JUNIOR RESEARCH FELLOWSHIP IN HUMANITIES AND SOCIAL SCIENCES: AN EXPLORATORY EVALUATION

DISSERTATION

Submitted To

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DECLARATION

I, Adbhut Pratap Singh, hereby declare that this research work embodied in the M. Phil. dissertation entitled **"Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation"** submitted in fulfillment of the award of the degree of Master of Philosophy in Education is an authentic record of original work carried out by me under the supervision of **Dr. Vivek Nath Tripathi**, Department of Education, School of Education, Babasaheb Bhimrao Ambedkar University, Lucknow. I further declare that this is the original work and has not been submitted in part or full for the award of any other degree or diploma to this or any other University. I also declare that this dissertation is free from all kinds of plagiarism.

Place: Lucknow **(Adbhut Pratap Singh)**

Date: 12/08/2021

CERTIFICATE

This is to certify that the M. Phil. dissertation entitled **"Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation"** submitted by **Adbhut Pratap Singh** is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

This M. Phil. dissertation submitted to **Babasaheb Bhimrao Ambedkar University, Lucknow** satisfies all the requirements as stipulated in the M.Phil./Ph.D. regulations, 2009 as amended from time to time and it is fit for submission and evaluation for the award of the degree of Master of Philosophy in Education of the University.

Date: 12/08/2021

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(Adbhut Pratap Singh)

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ABBREVIATIONS

n.d.	:	No Date
ARMACAD	:	Armenian Association for Academic Partnership and Support
NGOs	:	Non-Governmental Organizations
Anon.	:	Anonymous
UK	:	United Kingdom
Ph.D.	:	Doctor of Philosophy
UGC	:	University Grants Commission
NET	:	National Eligibility Test
JRF	:	Junior Research Fellowship
CSIR	:	Council of Scientific and Industrial Research
M.Phil.	:	Master of Philosophy
BPL	:	Below Poverty Line
ILSSC	:	Institution Level Search-cum-Screening Committee
NSC	:	National Selection Committee
PMRF	:	Prime Minister's Research Fellowship
INSPIRE	:	Innovation in Science Pursuit for Inspired Research
HSCST	:	Haryana State Council for Science, Innovation and Technology
NTA	:	National Testing Agency
INR	:	Indian Rupee

HRA	:	House Rent Allowance
SPRCs	:	Student Price Response Coefficients
UN	:	United Nations
IQR	:	Inter Quartile Range
WCLF	:	Welsh Clinical Leadership Fellowship
NIH	:	National Institutes of Health
OLS	:	Ordinary Least Square
IV	:	Instrumental Variable
HPB	:	Hepato-Pancreato-Biliary
IHPBA	:	Instrumental Hepato-Pancreato-Biliary Association
INFLIBNET	:	Information and Library Network
APP	:	Advanced Practice Provider
ICU	:	Intensive Care Unit
AMC	:	Academic Medical Center
US	:	United States
PD	:	Programme Director
NSF	:	National Science Foundation
SDR	:	Survey of Doctorate Recipients
R&D	:	Research and Development
HM	:	Honorable Mention
IO	:	Intermediary Organizations

FET	:	Further Education and Training
NIRF	:	National Institutional Ranking Framework
JNU	:	Jawaharlal Nehru University
JRFs	:	Junior Research Fellows

Chapter 1

Introduction

Chapter 1 : Introduction

1.1 Meaning of Fellowship

The term "Fellowship" itself conveys a broad range of meanings. Merriam Webster dictionary defines fellowship as a noun meaning (1) companionship, company; (2 a) a community of interest, activity, feeling, or experience; (2 b) the state of being a fellow or associate; (3) a company of equals or friends: association; (4) the quality or state of being comradely; (5) membership, partnership; (6 a) the position of a fellow (as of a university); (6 b) the stipend of a fellow; (6 c) a foundation for the providing of such a stipend; and as a verb (transitive verb) meaning to join in fellowship especially with a church member; (intransitive verb) to admit to fellowship (as in a church) (Merriam-Webster, n.d.). Here in this text, the word fellowship refers to the meaning stated at (6a) above, i.e., the position of a fellow.

The terms fellowship, scholarship, and grants are often used interchangeably and difference among them is not easy to underline, as the meanings of these terms depend over the country-specific context. However, the difference among the terms, as used in India, could be stated as in Table 1.1.

Table 1.1: Difference between scholarship, fellowship, and grants

Bases	Scholarship	Fellowship	Grants
Meaning	Aid provided to the students or research scholars based on their academic achievement, to encourage them for doing better	Aid awarded to the individuals willing to research further on a specific subject, after they qualify the prescribed exam	Aid provided to the students based on their need to enhance their education, or to an institution to enhance the infrastructure and services to increase productivity
Target Population	Students and Research Scholars	Research Fellows	Research Faculties and University/Institutions
Based on	Need, Merit and Social Class	Merit and Social Class	Need and category
Funded By	Government or any other organization	Government, Research Organizations, NGOs, or any private entity with a personal or special interest	Government or any other financial or social organization
Study	General	Research	General or research

Source: (Engineering and Physical Sciences Research Council, n.d.; Surabhi, 2017; University Grants Commission, n.d.-a, n.d.-b, n.d.-c)

While scholarships refer to the financial aid in different forms provided to the students or research scholars, fellowships are provided to research scholars and may or may not include financial aid. More specifically, fellowship is a position or status, which often includes financial aid whereas scholarship always provide financial aid. Fellowship may be considered a higher and more prestigious version of scholarship, which grants not only money but a certain level of recognition (ARMACAD, n.d.). Grants are generally provided to the Universities or Institutions, but also to the researchers or faculty – members conducting research or more specifically to the research project itself (University Grants Commission, n.d.-a, n.d.-b). While scholarships and fellowships are based upon the merit or social class of the students or scholars, grants are based upon the needs or category of the research faculty, university, or institution. The government or any other institution usually provides scholarships, whereas the fellowships are provided by the government, research organizations, Non-governmental organizations (NGOs), or any other private entity that is having an interest in the research activity. The governments provide grants either directly or through its various financial and social organizations. While the fellowships are research – oriented, the scholarships and grants could be general as well as research-oriented in nature.

Concluding this section, fellowship can be now understood as "A research position providing specific set of assistance as well as recognition and may or may not include financial assistance."

1.2 Historical Background of Fellowship

The exact origin and genesis of the fellowship cannot be tracked in history until 16th century. The literature related to the fellowship could be traced back to the early seventeenth century, with the Royal Society of London, United Kingdom providing the fellowships to the eminent scientists in the field of natural sciences including mathematics, engineering sciences, and medical sciences (Anon, 2015).

The Royal Society is a self-governing fellowship made up of the most eminent scientists, engineers and technologists from the UK and the Commonwealth. Fellows and Foreign Members are

elected for life through a peer review process on the basis of excellence in science. The Fellowship of the Royal Society is an award granted by the jury of the Royal Society of London and is provided at three different levels of Fellows (up to 52 new members each year), Foreign Members (up to 10 new members each year), and Statue 12 Arrangements (previously known as Honorary Fellowship). Each candidate is considered on his or her own merits and can be proposed from any sector of the scientific community. Every effort is made to encourage nominations of women candidates and candidates from the emerging disciplines (*About elections | Royal Society*, n.d.). There are approximately 1,700 Fellows and Foreign Members, including around 75 Nobel Laureates. Each year up to 52 Fellows and up to 10 Foreign Members are elected from a group of around 800 candidates who are proposed by the existing Fellowship (*Fellows | Royal Society*, n.d.).

In 1891-92, Thomas J. Burill who became acting regent, recommended fellowships for postgraduate education. He said that research was inseparably linked to good teaching, who also valued research. The graduate school was established at The University of Illinois. Four fellowships of $400 a year were provided (Solberg, 2000).

Ramsay Trust Memorial Fellowships were instituted in 1920 for the postdoctoral chemists who have already had some postdoctoral experience of research but who are in the early stages of their career, so that they may initiate a programme of original and independent research. Fellowships are usually tenable at a university or other place of academic research within the United Kingdom. The fellows are self-nominated annually and are selected by the Ramsay Trustees and Advisory Council (*Society of Chemical Industry - Ramsay Fellowship*, n.d.).

The Elisha Jones Classical Fellowship, established on April 17, 1889, by Mrs. Catherine E. Jones in memory of her husband, Elisha Jones was the earliest endowed fellowship to be given regularly at the University of Michigan. The fellowship was stopped in 1900 due to shrinkage of values in estate. The Buhl Classical Fellowships, given by Mr. Theodore D. Buhl in1901 at the University of Michigan, were continued annually by him during his lifetime, and maintained for a number of years by his son Mr. Lawrence Buhl. The Angeline Bradford Whittier Fellowship in

Botany was established in 1903 at the University of Michigan. In 1910, Emma J. Cole Fellowship in botany was established at the University of Michigan (Ford, 1958).

