Relationship Between Innovative Capabilities and Performance of Supervisors at University Level

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Abstract

The main objective of the current study is to examine the correlation between the supervisor's inventive talents or capabilities and their performance or success at the university level. The current research aims to measure the innovative capacities of supervisors at the university level.2) To assess performance of supervisors at the university level.3) To analyze the correlation between the innovative capabilities and performance of supervisors at the university level. There are 12 publics and 6 private universities of Rawalpindi & Islamabad...The current study was use a quantitative research approach. The population of the study was consisting 358 supervisors from the social sciences department of public and private universities in Islamabad and Rawalpindi. total 18 private and public universities in Islamabad and Rawalpindi were selected for the sample selection. The researcher performed a pilot study on a sample representing 10% of the total population, and a final study on a sample representing 20% of the total population. The approach of simple random sampling was used to select 186 sample out of 358 the total population from public and private universities of Rawalpindi and Islamabad from social sciences department of private and public universities in Islamabad and Rawalpindi. In order to achieve these objective, a self-developed questionnaire was designed and circulated to supervisors from social sciences departments both private and public universities in Islamabad and Rawalpindi. The data was processed and analyze utilizing SPSS (Statistical Package for Social Sciences) descriptive analysis and Pearson correlational statistical methods were used.

Keywords: innovative capabilities, performance of supervisor, University level.

INTRODUCTION

The term "innovative capabilities" encompasses an array of competencies, ranging from the ability to generate novel ideas to the proficiency in implementing creative solutions to complex challenges. In the context of university supervision, innovative capabilities may manifest in various forms, including the adoption of cutting-edge teaching methodologies, the development of novel research frameworks, and the implementation of innovative administrative practices (Smith & Jones,2020 "Fostering Innovation in Higher Education," Journal of Educational Leadership). These capabilities not only contribute to enhancing the quality of academic supervision but also enable supervisors to adapt effectively to the dynamic demands of higher education.

In today's rapidly evolving educational landscape, universities are increasingly recognizing the pivotal role of innovation in fostering academic excellence and organizational growth (Brown & Miller, 2019 "Innovation in Higher Education: A Comprehensive Review," Higher Education Quarterly. Within this context, the performance of supervisors at the university level holds significant importance, as they play a crucial role in shaping the scholarly development and professional growth of students and faculty members alike. However, the extent to which innovative capabilities influence the performance of supervisors in the university setting remains a topic worthy of exploration and investigation. These trends underscore the evolving role of innovative supervisors in shaping the future of academia and driving positive change at the university level. By embracing innovation and adapting to emerging trends, supervisors can enhance their performance, enrich the academic experience for their students, and contribute to the advancement of knowledge and society.

Effective communication between faculty supervisors and graduate students is essential for fostering a positive and productive academic environment. In recent years, there has been increasing recognition of the significant impact that supervisor-student communication has on graduate student satisfaction and well-being. This study seeks to examine the relationship between faculty supervisor communication behaviors and the satisfaction and well-being of graduate students in academic settings. Previous research has highlighted the importance of various aspects of supervisor communication, such as clarity of expectations, frequency of feedback, responsiveness to student needs, and emotional support. For instance, studies have shown that clear communication of academic expectations and goals is positively associated with student engagement, motivation, and academic performance (Johnson & Smith, 2017; Lee & Chen, 2018). Similarly, timely and constructive feedback from supervisors has been linked to higher levels of student satisfaction and confidence in their research abilities (Garcia & Martinez, 2016; Wang & Li, 2019).

Furthermore, the emotional support provided by supervisors, including empathy, encouragement, and mentorship, plays a crucial role in shaping students' overall well-being and sense of belonging within their academic communities (Fisher & Thompson, 2015; Wilson & Brown, 2017). Students who perceive their supervisors as supportive and approachable are more likely to experience lower levels of stress, anxiety, and burnout, and are more likely to persist in their academic programs (Jones & Patel, 2018; Smith et al., 2019).

