Factors Influencing Research Culture at Public Universities in Pakistan

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The study was conducted to explore factors influencing research culture at the universities in Pakistan. For this purpose, twelve heads of the departments of sciences and social sciences faculties of six general universities were interviewed using purposive sampling technique. Responses of the participants were transcribed and themes were developed after comprehensive analysis of the responses. Respondents were asked about the factors influencing research culture at universities. The discourses of the respondents that institutional support, funding, infrastructure, resources, professional development activities, workshops, collaboration and communication, transparency, reward system, diversity and inclusion, national policies and regulations were the major factors that were influencing research culture at the universities in Pakistan. Research teams having different socioeconomic background, experience and mental abilities conduct comprehensive and strong research studies. Policies and regulations about appointment and promotion, smooth funding, developing local and international collaboration, security of intellectual property rights and strict guidelines for research ethics were the major factors that contributed to develop research culture at the universities. Results explored that shortage of physical resources, poor collaboration, lack of funds, pressure of publications, lack of trainings, institutional bureaucracy, political instability and lack of mentorship were the major issues that were affecting research culture negatively at universities in Pakistan. The study also suggested that universities should develop research supportive infrastructure with the arrangement of funds and proper planning of skill development to create an environment that can be helpful in nourishing a rich research culture at the universities.

1 Introduction

Higher education has been working dynamically to address the multiple challenges related to rapid development and technologies. The demand and quality of research has changed the environment of higher education institutes in advance countries. The research and teaching at universities cultivating the talent among students for technological advancements in the society (Baba et al., 2021). Research is an important element at universities and universities provide incentives and provide them necessary facilities to the researchers for smooth research activities. Provision of facilities and incentives for research activities enhances the skills of the researchers and develop rich research environment at universities. Participation of faculty and encouraging them for research activities develop rich research culture at universities (Iqbal et al., 2018). The modern infrastructure, work abilities, skills and facilities increase the research productivity and develop research culture at universities (Fabre et al., 2021). The history of research culture in Pakistan was full of challenges and had many shortcomings. The landscape of higher education has been changing in Pakistan since 2002. Establishment of HEC has brought many reforms and provided resources for the researchers. University research is given importance because it gives solutions and directions to solve problems. Industries and organizations give importance to the doctorial researches conducted in the universities. Research conducted in universities having rich research culture answer the research questions and solve problems (Ravichandran, 2018).

Universities generate knowledge through research and provide opportunities to learn previous knowledge. Faculty members in universities remain busy in conducting research as well as teaching (Lakhotia, 2021). Research is the need of time for knowledge production. Research has core importance in generating an interface with the academic and business world. Researcher gives opportunity to students to learn deeper knowledge, explore academic literature and form a relationship with professional researchers and academic staff at universities (Ravichandran, 2018). Developing funding plans, reforms in evaluation methods, policy revisions and infrastructure to facilitate research were the basic requirements of the research universities in Pakistan (Fatima et al., 2020). Research culture could bring opportunities of incentives and monetary rewards for researchers. Capacity building trainings, national and international workshops, academia industry collaboration, security of intellectual property rights are the major factors that forma rich research culture at universities (Mirasol & Inovejas, 2017). Research that solved industrial and societal problems is given more importance. Collaboration promotes the research culture at universities (Mlitwa, 2016). Working according to norms, following ethics, socializing with people and reducing the gaps to construct a system develops a rich research environment (Kashif et al., 2022). Compelling the faculty members and scholars to produce more and more research papers damages the research culture at universities (Ion & Castro, 2017). HEC has taken many initiatives to improve the quality of education at universities. Research culture at universities was improving after the steps taken by HEC. Existing status of research is moving to improvement and governments is achieving its objectives (Ansari et al., 2016). Higher education institutes in Pakistan were facing problems like partial availability of physical facilities, libraries, laboratories, high tech equipment and highly skilled teaching staff (Memon, 2017). Weak collaboration and

quality issues were the main factors which are affecting research at universities in Pakistan (Jan & Hussain, 2020).

