processes.

Since 2002 and the creation of the HEC, Pakistan's higher education sector has undergone dramatic expansion with the number of universities growing from just under sixty to well over 200; growth, however, has not led to equal gains in quality and has led to a persistent divergence between the public and private sectors (Tahir and Saleem, 2021). Studies of this kind elsewhere have shown the positive association between management and educational quality with poor management having negative impact on learning. (Lizzio et al., 2002; Sunday, 2012; Wimshurst et al., 2006). Most of the old public universities in Pakistan suffer from budget deficit, bureaucratic system and dilapidated structure. The private universities, being subject to the market forces of supply and demand, readily respond to student requirements.

While conceptually there is a clear tie between management and outcomes, yet empirically validated studies testing the link are not available especially in the developing world and specifically in case of postgraduate students in Pakistan (Darling-Hammond & Snyder, 2000; Lizzio et al., 2002).

However, it is not mere paucity of resources that explains the low output. It is the quality of management (ability to utilize the resources that are available) that plays a key role. In the current research we compared the management and outcome link in a public and private university setting. The University of the Punjab (UOP), the century old public institution and the newer private university, Superior University Lahore (SU), both situated in the same city, were chosen as case studies for their comparability with regards to the geographic and socio economic factors.

The present research intended to address five objectives: 1) To understand management practices prevailing at two different university sectors (public vs private); 2) To measure the academic outcomes of students in both sectors; 3) To examine and compare management-outcome relationships in the public and private sectors; 4) To discover strongest predictors of outcomes; and 5) To formulate empirically grounded recommendations for improvement.

To fulfill the objectives of this research, we test the following three hypotheses: H1 – There is a positive association between management practices and student outcomes at the public sector university. H2 – There is a positive association between management practices and student outcomes at the private sector university. H3 – There is no significant difference between public and private sector universities in terms of the influence of management practices on student outcomes.

This inquiry is significant from three different perspectives: theoretical (extends existing conceptual frames such as Astin's (1984) involvement theory and the institutional effectiveness

model to the less studied Pakistani postgraduate context), empirical (provides quantitative information that fills a gap in an essentially qualitative-based literature to set a baseline for any future reforms in these institutions), and practical (helps institutions to target resources more effectively on management factors that are of greatest importance for improving student outcomes).

Literature Review

The empirical research underpinning this article is primarily situated within Astin's (1984) Inputs-Environment-Outputs (I-E-O) model of student development in which student success is determined by a combination of the characteristics that students bring with them (Inputs) and the environment that they experience (Environment). It is our argument that the eight management dimensions considered in this study collectively make up that environment, the manipulable context by means of which institutions create those outcomes. Our framing is augmented by an institutional effectiveness perspective which conceptualises the university as a goal-directed organization in which process and resources are optimally configured around the educational mission; and human capital theory (Becker, 1964; Schultz, 1961), which portrays education as an investment in the production capacity and the thereby imbues the management-outcome link with national developmental significance.

We are also informed by principles of Total Quality Management, now commonly employed in higher education settings, which identify systematically managed processes as the generators of quality.

Institutional management, drawing on earlier instrument development efforts (Ayuk & Gerrie, 2018; Jain et al., 2013; Kisangani et al., 2024), is Operationalized using eight correlated Dimensions: Non-Academic Processes, Interaction Quality, Academic Facilities, Curriculum Quality, Campus Environment, Industry Interaction, Support Facilities and Input Quality. Two dimensions are invariably and inextricably linked with student engagement and achievement; interaction quality and curriculum relevance (Kuh et al., 2007; Lizzio et al., 2002; Wang, 2014). The output is typically captured via both objectively-based outputs such as grades, and subjectively based outcomes such as student satisfaction and engagement (Jin, 2006; Roberts & Styron, 2010). The public/private differential is of crucial importance.

The market environment within which private universities operate incentivises a commitment to service quality and responsiveness that their publicly funded counterparts may struggle to match, as large, disparate student bodies and chronic under-funding combine to make the management task more daunting (Tahir & Saleem, 2021).

Linkages between universities and industries remain generally underdeveloped across both types, an issue found to be ubiquitous in developing settings (Engin-Demir, 2009; Voisin et al., 2023). Yet, within this context, empirical evidence on how these management dimensions shape postgraduate outcomes remains disappointingly sparse. This article offers a robust test of management's contribution to student outcomes.