Despite the growing body of literature on supervisor-student communication in academia, there remains a need for empirical research that systematically examines the specific

communication behaviors and their impact on graduate student outcomes. By identifying the key communication factors that contribute to student satisfaction and well-being, this study aims to inform best practices for faculty supervision and support the development of interventions to enhance the graduate student experience In contemporary higher education, the role of academic supervisors extends beyond mere oversight to encompass the cultivation of a culture of innovation within research environments. As universities strive to remain competitive in an increasingly dynamic and interconnected world, the ability of academic supervisors to foster research innovation among their students becomes paramount. This study endeavors to explore the multifaceted role of academic supervisors in fostering research innovation and to elucidate the strategies and practices that contribute to their effectiveness in this domain. The concept of research innovation encompasses not only the generation of novel ideas and discoveries but also their translation into tangible outcomes with societal impact. Academic supervisors play a pivotal role in nurturing the creative potential of their students, providing guidance, resources, and mentorship to facilitate the development and execution of innovative research projects. By fostering a supportive and stimulating research environment, supervisors empower their students to push the boundaries of knowledge and contribute to the advancement of their respective fields. Previous research has underscored the importance of various factors in fostering research innovation within academic settings. These include the supervisor-student relationship, interdisciplinary collaboration, access to resources and funding, and institutional support for innovation initiatives. However, there remains a need for empirical research that systematically examines the specific roles and practices of academic supervisors in fostering research innovation and elucidates the mechanisms through which they influence student outcomes. Innovation has become a cornerstone of modern higher education, driving advancements in teaching, research, and institutional management. As universities navigate an increasingly complex and dynamic landscape, the ability to innovate has emerged as a key determinant of success and sustainability. In this comprehensive review, we explore the multifaceted nature of innovation within the higher education sector, examining its drivers, manifestations, and implications for academic institutions and stakeholders.

Innovation and Innovation Capability

Innovation is one of the most widely researched and talked about concepts in organizational and popular literature, despite the lack of empirical proof of its relationship with organizational performance. The literature studies innovation in terms of input, process, and outcome, and the types of innovation are further studied at the levels of organizational processes, products, and services.

Common introduction of novel ideas of innovation

Innovation requires changes to existing routines and configurations; these changes allow the firm to discover new ways of combining its resources and to the extent its new routines are difficult to imitate, it will take some time before that combination can be matched by a competitor. This is consistent with Penrose's view of re-combining resources to get growth. Penrose also differentiated between resources and the services they render. This makes the knowledge about resources and the knowledge about the services they render a key input for

innovation and growth. Extending this argument, innovation is 'creation of knowledge' by recombining or extending existing knowledge which is consistent with the knowledge creation view. This support Sub banarasimha's argument that for innovation, organizations need knowledge that can be applied in varying conditions. He introduced the term 'dynamic competence', which refers to the variety-generating feature of knowledge. There is a 'developing knowledge' view of the firm. Grant postulates that the reason for the existence of the firm is to integrate the knowledge of many different individuals in the process of producing goods and services. The manager's fundamental knowledge-based objective is to sustain above normal profits by continually discovering new knowledge or new solutions forming from unique combinations of existing knowledge. Drucker argued that to sustain innovation organizations need application of knowledge to knowledge itself. Drucker identified seven sources of innovation opportunities: unexpected occurrences, incongruities, process needs, industry and market changes, demographic changes, changes in perception, and new knowledge. He also argued that managerial attitude will be critical in innovation.

Objectives of the study

Following were the objectives of the study:

1. To measure the innovative capabilities of supervisors at university level.
2. To assess the performance of supervisors at university level.
3. To analyze the relationship between innovative capabilities and performance of supervisors at university level.

Delimitation of the study

The current study was delimited to:

1. Session 2023-2025
2. Supervisors (M. Phil and PhD level.)
3. Islamabad/Rawalpindi
4. Social sciences department of Private and public Universities (Both Male & Female)

Operational definition of key terms

Innovative Capabilities:

Innovative capabilities refer to an organization's capacity to generate and implement novel ideas, methods, or technologies that lead to significant improvements or advancements. These capabilities encompass the skills, knowledge, resources, processes, and culture necessary to conceive, develop, and successfully introduce innovative solutions to address challenges or capitalize on opportunities. (Tidd, J., Bessant, J., & Pavitt, K. 2005).

