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# DETERMINANTS OF RESEARCH PRODUCTIVITY AMONG UNIVERSITY FACULTY IN HAZARA DIVISION

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**Abstract**
*This study investigates the factors affecting research productivity among university faculty in the Hazara Division. Research productivity plays a crucial role in enhancing university rankings and academic performance. The study aimed to (a) examine faculty perceptions of institutional factors influencing research productivity, (b) explore personal factors affecting research output, and (c) compare these factors across gender, discipline, and employment type. The population comprised 334 faculty members from three universities, including both social and natural sciences departments. Using disproportionate stratified random sampling, a sample of 235 faculty members was selected. Data were collected through a structured questionnaire with a reliability coefficient (Cronbach's alpha) of 0.814. Statistical techniques including mean scores, percentages, and t-tests were used for analysis. The findings revealed that both institutional and personal factors significantly influence research productivity. Faculty members showed general agreement on the impact of these factors, regardless of rank. A key issue identified was excessive workload, which limits research engagement and publication output. The study highlights important implications for higher education policymakers and university administrations. It recommends reducing non-academic workload to support faculty in enhancing their research productivity and contributing more effectively to academic advancement.*

## INTRODUCTION

Education plays a fundamental role in the development of society. The progress, prosperity, and global standing of any nation are closely linked to the quality and advancement of its education system. Beyond economic growth, education contributes significantly to the intellectual, social, and moral development of individuals. In the modern era, higher education institutions, particularly universities, are not only centers of learning but also hubs of knowledge creation through research. As a result, research has become a core function of universities worldwide. Research productivity is widely regarded as a key indicator of academic excellence and institutional performance. It contributes to university rankings, enhances institutional reputation, and promotes innovation and societal development. Universities provide an environment where new ideas are generated, tested, and disseminated. In this

context, teaching and research are often viewed as interconnected activities, where effective teaching is supported by active engagement in research. Faculty members who participate in research are more likely to bring current knowledge and critical thinking skills into their teaching practices.

In higher education, research is considered as important as teaching. Particularly in social sciences, research contributes to policy development, social improvement, and economic progress. Developed countries prioritize research activities in universities, allocating substantial resources and institutional support to enhance research output. In contrast, developing countries often face challenges in maintaining a balance between teaching responsibilities and research expectations. Research productivity can be understood as the measurable output of research activities conducted by faculty members. It includes publications in peer-reviewed journals, books, conference papers, research reports, and other scholarly contributions. It also encompasses activities such as securing research grants, supervising postgraduate research, and participating in academic collaborations. Thus, research productivity reflects both the quantity and quality of scholarly work produced by university faculty.

Faculty members, including Assistant Professors, Associate Professors, and Professors, play a central role in advancing research within universities. Their research output is often used as a benchmark for evaluating academic performance and career progression. Promotion, tenure, and financial incentives in higher education are frequently tied to research achievements. Therefore, enhancing faculty research productivity is essential for both individual career development and institutional success. However, research productivity is influenced by a range of factors, broadly categorized as institutional and personal. Institutional factors include policies, availability of research funding, workload, access to resources, administrative support, and opportunities for professional development. Universities that provide adequate research facilities, supportive policies, and incentives tend to have higher levels of research productivity among faculty members. Conversely, lack of funding, insufficient infrastructure, and heavy teaching loads can hinder research activities.

Personal factors also play a significant role in determining research productivity. These include age, gender, academic qualifications, research skills, motivation, attitude towards research, and family responsibilities. Faculty members with strong research training, positive attitudes, and high motivation are more likely to engage in research activities. On the other hand, personal challenges such as stress, lack of confidence, and work-life imbalance can negatively impact research output. Stress is another important factor affecting research productivity. It is a common experience among university faculty due to increasing academic demands, pressure to publish, and administrative responsibilities. While a moderate level of stress may motivate individuals, excessive stress can lead to decreased performance, burnout, and reduced research engagement. Managing stress effectively is therefore crucial for maintaining productivity in academic environments.

In the context of Pakistan, the structure of faculty employment also influences research productivity. Two major systems exist: the Basic Pay Scale (BPS) and the Tenure Track System (TTS). The BPS system primarily emphasizes teaching responsibilities and offers relatively lower financial incentives for research. In contrast, the TTS, introduced to align with international standards, focuses on both teaching and research performance, offering higher salaries and incentives for research output. Faculty members under the TTS are generally expected to be more research-active compared to those under the BPS system. Additionally, differences in academic disciplines can affect research productivity. Faculty in natural sciences often have greater access to funding opportunities, laboratories, and collaborative research projects, which can enhance their research output. In comparison, social sciences may face limitations in funding and infrastructure, although they play a critical role in addressing societal issues. These disciplinary

differences highlight the need to consider context-specific factors when examining research productivity.

Despite the recognized importance of research in higher education, universities in Pakistan face several challenges that limit faculty research productivity. These challenges include heavy teaching workloads, limited research funding, inadequate facilities, lack of institutional support, and increasing pressure to publish. Faculty members often struggle to balance teaching, administrative duties, and research responsibilities, which affects their ability to produce high-quality research. Research is an integral component of professional growth and career advancement in universities. It plays a crucial role in promotion, tenure decisions, and salary increments, making it a key factor in academic success. However, numerous factors affect the research productivity of university faculty. In Pakistan, the current higher education environment presents several challenges that hinder the development of a strong research culture.

Although faculty members are motivated to engage in research, they face significant barriers such as limited time due to heavy teaching loads, pressure to publish, insufficient funding, lack of research facilities, and inadequate institutional support. These challenges reduce their capacity to produce meaningful research outputs. Both institutional factors (such as policies, workload, and resources) and personal factors (such as motivation, skills, and demographic characteristics) influence research productivity.

Furthermore, variables such as gender, age, designation, marital status, and professional experience may also impact research engagement and output. Despite the importance of this issue, limited research has been conducted on the factors affecting research productivity of university faculty in the Khyber Pakhtunkhwa province, particularly in the Hazara Division. Therefore, this study aims to investigate the institutional and personal factors affecting research productivity among faculty members working under the BPS and TTS systems in social and natural sciences departments of universities in the Hazara Division. By identifying these factors, the study seeks to provide insights that can help policymakers and university administrators develop effective strategies to enhance research productivity in higher education institutions.

**Literature Review**

This chapter reviews the existing literature on research productivity and the factors affecting it among university faculty. It provides a comprehensive understanding of research productivity in higher education, its importance, measurement, and the institutional and personal factors that influence it. It also discusses the status of research in Pakistan, the role of research culture, and initiatives taken by the Higher Education Commission (HEC) to promote research activities. Research is a systematic and organized process of inquiry aimed at generating new knowledge or solving existing problems. According to Creswell (2011), research plays a vital role in addressing real-world challenges and contributes to intellectual and societal development. Similarly, Mills and Gay (2019) describe research as a formal and systematic application of scientific methods to study problems and enhance understanding. Research involves collecting, analyzing, and interpreting data to reach valid conclusions and expand knowledge across disciplines.

At the university level, research is a core function alongside teaching. Universities serve as centers for knowledge creation, dissemination, and innovation. Research productivity is often used as a key indicator of academic excellence and institutional performance. It includes publications in peer-reviewed journals, books, conference presentations, research projects, and supervision of postgraduate students. According to Alghanim and Alhamali (2011), research productivity reflects the quantity and quality of scholarly output produced by faculty members. The importance of research in higher education cannot be overstated. It enhances knowledge, supports innovation, and contributes to economic and social development. Research also improves teaching quality by

integrating new knowledge into classroom practices. In developed countries, research is given high priority, with strong institutional support and funding. However, in developing countries like Pakistan, research productivity is often hindered by limited resources and weak research infrastructure.