The current study is to explore the factors influencing research culture at public universities in Pakistan. Universities and research programs are playing an effective role in developing knowledge-based economies in technological advanced countries. But the situation in developing countries like Pakistan is not satisfactory and research culture is not fulfilling the needs of time. In this regard there is a need to explore the factors that influence the research culture at universities. Conducting research about the factors affecting research culture at universities in Pakistan is important for several reasons. Firstly, Research culture plays an important role in knowledge creation, promoting newness in research and driving economic growth. Understanding the factors affecting research culture at universities can be helpful to develop a rich research environment at universities in Pakistan. Research culture attracts the researchers to form a research community that can promote academic excellence. The study can be helpful to identify the challenges and barriers faced by researchers and factors like institutional support, policies, infrastructure and collaboration.

2 Literature Review

Research finds out the facts of the real world and it make researchers able to take right decisions and gain in-depth knowledge. High quality of research is beneficial for society and life. Provision of resources many enhance the production of research and more problems can be addressed. The status of universities has been changed in this new world and university research has been addressing the problems and developing knowledge based economies (Ravichandran, 2018).

2.1 Research at Universities in Pakistan

The purpose of the university research is to solve problems of the world (Rojas & Espejo, 2020). Establishment of HEC has improved research at universities in Pakistan. Initiatives of HEC has improved the productivity of research at universities (Ansari et al., 2016). Many policies were developed in Pakistan to improve the culture of universities but remained ineffective. Lack of merit, political interference, deficiency of research trainings, political activities at universities and shortage of funds were the major problems that were affecting the research performance at universities (Khan et al., 2018). Leadership change provided more resources to the universities and a wide impact could be seen from the previous two decades (Naseem et al., 2019). Many new universities are established in Pakistan in previous two decades which put a considerable effect on quantity of publications and doctorate degree holders (Naseem et al., 2019).

2.2 Higher Education in Pakistan

Perspective of education is changed now and higher education in Pakistan is improving its functioning for the development of Pakistan and society (Ali et al., 2018). Universities in Pakistan are needed to develop policies, infrastructure, collaboration, laboratories and research centers to develop standard of research at universities in Pakistan. Funding resources, equity more over international collaboration with foreign universities should be improved for smooth progress in

research (Murtaza & Hui, 2021b). Gender bigotry, political involvement, political involvement and favoritism should be abandoned in higher education institutes in Pakistan (Murtaza & Hui, 2021b). Many reforms like quality control, research scholarships, tenure track system and revision of syllabus were made during previous decades. HEC had planned and developed many policies to develop research culture at universities in Pakistan (Riaz et al., 2017). Higher education and research activities are contributing in the economic growth and development in Pakistan. It is the main objective of the universities to train the students for research and to serve the society (Ashraf, 2019).

2.3 Organizational Factors Influencing Research Culture

2.3.1 Institutional Policies and Resources

Institutional support includes technological support, academic support, social and service support. It improves the quality of education and service at universities (Kakada et al., 2019). Policies had a wide impact on the performance, publications, collaboration and sharing of research results with the relevant community (Moghdam et al., 2015). Usually local universities borrow policies without comparing its compatibility with local culture (Khawar & Arif, 2019). It was reported that universities were not receiving appropriate funding, equipment and other physical resources as per their demand and needs (Jan & Hussain, 2020). Funding and research climate affects the research productivity at universities. Support of leaders, collaboration, physical infrastructure and research environment had a positive effect on the research productivity (Yang, 2017). Higher education provides funding to universities to avail human capital, arrange facilities and to improve research productivity (Lang, 2016). Same as availability of physical infrastructure fosters the research productivity (Bakari & Hunjra, 2019). Physical facilities are the salient features of research university to conduct research activities effectively (Balyer & Ozvural, 2021).

2.3.2 Collaboration and Research Networking

Collaboration, originality, leadership, management, communication, organizational planning, strategies and capabilities to do something new develops the culture of research at universities (Zhu & Engels, 2014). Universities in the modern world has changed it mission and vision to establish new research universities that can play active role in conducting research, productions, developing and sharing results to the changing world (Engwall, 2020). There is need to develop academia industry collaboration and capacity building activities at universities (Nadeem et al., 2020). Collaboration between entrepreneurs and funding agencies was very weak that also weakens the collaboration at universities. It was needed to be improved for technological development and nation building (Bhutto & Lohana, 2018). Offices of research, innovation and commercialization (ORIC) were trying their best to enhance collaboration and to improve research culture at universities directly (Offices of Rresearch, Innovation and Commercialization, n.d.).