In 1912, the state college fellowships in the Graduate School were initiated for graduates of the various colleges in the state, who are nominated by their own faculties in the University of Michigan. In 1927, Regents of the Michigan University established the Alfred H. Lloyd Fellowships which were provided to outstanding candidates who already possessed the Ph.D. Degree and desire to continue research. In second semester of 1934-35, Horace H. Rackham Predoctoral Fellowships were initiated. 10 fellowships were provided each year. In 1936, two more Horace H. Rackham Postdoctoral Fellowships were started. In the fall of 1945, a third category of fellowships, namely the Horace H. Rackham Special Fellowships were started intending for exceptionally promising graduate students whose studies were interrupted by the second world war (Ford, 1958).

Today, a number of fellowships are available throughout the world. Few of the most notable ones include Mira Fellowship, Greenlining Institute Policy Fellowships, European University Institute Policy Leader Fellowship, Obama Foundation Fellowship, Hong Kong PhD Fellowship Scheme, Einstein Fellowship, Humane Studies Fellowships, Global Citizenship Fellows Program, Voqal Fellowship, and so on.

1.3 Fellowships in India

In India, the fellowships are being provided in various disciplines for conducting research in as well as outside India. Also, the fellowships are provided to research scholars at doctoral and postdoctoral level as well as other researchers. However, the majority of the fellowships are being provided by government, and the participation of private entities and organizations is still lagging behind. Some of the major fellowship schemes provided in India other than Junior Research Fellowship and Senior Research Fellowship are enlisted below in Table 1.2.

Table 1.2: Major Fellowships in India

Sr. No.	Name of Fellowship	Funding Agency	Selection Criteria	Disciplines Covered
1.	Tata Innovation Fellowship	Department of Biotechnology, Ministry of	Selected by committee on the basis of research contributions, memberships, major research	Biotechnology and related areas

		Science and Technology	projects implemented, relevance in the proposed area of research and summary of the proposed work.	
2.	Azim Premji Foundation Fellowship	Azim Premji Foundation	Based upon screening, written test, presentation, and interview	Public Education, in close association with government schools in rural India
3.	Prime Minister's Research Fellowship	Ministry of Education (Formerly Ministry of Human Resource Development)	Screening of applications by National Level Committee on the recommendation of Nodal Institutes that receive and review the applications in preliminary phase.	Science and Technology
4.	National Fellowship for Scheduled Caste Students	Ministry of Social Justice and Empowerment	Priority will be given to candidates pursuing M.Phil./Ph.D., then based upon the merit in UGC-NET/JRF and UGC-CSIR NET/JRF joint examination	Sciences, Humanities, Social Sciences and Engineering and Technology
5.	Maulana Azad National Fellowship for Minority Students	Ministry of Minority Affairs	Priority will be given to candidates pursuing M.Phil./Ph.D., then based upon the merit in UGC-NET/JRF and UGC-CSIR NET/JRF joint examination	Sciences, Humanities, Social Sciences and Engineering and Technology
6.	National Fellowship for Persons with Disabilities	Ministry of Social Justice and Empowerment	Pursuing M.Phil./Ph.D. and in case, the number of candidates exceeds the number of available awards, candidates are selected based on the percentage of marks obtained in Post Graduate Examination.	Sciences, Humanities, Social Sciences and Engineering and Technology
7.	National Fellowship for Other Backward Class Students	Ministry of Social Justice and Empowerment	Priority will be given to candidates pursuing M.Phil./Ph.D., then based upon the merit in UGC-NET/JRF and UGC-CSIR NET/JRF joint examination	Sciences, Humanities, Social Sciences and Engineering and Technology
8.	National Fellowship for Higher Education of Scheduled Tribe Student	Ministry of Tribal Affairs	Priority will be given first to Particularly Vulnerable Tribal Groups followed by female candidates, then BPL candidates and the remaining ones on inter-se-merit	Sciences, Humanities, Social Sciences and Engineering and Technology

9.	D. S. Kothari Post-Doctoral Fellowship	University Grants Commission	Grading by standing peer group based upon accomplishments at Ph.D. level and the professional standing of mentor and institution.	Sciences
10.	Tagore National Fellowship for Cultural Research	Ministry of Culture	Based on the relevance of study, benefits of the nodal institutions and the credential and reputation of the scholar screened by ILSSC and NSC.	Cultural Studies regarding archaeology, antiquities, museums, galleries, archives, libraries, general scholarship, anthropology, sociology, crafts, and performing/visual/literary arts.

Sources: (Department of Biotechnology, n.d.; *Fellowship | Azim Premji Foundation*, n.d.; *Prime Minister's Research Fellows (PMRF) Scheme, May 2020*, n.d.; Ministry of Culture, 2019; UGC, n.d.-b, n.d.-c, n.d.-a, 2018, 2019, 2020)

1.4 Classification of Fellowships

The fellowships that are being provided in India can be classified in different ways: based upon the career stage, or based upon the funding agency, or the tenure of fellowship, and so on. However, the researcher classifies the fellowship schemes on the basis of funding mechanism. Funding mechanism is a type of award, including the selection, an agency makes to support a program and within which it incorporates the terms and conditions for expending the funds and performing the work. The three classes of fellowships are: Competitive Fellowships, Formula-Based Fellowships or Block Fellowships, and Need-Based Fellowships.

Competitive Fellowships: Competitive fellowships are the fellowships that are provided through proposal selection based on the evaluation of a reviewer or team of reviewers. Fellowships are based upon the merits of the application and research proposal, and the recipients are not pre-determined. The main focus of such fellowships is the quality of research. These are primarily focused on the experienced researchers. Some of the major competitive fellowships provided in India are: Prime-Minister's Research Fellows Scheme, Extra Mural Research Funding, JC Bose National Fellowship, Ramanujan Fellowship etc.

Formula-Based Fellowships: Formula-based or block fellowships are, in contrast to competitive fellowships, are provided to recipients that are selected from the population using any formula. The major advantage of these fellowships is that they are having balanced priorities. Neither the research quality nor the inclusion is given extra edge over each other. Some of the major formula-based fellowships in India are various Junior / Senior Research Fellowship schemes provided by different agencies, INSPIRE Fellowships under Assured Opportunity for Research Careers, HSCST Fellowship Programme, etc.

Need-Based Fellowships: Need-based fellowships are, in contrast to block fellowships, are provided to recipients that are selected from the specific class of population based upon any certain need for the upliftment of the class within the society. These are usually allocated to eligible entities according to population or census criteria, and all applicants who meet the certain set of minimum requirements of the application process are entitled to receive the fellowship. Some of the need-based fellowships provided in India are National Fellowship for Other Backward Class, Maulana Azad National Fellowship, National Fellowship Scheme for Scheduled Caste, etc.

1.5 Fellowships: Their Needs and Implications

As discussed in the previous section, the various classes of fellowships are having their own advantages as well as disadvantages. Now, their needs and implications should be observed. The major reason of the fellowships is that majority of them come along with the financial aid which in turn is very critical for the researchers to make them able to complete on the research which they think are beneficial for the society as well as humankind, especially for the amateurs. Not all the researchers are having equal opportunities as well as resources to conduct their studies smoothly. The financial and educational barriers are the most important ones that need to be eradicated.

The funding also enables the researcher to enhance the quality and scope of their research. The other implication of the fellowships is that it provides an additional weightage to the researcher's profile, which in turn, helps in the further development of an entity into a better researcher, following the Matthew Principle that relates to accumulated advantage. The early career fellowships are also helpful in establishing researcher's credibility. They imply to others that the

person is able to conduct a better research. However, still there is a debate around this point. Some fellowships also provide extended resources and training, which outlines its recipients away from other researchers. The fellowships not only help economically and socially, but also psychologically. In most of the cases, the recipients of fellowships do not need to worry about the resources thus providing them mental peace and they stay away from unusual anxiety and depression, gaining mental strength and focus. Few of the fellowship schemes also provide specialized training which is useful for the fellows in different ways. They gain expertise in the area over time and secure their identity in the respective area. It helps them, in turn, in achieving more research opportunities related to the research area. Some fellowships also help the fellows to build the academic and research network, where they could get to know about the emerging related areas and current research developments at faster pace and also get to learn about predicting the scope of the research area through interacting with more experienced professionals.

1.6 Junior Research Fellowship in Humanities and Social Sciences

As stated earlier, Junior Research Fellowship schemes are being provided in various fields by various agencies. However, the scheme under the study is being provided by the University Grants Commission. While the University Grants Commission is also providing the Junior Research Fellowship in some applied science and technological areas, the present study is delimited to the fellowships provided by the commission in the disciplinary areas of humanities and social sciences only. The scheme of Junior Research Fellowship is having several stakeholders involved in the rolling out of the scheme. These stakeholders are having their own roles and have to dispose their responsibilities. The first of the stakeholder is the UGC itself. Apart from the UGC, the National Testing Agency plays a vital role of selector in this scheme. The NTA UGC NET/JRF examination is conducted twice in a year and any of the candidate who meets the eligibility criteria of having a post-graduation degree in the respective subject from any UGC recognized university with minimum of 55% marks in postgraduation (50% for reserved categories) is eligible to write the examination. The examination is conducted in online mode i.e., it employs Computer Based Testing. And Evaluation.