In Pakistan, higher education has undergone significant transformation, particularly after the establishment of the Higher Education Commission (HEC). The HEC has introduced various initiatives to promote research culture, including funding programs, international collaborations, and scholarships for advanced studies. Programs such as the National Research Program for Universities (NRPU) and international partnerships have played a significant role in enhancing research output. Despite these efforts, Pakistan still lags behind many countries in terms of research productivity. Research productivity is influenced by multiple factors, broadly categorized into institutional and personal factors. Institutional factors include promotion policies, availability of resources, workload, funding, and administrative support. Studies have shown that supportive institutional environments significantly enhance research productivity. For instance, adequate funding, access to research facilities, and fair promotion policies motivate faculty members to engage in research activities. On the other hand, heavy teaching workload and lack of resources act as barriers to research productivity.

Workload is one of the most critical institutional factors affecting research productivity. Faculty members often face multiple responsibilities, including teaching, administrative duties, and student supervision, which limit the time available for research. Similarly, lack of funding and inadequate research facilities reduce opportunities for conducting quality research. Motivation and incentives, such as promotions and financial rewards, also play a crucial role in enhancing research output. Personal factors also significantly influence research productivity. These include age, gender, family responsibilities, research skills, and attitudes toward research. Faculty members with strong research skills, training, and positive attitudes are more likely to produce high-quality research. Conversely, lack of training and limited exposure to modern research methodologies can hinder productivity.

Family responsibilities are another important factor, particularly affecting work-life balance. Studies have shown that marital status, childcare responsibilities, and family obligations can impact research engagement. Additionally, age and health conditions may influence productivity, as younger faculty members tend to be more active in research compared to older ones. Research skills and training are essential for enhancing productivity. Knowledge of research methods, data analysis tools, and technological advancements plays a critical role in producing quality research. Lack of training in these areas can limit faculty members' ability to conduct and publish research effectively. Furthermore, attitude toward research is a key determinant; faculty members with positive attitudes and intrinsic motivation are more likely to engage in research activities.

Several national and international studies have examined research productivity. Studies in Pakistan highlight the uneven distribution of research output among universities, with a few institutions contributing the majority of publications. International studies also emphasize the importance of institutional support and individual motivation in enhancing research productivity. In summary, the literature indicates that research productivity is a complex phenomenon influenced by a combination of institutional and personal factors. While institutional support provides the necessary environment and resources, personal characteristics determine individual engagement and performance in research activities. Understanding these factors is essential for developing strategies to improve research productivity in higher education institutions.

**Theoretical Framework**

This study is grounded in two key theoretical perspectives: Bland et al.'s Model of Faculty Research Productivity and Vroom's Expectancy

Theory of Motivation. These frameworks provide a comprehensive understanding of the factors influencing research productivity among university faculty. Bland et al. (2005) developed a comprehensive model to explain faculty research productivity. According to this model, research productivity is influenced by two major domains: institutional factors and individual (personal) factors. These factors interact within a broader academic environment to shape research outcomes.

The model identifies three key components:

1. Individual characteristics of faculty members
2. Institutional environment (department/university)
3. Leadership and administrative support

Individual characteristics include motivation, research skills, commitment, and interest in research. Faculty members who possess strong research orientation, intrinsic motivation, and adequate skills are more likely to be productive in research.

Institutional factors include workload, availability of resources, research funding, promotion policies, and organizational culture. Universities that provide supportive environments, research facilities, and incentives tend to have higher research productivity. Leadership also plays a crucial role in fostering a research-friendly environment by encouraging collaboration and providing guidance.

The interaction between these components creates a system that either supports or hinders research productivity. For example, even highly motivated faculty may struggle to produce research if institutional support is lacking. Conversely, a supportive environment can enhance the productivity of faculty members.

In the context of this study, Bland et al.'s model provides a useful framework for examining how institutional and personal factors jointly influence research productivity among university faculty in Hazara Division.

**Vroom's Expectancy Theory of Motivation**

Vroom's Expectancy Theory (1964) explains how motivation influences individual behavior and performance. The theory is based on the idea that individuals make decisions based on expected outcomes and the value they attach to those outcomes.

The theory consists of three key components:

- **Expectancy**: Belief that effort will lead to improved performance
- **Instrumentality**: Belief that performance will lead to desired outcomes
- **Valence**: Value placed on the expected outcomes

The motivational force is expressed as:

Motivation = Expectancy × Instrumentality × Valence

In the context of research productivity, this theory suggests that faculty members will engage in research activities if they believe that their efforts will lead to successful outcomes (e.g., publications), which in turn will result in rewards such as promotions, recognition, or financial incentives.

Expectancy reflects faculty confidence in their research abilities and skills. Instrumentality refers to the belief that research performance will be rewarded by the institution. Valence represents the importance faculty members place on these rewards.

If any of these components is weak, motivation decreases. For example, if faculty members believe that their research efforts will not be recognized or rewarded, they are less likely to engage in research activities.

**Integration of Theoretical Framework**

The integration of Bland et al.'s model and Vroom's Expectancy Theory provides a comprehensive understanding of research productivity. While Bland's model emphasizes structural and environmental factors, Vroom's theory explains the motivational aspects influencing individual behavior.

Together, these frameworks highlight that research productivity is not solely determined by institutional support or personal characteristics, but by the interaction between both. Institutional

policies, resources, and incentives shape the environment, while individual motivation, skills, and attitudes determine how faculty respond to these conditions.

This combined framework is particularly relevant for this study, as it examines both institutional and personal factors affecting research productivity among university faculty. It helps explain why some faculty members are more productive than others, even within the same institutional context.

**Research Methodology**

The present study employed a quantitative research approach with a descriptive survey design to investigate the factors affecting research productivity among university faculty in the Hazara Division. The survey method was considered appropriate as it enables the collection of data regarding participants' opinions, perceptions, and experiences related to a specific issue. The population of the study consisted of 334 faculty members, including Professors, Associate Professors, and Assistant Professors working in three public sector universities of Hazara Division. These faculty members belonged to both social and natural sciences departments and were employed under two systems: Basic Pay Scale (BPS) and Tenure Track System (TTS). A sample of 235 respondents was selected using a disproportionate stratified random sampling technique, ensuring representation across gender, job status, and academic disciplines. The sample included male and female faculty members from both employment systems and disciplines. Data were collected using a self-developed structured questionnaire based on a five-point Likert scale ranging from strongly agree to strongly disagree. The instrument consisted of two sections: demographic information and items measuring institutional and personal factors affecting research productivity. Institutional factors included promotion policies, workload, funding, and resources, while personal factors included research skills, attitudes, age, and family responsibilities.

The validity of the instrument was ensured through expert evaluation by five specialists in the field of education, who reviewed the questionnaire for clarity, relevance, and content accuracy. A pilot study was conducted with 20 faculty members to test the reliability of the instrument, and Cronbach's Alpha was calculated at 0.814, indicating a high level of internal consistency. Data collection was carried out through personal visits to the selected universities after obtaining official permission from the respective administrations. A total of 310 questionnaires were distributed, out of which 235 were returned, yielding a response rate of 78.3%. The data collection process spanned approximately two months, with follow-ups conducted to improve response rates. For data analysis, statistical techniques including frequency distribution, mean scores, percentages, standard deviation, and t-tests were applied using SPSS (Version 21). Descriptive statistics were used to analyze the first two objectives, while t-tests were employed to examine differences based on gender, discipline, and job status. Ethical considerations, including confidentiality and voluntary participation, were strictly maintained throughout the study.

**RESULTS AND INTERPRETATIONS**

This study describes the results and interpretation after data analysis. The data was analyzed with help of statistical Packages for social science (SPSS) to get mean, frequency and percentage of the variables. The total 36 tables have been made in this chapter, showing results related to each objective.