2.3.3 Credibility and Quality of Research

Transparency and accountability develops public trust and credibility of research among public (Ngo & Meek, 2019). Transparency enables researchers to understand the circumstances

and lead research results ethically avoiding replication. Transparency is related to do what it is actually (Griffith, 1998). Transparency is directly associated with the quality. Researchers and institutions collectively focused on the transparency, credibility and quality while conducting research. In scientific researches transparency enhances the credibility of the results and gave surety to application of results (Lucena & Costa, 2021).

2.3.4 Recognition and Prestige

Universities had the capacity to pat monetary rewards and incentives to the researchers. For the promotion of research and developing research culture universities offers incentives for the researchers (Tucker & Tilt, 2019). Universities award research grants that add up to develop socioeconomic value of the countries (Ngo & Meek, 2019). Researchers are motivated through incentives and awards to publish research papers in impact factor journals. Demand of research papers for the sake of promotions of academic staff is also a major motive to publish research papers (Pham & Hayden, 2019).

2.3.5 Diversity and Inclusion

Social and cultural values contribute much in developing culture in a society. Giving rights to all and gender equity developed the society and creates culture of care and sense of confidence (Naseem et al., 2019). Diversity and inclusion (related to concern such as gender, age, ethnicity, geographical, socioeconomic background and mental ability) addresses to the changes took place because of these factors (Oswick & Noon, 2013). Diversity and inclusion combined the groups of people with different abilities on the same work place. Combination of abilities and experience enhance the quality of work (Kirton, 2009).

2.3.6 Challenges and Barriers in Developing Research Culture

There are many factors which influence the research culture at universities. The major factors that were affecting research culture in Pakistan were poor physical infrastructure, scarcity of high-tech equipment and limited resources at universities. Many departments in Pakistani universities had not computer labs, digital libraries, internet facilities and high-tech laboratory equipment. There was a need to develop collaboration between local and international universities. Establishment of high-tech laboratories is the need of time to compete the international researches. Syllabuses of the universities should be revised to boost research culture at universities (Murtaza & Hui, 2021b). Numbers of publications are increased in previous era in bulk but knowledge involvement remained low which shows weak research culture at universities (Rana, 2021). Pressure of publications on the faculty members, shortage of resources, non-availability of physical facilities and scarcity of funds are also effecting the quality and performance of researchers (Zafar & Ali, 2018; Ion & Castro, 2017). Research culture at universities is getting better after the establishment of ORICs at universities in Pakistan. Universities are facing many challenges like inadequate funding, trust gap, policy faults and technological advance laboratory equipment (Khan et al., 2020).

Following are the research questions of the research study;

1. What factors are influencing the research culture of public universities in Pakistan?
2. What are the challenges and issues that universities have to deal with in order to develop research culture?
3. How can universities develop rich research culture in Pakistan?

3 Research Methodology

The current research study was descriptive in nature and qualitative method was used to explore the factors influencing research culture at universities in Pakistan. The qualitative research method was used because it gave comprehensive details about the practices (Hammarberg et al., 2016). Qualitative research gave in detail perceptions of the respondents about the nature of phenomena and context of the perspectives (Busetto et al., 2020). The study was conducted to explore the factors that influence and shape the research culture at universities. The study's objective was to explore the factors that influence research culture at universities, thus the heads of the departments of sciences and social sciences were the participants of the study. The study was delimited to six public sector general universities in Punjab, Pakistan. All the heads of the departments were the population of the study. A total twelve heads of the departments were selected as sample of the study through purposive sampling method. In the light of literature review a semi structured interview consisted on different aspects of research culture was developed for data collection. The semi structured interview was consisted on eight questions besides demographic information of the participants. The interview was validated through expert opinion. Keeping in view the nature of the study the purposive sampling method was used and respondents were personally contacted to collect data. Total twelve interviews were conducted among them seven were recorded with the permission of the respondents. Three interviews were conducted through phone call and calls were recorded with the permission of respondents. Two respondents did not allow recording and written notes were taken for data collection. The researcher transcribed the recorded and noted interviews into English language and developed themes after a comprehensive thematic analysis.