Material and Methods

A quantitative, descriptive-correlational design was used in order to relate the variables together in their natural environment without manipulation (Mugenda & Mugenda, 2003). The design involved a cross-sectional survey carried out during the 2025-2026 academic year (Jepketer et al., 2015). The study targeted 520 postgraduate students in the Faculty of Education at UOP (public university; 1882) and SU (private university; 2000). Slovin's formula and a 5% level of

significance was used to derive a sample of 253 postgraduate students with allowance made for potential non-response. Proportionate sample size was distributed across institutions (135 from UOP; 118 from SU). Out of the 270 questionnaires distributed, 258 were retrieved, with 253 deemed fit for analysis after cleaning. Thus, the overall response rate was 93.7%. Convenience sampling method was adopted due to the limitations in access in respective institutions.

A questionnaire was developed based on adapted and established validated research instruments (Ayuk & Gerrie, 2018; Jain et al., 2013; Kisangani et al., 2024) and consisting of three parts: part one covered participants' demographics; part two contained 40 items covering the eight management dimensions of which 5 items each were formulated; and part three consisted of 10 items addressing student academic engagement, satisfaction and student's self - reported CGPA. Items for parts two and three of the questionnaire used a five - point Likert scale (1 = Strongly disagree; 5 = Strongly agree). Expert validation process determined both content validity and face validity, pre–test was also conducted to test validity. Pilot study using 30 students in the pilot sample yielded reliable instrument and subscales all yieldingCronbach's alpha above 0.70threshold (Nunnally, 1978) ranging between 0.79 and 0.91(overall Cronbach's alpha was 0.91.)

Departmental heads granted formal approval, and questionnaires were filled in manually during regular department meetings. All subjects participated voluntarily and anonymously; signedinformed consent forms were collected from all subjects, and the research protocol received approval from the Ethics Committee, Superior University Lahore, prior to data collection. Descriptive, Pearson correlations, independent-samples t-tests, and simultaneous multiple regression analyses were performed using IBM SPSS Statistics v26, with $p < .05$ representing significance and all effect sizes reported.

Results and Discussions

The survey of 253 respondents was composed of 54.5% males and 45.5% females; 47.8% of the respondents fall between 26 to 30 years of age. This again indicates that respondents are typical professional working individuals who are doing postgraduate studies in Pakistan. While the ratio of respondents of both UOP and SU was found almost balanced with (53.4%) vs (46.6%).

In both universities there was almost no imbalance between the first and second-year students.

Majority of respondents has achieved GPA above 3.50 (58.3%).

Institutional Management Practices

Management practice dimensions: SU scores consistently higher The management practice variables were rated from moderate to high on both sides (Overall M = 3.55), with students at both SU and UOP rating each variable as higher than their counterparts (Table 1). SU students' average overall score of 3.76 was higher than UOP students' average score of 3.36 (by a .40 scale point). Academic Facilities had the biggest difference between sides (SU 3.85; UOP 3.22), supporting the hypothesis regarding the advantages of the newer institution and reflecting decades of deferred investments in the public sector infrastructure (a result partly of resource shortages, but also managerial neglect).

Industry Interaction scored lowest in both universities (M = 3.21) supporting previous findings of an overall sector wide problem rather than a public vs. Private issue (Engin-Demir, 2009; Voisin et al., 2023). This is consistent with reports of the impact of competitive pressures on the incentive structures for quality management at private universities. (Tahir & Saleem, 2021).

Table 1: *Descriptive Statistics for Institutional Management Practice Dimensions by University*

Dimension	UOP M (SD)	SU M (SD)	Overall M (SD)
Non-Academic Processes	3.41 (0.72)	3.78 (0.65)	3.58 (0.71)
Interaction Quality	3.56 (0.68)	3.91 (0.61)	3.72 (0.66)
Academic Facilities	3.22 (0.81)	3.85 (0.70)	3.51 (0.79)
Curriculum Quality	3.47 (0.74)	3.89 (0.66)	3.66 (0.72)
Campus Environment	3.38 (0.77)	3.73 (0.69)	3.54 (0.75)
Industry Interaction	3.01 (0.88)	3.44 (0.79)	3.21 (0.85)
Support Facilities	3.29 (0.76)	3.67 (0.71)	3.46 (0.75)
Input Quality	3.52 (0.70)	3.82 (0.63)	3.66 (0.68)
Overall Mgmt Practices	3.36 (0.63)	3.76 (0.57)	3.55 (0.62)

Note. M = mean; SD = standard deviation. Scale: 1.00–2.49 = low; 2.50–3.49 = moderate; 3.50–4.49 = high; 4.50–5.00 = very high.