**Analysis of objective No. 1**

To examine the perceptions of university faculty about the institutional factors that affects their research productivity

**Table 4.1**
**Teacher's perception about the policy for promotion**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Promotion systems motivate the research performance of university faculty. | f | 123 | 100 | 6 | 2 | 4 | 4.43 |
| | % | 52 | 42.6 | 2.6 | 0.9 | 1.7 | |
| Delay in promotion affects research productivity of faculty. | f | 125 | 106 | 0 | 3 | 1 | 4.49 |
| | % | 53.2 | 45.1 | 0 | 1.3 | 0.4 | |
| Incentive due to promotion stimulates university faculty for research. | f | 113 | 117 | 3 | 2 | 0 | 4.45 |
| | % | 48.1 | 49.8 | 1.3 | 0.9 | 0 | |
| Research productivity has positive affect on the promotion of BPS and TTS faculty. | f | 118 | 109 | 7 | 0 | 1 | 4.46 |
| | % | 50 | 46 | 3.0 | 0 | 1 | |
| Timely promotion motivate faculty towards research productivity. | f | 136 | 94 | 4 | 0 | 1 | 4.55 |
| | % | 57.9 | 40.0 | 1.7 | 0 | 0.4 | |

Table 4.1 present the effects of policy for promotion on the research productivity of university teachers. Analysis regarding statement No.1 shows that 52% faculty members strongly agreed and 42.6% agreed about the statement, "promotion systems motivate the research performance of university faculty". The mean score (4.43) also indicates that faculty agreed promotion systems affects them staff research performance.

Analysis regarding statement No.2 shows that 53.2% faculty members strongly agreed and 45.1% agreed about the statement, "delay in promotion affects research productivity of faculty". The mean score (4.49) also indicates that faculty agreed delay in promotion affects their staff research performance.

Analysis of statement No. 3 shows that 48.1% of faculty members strongly agreed and 49.8% agreed with the statement, "incentive due to promotion stimulates university faculty for research". The mean score (4.45) also indicates that faculty agreed incentive due to promotion affect their staff research performance.

Analysis regarding statement No.4 shows that 50% faculty members strongly agreed and 46% agreed about the statement, "research productivity has a positive affect on the promotion of BPS and TTS faculty". The mean score (4.46) also indicates that faculty agreed that promotion of BPS and TTS faculty affects their staff research performance.

Analysis of statement No. 5 shows that 57.9% of faculty members strongly agreed and 40% agreed with the statement, "timely promotion motivates faculty towards research productivity". The mean score (4.55) also indicates that faculty agreed that timely promotion affects their staff's research performance.

**Table 4.2**
**Teachers' perception of the resources and material support**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Library facilities enhance the university staff research productivity. | f | 91 | 119 | 16 | 8 | 1 | 4.24 |
| | % | 38.7 | 50.6 | 6.8 | 3.4 | 0.4 | |
| Lack of institutional and material support decreAssess the research productivity of faculty. | f | 113 | 116 | 3 | 3 | 0 | 4.44 |
| | % | 48.1 | 49.4 | 1.3 | 1.2 | 0 | |
| Shortage of facilities (laptops, internet, learning resource center) are the main barriers to conduct research. | f | 98 | 124 | 5 | 5 | 3 | 4.31 |
| | % | 41.7 | 52.8 | 2.1 | 2.1 | 1.3 | |
| Non- availability of e-library affects research productivity. | f | 83 | 132 | 15 | 3 | 2 | 4.24 |
| | % | 35.3 | 56.2 | 6.4 | 1.3 | 0.8 | |
| Sub-standard equipment in the laboratory affects research productivity. | f | 107 | 123 | 4 | 1 | 0 | 4.43 |
| | % | 45.5 | 52.3 | 1.7 | 0.4 | 0 | |

Table 4.2 present the effects of resources and material support on the research productivity of university teachers. Analysis regarding statement No.1 shows that 38.7% faculty members strongly agreed and 50.6% agreed about the statement, "library facilities enhance the university staff research productivity". The mean score (4.42) also indicates that faculty agreed library facilities affect their staff research performance.

Analysis regarding statement No.2 shows that 48.1% faculty members strongly agreed and 49.4% agreed about the statement, "lack of institutional and material support decreases research productivity of faculty". The mean score (4.44) also indicates that faculty agreed lack of institutional and material support affects them staff research performance.

Analysis regarding statement No.3 shows that 41.7% faculty members strongly agreed and 52.8% agreed about the statement, "shortage of facilities (laptops, internet, learning resource center) are the main barriers to conduct research". The mean score (4.31) also indicates that faculty agreed shortage of facilities affects them staff research performance.

Analysis regarding statement No.4 shows that 35.3% faculty members strongly agreed and 56.2% agreed about the statement, "non-availability of e-library affects research productivity". The mean score (4.24) also indicates that faculty agreed non- availability of e-library affects them staff research performance.

Analysis regarding statement No.5 shows that 45.5% faculty members strongly agreed and 52.3% agreed about the statement, "Sub-standard equipment in the laboratory affects research productivity". The mean score (4.43) also indicates that faculty agreed sub-standard equipment affects them staff research performance.

**Table 4.3**
**Teachers Perception about the Workload**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Academic duties like assignments and preparation of course outlines affect the research productivity of faculty. | f | 87 | 111 | 9 | 15 | 13 | 4.04 |
| | % | 37.0 | 47.2 | 3.8 | 6.4 | 5.5 | |
| Extra burden of teaching affect the faculty research productivity. | f | 101 | 113 | 8 | 9 | 4 | 4.27 |
| | % | 43.0 | 48.1 | 3.4 | 3.8 | 1.7 | |
| Engagement in different departmental committees affects faculty research work. | f | 77 | 127 | 10 | 13 | 8 | 4.07 |
| | % | 32.8 | 54.0 | 4.3 | 5.5 | 3.4 | |
| Examination duties influence on research productivity of teachers. | f | 65 | 119 | 17 | 23 | 11 | 3.87 |
| | % | 27.7 | 50.6 | 7.2 | 9.8 | 4.7 | |
| Adequate time for research affect personnel research productivity. | f | 74 | 108 | 16 | 28 | 9 | 3.89 |
| | % | 31.5 | 46.0 | 6.8 | 11.9 | 3.8 | |

Table 4.3 present the effects of work load on the research productivity of university teachers. Analysis regarding statement No.1 shows that 37% faculty members strongly agreed and 47.2% agreed about the statement, "assignments and preparation of course outlines affect the faculty research productivity". The mean score (4.04) also indicates that faculty agreed academic duties affects them staff research performance.

Analysis regarding statement No.2 shows that 43% faculty members strongly agreed and 48.1% agreed about the statement, "Extra burden of teaching affect the faculty research productivity". The mean score (4.27) also indicates that faculty agreed extra burden of teaching affects them staff research performance.

Analysis regarding statement No.3 shows that 32.8% faculty members strongly agreed and 54% agreed about the statement, "Engagement in different departmental committees affects faculty research work". The mean score (4.07) also indicates that faculty agreed engagement in different departmental affects them staff research performance.

Analysis regarding statement No.4 shows that 27.7% faculty members strongly agreed and 50.6% agreed about the statement, "examination duties influence on research productivity of teachers". The mean score (3.87) also indicates that faculty agreed promotion systems affects them staff research performance.

Analysis regarding statement No.5 shows that 31.5% faculty members strongly agreed and 46% agreed about the statement, "Adequate time for research affect personnel research productivity". The mean score (3.89) also indicates that faculty agreed adequate time for research affects them staff research performance.

**Table 4.4**
**Teachers Perception about the Motivation**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Motivation encourages faculty members | f | 126 | 103 | 3 | 2 | 1 | 4.49 |
| In accomplishing their research work. | % | 53.6 | 43.8 | 1.3 | 0.9 | 0.4 | |
| Pay raises motivate university teachers | f | 122 | 105 | 5 | 2 | 1 | 4.47 |
| To enhance research work. | % | 51.9 | 44.7 | 2.1 | 0.9 | 0.4 | |
| Scholarships and Rewards motivate | f | 120 | 112 | 1 | 1 | 1 | 4.49 |
| Faculty towards research productivity. | % | 51.1 | 47.7 | 0.4 | 0.4 | 0.4 | |
| Appreciation of faculty by the Head of | f | 125 | 107 | 1 | 1 | 1 | 4.51 |
| Department positively affects their research productivity. | % | 53.2 | 45.5 | 0.4 | 0.4 | 0.4 | |
| Research project of the faculty stimulates | f | 126 | 106 | 3 | 0 | 0 | 4.52 |
| Research culture in universities. | % | 53.6 | 45.1 | 1.3 | 0 | 0 | |

Table 4.4 presents the effect of motivation on the research productivity of university teachers. Analysis regarding statement No.1 shows that 53.6% faculty members strongly agreed and 43.8% agreed about the statement, "Motivation encourages faculty members in accomplishing their research work". The mean score (4.49) also indicates that faculty agreed that motivation affects their staff's research performance.