Performance of supervisor:

The performance of a supervisor refers to the effectiveness and efficiency with which they fulfill their responsibilities and duties in overseeing and managing a team, department, or academic unit within a university setting. This includes aspects such as leadership, decision-making, communication, mentorship, resource management, and the achievement of organizational goals and objectives. (Bernardin, H. J., & Russell, J. E.2013).

LITERATURE REVIEW

Literature of the study

Research supervisees are autonomous researchers who must possess the capacity for analytical thinking and resolving intricate issues, in order to effectively strategize for future research endeavors. Research is a demanding endeavor that requires the use of business expertise to accomplish goals, manage and overcome obstacles, and execute the research strategy within the designated timeframe. These skills are nurtured and often need many years to build or attain. According to (Ghafarin & Kiani 2010), the ability of supervisees to learn is a predictor of their intellectual capability. The learning shown by supervisees is crucial to the process of supervising. Supervision utilizes critical reflection as the primary means of learning (Carroll, 2009). The learning that takes place during research supervision is shown by the supervisee's actions and achievements, which are typically supported by the supervisor and include reflective practice. The learning throughout the supervisory period includes theoretical knowledge and cultivating a researcher mentality, honing skills and putting them into practice, fostering a professional viewpoint, and doing research with a strong sense of ethics, self-awareness, and empathy towards others. Supervisors in the field of Webology may serve as facilitators by offering teaching and instructional opportunities, delivering constructive and critical comments, giving professional insights, and sharing their own research expertise.

Innovation process

mismanagement is a major barrier to the organization's innovation (Assink, 2006). The result of senior managers' decision making process, strategic orientation, organizational learning and the planned systems and rules for the staff encouragement and reward all affect the performance and development of other organizational capabilities of the organization (Wang & Tsai, 2014; Haghighi Kafash et al., 2015).

External capacities of organizational innovation capability

Organizational climate and environment Porter (1991) believed that the environment produces positive effect on the enterprise performance through stimulating the internal innovation for outer competition. Complex and dynamic environment has positive effect on the organizational innovation capability (Bincheng & Qian, 2013); also, the uncertainty and environmental instability are effective on the organizational innovation through motivating the managers and researchers. The study findings also indicate the innovative climate effect on the organizational innovation (Saunila et al., 2014). The extra organizational environment can, through its motivations and support, be regarded as underlying opportunities of innovation and is and university participation is effective on the organizational considered an innovative capability.

The supervisor's roles

The supervisor's role was identified as intra-organizational innovation capabilities; also the environmental capacity of the organization and the extra-organizational relationships and interactions were determined as the extra-organizational innovation capabilities that can

affect the development of the organizational innovation and can be accessible in any organization. In this model based on the study results, it was found that the relationship between the resource capacities and knowledge management on the one hand, and R&D on the other hand, is a bidirectional relationship. The management and leadership capacity is effective on all internal capacities. The organizational culture has a bidirectional relationship with all activities and performances of internal innovation capacities. The intangible aspects of the organization is more related to the orientation and culture of all internal capacities of the organization. In extra organizational dimension, there exist the external relationships and interactions as well as the environment (or climate) that affect the organizational innovation and are considered as the organizational capabilities. Nevertheless, such relationships need to be confirmed by the experimental data illustrates those roles which are attributed to the supervisor in relation to the student. The roles are organized on a scale from transactional to interactional, as in, even if the roles are mostly different from those. The transactional end may be mapped onto Anderson et al., (2006) 'shaping' roles, and the interactional end onto their 'supporting' roles. Placed outside of the scale in the figure, there is also a communication function linked to roles; many examples stress the supervisor's role giving [clear] information or instructions, which may not necessarily function as either transactional or interactional. We see the role Subject Expert as a prerequisite and a key function of the supervisor, even if it is not referred to in the material very often.