After securing position in the merit list based upon the performance in this examination, the candidate is required to be enrolled in the M.Phil. or Ph.D. program in any university of India recognized by UGC in the particular or allied discipline within 3 years from the date of declaration of the result. However, for the scholars already enrolled in the M.Phil. or Ph.D. program prior to the declaration of result, the fellowship tenure would be counted from the date of declaration of the result. Meeting all these criteria, the participant has to fill up the form through their department. After this, the scholar becomes the fellow and start receiving the financial remuneration of INR 31,000 per month and certain amount of HRA that is based upon the category of the city where the researcher is residing. The financial remuneration is transferred directly to the bank account of the fellow through Direct Benefit Transfer that has been initiated by the central government from 1 January 2013. Earlier, the fellowship remuneration was disbursed through the universities.

1.7 Statement of the Problem

The scheme selected for the study is the Junior Research Fellowship Scheme in Humanities and Social Sciences, which has been implemented by UGC. Over the years, substantial changes have been made in the examination pattern, evaluation, eligibility criteria, age limit, and validity of award for JRF. However, the credibility of the examination has been questioned, particularly regarding how it tests the subject knowledge and scientific or research aptitude, and whether it does serve its intended purpose. The debate also revolves over the remuneration or financial assistance provided under the scheme. Meanwhile, the quality and scope of research output presented by the participants under this scheme are also often questioned.

It reflects the basis, and thus the researcher has conducted an evaluation as stated below:

"Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation"

1.8 Terms Defined

In the present study, the following terms are used and are defined operationally as follow:

Junior Research Fellowship in Humanities and Social Sciences: Junior Research Fellowship in Humanities and Social Sciences, in this study, refer to the fellowship scheme which has been

implemented by the University Grants Commission (UGC) and the fellowship is provided by the UGC itself.

Humanities and Social Sciences: Humanities and Social Sciences are the disciplines covering the subject areas in which UGC-NET/JRF is being conducted and Junior Research Fellowship is being provided by the University Grants Commission itself.

Evaluation: Evaluation, hereby, is a process that entails the systematic application of social science research to plan for and learn about the various aspects of any policy, program, scheme, or initiatives in order to create, further, or sustain social change.

Context: Context in this study refers to the situation or a group of conditions that exists or existed in which any policy, program, or scheme is being implemented or is going on.

Input: Input, here, refers to the number of financial resources put in, the number of human resources put in, the number of beneficiaries taken in or operated on, and the time duration for which the resources and services are being provided to the beneficiaries within any policy, program, or scheme.

Process: In this research, process refers to the series of actions or steps taken in order to achieve the desired or pre-determined changes at different levels namely participant, program, agency, system, cross-system, and community.

Output: Output, in this study, is the direct product of the scheme's activities which could be measured quantitatively and is used to monitor the scheme's activities.

Outcome: Outcomes, hereby, are the short-term (within three years after receiving resources or services) and mid-term (between three years to eight years after receiving resources or services) effects of any policy, program or scheme on a particular participant, program, agency, system, cross-system, or community.

Impact: Here, in this research, impacts are the long-term (more than eight years after receiving resources or services) effects of any policy, program or scheme on a participant, program, agency, system, cross-system, or community.

1.9 Aims of the Study

The present study aims to get greater insights about the Junior Research Fellowship scheme. The study aims to understand why the scheme was implemented and get in-depth knowledge about the objectives of the scheme under study i.e., JRF in Humanities and Social Sciences. The study focuses on whether the stated objectives of the scheme are being fulfilled or not. The study tries to analyze the selection process through which the National Testing Agency, which is the selector agency in this context, selects the eligible candidates. There may be a difference in the perceptions of the fellowship scheme among the various stakeholders, so there is an interesting question of the inquiry whether that is the case for the JRF scheme too. Apart from this, the study also looks for the unintended outcomes of the schemes and figure out whether they are positive or negative in nature. The study also like to see whether the scheme has any effect on the professional as well as the personal life of the fellows, academic and research institutions and communities, and the society.

1.10 Need and Significance of the Study

The Junior Research Fellowship scheme of UGC is one of the major, popular and longest running fellowship schemes that provides the fellowship to the research scholars working in the disciplines of humanities and social sciences. In the development of research community and strengthening of the research power of India, the scheme plays a vital role. Such a scheme should be reviewed from time to time to enhance its effectiveness and maintain its vitality. Now, with the introduction of New Education Policy 2020, it has been significantly affirmed that the due reforms would be rolled over to enhance the research productivity along with greater inclusion. With the help of present study, we would be able to know that how the scheme is performing and how it is being perceived by the academic community. It will help us to find out the areas where the modifications may be needed to enhance the productivity of the scheme.

1.11 Rationale of the Study

All the reviewed studies have been conducted outside India where the structure of fellowship schemes is different from those provided within India. Also, in India, no formal study has been conducted yet to study any fellowship scheme. However, various internal committees and bureau

under UGC study the scheme and offers recommendations to UGC's administration related to the modification of the JRF scheme. But the reports are not diffused in the public domain.

1.12 Research Question

The main or central research question of the present study is

"How different aspects of the Junior Research Fellowship scheme provided in the disciplinary areas of humanities and social sciences work, for whom, and in what context?"

1.13 Delimitations of the Study

An ideal evaluative study involves a large number of participants and analyzes all the documents related to the scheme. However, due to some practical constraints like limitation of time, unavailability of funds, and the accessibility of the resources, either human or documents, the ideal study is not possible in the present case. The present study has been delimited to the analysis of documents that were readily available to the researcher. The participants do not include the employees of UGC, who are one of the crucial stakeholders of the scheme. The accessible population for qualitative data collection was also constraint to the states of Uttar Pradesh and Delhi only. Moreover, the qualitative sample selection criteria have been used in the present study that restricts the generalization of the findings of the present study.

Chapter 2

Review of Related Literature

Chapter 2 : Review of Related Literature

Any program, policy, or scheme must be reviewed by some external organization or entity to ascertain the degree to which the program, policy or scheme in question is capable of affecting the lives of individuals and whether it works in the right way or needs some reform. A variety of issues may occur with respect to the context in which it was introduced, the collection of recipients, the practices by which the proposed improvement was made, its efficiency or the goods. Hence various studies carried out to evaluate fellowship schemes were reviewed objectively as well as constructively for setting a proper framework for the present research.

A systematic analysis of the literature pertaining to the research issue is a summary of similar literature. In research, it is an important and mostly the first step as the framework is mostly needed to analyze and appreciate the research issue by putting it within the research problem-related scholarly literature.

After defining the research problem, the relation between the research problem and the relevant literature must be analyzed in order to (1) gain expertise and information about the research problem, (2) acquire sufficient knowledge about the prospective research methodology, procedures, and techniques of prospective study, (3) formulate study theories and/or research questions, (4) evolve systematic plan, and (5) neglect the replication of the research, until some new insight is to be included.

In the present study, the researcher has gone through various research regarding fellowship evaluation. However, majority of the literature was regarding the methods of performing evaluation, and only a handful of studies have been carried in the field fellowship evaluation. The findings of some of the major studies have been discussed in this chapter.

(Zinovieff & Rotem, 2008) in their report **"Review and Analysis of Training Impact Evaluation Methods, and Proposed Measures to Support a United Nations System Fellowships Evaluation Framework"** prepared for the WHO's Department of Human Resources for Health on behalf of the UN Task Force on Impact Assessment of Fellowships have mentioned the five

fellowship assessment criteria, noting that fellowship evaluation requires us to be smart, i.e. to select fellows, to monitor them, to have local and regional allies for their supervision, to adequately retrieve information on and about fellows, and to maintain ties with fellows after the training. They note that all organizations have selection criteria, but if they are not adhered to, and if the implementer is not, at least to a degree, the selector, they have no function. Certainly, the agencies should claim their priority role in the selection process when it concerns projects funded by the system itself.

(Somers, 1995) in her research paper **"A Comprehensive Model for Examining the Impact of Financial Aid on Enrolment and Persistence"** suggested that the researchers disagree on the impact of student financial aid, with the major research traditions in education, sociology, and economics providing conflicting results. She developed and tested an institutional model to measure the effect of student aid. A comprehensive theoretical model of student matriculation that examined first-time attendance, within-year persistence, and year-to-year persistence of the entering class at an urban, public university was created. The model included the following factors: background, achievement, college experiences, and financial aid. The findings suggested that the proposed logical model was both workable and potentially useful for other institutions. This was significant because the method developed uses only extant data and can be used by any institution. Moreover, the Student Price Response Coefficients (SPRCs) provided the needed linking mechanism between enrolment management and financial planning, which could provide significant guidance to university administrators. This paper focused on the over-arching concerns raised by this year-long study of the impact of aid on who enrolls and who persists.