Analysis of statement No. 2 shows that 51.9% of faculty members strongly agreed and 44.7% agreed with the statement, "Pay raises motivate university teachers to enhance research work". The mean score (4.47) also indicates that faculty agreed that pay raises affect their staff's research performance.

Analysis of statement No. 3 shows that 51.1% of faculty members strongly agreed and 47.7% agreed with the statement, "scholarships and rewards motivate faculty towards research productivity". The mean score (4.49) also indicates that faculty agreed that scholarships and rewards affect their staff's research performance.

Analysis of statement No. 4 shows that 53.2% of faculty members strongly agreed and 45.5% agreed with the statement, "Appreciation of faculty by the Head of Department positively affects their research productivity". The mean score (4.51) also indicates that faculty agreed that the Head of Department affects their staff's research performance.

Analysis regarding statement No.5 shows that 53.6% faculty members strongly agreed and 45.1% agreed about the statement, the research project of faculty stimulates research culture in universities. The mean score (4.52) also indicates that faculty agreed that the research project affects their staff's research performance.

**Table 4.5**
**Teachers' Perception about fund for Research**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| The availability of funds motivate academic faculty to conduct productive research work. | f | 116 | 110 | 5 | 4 | 0 | 4.44 |
| | % | 49.4 | 46.8 | 2.1 | 1.7 | 0 | |
| Funds are positively associated with research productivity. | f | 105 | 112 | 6 | 10 | 2 | 4.31 |
| | % | 44.7 | 47.4 | 2.6 | 4.3 | 0.9 | |
| The availability of funds for the establishment of research laboratories increases the number of research productivity. | f | 107 | 118 | 5 | 4 | 1 | 4.39 |
| | % | 45.5 | 50.2 | 2.1 | 1.7 | 0.4 | |
| Funds for research publication in internationally recognized/impact factor | f | 104 | | | | | |
| | % | 44.3 | | | | | |
| journals affect research productivity of faculty. | | 4 | | | | | |
| | | 1.7 | | | | | |
| Non- availability of research funding from institution hampers research work of faculty. | f | 3 | | | | | |
| | | 1.3 | | | | | |
| | % | 3 | | | | | |
| | | 1.3 | | | | | |
| | | 4.36 | | | | | |



Table 4.5 presents the affect of funds for research on the research productivity of university teachers. Analysis regarding statement No.1 shows that 49.4% faculty members strongly agreed and 46.8% agreed about the statement, "the availability of
funds motivate academic faculty to conduct productive research work". The mean score (4.44) also indicates that faculty agreed that the availability of funds affects their staff research performance.

Analysis of statement No. 2 shows that 44.7% of faculty members strongly agreed and 47.4% agreed with the statement, "funds are positively associated with research productivity". The mean score (4.31) also indicates that faculty agreed funds positively affects them staff research performance.

Analysis of statement No. 3 shows that 45.5% of faculty members strongly agreed and 50.2% agreed with the statement, "the availability of funds for the establishment of research laboratories increases the number of research productivity". The mean score (4.39) also indicates that faculty agreed availability of funds for research laboratories affects them staff research performance.

Analysis of statement No. 4 shows that 44.3% of faculty members strongly agreed and 51.5% agreed with the statement, "funds for research publication in internationally recognized/impact factor journals affect research productivity of faculty". The mean score (4.36) also indicates that faculty agreed that funds for research publication in internationally affect their staff research performance.

Analysis regarding statement No.5 shows that 42.6% faculty members strongly agreed and 53.6% agreed about the statement, "non-availability of research funding from institution hampers the research work of faculty". The mean score (4.37) also indicates that faculty agreed non-availability of research funding affects them staff research performance.

**Analysis of objective No.2**

To explore the perceptions of university faculty about the personal factors that affect their research productivity.

**Table 4.6**
**Teacher's perception about personal factor age**

| Statement | | SA | | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Aged faculty members can cope with updated | f | 23 | 64 | 91 | 41 | 15 | 3.25 |
| knowledge and changing research technology. | % | 9.8 | 27.2 | 38.7 | 17.4 | 6.4 | |
| The teachers with age between 40-49 years | f | 20 | 42 | 30 | 96 | 47 | 2.54 |
| are more innovative research ideas than other age group. | % | 8.5 | 17.9 | 12.8 | 40.9 | 20.0 | |
| Young faculty members show more | f | 32 | 40 | 26 | 78 | 59 | 2.61 |
| performance and active than older faculty members in research productivity. | % | 13.6 | 17.0 | 11.1 | 33.2 | 25.1 | |
| The teachers with age group between 30-40 | f | 33 | 34 | 34 | 69 | 65 | 2.58 |
| years have high research productivity. | % | 14.0 | 14.5 | 14.5 | 29.4 | 27.7 | |
| The health issues with age of faculty members | f | 58 | | 15 | 3 | 3 | 4.12 |
| negatively affect on research productivity. | % | 24.7 | | 6.4 | 1.3 | 1.3 | |

Table 4.6 present the affects of age for research on the research productivity of university teachers. Analysis regarding statement No.1 shows that 38.7% faculty members undecided, while 17.4% disagreed about the statement, "aged faculty members can cope with updated knowledge and changing research technology". The mean score (3.25) also indicates that faculty undecided aged faculty members can cope with updated knowledge affects them staff research performance.

Analysis regarding statement No.2 shows that 40.9% faculty members disagreed and 20% strongly disagreed about the statement, "the teachers with age between 40-49 years are more innovative research ideas than other age group". The mean score (2.54) also indicates that faculty disagreed age between 40-90 years are more innovative research ideas.

Analysis regarding statement No.3 shows that 33.2% faculty members disagreed and 25.1% strongly disagreed about the statement, "young

faculty members show more performance and active than older faculty members in research productivity". The mean score (2.61) also indicates that faculty disagreed young faculty members show more performance.

Analysis regarding statement No.4 shows that 29.4% faculty members disagreed and 27.7% strongly disagreed about the statement, "the teachers with age group between 30-40 years have high research productivity". The mean score (2.58) also indicates that faculty disagreed age group between 30-40 years have high research productivity affects them staff research performance.

Analysis regarding statement No.5 shows that 24.7% faculty members strongly agreed and 66.4% agreed about the statement, "the health issues with age of faculty members negatively affect on research productivity". The mean score (4.12) also indicates that faculty agreed the health affects them staff research performance.

**Table 4.7**
**Teacher's perception about family factors**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Family responsibilities of both male and female faculty affect research productivity. | f | 48 | 168 | 13 | 6 | 0 | 4.10 |
| | % | 20.4 | 71.5 | 5.5 | 2.6 | 0 | |
| Non-supportive attitude of family discourages faculty to complete research work. | f | 56 | 153 | 19 | 6 | 1 | 4.09 |
| | % | 23.8 | 65.1 | 8.1 | 2.6 | 0.4 | |
| Family obligations/pressure affects university faculty research work. | f | 59 | 146 | 19 | 9 | 2 | 4.07 |
| | % | 25.1 | 62.1 | 8.1 | 3.8 | 0.9 | |
| Large family size (4-6 children) affects research work. | f | 35 | 90 | 29 | 29 | 52 | 3.11 |
| | % | 14.9 | 38.3 | 12.3 | 12.3 | 22.1 | |
| Family engagement cause for discontinuation of research work. | f | 45 | 150 | 22 | 14 | 4 | 3.93 |
| | % | 19.1 | 63.8 | 9.4 | 6.0 | 1.7 | |

Table 4.7 presents the affect of family factors for research on the research productivity of university teachers. Analysis regarding statement No.1 shows that 20.4% faculty members strongly agreed and 71.5% agreed about the statement, "family responsibilities of both male and female faculty affect research productivity". The mean score (4.10) also indicates that faculty agreed family responsibilities affects them staff research performance.