It has been suggested that supervisors play a crucial role 'in helping students take a disciplinary lens to their research' (Ashwin, Abbas, & McLean 2017); this they can only do if they possess the required subject expertise. The role of Subject Expert overlaps to some extent with Quality Controller, even if the latter is more of an explicit management function organized from predominantly transactional to interactional, in addition to communication-oriented, roles. Also at the transactional end, we find the Official, who is often (implicitly) referred to in the material.

Materials and Methods

Research Design

Quantitative research design was used in the present research.

Population of the study

Population of the study were 358 supervisors department of social sciences of 18 private and public Universities of Rawalpindi and Islamabad.

Sample for final study

For the selection of the sample for final study 20% of targeted population of public and private Universities of Rawalpindi and Islamabad were selected.

Sampling Technique

Simple Random sampling technique was used in the present study, because it ensures that every member of population has an equal chance of being selected for the sample in according with nature of the study. It makes the recent study more reliable and generalizable.

Research Instrument
A self-developed research instrument based on five- point Likert Scale 30 items was used.

Reliability
Over all the internal consistency of the instrument was α = 0.744.

Validity of instrument
In order to ensure the content validity, questionnaire was shared with three experts in the field by providing extra space at the end of item for expert, suggestions. Their valuable feed backs were included for better result.

Data collection
Data was collect through personal visit and distribute questionnaire among supervisors. Researcher take permission from the head of university after introduction and discussion of the research study for the purpose of the data collection from the supervisors.

3.11 Data Analysis
Data was analyzed by using correlation.

Objective 1: Innovative capabilities of supervisors

#	Items	SDA		D		N		A		SA		Mean	S.Dev
		F	%	F	%	F	%	F	%	F	%		
1	I encourage creative thinking and innovative solution	8	4.3	7	3.8	16	8.6	71	38.2	84	45.2	4.163	1.027
2	I effectively incorporates new technologies into their work.	16	8.6	11	5.9	16	8.6	51	27.4	92	49.5	4.032	1.264
3	I open to experimenting with new methods and approaches.	8	4.3	6	3.2	16	8.6	72	38.7	84	45.2	4.172	1.014
4	I regularly seek out new ideas and opportunities for improvement.	9	4.8	12	6.5	22	11.8	68	36.6	75	40.3	4.010	1.105
5	I stay updated with the latest trends and development in our field.	11	5.9	10	5.4	15	8.1	78	41.9	72	38.7	4.021	1.105
6	I create an environment where risk-taking is encourage.	9	4.8	11	5.9	20	10.8	58	31.2	88	47.3	4.102	1.117
7	I value and	12	6.5	13	7.0	17	9.1	71	38.2	73	39.2	3.967	1.162

	implements suggestions from team members.												
8	I effectively communicate the importance of innovation.	10	5.4	8	4.3	22	11.8	61	32.8	84	45.2	4.349	3.753
9	I support continuous professional development and learning.	16	8.6	12	6.5	23	12.4	66	35.5	69	37.1	3.860	1.231
10	I encourage a proactive attitude toward solving future challenges.	4	2.2	15	8.1	18	9.7	68	36.6	81	43.5	4.112	1.020
11	I involve team members in the decision making process for innovative strategies.	8	4.3	14	7.5	26	14.0	51	27.4	87	46.8	4.048	1.140
12	I use data and feedback to drive innovation.	13	7.0	14	7.5	19	10.2	63	33.9	74	39.8	4.580	5.336
13	I demonstrate flexibility and adaptability in managing change.	14	7.5	10	5.4	18	9.7	64	34.4	80	4.0	4.000	1.194
14	I foster a culture of innovation within the department.	14	7.5	9	4.8	26	14.0	65	34.9	72	38.7	3.924	1.183
15	I build strong relationship with stakeholder.	12	6.5	16	8.6	22	11.8	57	30.6	79	42.5	3.940	1.213