(Rotem et al., 2010) in their article **"A framework for evaluating the impact of the United Nations fellowship programmes"** stated that the United Nations (UN) System's agencies have been criticized for not adequately assessing the impact of their training and fellowship programmes. Critics point out that beyond documentation of the number of fellows that underwent training, and their immediate reaction to the experience, it is necessary to ascertain that fellows are using what they have learned, and most importantly that their institution and country are benefiting from the significant investments made in the fellowship programmes. This paper presents an evaluation framework that was adopted by the 17th Meeting of the UN System Senior Fellowship Officers

convened in London in 2008 in response to this challenge. It is arranged in three sections. First, the assumptions and constraints concerning impact evaluation of training are presented. Second, a framework for evaluating the impact of training in the context of UN System programmes is proposed. Third, necessary conditions and supportive measures to enable implementation of the impact evaluation framework are identified. The critical message emerging from this review is the importance of constructing a 'performance story' based on key milestones associated with the design and implementation of fellowship programmes as a way of assessing the contribution of different components of the fellowship programmes to institutional outcomes.

(Smith et al., 2018) in their research **"A mixed-methods evaluation of the Association of Anaesthetists of Great Britain and Ireland Uganda Fellowship Scheme"** studied that the Association of Anaesthetists of Great Britain and Ireland and the then Uganda Society of Anaesthesia established the Uganda Fellowship Scheme in 2006, to provide scholarships to encourage doctors to train in anaesthesia in Uganda. They conducted an evaluation of this programme using online questionnaires and face-to-face semi-structured interviews with trainees who received scholarships, as well as with senior surgeons and anaesthetists. Focus group discussions were held to assess changes in attitudes towards anaesthesia over the last 10 years. Interviews were recorded, transcribed, and analyzed using the constant comparative method. A total of 54 Ugandan doctors have received anaesthesia scholarships since 2006 (median funding per trainee (IQR [range]) £5520–£6750 [£765–£9000]). There has been a four-fold increase in the number of physicians anaesthetists in Uganda during this time. All those who received funding remain in the region. The specialty of anaesthesia is undergoing a dramatic transformation led by this group of motivated young anaesthetists. There is increased access to intensive care, and this has allowed surgical specialties to develop. There is greater understanding and visibility of anaesthesia, and the quality of education in anaesthesia throughout the country has improved. The Uganda Fellowship Scheme provided a relatively small financial incentive to encourage doctors to train as anaesthetists. Evaluation of the project shows a wide-ranging impact that extends beyond the initial goal of simply improving human resource capacity. Financial incentives combined with strong 'north-south' links between professional organizations can play an important role in tackling the

shortage of anaesthesia providers in a low-income country and in improving access to safe surgery and anaesthesia.

(Phillips & Bullock, 2018) in their study **"Clinical leadership training: An evaluation of the Welsh Fellowship programme"** stated that the purpose of UK fellowship schemes has been set up to address low-level engagement of doctors with leadership roles. Established in 2013, the Welsh Clinical Leadership Fellowship (WCLF) programme aims to recruit aspiring future clinical leaders and equip them with knowledge and skills to lead improvements in healthcare delivery. This paper aimed to evaluate the 12-monthWCLF programme in its first two years of operation. Focused on the participants (n = 8), the authors explored expectations of the programme, reactions to academic components (provided by Academi Wales) and learning from workplace projects and other opportunities. The authors adopted a qualitative approach, collecting data from four focus groups, 20 individual face-to-face or telephone interviews with fellows and project supervisors and observation of Academi Wales training days. The findings of the study include although from diverse specialties and stages in training, all participants reported that the Fellowship met expectations. Fellows learned leadership theory, developing understanding of leadership and teamwork in complex organizations. Through workplace projects, they applied their knowledge, learning from both success and failure. The quality of communication with fellows distinguished the better supervisors and impacted on project success. Research limitations reported include small participant numbers that limit generalizability and that the authors did not evaluate longer-term impact. Practical implications of the study were supposed to be useful for doctors. Doctors are required to be both clinically proficient and influence service delivery and improve patient care. The WCLF programme addresses both the need for leadership theory (through the Academi Wales training) and the application of learning through the performance of leadership roles in the projects. Originality/value of the study as claimed by the author is that this work represents an evaluation of the only leadership programme in Wales, and outcomes have led to improvements.

(Mcdonough & Calderone, 2006) in their paper **"The Meaning of Money About College Costs and Financial Aid"**, using interviews with 63 college counselors in urban secondary schools, framed low-income underrepresented students' assessments of affordability by a highly

individualized assessment of need, internalized calculation of costs versus benefits, and an acute awareness of the competing demands resulting from financial scarcity. He concluded that perceptual differences concerning college affordability are an unintended consequence of differential tastes between middle-income counselors and low-income families.

(Goldfarb, 2008) in his article **"The effect of government contracting on academic research: Does the source of funding affect scientific output?"** stated that the growing share of university research funded by industry has sparked concerns that academics will sacrifice traditional scholarly activities to pursue commercial goals. To investigate this concern, he examined the influence of an applied sponsor and considers the limitations of the grant funding mechanism. A novel dataset tracks the careers of academic engineers and their relationships with this sponsor. He found that (a) researchers who maintain a relationship with the directed sponsor experience a decrease in publications implying that academics' careers may be a function of the type of funding received, not only talent; (b) academic merit does not necessarily serve as a funding criterion for sponsors, and (c) citation and publication measures of academic output are often not useful proxies for short-term commercial or social value.

(Long, 2008) in his working paper entitled **"What is Known About the Impact of Financial Aid? Implications for Policy"** stated that years of research support the notion that financial aid *can* influence students' postsecondary decisions, but questions remain about the best ways to design and implement such programs and policies. He has discussed the research literature on the effectiveness of financial aid with special attention to its implications for policy. He addressed the issues central to today's debates about how to improve college access and affordability while encouraging researchers to continue to advance the line of inquiry.

(Auranen & Nieminen, 2010) in their article entitled **"University Research Funding and Publication Performance – An International Comparison"** analyzed how funding environments of university research vary across countries and whether more competitive funding systems are more efficient in producing scientific publications by comparing eight countries. The result shows that there are significant differences in the competitiveness of funding systems, but no straightforward

connection between financial incentives and the efficiency of university systems exists. Their results provoke questions about whether financial incentives boost publication productivity, and whether policymakers should place greater emphasis on other factors relevant to high productivity.

(Jacob & Lefgren, 2011) in their paper entitled **"The impact of research grant funding on scientific productivity"** estimated the impact of receiving a National Institutes of Health (NIH) grant on subsequent publications and citations. The sample consists of all applications (unsuccessful as well as successful) to the NIH from 1980 to 2000 for standard research grants. Both Ordinary Least Squares (OLS) and Instrumental Variables (IV) estimates show that receipt of an NIH research grant (worth roughly $1.7 million) leads to only one additional publication over the next five years, which corresponds to a 7% increase. They concluded that the limited impact of NIH grants is consistent with a model in which the market for research funding is competitive so that the loss of an NIH grant simply causes researchers to shift to another source of funding.

(Raptis & Clavien, 2011) conducted an evaluation study of Hepato- Pancreato- Biliary (HPB) fellowships entitled **"Evaluation of Hepato-Pancreato-Biliary (HPB) Fellowships: An International Survey of Programme Directors"**. This report describes a survey undertaken to access the current status of available fellowships in Hepato-Pancreato-Biliary (HPB) surgery to identify steps to be taken to ensure the provision of successful training in this specialty. An online survey was conducted among members of the International Hepato- Pancreato- Biliary Association (IHPBA) targeting registered and non- registered HPB surgery fellowships. A total of 71 programs are registered on the IHPBA website and 40 fellowship directors completed the survey. Only 18 completed surveys referred to programmes previously listed on the website. Responses showed great diversity among centers regarding their requirements for application, the duration of training and exposure to HPB cases during the fellowship. Factors associated with higher levels of training included the country of fellowship, a third year of training and the presence of a well- structured HPB curriculum. Over 90% of responders seek official accreditation from their regional association (i.e., the European, American and Asian- Pacific HPB Associations). Most programs would welcome official IHPBA or regional association monitoring of their fellowship. This survey disclosed important information that will allow the IHPBA Education and Training Committee to

move forward. Authors recommended the next steps should include close monitoring of the performance of fellows by creating a fellows' registry, as well as a blog or forum which can be used to further enhance communication among fellows. It also suggested that the availability of registration to both programme directors and fellows may eventually lead to an official fellowship accreditation process.