Analysis regarding statement No.2 shows that 23.8% faculty members strongly agreed and 65.1% agreed about the statement, "non-supportive attitude of family discourages faculty to complete research work". The mean score (4.09) also indicates that faculty agreed non-supportive attitude of family affects them staff research performance.

Analysis regarding statement No.3 shows that 25.1% faculty members strongly agreed and 62.1% agreed about the statement, "family obligations/pressure
affects university faculty research work". The mean score (4.09) also indicates that faculty agreed

family obligations/pressure affects them staff research performance.

Analysis regarding statement No.4 shows that 14.9% faculty members strongly agreed and 38.3% agreed about the statement, "large family size (4-6 children) affects research work". The mean score (3.11) also indicates that faculty agreed large family size affects them staff research performance.

Analysis regarding statement No.5 shows that 19.1% facility members strongly agreed and 63.8% agreed about the statement, "family engagement cause for discontinuation of research work". The mean score (3.93) also indicates that faculty agreed family engagement affects them staff research performance.

**Table 4.8**
**Teacher's Perception about knowledge, skills and Training in Research**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Lack of updated knowledge about research may reduce their research productivity. | f | 55 | 173 | 6 | 1 | 0 | 4.20 |
| | % | 23.4 | 73.6 | 2.6 | 0.4 | 0 | |
| Lacks of basic computer skills affect research productivity. | f | 66 | 159 | 7 | 3 | 0 | 4.23 |
| | % | 28.1 | 67.7 | 3.0 | 1.3 | 0 | |
| Insufficient ICT training is the main factor for university faculty in research productivity. | f | 58 | 141 | 25 | 11 | 0 | 4.05 |
| | % | 24.7 | 60.0 | 10.6 | 4.7 | 0 | |
| Lack of knowledge about data tool development and data collection negatively affects the performance of university faculty in research. | f | 70 | 147 | 13 | 5 | 0 | 4.02 |
| | % | 29.8 | 62.6 | 6.5 | 2.1 | 0 | |
| Faculty expertise about SPSS and other data analysis techniques affect their research work. | f | 70 | 138 | 21 | 6 | 0 | 4.16 |
| | % | 29.8 | 58.7 | 8.9 | 2.6 | 0 | |

Table 4.8 present the effects of knowledge, skills and training for research on the research productivity of university teachers. Analysis regarding statement No.1 shows that 23.4% faculty members strongly agreed and 73.6% agreed about the
statement, "lack of updated knowledge about research may reduce their research productivity". The mean score (4.20) also indicates that faculty agreed non-supportive attitude of family affects them staff research performance.

Analysis regarding statement No.2 shows that % faculty members strongly agreed, 28.1% agreed and 67.7% about the statement, "Lack of basic computer skills affect research productivity". The mean score (4.23) also indicates that faculty agreed lacks of basic computer skills affects them staff research performance.

Analysis regarding statement No.3 shows that 24.7% faculty members strongly agreed and 60% agreed about the statement, "Insufficient ICT training is the main factor for university faculty in research productivity". The mean score (4.05) also indicates that faculty agreed Insufficient ICT training affects them staff research performance.

Analysis regarding statement No.4 shows that 29.8% faculty members strongly agreed and 62.6% agreed about the statement, "lack of

knowledge about data tool development and data collection negatively affects the performance of university faculty in research". The mean score (4.02) also indicates that faculty agreed lack of knowledge about data tool development and data collection affects them staff research performance.
Analysis regarding statement No.5 shows that 29.8% facility members strongly agreed and 58.7% agreed about the statement, "Faculty expertise about SPSS and other data analysis techniques affect their research work". The mean score (4.16) also indicates that faculty expertise about SPSS affects them staff research performance.

**Table 4.9**
**Teachers Perception about Personal factor Attitude towards Research**

| Statement | | SA | A | UD | DA | SDA | Mean Score |
|---|---|---|---|---|---|---|---|
| Participation of teachers in research conferences and seminars positively affect on research work. | f | 72 | 153 | 4 | 5 | 1 | 4.23 |
| | % | 30.6 | 65.1 | 1.7 | 2.1 | 0.4 | |
| Attitude of faculty towards conducting research affect their research productivity. | f | 81 | 139 | 10 | 4 | 1 | 4.26 |
| | % | 34.5 | 59.1 | 4.3 | 1.7 | 0.4 | |
| Negative faculty attitude towards conducting research affect research productivity. | f | 69 | 158 | 5 | 3 | 0 | 4.25 |
| | % | 29.4 | 67.2 | 2.1 | 1.3 | 0 | |
| Research training courses affect teachers to raise research productivity. | f | 73 | 141 | 12 | 9 | 0 | 4.18 |
| | % | 31.1 | 60.0 | 5.1 | 3.8 | 0 | |
| Training about research methods influences on the career of faculty in research. | f | 62 | 156 | 13 | 4 | 0 | 4.17 |
| | % | 26.4 | 66.4 | 5.5 | 1.7 | 0 | |

Table 4.8 present the effects of attitude towards research on the research productivity of university teachers. Analysis regarding statement No.1 shows that 30.6% faculty members strongly agreed and 65.1% agreed about the statement, "participation of teachers in research conferences and seminars positively affect on research work". The mean score (4.23) also indicates that faculty agreed participation of teachers in research conferences and seminars affects them staff research performance.
Analysis regarding statement No.2 shows that 34.5% faculty members strongly agreed and 59.1% agreed about the statement, "attitude of faculty towards conducting research affect their research productivity". The mean score (4.26) also indicates that faculty agreed attitude of faculty affects them staff research performance.
Analysis regarding statement No.3 shows that 29.4% faculty members strongly agreed and 67.2% agreed about the statement, "negative faculty attitude towards conducting research affect research productivity". The mean score (4.25) also indicates that faculty agreed negative faculty attitude affects them staff research performance.
Analysis regarding statement No.4 shows that

31.1% faculty members strongly agreed and 60% agreed about the statement, "research training courses affect teachers to raise research productivity". The mean score (4.18) also indicates that faculty agreed research training courses affects them staff research performance.

Analysis regarding statement No.5 shows that 26.4% faculty members strongly agreed and 66.4% agreed about the statement, "training about research methods influences on the career of faculty in research". The mean score (4.17) also indicates that faculty agreed training about research methods affects them staff research performance.

**Analysis of objective No.3**

To compare the factors of research productivity (institutional and personal) with reference gender, discipline and nature of job of university faculty.

**Table 4.10**

**Comparison of social and natural science disciplines about the Policy for promotion**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Policy for promotion | Natural sciences | 130 | 4.45 | 0.355 | -1.179 | 233 | 0.240 |
| | Social sciences | 105 | 4.51 | 0.346 | | | |

Table 4.10 shows the difference of the views about natural and social sciences as a factor policy for promotion. Since, t=-1.179>0.05, there is no significant difference found in this statement.

Table 4.11

**Difference between natural and social sciences about Resources and material support**

| Statement | Group | N | Mean | SD | T | df | p-value |
|---|---|---|---|---|---|---|---|
| Natural Resources and material support | sciences | 130 | 4.33 | 0.442 | -0.139 | 233 | 0.890 |
| Social sciences | | 105 | 4.34 | 0.424 | | | |

Table 4.11 shows the difference of the views about natural and social sciences as a factor resources and material support. Since, t=-0.139>0.05, there is no significant difference found in this statement.

**Table 4.12**

**Difference between natural and social sciences about Resources Workload**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Workload | | | | | | | |
| Natural sciences | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Social | | | | | | |
| 130 | 3.96 | 0.846 | | | | |
| 105 | 4.11 | 0.799 | | | | |
| -1.439 | 233 | 0.152 | | | | |
| sciences | | | | | | |

Table 4.12 shows the difference of the views about natural and social sciences as a factor workload. Since, t=-1.439>0.05, there is no significant difference found in this statement.

**Table 4.13**
**Difference between natural and social sciences about Motivation**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Motivation | Natural sciences | 130 | 4.47 | 0.456 | | | |
| | | | | | -1.020 | 233 | 0.309 |
| Social sciences | | 105 | 4.53 | 0.410 | | | |

Table 4.13 shows the difference of the views about natural and social sciences as a factor motivation. Since, t=-1.020>0.05, there is no significant difference found in this statement.