4 Results

4.1 Institutional Support

The discourses of the educational managers about institutional support revealed that funding, research resources, policies and priorities of educational managers had a broad impact on the research culture. Majority of the respondents stated that universities supported the research in different ways but funding was the important one. Mostly respondents stated that universities received funds for research from the government sector. One of the respondents stated his views in this way:

"Government provides research grants for research projects, which are spent on provision of equipment, travel expenses, and research assistant salaries (Interviewee HFS4).

More than half of the respondents stated that higher education provided funds for the provision of laboratories equipment and maintain physical resources to support research programs

at universities in Pakistan. A head of the department of from the faculty of science expressed his views:

"Universities had inadequate physical facilities and high tech equipments in science laboratories just because of scarcity of funds. There is a need to improve physical, resources, facilities and infrastructure at universities (Interviewee HFS6).

Same as it was reported that the universities in Pakistan were providing support to researchers by providing them the services of trainings to improve their research skills. While taking about the professional development and research skills of the researchers at universities an educational manager stated that:

"Universities in Pakistan provide professional development opportunities for researchers, such as training in research methodologies and data analysis to enhance their skills and stay up-to-date with the latest research trends. But these trainings and workshops need to be conducted on large scale and regular basis (Interviewee HFSS7)"

Mostly respondents of the research study agreed that trainings, workshops and professional development activities affect the research culture at universities. Respondents stated that universities were providing their services to improve professional development activities but those were less than the requirements of the universities.

Talking about the institutional support respondents stated that university policies and priorities also had a considerable effect on developing research culture at universities. A head of the department stated that:

"Universities have to set its priorities and develop research friendly policies that may allocate funds for research from their general budgets or from external funding sources such as grants, contracts, or donations. The availability of research funding can incentivize faculty and students to engage in research activities and can provide the resources needed to conduct high-quality research (Interviewee HFS4)"

Another respondent stated his views in this way:

"Universities those set their priorities to develop infrastructure, laboratories, libraries and equipment that support research may enhance research culture at universities. Research friendly policies support the researchers in conducting research activities smoothly (Interviewee HFS3)".

One fourth of the participants stated that university policies and priorities of the managers had a significant impact on developing research culture at universities. Overall university policies, perorates, resources, physical infrastructure, libraries, laboratories and funding provided institutional support to researchers to conduct research activities and to develop research culture at universities.

4.2 Collaboration and Communication

Universities often developed collaboration with industry partners to conduct research Respondents believed that collaboration and communication had a broad impact on developing the research culture at universities. Mostly respondents believed that culture of collaboration at universities was pathetic. One of the respondents stated that:

"Universities and industries conduct research and provide platform to work collaboratively to find the practical solutions of the real-world problems (Interviewee HFSS8)".

Another respondent expressed his views in this way:

"No doubt situation of collaboration and communication system between academia and industry is not much satisfying but universities are taking many initiatives to develop collaboration for the sake of rich research culture (Interviewee HFS2)".

All the respondents believed that collaboration and strong communication system developed a rich research culture at universities. But mostly respondents stated that system of open communication and inter disciplinary collaboration was weak at universities in Pakistan. Three out of twelve respondents suggested that by fostering the culture of collaboration, communication and knowledge sharing, universities can assist researchers to build network, access resources that can be helpful to develop strong research culture at universities in Pakistan.

4.3 Transparency

Transparency played a healthy role in developing research culture at universities. All of the participants stated that transparency in conducting research enhance the credibility of research findings. Talking about the transparency in conducting research a head of department stated his views in this way:

"While conducting research, when researchers are crystal clear about their research plans, methodology and finding, it becomes very easier for them to build upon their work. This transparency leads the researchers toward innovative researches (Interviewee HFSS7)".

Ten out of twelve participants stated that transparency in research developed high ethical and moral values among researchers. Mostly respondents stated that culture of transparency fostered trust among researchers in addition between researchers and public. Overall it was concluded that transparency, credibility, ethical behavior, and trust ensured the healthy research culture at universities.