(Ehrenberg & Mavros, n.d.) in their working paper entitled **"Do Doctoral Students' Financial Support Patterns Affect Their Times to Degree and Completion Probabilities"** used data of all graduate students who entered Ph.D. programs in four fields during a 25-years period at a single major doctorate producing university to estimate how graduate student financial support patterns influence their outcomes. They find that completion rates and mean duration of times-to-completion are sensitive to the types of financial support the students received. Other things held constants, students who receive fellowships or research assistantships have higher completion rates and shorter times to degree than students who receive teaching assistantships or tuition waivers, or who are totally self-supporting. A major finding is that the impact of financial support patterns on the fraction of students who complete programs are much larger than its impact on the mean-durations of times-to degree.

(Mahajan & Chauhan, 2013) in their article entitled **"Research Output of Indian Universities: Observations and Key Issues"** discusses the research output of Indian universities. In this study, an attempt is being made to know trends of research in Indian universities with respect to production of number of PhDs. The analysis helped to know trends, characteristics as well as the gray areas of research productivity where government can focus to streamline the mechanism. They stated that India is able to attract or facilitate only 12 per cent of the total population which could be a part of higher education. They also suggested that India needs a greater number of universities (roughly 1500 more), equipped with quality resources, to accommodate vast number of its population in the main stream of higher education. Policy makers were called to adopt some measure to bring down the social, gender and geographic gaps so that maximum number of students may be able to enroll in higher education. The authors also indicated that proper mechanism is also required

to enhance the quality of research output, the union database of Indian thesis, being developed by INFLIBNET, should be supported by UGC and all the universities so that a bibliographic control over thesis can be established.

(van der Haert et al., 2014) in their paper **"Are dropout and degree completion in doctoral study significantly dependent on type of financial support and field of research?"** studied the determinants of 'time to dropout' from doctoral studies and 'time to Ph.D. completion' using a discrete-time competing risks survival analysis for a sample of 3092 doctoral candidates from the Université libre deBruxelles. The results show that students supported with research fellowships have much higher Ph.D. completion hazards than teaching assistants or unfinanced students. Concerning dropout, students with no financing showed the highest withdrawal rate, while students with selective research fellowships showed the lowest one. Dropout is also influenced by the ability of the student, which is correlated to their success in the fellowship allocation procedure. However, the type of financial support influences time to dropout of doctoral studies even when controlling for the ability of the student. Finally, their findings suggest that there are no significant differences in dropout and degree completion between fields of study, except for unfinanced students.

(Joffe et al., 2014) conducted a study with the title **"Utilization and impact on fellowship training of non-physician advanced practice providers in intensive care units of academic medical centers: A survey of critical care program directors"** to determine the utilization of Non-physician advanced practice providers (APPs) in the intensive care units (ICUs) of academic medical centers (AMCs) and to assess the perceptions of critical care fellowship program directors (PDs) regarding the impact of these APPs on fellowship training. They have conducted a cross-sectional national survey. Questionnaire was distributed to program directors of 331 adult Accreditation Council for Graduate Medical Education-approved critical care fellowship training programs (internal medicine, anesthesiology, and surgery) in the US AMCs. The majority of respondents reported that patient care was positively affected by APPs with nearly two-thirds of PDs reporting that fellowship training was also positively impacted. Their survey revealed that APPs are utilized in a large number of US AMCs with critical care training programs. Program director respondents believed that patient care and fellowship training were positively impacted by APPs.

(Bartolone et al., 2014) conducted a study entitled **"Evaluation of the National Science Foundation's Graduate Research Fellowship Program"** on evaluation of the National Science Foundation's Graduate Research Fellowship Program. The study concluded that a greater proportion of NSF Graduate Fellows from 1994 to 2011 worked in the higher education sector compared to NSF Honorable Mention designees and a national comparison group from the Survey of Doctorate Recipients (SDR). A greater proportion of Fellows from 1994 to 2011 engaged in R&D and teaching-related job activities compared to a national comparison group from the SDR. Fellows from 1994 to 2011 published more papers, gave more presentations, and received more grants than Honorable Mention designees Compared to the SDR sample, a greater proportion of NSF Graduate Fellows were employed in the higher education sector nearly 60 percent of Fellows who completed a Ph.D. were employed in the higher education sector compared to half of the national comparison group. Commensurately, Fellows were less likely than the national comparison group to be employed within the government (7 percent versus 11 percent) or private (31 percent versus 39 percent) sector. A similar trend was observed with respect to the Honorable Mention (HM) designees. Approximately 55 percent of all Fellows (regardless of degree completion) were employed in the higher education sector compared with 51 percent of the HM designees. However, there were no differences between the two groups with respect to the percentages who were employed within the government or private sector. More fellows were engaged in research and development and teaching compared to the nationally- representative SDR group, a greater proportion of NSF Graduate Fellows reported that their primary work activities included research and development (R&D) and teaching. About 81 percent of Fellows indicated their work activities included R&D compared to 65 percent of the SDR sample. Similarly, 45 percent of fellows indicated their work activities included teaching compared to 31 percent of the national comparison group. Instead, the national comparison group were more likely than fellows to be working in management and administration (33 versus 26 percent), professional service (16 versus 9 percent), and other activities (26 versus 6 percent).

Overall, this study found that being an NSF Graduate Fellow is associated with various measures of traditional academic career success in science and engineering fields. Fellows were

more likely than a nationally representative group of doctorate recipients and HM designees to be employed in the higher education sector and to report research and development and teaching as primary work activities. Fellows were also more productive than HM designees with respect to the number of presentations at meetings, publications, and grants and contracts received. However, the study was not able to compare fellows who completed a Ph.D. with their national peers on productivity. Although there were no differences between the two groups with respect to number of patents awarded, fellows presented more papers at meetings than HM designees. Fellows reported an average of 8.5 presentations at meetings compared to 6.5 presentations for HM designees. Similarly, Fellows reported more publications - an average of 9 publications, of which 6.5 were refereed journal articles. In contrast, HM designees reported an average of 7 publications, of which 5 were refereed journal articles. Fellows also reported receiving more contracts or grants as a principal investigator than HM designees–an average of 1.7 contracts or grants versus 1.3 among the latter group.

(Scott & Jabbar, 2014) in their study **"The Hub and the Spokes: Foundations, Intermediary Organizations, Incentive Reforms, and the Politics of Research Evidence"** discussed about the evidences of rise in the influence of and spending by educational philanthropists and foundations over the past two decades, especially in the area of market-based reforms, such as charter schools, vouchers, and merit pay. They stated that largely due to philanthropic investments, relatively new educational intermediary organizations (IOs) have also been growing in size, scope, and influence. These new IOs have sought to implement market-based reforms in key urban school districts, frequently based on ideological stances and/or evidence of their efficacy. As yet, researchers have not conceptualized the unique position of foundations in the landscape of intermediary organizations, market-based reforms, and evidence production and utilization. Drawing from a 3-year (2011-2014) study of IOs, research utilization, and policymaking in the case of "incentivist" reforms, they found that foundations are uniquely situated in the reform landscape as a central actor, at the "hub" of intermediary activity as a funder of IOs, but also as a "spoke" in the wheel that helps to mobilize and, in many ways, direct the activities of the IOs. They have also

discussed the implications of the role of foundations in research production, promotion, and utilization for research and policymaking.

(Vreeland, 2015) in his research paper **"The nursing research grant and fellowship program of the public health service"** stated the context of the Nursing Research Grant and Fellowship Program of the Public Health Service. He stated the needs of the fellowship programs, the process of the application and discussed the elements missing in the above fellowship program. He also has included the major research focus of the projects which have been granted funds within the program.

(Zungu, 2015) in his working paper entitled **"An evaluation of the new funding model for Further Education and Training Colleges and its financial implications"** has investigated the new funding model of three public Further Education and Training (FET) colleges in KwaZulu-Natal Province to understand the extent of the effectiveness of this funding model in the different colleges. The methodology used is a mixed-method approach, which is largely qualitative but also uses descriptive statistics in the quantitative inquiry. The specific instruments used are structured questionnaires and an analysis of institutional financial documents. The significant finding was that a disproportionate amount of money is spent on personnel salaries and less on students or infrastructure. This means that the new funding model is failing the FET system of education. Importantly, this study establishes that there is a need to engage in partnerships with the private sector as an alternative funding source. It believes that an alternative funding model, particularly in partnership with the private sector, is sustainable and therefore recommends that FET colleges pursue this model alongside government funding.

(A. S. Ray et al., 2016) in their working paper entitled **"Quality of Social Science Research in India"** described the quality of social science research in India. The authors of the study argue that India's social science research contributes more to public debates and policy formulations than pushing the frontiers of knowledge for further research. They mentioned that it is encouraging to note that over 90% of all articles record a positive quality index score, which implies that they do contribute to further research and or public discourse. Nevertheless, nearly 99% of the articles still score less than 0.14. The paper does signal towards two policy directions. First, it is essential to

increase research funding for social sciences to improve its quality. Secondly, there should be a concerted effort to encourage collaborations, especially international collaborations, in social science research in India.