**Table 4.14**
**Difference between natural and social sciences about Funds for research**

| Statement | Group | N | Mean | SD | T | df | p-value |
|---|---|---|---|---|---|---|---|
| Funds for research | | | | | | | |
| Natural sciences | | | | | | | |
| Social | | | | | | | |
| 130 | 4.35 | 0.468 | | | | | |
| 105 | 4.40 | 0.584 | | | | | |
| -0.818 | 233 | 0.414 | | | | | |
| sciences | | | | | | | |

Table 4.14 shows the difference of the views about natural and social sciences as a factor funds for research. Since, t=-0.818>0.05, there is no significant difference found in this statement.

**Table 4.15**
**Difference between natural and social sciences about Age**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Age | | | | | | | |
| Natural sciences | | | | | | | |
| | Social | | | | | | |
| | 130 | 3.01 | 0.867 | | | | |
| | 105 | 3.03 | 1.005 | | | | |
| | -0.105 | 233 | 0.917 | | | | |
| | sciences | | | | | | |

Table 4.15 shows the difference of the views about natural and social sciences as a factor age. Since, t=-0.105>0.05, there is no significant difference found in this statement.

**Table 4.16**
**Difference between natural and social sciences in Family factors**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Family factors | | | | | | | |
| Natural sciences | | | | | | | |
| | Social | | | | | | |
| | 130 | 3.80 | 0.547 | | | | |
| | 105 | 3.94 | 0.565 | | | | |
| | -1.952 | 233 | 0.052 | | | | |
| | sciences | | | | | | |

Table 4.16 shows the difference of the views about natural and social sciences as factor family factors. Since, t=-1.952<0.05, there is no significant difference found in this statement.

**Table 4.17**
**Difference between natural and social sciences in factor related to knowledge, skills and training**

| Statement | Group | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Knowledge, skills and training in research | Natural sciences | 130 | 4.13 | 0.467 | -1.593 | 233 | 0.112 |
| | Social sciences | 105 | 4.22 | 0.369 | | | |

Table 4.17 shows the difference of the views about natural and social sciences as factor knowledge, skills and training in research. Since, t=-1.593>0.05, there is no significant difference found in this statement.

**Table 4.18**
**Difference between natural and social sciences in factor related to attitude towards research**

| Statement | Group | N | Mean | SD | t | Df | p-value |
|---|---|---|---|---|---|---|---|
| Attitude towards research | Natural sciences | | | | | | |
| | Social sciences | 130 | 4.17 | 0.410 | | | |
| | | 105 | 4.28 | 0.364 | | | |
| | | | | | -2.164 | 233 | 0.031 |

Table 4.18 shows the difference of the views about natural and social sciences as factor attitude towards research. Since, t=-2.164<0.05, there is significant difference found in this statement.

**Table 4.19**
**Gender difference about Policy for promotion research**

| Statement | Gender | N | Mean | SD | | Df | p-value |
|---|---|---|---|---|---|---|---|
| Policy for promotion | Male | 189 | 4.47 | 0.356 | -0.502 | 233 | 0.616 |
| | Female | 46 | 4.50 | 0.337 | | | |

Table 4.19 shows the difference of the views about male and female as factor policy for promotion. Since, t=-0.502>0.05, there is no significant difference found in this statement.

**Table 4.20**
**Gender Difference about Resources and Material Support factor**

| Statement | Gender | N | Mean | SD | T | df | p-value |
|---|---|---|---|---|---|---|---|
| Resources and materials support | Male | 189 | 4.29 | 0.443 | -3.292 | 233 | 0.001 |
| | Female | 46 | 4.52 | 0.334 | | | |

Table 4.20 shows the difference of the views about male and female as factor resources and material support. Since, t=-3.292<0.05, there is significant difference found in this statement.

**Table 4.21**
**Gender Difference about Workload factor**

| Statement | Gender | N | Mean | SD | t | Df | p-value |
|---|---|---|---|---|---|---|---|
| Workload | | | | | | | |
| Male | 189 | 4.01 | 0.852 | | | | |
| Female | 46 | 4.11 | 0.721 | | | | |
| -0.736 | 233 | 0.462 | | | | | |

Table 4.21 shows the difference of the views about male and female as factor workload. Since, t=-0.736>0.05, there is no significant difference found in this statement.

**Table 4.22**
**Gender Difference about Motivation factor**

| Statement | Gender | N | Mean | SD | t | Df | p-value |
|---|---|---|---|---|---|---|---|
| Motivation | | | | | | | |
| Male | 189 | 4.50 | 0.405 | | | | |
| 0.597 | 233 | 0.551 | | | | | |
| | Female | 46 | 4.46 | 0.550 | | | |

Table 4.22 shows the difference of the views about male and female as factor motivation. Since, t=0.597>0.05, there is no significant difference found in this statement.

**Table 4.23**
**Gender Difference about funds for research factor**

| Statement | Gender | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Fund for research | Male | 189 | 4.37 | 0.487 | -0.205 | 233 | 0.838 |
| | Female | 46 | 4.39 | | | | |

Table 4.23 shows the difference of the views about male and female as factor funds for research. Since, t=-0.205>0.05, there is no significant difference found in this statement.

**Table 4.24**
**Gender Difference about Age factor**

| Statement | Gender | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Male | 189 | | 2.93 | | | | |
| Age | | | | | | | |
| 0.839 | -3.193 | 233 | 0.002 | | | | |
| | Female | 46 | 3.40 | | | | |

Table 4.24 shows the difference of the views about male and female as factor age. Since, t=-3.193<0.05, there is significant difference found in this statement.

**Table 4.25**
**Gender Difference about Family factors**

| Statement | Gender | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Family factors | Male | 189 | 3.83 | | | | |
| | | | | 0.589 | -1.601 | 233 | 0.111 |
| | Female | 46 | 3.98 | | | | |

Table 4.25 shows the difference of the views about male and female as family factors. Since, t=-1.601>0.05, there is no significant difference found in this statement.

**Table 4.26**
**Gender Difference about Knowledge, skills and Training in Research factors**

| Statement | Gender | N | Mean | SD | t | df | p-value |
|---|---|---|---|---|---|---|---|
| Male | | 189 | 4.18 | 0.419 | 1.090 | 233 | 0.277 |
| Knowledge, skills and training in research | Female | 46 | 4.10 | | | | |

Table 4.26 shows the difference of the views about male and female as factors knowledge, skills and training in research. Since, t=1.090>0.05, there is no significant difference found in this statement.

## SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

The present chapter is comprised of the findings, discussion and conclusion of this research and also enlists some of the recommendations for future studies.

### Summary

The purpose of this study was focus on the factors affecting research productivity of university faculty in Hazara Division. The objective of the study were (a) to examine the perceptions of university faculty about the institutional factors that affect their research productivity, (b) to explore the perceptions of university
faculty about the personal factors that affect their research productivity, (c) to compare the factors of research productivity (institutional and personal), with
Reference gender, discipline and nature of job of the faculty. The study"s population consisted of three hundred thirty four (334) university faculty members in three public universities of Hazara Division. Disproportionate Stratified random sampling technique was used for the selection of samples from the given population of the study. As a result, the study"s sample size was two hundred and twenty five (235) faculty members. The study"s sample size was two hundred and thirty five (235) faculty members. One hundred ninety one (191) were males, forty four (44) were female, one hundred forty seven (147) were on BPS (Basic Pay Scale) and eighty eight (88) were on TTS (Tenure track system), one hundred twenty seven (127) from natural sciences and one hundred eight (108) from social sciences departments. The tool for data collection was self-developed questionnaire. In the light of the objectives of the current study, the tool was validated and found to be accurate. 0.89 values were obtained by using Cronbach"s Alpha. To analyze the data of present study SPSS version 21 was used. Statistical techniques such as frequency, percentage, t-test and standard deviation were used to analyze the data. The researcher used self-developed questionnaire for data collection of the study. Demographic variables were contained on part one. In the second section of the tool, there were 45 items related to the teachers" institutional and personal factors. For the validation and reliability of the instruments pilot study was conducted. At 0.05 level of significance all the factors were tested. Survey method was adopted to find which factors affecting research productivity among the faculty members of public university teachers" in Hazara division.