Academic Outcomes and the Management–Outcome Relationship

Overall academic results were quite positive (composite M = 3.64). Students at SU reported higher satisfaction with their courses (M=3.94 vs. 3.49), higher course engagement

(3.87 vs. 3.58) and higher CGPA (3.59 vs. 3.41). It seems that the gap in satisfaction is quite substantial and meaningful regarding perceived course quality. The results in CGPA should be treated carefully because the self-report method may subject to social-desirability biases and different marking schemes are in use. However, the findings were consistent with studies reporting better academic outcome under effective well-managed and supported teaching environments

(Lizzio et al., 2002; Roberts & Styron, 2010), while acknowledging that UOP students often face additional financial and work pressures independent of management quality.

At both institutions, Pearson correlations (Table 2) between all eight dimensions and both academic outcomes were significant and positive, providing evidence to support both H1 and H2. Effect sizes varied from weak to moderate (Industry Interaction; r = .38-.42) to moderate to large (Curriculum Quality; r = .63-.71; Interaction Quality; r = .61-.68). Almost all these correlations fell into the large effect size range defined by Cohen (1988), with effect sizes consistently larger in the SU setting than the FU setting, consistent with the greater role for management to be direct in the presence of fewer institutional constraints. These results demonstrate support for Astin's (1984) I-E-O model in the Pakistani public and private contexts, and concur with research from Pakistani, Australian and Nigerian contexts. (Lizzio et al., 2002; Shah et al., 2021; Sunday, 2012).

Table 2: *Pearson Correlations Between Management Dimensions and Academic Outcomes*

Management Dimension	UOP r (p)	SU r (p)
Non-Academic Processes	.48 (< .001)	.53 (< .001)
Interaction Quality	.61 (< .001)	.68 (< .001)
Academic Facilities	.57 (< .001)	.65 (< .001)
Curriculum Quality	.63 (< .001)	.71 (< .001)
Campus Environment	.44 (< .001)	.49 (< .001)
Industry Interaction	.38 (< .001)	.42 (< .001)
Support Facilities	.51 (< .001)	.58 (< .001)
Input Quality	.55 (< .001)	.62 (< .001)
Overall Mgmt Practices	.63 (< .001)	.71 (< .001)

Note. All correlations significant at $p < .001$ (two-tailed).

Inter-Institutional Differences

Table 3 shows that, among independent samples t-tests, there were statistically significant differences in the expected direction (SU > UOP) for both management practice, $t(251) = 5.22$, $p < .001$, $d = 0.66$, and academic outcomes, $t(251) = 3.47$, $p < .001$, $d = 0.56$. The medium to large effects size suggests that the null form of H3 is rejected. The relationship between management and outcomes differs across sectors, and is more pronounced in the private institution. When comparing each of the 8 dimensions separately, statistically significant differences between SU and UOP were found on all dimensions, with Academic Facilities showing the greatest difference between institutions ($d = 0.83$), and Industry Interaction the least ($d = 0.49$). This does not mean one should be quick to conclude that privatisation is better, SU students have higher tuition, and opt-in for better quality, but perhaps universities could strive for higher quality of education through increased quality in the curriculum, interaction between students and their lecturers, and better academic facilities. This also should be interpreted in context; the results from UOP may reflect not solely poor management practices but structural conditions in a large diverse university suffering chronically from under-funding.

Table 3: *Independent-Samples t-Tests by University*

Variable	UOP M (SD)	SU M (SD)	t	df	p	d
Mgmt Practices	3.36 (0.63)	3.76 (0.57)	−5.22	251	< .001	0.66
Academic Outcomes	3.49 (0.58)	3.80 (0.52)	−3.47	251	< .001	0.56

Note. Cohen's d: small = 0.20, medium = 0.50, large = 0.80. Levene's test non-significant for both variables.