(Mukherjee, 2016) in his paper **"Ranking Indian Universities Through Research and Professional Practices of National Institutional Ranking Framework (NIRF): A Case Study of Select Central Universities in India"** indicates that quantity of research output, as reflected in any international databases to consider as an indicator of measuring research performance of an institute, is not exhaustive and seems to be implausible. No database seems to have complete coverage of the total research output of an institute. Overall, an international database includes only 80% articles of an institute and only shows output that is generated from Sciences and Applied sciences only. Fields in Social Sciences, Arts & Humanities are ignored in these databases. Inter-country collaboration is found as more prominent than international collaboration among these institutes. However, the research output mostly appeared in the journals having impact factor in the range of 1-3. Although the citation per article by JNU authors found the least, they are in the top rank in NIRF ranking, which suggests citations do not have much influence on NIRF ranking.

(Gush et al., 2018) in their paper entitled **"The effect of public funding on research output: The New Zealand Marsden Fund"** estimated the impact of participating in the New Zealand Marsden Fund on research output trajectories, by comparing the subsequent performance of funded researchers to those who submitted proposals but were not funded. This estimation does not deal with individual researchers' multiple proposals and funding over time. Overall, they found that funding is associated with a 6-15% increase in publications and a 22-26% increase in citation-weighted papers for research teams. For individuals, funding is associated with a 3-5% increase in annual publications, and a 5-8% increase in citation-weighted papers for 5 years after grant; however, the lag structure and persistence of this effect post-grant is difficult to pin down. Surprisingly, they found no systematic evidence that the evaluation of proposals by the Marsden system was predictive of subsequent success. They concluded that the Marsden Fund is modestly

successful in increasing scientific performance, but that the selection process does not appear to be effective indiscriminating among second-round proposals in terms of their likely success.

(Nisticò, 2018) in his working paper entitled **"The effect of PhD funding on postdegree research career and publication productivity"** explored to what extent the receipt of funding during Ph.D. encourages post-degree research career and publications. Using novel data on new Ph.D. graduates from all Italian universities, he documented a strong effect of funding on both the probability of entering a research profession and the publication productivity within a few years after graduation. He provided additional evidence that funded students invest more in research-oriented activities (e.g., visiting research programs abroad) and spend less time working part-time during the Ph.D., thus adding to the mechanisms that potentially account for the effect of funding.

2.1 Summary of the Review of Related Literature

The present review of related literature signifies the rationale of the undertaken evaluation, as well as suggests the key areas to focus upon, based upon the prior studies. All the evaluation studies of different fellowship programmes have been carried outside India. Researcher could not locate any evaluative study regarding the evaluation of any fellowship scheme in India. However, a few of the studies that have been conducted in Indian context discusses about the research output and research quality (Mahajan & Chauhan, 2013; Mukherjee, 2016; A. S. Ray et al., 2016).

Some of the reviewed studies have proposed the frameworks for evaluating fellowships (Rotem et al., 2010; Somers, 1995; Zinovieff & Rotem, 2008). The majority of the studies regarding evaluation of different fellowship schemes have been carried out to see the effects and impacts of the fellowship programmes under study (Bartolone et al., 2014; Ehrenberg & Mavros, n.d.; Jacob & Lefgren, 2011; Joffe et al., 2014; Long, 2008; Nisticò, 2018; Raptis & Clavien, 2011; Rotem et al., 2010; Somers, 1995). However, a good amount of studies have been carried out to evaluate outputs in terms of retention or completion rate, time to completion, and dropout, and number and quality of publications (Bartolone et al., 2014; Ehrenberg & Mavros, n.d.; Hewitt Smith et al., 2018; Jacob & Lefgren, 2011; Raptis & Clavien, 2011; van der Haert et al., 2014). A few of them like (Mcdonough & Calderone, 2006; Somers, 1995; Vreeland, 2015) have carried out input evaluation, process

evaluation (Gush et al., 2018; Vreeland, 2015), and context evaluation (Phillips & Bullock, 2018). A good number of studies including (Auranen & Nieminen, 2010; Bartolone et al., 2014; Ehrenberg & Mavros, n.d.; Hewitt Smith et al., 2018; Raptis & Clavien, 2011) have also focused on outcome evaluation. However, the authors were not able to differentiate between the outcome and impact evaluation, and majority of such evaluations overlap. One of the possible reasons for this overlap could be the background of the researcher or where they have conducted the study.

On the line of finding some alternative sources for funding, industry is recognized as one of the leading alternatives. But (Goldfarb, 2008) has discussed about the negative impacts of industrial funding. Moreover, a few of the studies such as those conducted by (Auranen & Nieminen, 2010; Zungu, 2015) have also compared different funding models available. The researcher of the present study has also gone through a number of articles based upon the research production, promotion, dissemination, and utilization that might be helpful in the present study indirectly. However, only one of these articles have been included in the present review section.

2.2 Conclusion

We have seen how the fellowships are playing a vital role in the research development in any country. Also, the reviews presented here suggested a wide array of tools and techniques for carrying out evaluations. However, no such evaluation study had been found which was carried in the Indian context or of the fellowship offered in India. Majority of the reviewed studies were explanatory in nature and were based on the previous studies. Also, most of them have been conducted using either online surveys or interview and focus group discussion. Only single study carried by (Hewitt Smith et al., 2018) was a mixed method research that employed both survey as well as interviews. Majority of the studies try to explore either single or at most two of the aspects of the fellowship programme. But in the present study, the researcher aims to study all the different aspects of the fellowship scheme, so that the further studies could be based upon the exploratory findings of the present study.

Chapter 3

Philosophical Assumptions, Methodology, and Instruments Employed

Chapter 3 : Philosophical Assumptions, Methodology and Instruments Employed

Research methodology is an essential requisite for getting the appropriate answer(s) to the research problem(s). The present chapter deals with the research methodology employed by the researcher for the present study. Detailed account of the research methodology adopted has been described throughout this chapter. A systematic methodological approach is essential to maintain the validity of the research findings. This chapter precisely describes the philosophical assumptions underlying the study, methodological tools and instruments adopted in conducting this research. The materials and methodological steps incorporated to carry out the study on "**Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation**" has been broadly classified under the following subheads:

3.1 Philosophical Assumptions

3.1.1 Ontological Assumptions

3.1.2 Epistemological Assumptions

3.1.3 Axiological Assumptions

3.1.4 Rhetorical Assumptions

3.1.5 Methodological Assumptions

3.2 Research Design

3.3 Inclusion or Exclusion Criteria for Sample Selection

3.4 Locale of Study

3.5 Sampling Procedure

3.5.1 Population

3.5.2 Selection of the sample

3.5.3 Distribution of the sample

3.5.4 Determining Sample Size

3.6 Construction of Tools and Their Process

3.6.1 Construction of the questionnaire for evaluating fellowship scheme

3.6.2 Standardization of the questionnaire for evaluating fellowship scheme

3.6.3 Trustworthiness of the tools

3.7 Procedure of Data Collection

3.8.1 Procedure of Quantitative Data Collection

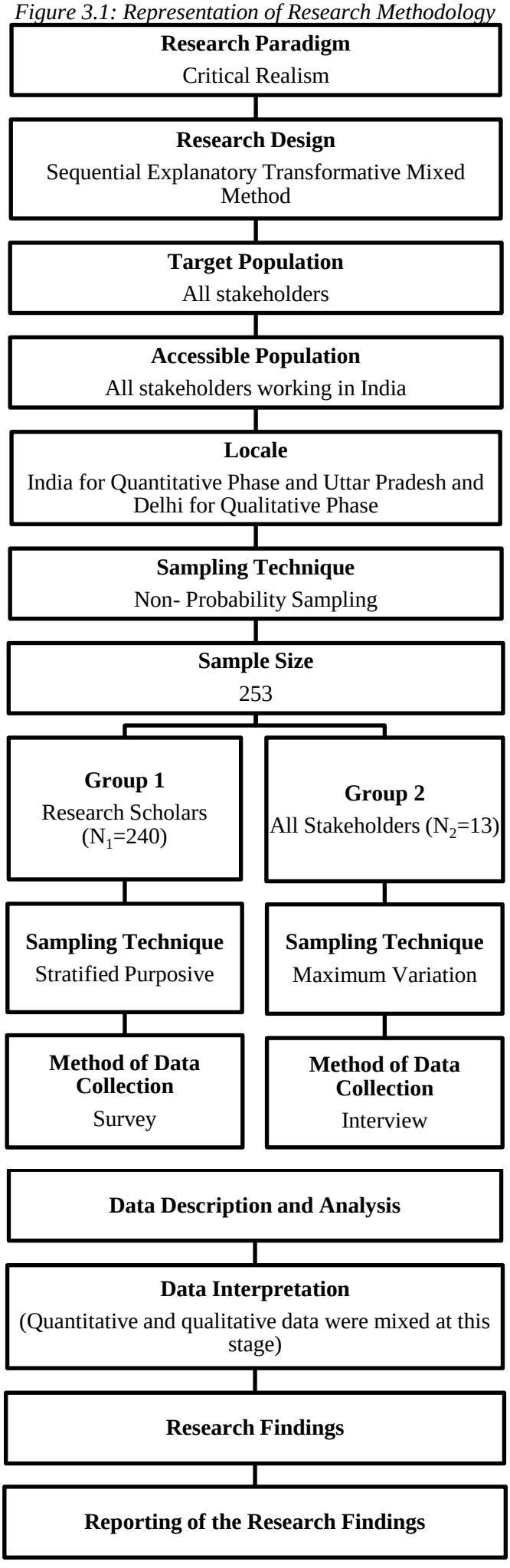
3.8.2 Procedure of Qualitative Data Collection