### Findings

#### Findings Related to objective No. 1

To examine the perceptions of university faculty about the institutional factors that affect their research productivity.

1. More than half of the respondents (52%) strongly agreed that promotion systems motivate the research performance of university faculty in Hazara division (Table 4.1.1).
2. More than half of the respondents (53%) strongly agreed that delay in promotion affects research productivity of faculty in Hazara division (Table 4.1.2).
3. Half of the respondents (50%) agreed that incentive due to promotion stimulates university faculty for research in Hazara division (Table4.1.3).
4. Half of the respondents (50%) strongly agreed that research productivity has positive affect on the promotion of BPS and TTS faculty in Hazara division (Table 4.1.4).
5. More than half of the respondents (58%) strongly agreed that timely promotions motivate faculty towards research productivity in Hazara division (Table 4.1.5).
6. More than half of the respondents (51%) agreed that library facilities enhance the university staff research productivity in Hazara division (Table 4.2.1).
7. Forty nine percent (49%) of the respondents agreed that lack of institutional and material support decreases research productivity in Hazara division (Table 4.2.2).
8. More than half of the respondents (53%) agreed that shortages of the facilities (laptops, internet and learning resource center) are the main barriers to conduct research

in Hazara division (Table 4.2.3).

9. More than half of the respondents (56%) agreed that non-availability of e-library facility affects research productivity in Hazara division (Table 4.2.4).

10. More than half of the respondents (52%) agreed that sub-standard equipment in the laboratory affects research productivity in Hazara division (Table 4.2.5).

11. Forty seven percent (47%) of the respondents agreed that assignments and preparation of course outlines affects the research performance of faculty in Hazara division (Table 4.3.1).

12. Forty eight percent (48%) of the respondents agreed that extra burden of teaching affects the faculty research productivity in Hazara division (Table 4.3.2).

13. More than half of the respondents (54%) agreed that engagement in different departmental committees affects faculty research work in Hazara division (Table 4.3.3).

14. More than half of the respondents (51%) agreed that examination duties affect research productivity of faculty in Hazara Division (Table 4.3.4).

15. Forty six percent (46%) of the respondents agreed that inspection duties assigned by university/exams affects research productivity in Hazara Division (Table 4.3.5).

16. More than half of the respondents (54%) strongly agreed that motivation encourages faculty members in accomplishing their research work in Hazara Division (Table 4.4.1).

17. More than half of the respondents (52%) strongly agreed that pay raises motivate university teachers to enhance research work in Hazara Division. (Table 4.4.2).

18. More than half of the respondents (51%) strongly agreed that scholarships and rewards motivate faculty towards research productivity in Hazara Division (Table 4.4.3).

19. More than half of the respondents (53%) strongly agreed that appreciation of faculty by the Head of Department positively affects their research productivity in Hazara Division (Table 4.4.4).

20. More than half of the respondents (54%) strongly agreed that research project of faculty stimulates research culture in universities of Hazara Division (Table 4.4.5).

21. Forty nine percent (49%) of the respondents strongly agreed that availability of funds motivate academic faculty to conduct productive research work in Hazara Division (Table 4.5.1).

22. Forty seven percent (47%) of the respondents agreed that funds are positively associated with research productivity in Hazara Division (Table 4.5.2).

23. Half of the respondents (50%) agreed that availability of funds for the establishment of research laboratories increases the number of research productivity in Hazara Division (Table 4.5.3).

24. More than half of the respondents (51%) agreed that funds for research publication in internationally recognized/impact factors journals affect research productivity of faculty in Hazara Division (Table 4.5.4).

25. More than half of the respondents (54%) agreed that non-availability of research funding from the institution hampers the research work of faculty in Hazara Division (Table 4.5.5).

*Findings Related to objective No. 2*

To explore the perceptions of university faculty about the personal factors that affect their research productivity.

26. Thirty-nine (39%) of the respondents were undecided whether aged faculty members can cope with updated knowledge and changing research technologies in Hazara Division (Table 4.6.1).

27. Forty-one (41%) of the respondents disagreed that the teacher‟s with age between 40-49 years are more innovative research ideas than other age groups in Hazara Division (Table 4.6.2).

28. Thirty three (33%) of the respondents disagreed that young faculty members show more performance and active than older faculty members in research productivity in

Hazara Division (Table 4.6.3).

29. Twenty nine percent (29%) of the respondents disagreed that the teachers with age group between 30-40 years have high research productivity in Hazara Division (Table 4.6.4).

30. Two third of the respondents (66%) agreed that the health issues with age of faculty members negatively affect on research productivity in Hazara Division (Table 4.6.5).

31. Majority (71.5%) of the respondents agreed that family responsibilities of both male and female faculty affect research productivity in Hazara Division (Table 4.7.1).

32. More than half of the respondents (65%) agreed that non-supportive attitude of family discourages faculty to complete research work in Hazara Division (Table 4.7.2).

33. More than half of the respondents (62%) agreed that family obligations/pressure affects faculty research work in Hazara Division (Table 4.7.3).

34. Thirty eight percent (38%) of the respondents agreed that large family size (4-6 children) affects faculty research work in Hazara Division (Table 4.7.4).

35. More than half of the respondents (64%) agreed that family engagement cause for discontinuation of research work in Hazara Division (Table 4.7.5).

36. Majority (74%) of the respondents agreed that lack of updated knowledge about research may reduce their research productivity in Hazara Division (Table 4.8.1).

37. Two third of respondents (68%) agreed that lacks of basic computer skills affect research productivity in Hazara Division (Table 4.8.2).

38. More than half of the respondents (60%) agreed that insufficient ICT (Instructional Communication Technology) training is the main factors for university faculty in research productivity in Hazara Division (Table 4.8.3).

39. More than half of the respondents (63%) agreed that lack of knowledge about data tool development and data collection negatively affects the performance of university faculty in research productivity in Hazara Division (Table 4.8.4).

40. More than half of the respondents (59%) agreed that faculty expertise about SPSS (Statistical Package for Social Sciences) and other data analysis techniques affect their research work in Hazara Division (Table 4.8.5).

41. More than half of the respondents (65%) agreed that participation of teachers in research conferences and seminars positively affect on research work in Hazara Division (Table 4.9.1).

42. More than half of the respondents (59%) agreed that attitude of faculty towards conducting research affects their research productivity in Hazara Division (Table 4.9.2).

43. Two third of the respondents (67%) agreed that negative faculty attitude towards conducting research affects research productivity in Hazara Division (Table 4.9.3).

44. More than half of the respondents (60%) agreed that research training courses affect teachers to raise research productivity in Hazara Division (Table 4.9.4).

45. Two third of the respondents (66%) agreed that training about research methods influences on the career of faculty in research productivity in Hazara Division (Table 4.9.5).

**Findings Related to objective No. 3**

To compare the factors of research productivity (institutional and personal), with

Reference gender, discipline and nature of job of the faculty

46. Among both faculty members of social and natural science, no significant difference found about policy for promotion as institutional factor affecting their research productivity $p>0.05$ (Table 4.10.).

47. Among the both faculty members of social and natural science, no significant difference found about resources and material support as institutional factor affecting their research productivity $p>0.05$ (Table 4.11).

48. Among both faculty members of social and natural science, no significant difference found about work load as institutional factor affecting their research productivity $p>0.05$

(Table 4.12).

49. Among both faculty members of social and natural science, no significant difference found about motivation as institutional factor affecting their research productivity p>0.05 (Table 4.13).

50. Among both faculty members of social and natural science, no significant difference found about funds for research as institutional factor affecting their research productivity p>0.05 (Table 4.14).

51. Among both faculty members of social and natural science, no significant difference found about age as personal factor affecting their research productivity p>0.05 (Table 4.15).

52. Among both faculty members of social and natural science, no significant difference found about family factors as personal factor affecting their research productivity p>0.05 (Table 4.16).

53. Among both faculty members of social and natural science, no significant difference found about knowledge, skills and training in research as personal factor affecting their research productivity p>0.05 (Table 4.17).