4.4 Reward System

Discourses of the head of departments revealed that reward system played a significant role in developing research culture at universities in Pakistan. One of the participants stated that:

"Incentives, award, prizes and appraisal motivate the researchers to conduct high quality and innovative research. Motivation is the key element which inspires the researchers to conduct innovative researches and to win awards (Interviewee HFSS7)".

Nine out of twelve respondents stated that reward system encouraged the researchers' productivity. Publications, research grants, appraisal, announcement of rewards and incentives played a significant role in developing rich research culture at universities. One fourth heads of the departments stated that reward system brought excellence in research. Awards and prizes motivated the researchers to strive for excellence and contribute to the culture of high quality research.

4.5 Diversity and Inclusion

Discourses of the educational managers revealed that diversity and inclusion had a momentous impact on the research culture at universities. Mostly respondents stated that diverse and inclusive research groups can promote newness and creativity in their research. Talking about the diversity and inclusion educational managers stated that:

"Researchers have different background and socioeconomic status with different mental abilities and skills. Researchers having diversified experience, knowledge and skills solve problems innovatively and precisely (Interviewee HFS4)".

Another head of the department reported his views in this way:

"Students in universities come from different cultures having different age, abilities, background, geographical locations that makes the researchers unique. While conducting research at universities a diverse and inclusive research team can present a variety of perspectives that result a high quality and comprehensive research findings (Interviewee HFSS9)".

Discourses and findings reveled that majority of the respondents reported that researchers having different background and experience conducted more comprehensive research studies, solved problems more effectively and brought innovative solutions of research problems. One fourth respondents stated that researchers who had different social and cultural background with different mental abilities had conducted unique researches in an innovative way. Three out of twelve respondents stated that diverse and inclusive research teams brought variety of perspectives, experience and knowledge in their researches. Some of the respondents stated that inclusive and diverse researchers explored the cultural differences and communicate the people having diversified backgrounds to solve credible and better research findings and outcomes. Overall discourses concluded that diversity and inclusion had positive impact on research culture at universities in Pakistan.

4.6 National Policies and Regulations

Polices had a broad impact on the development of healthy and rich research culture at universities. All of the respondents stated that tenure and promotion policies linked with research publications had promoted the culture of research at universities. A respondent stated his views in this way:

"HEC demands research publications and experience for appointment and promotion of teachers. This encourages and motivates the researchers to prioritize research, devote time and use available resources for conducting research (Interviewee HFSS9)".

Talking about the national policies and regulations a head of department stated his views in this way:

"Policies about smooth funding, collaboration and security of intellectual property help a lot in developing research culture at universities. Policies that encourage inter-university and academia-industry collaboration need revisions to boost up the research culture at universities (Interviewee HFS4)".

Majority of the respondents stated that policies and regulations about appointment and promotion, smooth funding, developing local and international collaboration, security of intellectual property rights and strict guidelines for research ethics were the major factors that contributed to develop research culture at universities.

4.7 Challenges and Barriers

Discourses of the educational managers also pointed out some challenges and barriers that were affecting research culture at universities in Pakistan. Seven out of twelve participants stated that lack of adequate funding; inadequate research infrastructure, poor collaboration and shortage of resources were the main hindrance and had limited researchers' ability to conduct high quality research. One fourth of the respondents stated that pressure of publications, limited support for early career researchers, institutional bureaucracy and limited access to literature and database were effecting research environment at universities in Pakistan. Some of the participants stated that national policies, political instability and lack of mentorship and guidance were affecting the performance of researchers at universities.

4.8 Discussion

Research culture plays an affective role in success and advancement of universities. The main purpose of the research was to investigate factors influencing research culture at universities. The main mission of the universities is to create and disseminate knowledge and research. It is observed that after the establishment of higher education commission (HEC) research culture at universities is getting better (Ansari et al., 2016). The findings of the research study explored that institutional support plays a vital role in developing research culture at universities. Institutional support for conducting high quality research involved funding, availability of physical infrastructure, resources, provision of support to young researchers through trainings and workshops, and university policies and managers priorities. Kakada et al. (2019) reported that technology support, social support, service support and academic support are the dimensions of institutional support to enhance the work performance of the students and researchers. Departments those have appropriate physical infrastructure, laboratories, equipments produce more high quality researches as compared to the departments who were facing shortage of physical facilities (Yang, 2017).