3.8 Techniques for Analysis of Data

3.8.1 Techniques for Quantitative Data Analysis

3.8.2 Techniques for Qualitative Data Analysis

Figure 3.1: Representation of Research Methodology



3.1 Philosophical Assumptions

This section introduces the philosophical underpinnings, assumptions and beliefs that underlie current research. The five main philosophical assumptions about research: Ontological, Epistemological, Axiological, Methodological and Rhetorical have been discussed in the present section. The paradigmatic orientation used for this research was critical realism because it appeared to most closely align with the researcher's own personal worldview and his interest in identifying and understanding the factors that may be causing 'things' to occur. In this instance, the researcher wants to understand both how the stakeholders responded to the scheme and why their responses occurred. Critical Realism also offered useful frameworks and processes for investigating complex phenomena and for generating 'best guess' explanations for specific outcomes and overall tendencies in outcomes. These processes included the use of abductive and retroductive reasoning. While there are some variations in the views about the basic concepts and propositions of critical realism, those adopted within this research are heavily derived from the works of Roy Bhaskar (Bhaskar, 1975, 1979), who was the most influential developer and proponent of critical realism.

3.1.1 Ontological Assumptions

Ontology can be described as the understanding of *reality* and what is *knowable* (Sobh & Perry, 2005). The ontological assumptions of the present study align with **Critical realism**. Critical realism entails a deep ontological belief in an external world that exists and acts independently of our knowledge of it, or beliefs about it (Bhaskar, 1978). This is a realist ontological position. While *positivism* proposes a single knowable reality, and *interpretivism* proposes multiple mind-dependent realities, critical realism postulates that there are multiple perceptions about a single, mind-independent reality (Healy & Perry, 2000).

Critical realists believe that there is a real, but *imperfectly apprehensible*, world out there to discover (Sobh & Perry, 2005), and reality is complex and changing. For example, social structures are real in that they persist in time and space, exist independently of the knower, and have causative influences on social events and the actions of people. In this sense, critical realism offers a unique *model for discovery*. For critical realists "the ultimate goal of research is not to identify generalizable

laws (positivism) or to identify the lived experience or beliefs of social actors (interpretivism). Rather, it is to develop deeper levels of explanation and understanding" of reality (McEvoy & Richards, 2006).

Ontological Stratification

Critical realists have an ontological belief in a world or reality that is both *differentiated* and *stratified*, consisting of three domains: the *empirical*, the *actual*, and the *real*.

- The domain of the *empirical* represents people's individual experience of events.
- The domain of the *actual* is concerned with events and outcomes resulting from the generative powers of objects and their associated structures and mechanisms. These events may, or may not, be observed or experienced by people.
- The domain of *real* consists of objects that have structures that possess generative mechanisms. These are not observable, but their effects may be experienced or observed.

3.1.2 Epistemological Assumptions

We cannot separate ourselves from what we know. The investigator and the object of investigation, in the present study, are linked such that who we are and how we understand the world is a central part of how we understand ourselves, others, and the world. 'Objectivity' remains as an ideal that researcher attempt to attain through specific research techniques. However, the reality at third strata of real dealing with generative mechanisms is always objective and could be predicted based upon the study of second domain of the reality i.e., actual that in turn consists of the events and outcomes produced through generative powers of associated structure and mechanisms. The researcher starts through the first strata of empirical reality and moves towards the knowledge of real reality using different approaches and techniques.

3.1.3 Axiological Assumptions

The researchers' values are inherent in all phases of the research process. Truth is negotiated through dialogue. Thus, this objective reality cannot be apprehended in a perfect way. Moreover, the values of participants are embedded deep in the findings of the study. However, the researcher aims

to remove such biases or at least report them. But the researcher could not claim that the findings are independent of these personal values of researcher and participants. Moreover, at few distinct points of time during research, the researcher also faced the dilemma of prioritizing between the ethical concerns and moral concerns. At such points, the researcher has given the due priority to the ethical concerns and reported the scenarios with integrity.

3.1.4 Rhetorical Assumptions

Rhetoric is the art of speaking or writing. It refers generally to how language is employed, but it has come to mean the insincere or even manipulative words. Technically, it includes the arts of persuasion and decoration or elaboration in literature (Fyre, 1957). In research, it is normally considered that the facts are supposed to "speak for themselves" (Firestone, 1987). The words of everyday life are rich in multiple meanings and because the scientific terms too have multiple meanings, the researcher must steer the reader's attention to the specific ones. This is the work of demonstrating theoretical, policy, or practical relevance of research that is accomplished in introduction and the conclusion (Gusfield, 1976). It too requires rhetoric. In the present study, the researcher has adopted following rhetorical assumptions:

Persuasion: The researcher has tried to persuade the readers through enhanced description of study's methods, detailed descriptions of procedures and forwarding scientific debates, wherever applicable. The appropriate references are provided for most of the propositions stated in the present dissertation.

Assumptions: All the different assumptions do not stem from the study itself they move in large measure from the way the researcher has collected and processed the data. In addition to usage of different persuasive strategies, all types of assumptions formed either a-priory or during the research process have been clearly stated.

Complementarity: The quantitative studies measure the extent of relationship more precisely. On the other hand, the classical strengths of the qualitative approaches are a concrete representation of data, portrayal of mechanisms in an active mode, and an attention to the perspectives of those studied (M.

Q. Patton, 1990). Quantitative and qualitative studies, used separately, provide various types of information. Focusing on the same issue, the two types of studies can triangulate i.e., using different methods to assess the robustness of the findings (Jick, 1979). Where research using different approaches have similar outcomes, it can be more assured that the findings are not affected by the methodology. Where the findings vary, further research is needed; but a comparison of studies may also indicate important lines of investigation to be followed.

Moreover, as the researcher has assumed that there is an ideal reality outside of the mind, the researcher has written this dissertation in third person and used a vocabulary that characterizes objective reality.

3.1.5 Methodological Assumptions

The research approaches tend to rely on a combination of qualitative and quantitative methods. Research has been conducted in its natural settings and more situational or contextual data is collected. Methods have been incorporated to elicit participants ways of knowing and seeing. Research design has provided the opportunities for discovery (emergent). The questions of the interview have been revised according to the information gleaned from earlier discussions and the results of the analysis of data collected through survey. Also, the rationale behind the unstructured interview schedule has been that not every participant is competent enough to provide greater insights on the same component, and in this case the participant may also get disengaged from the conversation. Hence to increase the involvement of the participants, the researcher has let the participants decide the direction of the interview.

3.2 Research Design

The researcher has employed a mixed research methodology to gain insight into the nature of the fellowship and its perception among the various stakeholders viz. research scholars, faculty members, educational administrators, and policymakers along with the quantitative measures of inputs and outputs of the fellowship scheme under the study. The researcher viewed (1) the context under which the fellowship is being provided, (2) the inputs of the fellowship scheme, (3) the various processes involved, (4) the output of the fellowship scheme along with (5) its outcomes and (6) the

impacts are the central phenomenon under the study which require further exploration and understanding. Considering the nature of the target phenomena, the researcher followed the advice of (Strauss & Corbin, 1998) who explained that "Qualitative methods can be used to obtain the intricate details about phenomena that are difficult to extract or learn about through more conventional methods."

Research design is a coherent plain in conducting research, which deals with structure and strategy of investigation so conceived to obtain answers to research questions. Research designs are used to conduct research with objectivity and accuracy (Kerlinger, 1986). Research design is a logical task undertaken to ensure that the evidence collected to enable to answer the research questions as unambiguously as possible.