54. Among both faculty members of social and natural science, no significant difference found about attitude towards research as personal factor affecting their research productivity p<0.05 (Table 4.18).

55. Among both male and female faculty members of social and natural science, no significant difference found about policy making for promotion as institutional factor affecting their research productivity p>0.05 (Table4.19).

56. Among both male and female faculty members of social and natural science, significant difference found about resources and material support as institutional factor affecting their research productivity p<0.05 (Table 4.20).

57. Among both male and female faculty members of social and natural science, no significant difference found about work load as institutional factor affecting their research productivity p>0.05 (Table 4.21).

58. Among both male and female faculty members of social and natural science, no significant difference found about motivation as institutional factor affecting their research productivity p>0.05 (Table 4.22).

59. Among both male and female faculty members of social and natural science, no significant difference found about funds for research as institutional factor affecting their research productivity p>0.05 (Table 4.23).

60. Among male and female faculty members of social and natural science, significant difference found about age as personal factor affecting their research productivity p<0.05 (Table 4.24).

61. Among both male and female faculty members of social and natural science, no significant difference found about family factors as personal factor affecting their research productivity p>0.05 (Table 4.25).

62. Among both male and female faculty members of social and natural science, no significant difference found about knowledge, skills and training in research as personal factor affecting their research productivity p>0.05 (Table 4.26).

63. Among both male and female faculty members of social and natural science, no significant difference found about attitude towards research as personal factor affecting their research productivity p>0.05 (Table 4.27).

64. Among both BPS and TTS faculty members of social and natural science, no significant difference found about policy for promotion as institutional factor affecting their research productivity p>0.05 (Table 4.28).

65. Among both BPS and TTS faculty members of social and natural science, no significant difference found about resources and material support as institutional factor affecting their research productivity p>0.05 (Table 4.29).

66. Among both BPS and TTS faculty members of social and natural science, no significant difference found about work load as institutional factor affecting their research productivity p>0.05 (Table 4.30).

67. Among both BPS and TTS faculty members of social and natural science, no

significant difference found about motivation as institutional factor affecting their research productivity p>0.05 (Table 4.31).

68. Among both BPS and TTS faculty members of social and natural science, no significant difference found about fund for research as institutional factor affecting their research productivity p>0.05 (Table 4.32).

69. Among both BPS and TTS faculty members of social and natural science, no significant difference found about age as personal factor affecting research productivity as p>0.05 (Table 4.33).

70. Among both BPS and TTS faculty members of social and natural science, no significant difference found about family factors as personal factors affecting research productivity p>.05 (Table 4.34).

71. Among both BPS and TTS faculty members of social and natural science, significant difference found about the knowledge, skills and training as personal factors affecting their research productivity p<0.05 (Table 4.35).

72. Among both BPS and TTS faculty members of social and natural science, no significant difference found about attitude towards research as personal factors affecting their research productivity p>0.05 (Table 4.36).

**Discussion**

Results of this study indicated that promotion and incentives motivate the research performance of university faculty. This finding is similar to Zhang (2014), who found that promotion and incentive helps the faculty to increase their research productivity. Finding of the study shows that personal factors affect research productivity of university faculty. This finding is similar to of Stafford (2011), who found similar findings that personal factors effect on research productivity of the faculty. Study also revealed that family engagement is the main cause for discontinuation of research work. This finding is similar to Iqbal (2018), who found that the majority of the respondents agreed that engagement of families were a biggest cause for the discontinuation of research activities.

The finding of the study also indicated that lack of basic computer skills affect research productivity of faculty. This finding is similar to the finding of Iqbal (2018), who highlight that the majority of faculty was of the opinions that lack of basic computer skills affected research productivity.

The finding of the study shows that non-availability of e-library facility affect the research productivity of university faculty. This finding is similar to the finding of Iqbal (2018), who argue that majority of faculty agreed that departmental research work highly affected by the non-availability of e-library facility. It was also discovered that extra burden of teaching and negative attitude of faculty affect research productivity. This finding is similar to the findings of Iqbal, Zafar, Mahmood, and Azhar (2011), who found that extra burden of teaching and negative attitude of the faculty affect research productivity.

The finding of the study shows that shortage of lab and laboratory equipment affect research productivity. This finding is similar to the findings the Gardner and Gopaul (2012), who found that lack of research facilities (library, laboratory and ICT) that badly affected research activities.

Finding of the study showed that age of faculty (cope with updated knowledge and changing research technology) positively affect research productivity. This finding is contrast to the findings of the Hedjazi and Behravan (2011), who found that decrease in the research productivity of academics as they aged. Finding of the study discovered that young faculty member"s show more published/performance and active than older faculty members in research productivity. This finding is contrast to the findings of the Stafford (2011), found that older faculty published more than younger faculty members. The possible reasons of this contradiction may due to: old teachers are overburden in administrative work in universities, family responsibilities, health issues etc.

**Conclusions**

**Conclusions Related to Objective No. 1**

The findings of the study suggest the following conclusions; In light of findings of this study,

the following conclusions are drawn. Promotion system, incentives and timely promotion motivate the research performance of university BPS (Basic Pay Scale) and TTS (Tenure Track System) faculty.Delay in promotion highly affects research productivity among faculty member. Library facilities enhance the research productivity among university faculty. Lack of institutional and material support, shortage of research related facilities and non-availability of e-library facility affects research productivity among university faculty. Engagement in departmental committees and examination duties of faculty affect the research productivity. Motivation, pay raises, scholarships, rewards and appreciation by the Head of Department highly affect the research productivity of faculty members.

### 5.1.2 Conclusions Related to Objective No. 2

Health issues of faculty member negatively affect research productivity. Family responsibilities of male and female, non-supportive attitude of family, family obligation and family engagement affect research productivity. Lack of update Knowledge, lack of basic computer skills, insufficient ICT (Instructional Communication Technology) training and lack of knowledge about tool development affect the research productivity of faculty. Participation of teachers in research conferences, seminars and research training courses highly affect research productivity of faculty.Negative faculty attitude highly affects research productivity of faculty members.

### Conclusions Related to Objective No. 3

Faculty from Natural and Social sciences departments have similar views about the policy for promotion, resource and material support, work load, motivation, fund for research, age, family factors, knowledge, skills and training in research as an institutional and personal factors affecting research productivity among faculty members. Faculty from Natural and Social sciences departments have different views about attitude towards research as personal factor that influence on the research Productivity. Faculty from Male and Female have similar views about the policy for promotion, work load, motivation, and funds for research, family factors, knowledge, skills and training in research as an institutional and personal factors affecting research productivity among faculty members. Faculty from Male and Female have different views about resources and material support as institutional factor that affects the research productivity. Faculty from Male and Female have different views about age as personal factor that are influencing on the research productivity. Faculty from BPS and TTS have similar views about the policy for promotion, work load, motivation, funds for research, family factors as an institutional and personal factors affecting on the research productivity among faculty members.

Faculty from BPS and TTS has different views about the knowledge, skills and training as personal factor that affect the research productivity.

### Recommendations

On the basis of findings of the study the researcher suggests the following recommendations which will beneficial to undertake in future for all higher education institutions.

1. The shortage of research facilities i.e. laptops, internet and learning resource centers are the major barriers in producing quality research. Therefore, it is obligatory for an institution to provide all necessary resources and material and may enable faculty members to produce quality research.
2. The extra burden of teaching, preparation of course outlines, department administrative work and examination duties etc. are hurdles in enhancing quality research. Therefore, higher education may decrease over loaded responsibilities of a scholar to focus on his/her research only.
3. Department internal support to teachers i.e. internet facility, access to library, separate research rooms and peaceful environment are major keys to produce quality

research. Therefore, it is recommended that the attempts should be made in future regarding such conducive environment.

4. The motivation and encouragement of leader/head of an institution resulted with good quality research. Hence, the leader/head may organized award ceremonies to motivate and more encourage faculty members to increase their research productivity.

5. The research training courses, work-shops and seminars are positively influence research productivity. Therefore, the institution may require taking such initiatives to increase researcher‟s skills in future.

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