Fatima et al. (2020) reported that developing funding plans, reforms in evaluation of research methods, provision of research resources and infrastructure, and revision of research policies were the basic requirements of the research universities in Pakistan. Jan and Hussain (2020) reported that funding, equipment and other physical facilities were less than the requirements of the universities. Findings of research study explores that universities received funds from the government sector for the provision of laboratories equipment and maintain physical resources to support research programs at universities in Pakistan. Wong (2019) reported that skills of writing research papers need capacity building trainings and activities to improve research culture at universities. Talking about the institutional support respondents stated that university policies and priorities also had a consider effect on developing research culture at universities. Murtaza and Hui (2021b) reported that universities in Pakistan were needed to revise policies and develop physical resources, collaboration and improve funding procedures to improve the culture of research at universities. Mostly respondents of this research study agreed that trainings, workshops and professional development activities affect the research culture at universities. Respondents stated that universities were providing their services to improve professional development activities but those were less than the requirements of the universities. Zafar and Ali (2018) concluded that universities in Pakistan were facing many sever problems like professional development activities, trainings, shortage of resources used for research work, effective feedback and scarcity of funds. Iqbal et al. (2018) reported that institutional supporting in conducting research at universities was not fully prevalent and universities are facing many problems in supporting research culture.

Universities often developed collaboration with industry partners to conduct research Respondents believed that collaboration and communication had a broad impact on developing the research culture at universities. Mostly respondents believed that culture of collaboration at universities was pathetic. Same as Jan and Hussain (2020) reported same results that weak collaboration and quality problem were the main factors that are effecting research culture at universities. Universities managers with rich research culture adopt strategies of open communication, share goals and objectives to the researchers and faculty members to motivate researchers. They developed social networking and peer relations which brought a positive change in universities (Chan, 2021). Majority of the respondents believed that collaboration and strong communication system developed a rich research culture at universities but system of open communication and inter disciplinary collaboration was weak at universities in Pakistan. Powerful and good relations between management and researchers bring desired change in the departments to achieve objectives. Good relations and open communication brings achievements in research work (Hattke et al., 2016). Transparency played a healthy role in developing research culture at universities. Transparent research beings easiness for authorization and can be justified for securing funds and publication (Corti et al., 2014). Majority of the participants stated that transparency in conducting research enhance the credibility of research findings, fostered trust among researchers in addition between researchers and public and developed high moral values among researchers. Transparency of research is linked with ethical obligation to collect data transparently; measure, interpret and analyze data as per standards and frame the research results according to research design (Lupia & Elman, 2014). Overall, it was concluded that transparency, credibility, ethical behavior, and trust ensured the healthy research culture at universities.

Transparency and integration are the important factors that are strongly associated with the quality. Transparency brings clarity and strength in the results of scientific research (Lucena & Costa, 2021). Findings also revealed that reward system played a significant role in developing research culture at universities in Pakistan. Mostly respondents stated that reward system encouraged the researchers' productivity. Publications, research grants, appraisal, announcement of rewards and incentives played a significant role in developing rich research culture at universities. Some of the departments stated that reward system brought excellence in research. Awards and prizes motivated the researchers to strive for excellence and contribute to the culture of high quality research. Naoreen and Adeeb (2014b) also stated that research grants and incentives were awarded to the researchers to support the research activities.

Discourses of the educational managers revealed that diversity and inclusion had a momentous impact on the research culture at universities. The research at universities is linked with culture, values, norms, welfare and prosperity of the society and community (Tilak, 2006). Mostly respondents stated that diverse and inclusive research groups can promote newness and creativity in their research. Murphy et al. (2013) concluded that external environmental factors and conditions affect the internal performance of employees. Members with diversified qualities and having different perspectives affect the performance positively. Findings reveals that majority of the respondents reported that researchers having different background and experience conducted more comprehensive research studies, solved problems more effectively and brought innovative solutions of research problems. Burt (2002) also stated that there was a significant positive relationship between cultural factors and performance of the universities. Some respondents stated that researchers who have different social and cultural background with different mental abilities have conducted unique researches in an innovative way and brought variety of perspectives, experience and knowledge in their researches. Diverse and inclusive research teams addressed the complex societal problems. Research teams with multiple qualities and abilities bring unique scientific solutions of the problems. Inclusion and diversity brings talent close and give opportunity to work collaboratively to conduct research (Hattery et al., 2022).