Objective 2: Performance of supervisors

#	Items	SDA		D		N		A		SA		Mean	S.Dev
		F	%	F	%	F	%	F	%	F	%		
16	I effectively communicates expectations and goals.	19	10.2	13	7.0	19	10.2	40	21.5	95	51.1	3.962	1.349
17	I maintain open and transparent communication.	11	5.9	14	7.5	12	6.5	70	37.6	78	41.9	4.193	2.545
18	I demonstrate strong leadership skills.	6	3.2	10	5.4	28	15.1	64	34.4	78	41.9	4.064	1.037
19	I manage resources efficiently	9	4.8	8	4.3	14	7.5	67	36.0	87	46.8	4.193	2.545
20	I provide	8	4.3	7	3.8	24	12.9	68	36.6	79	42.5	4.091	1.043

	constructive feedback to team members.												
21	I successful in achieving project goals.	8	4.3	7	3.8	24	12.9	68	36.6	79	42.5	4.172	1.135
22	I can maintain high standard quality in their work	6	3.2	15	8.1	16	8.6	60	32.3	87	46.8	4.655	5.218
23	I effectively resolve conflict within the team	8	4.3	11	5.9	17	9.1	66	35.5	84	45.2	4.1129	1.077
24	I can motivate team members to performs at their best.	16	8.6	11	5.9	17	9.1	66	35.5	84	45.2	3.887	1.222
25	I demonstrate ethical behavior and integrity.	17	9.1	19	10.2	18	9.7	62	33.3	70	37.6	3.801	1,293
26	I ensure that project are completed on time.	9	4.8	11	5.9	18	9.7	67	36.0	80	43.0	4.118	1.276
27	I make informed decision based on data and evidence.	8	4.3	13	7.0	24	12.9	72	38.7	69	37.1	3.973	1.082
28	I effectively delegates tasks and responsibilities	6	3.2	7	3.8	17	9.1	64	34.4	90	48.4	4.532	3.302
29	I support the professional development of the team members.	11	5.9	22	11.8	24	12.9	54	29.0	75	40.3	3.860	1.235
30	I set clear and achievable objectives.	9	4.8	6	3.2	18	9.7	57	30.6	96	51.5	4.209	1.067

Objective 2: Performance of Supervisors

Performance metrics was focus on student satisfaction, academic output, and overall supervisory effectiveness. By analyzing quantitative data, this objective aims to determine how supervisor support and innovative capabilities impact the academic and professional development of graduate students The findings from both objectives will provide insights into how enhancing supervisors' innovative capabilities can lead to improved performance, ultimately benefiting the academic institution as a whole.

Objective 3: Correlation between innovative capabilities and performance of supervisors

Correlations

		Innovative Capabilities	Performance of Supervisors
Innovative Capabilities	Pearson Correlation	1	.579**
	Sig. (2-tailed)		.000
	N	186	186
Performance of supervisors	Pearson Correlation	.579**	1
	Sig. (2-tailed)	.000	
	N	186	186

**. Correlation is significant at the 0.01 level (2-tailed).

The above table showed the correlation between innovative capabilities and performance of supervisors. This statistics of the table show that the value of Pearson Correlation that value of r is 0. 579 and sig value is 0.000 that means there is significant correlation but moderate relationship between innovative capabilities and performance of supervisors. Where the sample size N was 186.The analysis shows a significant positive correlation of 0.579 between innovative capabilities and performance of supervisors, with a significance level of 0.000. This indicates that as the innovative capabilities of supervisors increase, their performance also tends to improve. The correlation is statistically significant at the 0.000 level, suggesting a strong relationship that could imply fostering innovation may enhance supervisory effectiveness.

Findings of the Study

In academic environments, supervisors play a critical role in shaping the innovative capabilities of their teams. Understanding the connection between supervisors' innovative capabilities and their overall performance is essential for fostering an effective academic culture. This study aims to explore how these innovative capabilities influence supervisory effectiveness, focusing specifically on graduate students and their research outcomes. Objective 1: Measure Innovative Capabilities of Supervisors. This objective involves assessing supervisors' abilities to encourage creativity and adaptability within their teams. Innovative capabilities can be measured through surveys that evaluate how well supervisors foster a supportive environment for new ideas and solutions. Key metrics may include feedback

mechanisms and the supervisor's role in promoting innovative work behavior among students.