Predictors of Academic Outcomes

Simultaneous multiple regression (Table 4) predicted 58% of the variance in academic performance outcomes, F (8, 244) = 42.31, p < .001 - a quite well-specified model by the social science standard. Three dimensions emerged as significant predictors in the overall model: Quality of Curriculum (= 0.28), Quality of Interaction (= 0.24), and Quality of Academic Facilities (= 0.21). Quality of Input and Quality of Support Facilities play smaller roles and the remaining dimensions are non-significant in the model (perhaps due to multicollinearity, although VIFs were all less than 5.0). This ranking is sensible, since Curriculum Quality seems more fundamental in the context of student motivation than quality of surrounding environment, since students will likely put up with sub-standard environment but not the reasons for which they paid (Wang, 2014).

That Quality of Interaction is also a key predictor implies the importance of management of human capital in selection, development and retention, while Quality of Academic Facilities points to a minimum condition for development of culture of learning in.

Table 4: *Multiple Regression Predicting Academic Outcomes (N = 253)*

Predictor	**B**	**SE**	**β**	**t**	**p**
Curriculum Quality	0.22	0.05	0.28	4.40	< .001
Interaction Quality	0.19	0.05	0.24	3.80	< .001
Academic Facilities	0.17	0.05	0.21	3.40	< .001
Input Quality	0.13	0.05	0.17	2.60	.010
Support Facilities	0.10	0.05	0.13	2.00	.046
Non-Academic Processes	0.09	0.05	0.11	1.80	.073
Campus Environment	0.07	0.05	0.09	1.40	.163
Industry Interaction	0.06	0.05	0.08	1.20	.231

Note. $R^2 = 0.58$; adjusted $R^2 = 0.56$; F (8, 244) = 42.31, p < .001. Constant = 0.87 (SE = 0.18).

Conclusion

This investigation thus vindicates the idea that management systems exert a real and measurable influence on the performance of postgraduate students in the higher education of Pakistan. The system-wide finding of management ratings above midpoint at both sites, and their consistent level more than double the overall level at the private institution, and significant positive correlations between management and outcome, provide strong confirmation for H1 and H2. It is quite likely that this effect is more systemic than artifact of any particular institution.

This effect is more pronounced in the private sector and thus we may reject the null form of H3 on the grounds that superior resources, as well as distinct approaches to governance and responsive, make the more marked difference to outcome. However, the most crucial point is the evidence that Curriculum Quality, Interaction Quality, and Academic Facilities were all very much more important to the outcomes of these students that management. Indeed, they explained in excess of

half of the variation. The implication is that management plays a central, rather than supplementary, role in the learning system. This should, however, be taken with caution, in the light of the study's limitations. These are: cross sectional design (no casual inference possible); convenience sampling (loss of representativeness); CGPA self-reported; measurement of management via student perceptions of two institutions in one city (little generalizability beyond); management measurement was confined to students' perspectives (rather than other relevant parties such as faculty etc.).

Recommendations

Colleges must institutionalise curriculum review and renewal as a regular structured process that involves teachers, students, alumni and professionals as Curriculum Quality best predicts output quality. Given the strength of the correlation for Interaction Quality (at #2) investment should also focus on faculty-development (pedagogical-training, peer review, protected teaching time, teacher awards) along with investment in learning and research facilities (classrooms, labs, libraries, digital infrastructure – particularly at public sector institutions like the UOP for which the facility-related score was weakest, and with large variance). The always low score on Industry Interaction at both universities needs to be addressed through institutionalised linkages with industry, internships, guest faculty, and jointly-sponsored research programmes.

From the perspective of policy-makers and the HEC, differentiated policy regimes should reflect the different operating environments of public and private universities, public funding support should be directed at the deficiencies in infrastructure and management capability; quality assurance should consider management input as well as output measures, there should be sector-level incentives for industry linkages; and leadership training should be organised at scale for managers of public and private sector universities. Further research should, where feasible, adopt longitudinal or mixed methods design with institutions from more disciplines and regions to enhance the quality of evidence on causality and generalizability.

Declarations

Funding: This study did not benefit from any financial support external to the research project.

Conflicts of Interest: The authors declare no competing interest.

Ethics: Ethical approval was received from the committee concerned, at Superior University Lahore. Consent for participation in the study was also obtained from the entire study participants.

Data Availability: Supporting information in this study may be available from the corresponding author.

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