Some of the respondents stated that inclusive and diverse researchers explored the cultural differences and communicate the people having diversified backgrounds to solve credible and better research findings and outcomes. Diversity and inclusion build a trusting environment. It develops strengthen the qualities of the workers and they feel that they were included and given importance. It also increased the performance and wellbeing of those who works together (Stephanie et al., 2015). Polices had a broad impact on the development of healthy and rich research culture at universities. Riaz et al. (2017) research policies about quality control, research scholarship, tenure track and revision of syllabus were revised in previous decades to improve research culture. All of the respondents stated that tenure and promotion policies linked with research publications had promoted the culture of research at universities. Majority of the respondents stated that policies and regulations about appointment and promotion, smooth funding, developing local and international collaboration, security of intellectual property rights and strict guidelines for research ethics were the major factors that contributed to develop research culture at universities.

Lack of physical resources, poor collaboration, funding issues, favoritism and lack of competency of students were the major problems that were effecting research culture at universities adversely (Naoreen & Adeeb, 2014b). Discourses of the educational managers also pointed out some challenges and barriers that were affecting research culture at universities in Pakistan. Mostly respondents stated that lack of adequate funding, inadequate research infrastructure and shortage of resources were the main hindrance and had limited researchers' ability to conduct high quality research. Some of the respondents stated that pressure of publications, limited support for early career researchers, institutional bureaucracy and limited access to literature and database were effecting research environment at universities in Pakistan. Some of the participants stated that national policies, political instability and lack of mentorship and guidance were affecting the performance of researchers at universities. Political interference, gender racism and favoritism are affecting research culture at universities in Pakistan (Murtaza & Hui, 2021a).

5 Conclusion

It was concluded from the discourses of the respondents that institutional support, funding, infrastructure, resources, professional development activities, workshops, collaboration and communication, transparency, reward system, diversity and inclusion, national policies and regulations were the major factors that were affecting research culture at universities in Pakistan. Collaboration and communication was an important factor that affects research culture but respondents stated that the situation of collaboration at universities was pathetic. Lack of funds, shortage of resources, insufficient infrastructure and few skill development activities weakens the research culture at universities. Transparency, credibility, ethical behavior of researchers, rewards and incentives foster the research culture at universities. Research teams having different socioeconomic background, experience and mental abilities conduct comprehensive and strong research studies. Policies and regulations about appointment and promotion, smooth funding, developing local and international collaboration, security of intellectual property rights and strict guidelines for research ethics were the major factors that contributed to develop research culture at universities. Results explored that shortage of physical resources, poor collaboration, funding issues, pressure of publications, institutional bureaucracy, political instability and lack of mentorship were major issues that were affecting research culture at universities in Pakistan. The findings of the current study explored the factors influencing research culture at universities. The study is helpful to understand the factors, current problems and challenges that are influencing research culture at universities. The results of the study might be helpful for educational managers, policy makers and research supervisors to develop a rich research culture at universities.

5.1 Recommendations

There are different recommendations for policy makers, academicians, and management of higher education institutions based on the findings of the study.

1. There is a need to develop supportive infrastructure and arrange research funds that can be helpful to build rich research culture at universities.
2. Universities should develop a long term plan to conduct trainings to develop research skills of research professionals.

3. University managers should develop a strong inter disciplinary collaboration, networking and academia-industry linkage to develop a strong research culture at universities.
4. Higher education commission should encourage, recognize and give incentives to researchers for their active participation in research activities.
5. Foster an environment where diverse perspectives and ideas are welcomed and respected.

5.2 Future Research

Although the current research study explores the factors affecting research culture at universities in Pakistan but there are many gaps which can be further addressed. The current research study was conducted in only six general universities of Punjab. Further the number of universities can be increased and universities with professional degree courses can be included to investigate research culture. Furthermore the culture of researches leading to innovation and innovation culture can evaluated in further research studies to know how researches and innovations are contributing in solving the societal and industrial problems of this technological advance world.

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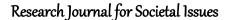
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