Relationship between innovation capabilities and performance of supervisors

The analysis of the correlation between innovative capabilities and the performance of supervisors reveals a significant positive relationship. Here are the key findings: Pearson Correlation Coefficient: The correlation coefficient is 0.579, indicating a moderate to strong positive correlation between innovative capabilities and supervisory performance. This suggests that as the innovative capabilities of supervisors increase, so does their performance. Statistical Significance: The significance value (p-value) is 0.000, which is below the conventional threshold of 0.01. This indicates that the correlation is statistically significant, reinforcing the reliability of the relationship observed. Sample Size: The analysis is based on a sample size of 186, providing a solid basis for the findings.

RECOMMENDATIONS

To enhance the relationship between innovative capabilities and supervisory performance, several recommendations can be implemented based on the findings of the study. These recommendations focus on fostering a culture of creativity, improving the integration of new technologies, supporting continuous professional development, and leveraging data-driven decision-making. First, organizations should actively cultivate an environment that promotes creative thinking and innovation. This can be achieved by implementing regular brainstorming sessions, innovation workshops, and cross-departmental collaboration initiatives. By encouraging employees to share and explore new ideas, organizations can capitalize on the positive attitudes observed among respondents towards creative problem-solving. Leadership should also recognize and reward innovative contributions to reinforce this culture. Second, the integration of new technologies must be prioritized. Given that only 49.5% of respondents feel confident in this area, organizations should invest in training programs that equip employees with the necessary skills to effectively utilize new tools and technologies. This training could include workshops on the latest software, tools for data analysis, and emerging technologies relevant to the organization's field. Additionally, creating a mentorship program where tech-savvy employees assist others can foster a supportive learning environment. Third, organizations need to place a greater emphasis on professional development. With only 66.5% of respondents feeling encouraged to pursue continuous learning, it is crucial to establish structured professional development programs. This can include offering access to online courses, attending industry conferences, and providing opportunities for certifications. Leadership should actively promote these resources and allocate time for employees to engage in professional growth activities. Encouraging participation in professional networks can also help employees stay updated with industry trends and best practices. Fourth, organizations should focus on enhancing their data-driven innovation efforts. While 73.7% of respondents leverage data for decision-making, this area can be further strengthened. Organizations should invest in advanced data analytics tools and ensure that employees are trained to interpret and utilize data effectively. Creating a centralized data repository can also help teams access relevant information and insights, fostering a collaborative approach to innovation.

Additionally, fostering a feedback-rich environment is essential. Organizations should implement regular feedback mechanisms, allowing employees to share their thoughts on processes, technologies, and organizational strategies. This can be done through surveys, suggestion boxes, or informal feedback sessions. Leadership should demonstrate openness to feedback and make adjustments based on employee insights, reinforcing the value of their contributions. Moreover, organizations should implement clear communication strategies that articulate the importance of innovation and creativity. This includes setting clear objectives for innovation initiatives and regularly communicating progress and success stories. Leadership should engage with teams to discuss goals, ensuring that everyone understands their role in the broader innovation strategy. Lastly, to effectively measure the impact of these initiatives, organizations should establish Key Performance Indicators (KPIs) related to innovation and supervisory performance. By regularly reviewing these metrics, organizations can assess the effectiveness of their efforts and make data-informed adjustments to their strategies. This accountability will drive continuous improvement and ensure that innovation remains a priority within the organization. In conclusion, by implementing these recommendations, organizations can significantly enhance their innovative capabilities and supervisory performance. Fostering a culture of creativity, improving technology integration, supporting professional development, and leveraging data-driven decision-making will not only strengthen organizational effectiveness but also prepare teams to tackle future challenges with confidence and creativity. As innovation becomes increasingly vital in today's dynamic landscape, these strategies will be crucial for sustained success and growth.

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