The research design adopted for the proposed study was **Mixed Methods Research Design,** which is a procedure for collecting, analyzing and "mixing" both quantitative and qualitative methods in a single study or a series of studies to understand a research problem (J. W. Creswell & Clark, 2007). The basic assumption is that the uses of both quantitative and qualitative methods, in combination, provide a better understanding of the research problem and question than either method by itself. The relevance of the selected research design can be discussed in different breakups consisting of the varying factors on which the selection of the research design depends. Various factors can be discussed as:

a) Based on the philosophical worldviews or paradigms which are used to study the **pragmatic knowledge claims**:

- **i)** helpful in studying the consequences of the actions,
- **ii)** problem centered,
- **iii)** pluralistic in nature and
- **iv)** real world practice oriented.

b) Based upon the selected strategies of inquiry, that is survey, interview, and content analysis.

c) Based on the research methods adopted, which include pre-determined methods of **mixed survey** (open-ended as well as close-ended questions), and **unstructured narrative interviews of various stakeholders.**

d) On the basis of usage of both quantitative as well as qualitative data, data interpretation and data analysis.

e) Based upon the practices of research as researcher, the researcher had collected both quantitative and qualitative data, developed a rationale for mixing them and integrated the data within the research.

f) Based upon the research problem.

g) On the basis of personal experiences of the researcher and the supervisor.

The idea of triangulation had already introduced one purpose for mixing methods – to integrate multiple databases to understand a phenomenon and research problem (Rossman & Wilson, 1985). Other reasons have followed. We could collect quantitative and qualitative data separately in two phases so that data from one source could enhance, elaborate or complement data from other source (Greene et al., 1989). In more complex designs, the data collection could extend from two to three phases or be collected from multiple levels in an organization. We could also embed data, with one form of data becoming less important in a design emphasizing the other form of data (Creswell, 2012).

Here, in reference to this research, the researcher has conducted the research to address a social issue, to bring about change and the research is value based and ideological, so the **Transformative Mixed Methods Research Design** has been used.

Depending upon the role of the two types of data, i.e., quantitative and qualitative, the researcher has chosen to explain the various phenomena and circumstances regarding the fellowship scheme under the study, and hence the **Explanatory Transformative Mixed Methods Research Design** has been chosen.

Further, while framing the research the researcher has chosen to first explore the scheme under study using the quantitative data (questionnaire) and then tried to explain the issues with the help of qualitative data (case study and interview) in separate phases. Hence the final research design used for this study is **Sequential Explanatory Transformative Mixed Methods Research Design.**

3.3 Inclusion or Exclusion Criteria for Sample Collection

Only the research scholars and faculty members, who are from the disciplines of Social Sciences and Humanities in which the UGC conducts the NET/JRF examination were included.

3.4 Locale of the Study

The survey was conducted online and included the respondents throughout the nation, but qualitative investigation was carried out through telephonic conversation and face-to-face interaction with the participants in the states of Uttar Pradesh and Delhi only.

3.5 Sampling Procedure

3.5.1 Population

A population is a complete set of elements (persons, objects, or events) that possess some common characteristics defined by the sampling criteria established by the researcher. Generally, population consists of two groups – target population and accessible population. Target population is the entire group of people, objects, or events to which the researcher wishes to generalize the study findings and meet the set of criteria of interest to researcher. Whereas the accessible population is the portion of the population to which the researcher has reasonable access, may be a subset of target population and may be limited to region, state, city, country, or institution.

In this study, the target population consists of the various stakeholders viz. the UGC, the NTA, the educational administrators at higher education institutions of India, the faculty members, and the research scholars in disciplines of humanities and social sciences within the country.

The accessible population for this study consists of all the educational administrators at higher education institutions, the faculty members, and research scholars conducting the research in disciplines of humanities and social sciences throughout the nation for online survey while for qualitative data collection, same participants within the Uttar Pradesh state and National Capital Territory of Delhi, India.

3.5.2 Selection of the Sample

Sample is the selected elements (people, objects or events) chosen for participation in a study and the people are referred to as the subjects or the participants. Sampling is the process of selecting

a group of people, events, behaviors, or other elements with which to conduct a study. Whereas sampling frame is a list of all the elements in the accessible population from which the sample is drawn.

Here, in this study, there are two different groups of samples. The groups under the study are:

1. Group one for administering survey consisting of all the research scholars.
2. Group two for conducting interviews consisting of all the research scholars, faculty members, and administrators and policy makers.

Now, the sample has been drawn out from the above groups. The researcher was not having ample resources in terms of time, financial and human to select enough samples using probability sampling. Also, for determining the sample size in probability sampling, the researcher should know the exact size of population, which he tried but cannot access, as the number of Ph.D. holders in social sciences and humanities in the past years cannot be traced. Also, there was problem in accessing the number of faculty members in the departments of the humanities and social sciences in all the universities. So, the researcher moved on to use the non – probability sampling techniques for sample selection.

The samples among the first group were procured using the **Stratified Purposive Sampling**, so as to enable the researcher to compare the two groups of JRF fellows and non-JRF scholars and also to get the homogenous sample within each stratum.

The second group in the study was used for the qualitative inquiry, to know about the perception towards the fellowship scheme among the research scholars, faculty members and the policymakers and administrators. So, to fulfill this purpose and to maximize the representativeness of various characteristics, **Maximum Variation Purposive Sampling** was adopted. Through maximum variation purposive sampling, it was possible to describe the variations in the group more thoroughly and to understand variations in the experiences.(Michael Quinn Patton, 2002) has rightly stated that "The logic and power of purposeful sampling lies in selecting information-rich cases for study in-depth."

3.5.3 Distribution of the Sample

Six sub-groups of research scholars who are pursuing their Ph.D. had been determined on the basis of two parameters: stage of their research work and whether they availed/availing Junior Research Fellowship or not, using the stratified purposive sampling technique: (1) who have completed their coursework, are in first year of their research and are availing the Junior Research Fellowship (Subgroup-1, N_{11}=20 participants), (2) who have completed their coursework, are in first year of their research and are not availing the Junior Research Fellowship (Subgroup-1, N_{12}=20 participants), (3) who are in mid of their research and are availing the Junior Research Fellowship (Subgroup-2, N_{21}=30), (4) who are in mid of their research and are not availing the Junior Research Fellowship (Subgroup-2, N_{22}=30), (5) who are about to submit their research within a year or have submitted their research work in 2020 and have availed the Junior Research Fellowship (Subgroup-3, N_{31}=30 participants), (6) who are about to submit their research within a year or have submitted their research work in 2020 and have not availed the Junior Research Fellowship (Subgroup-3, N_{32}=30 participants).

The other four-subgroups of research scholars in the past, who pursued Ph.D. are formed based on two parameters: their thesis submission date i.e., have submitted their research work before 1 January 2012 or on or after 1 January 2012 and whether they availed the Junior Research Fellowship or not, using the stratified purposive sampling. The four sub-groups are: (1) who have submitted their thesis on or after 1 January 2012 and availed the Junior Research Fellowship (Subgroup-4, N_{41}=20 participants), (2) who have submitted their thesis on or after 1 January 2012 and not availed the Junior Research Fellowship (Subgroup-4, N_{42}=20 participants), (3) who have submitted their thesis before 1 January 2012 and availed the Junior Research Fellowship (Subgroup-5, N_{51}=20 participants), (4) who have submitted their thesis before1 January 2012 and not availed the Junior Research Fellowship (Subgroup-5, N_{52}=20).

The second group also consists of all the research scholars who are either pursuing Ph.D. or have pursued their research in social science or humanities as well as faculty members along with the educational administrators and policymakers are selected using the maximum variation purposive sampling (N_2=13 participants).

3.5.4 Determining Sample Size

The size question is an important decision to be made for sampling strategy in the data collection process. The sample size is the number of participants or specimen required in a study and its estimation is important for establishing the power and impact of the study. The determined size should be optimum as (Noordzij et al., 2011) stated that the arbitrary calculation with less or more can affect the study design and its significance. The larger size can lead to ethical concerns, time consumption, and financial wastage, and smaller size affects the effectiveness of the study. The sample size usually depends upon study design, method of sampling and outcome measures – effect size, standard deviation, study power and significance level.

A sample size should be large enough to sufficiently describe the phenomenon of interest and address the research questions. The goal of qualitative researchers should be the attainment of saturation, which occurs when adding more participants to the study does not result in additional perspectives or information. (Glaser & Strauss, 1967) recommended the concept of saturation for achieving an appropriate sample size in qualitative studies. Although, the concept of saturation is intended for the grounded theory approach, in which the theoretical model being developed stabilizes. Studies not adopting grounded theory approach use the term broadly as: (1) The point in data collection and analysis when new information produces little or no change to the code book; (2) The criterion to determine when sampling should cease in qualitative evaluation.

Considering the above discussion and arguments, the researcher has predetermined the sample size. The predetermined sample size under the first group was 240. The rationale for selecting this arbitrary number was to minimize the sampling error by taking adequate number of respondents and their representation, while taking care of availability of the respondents, incurring time, cost and scope of the evaluation.

For second group, sample size of 10 was chosen a-priori. Also, it was decided to conduct two more interviews, without new shared themes or ideas emerging before concluding that data saturation has achieved for this group. The data saturation was found to be achieved after 13 interviews only.

The researcher was constantly comparing the data using the application software that was used for data collection during the process for survey and manually for interviews. The sample size was determined at the end of the data collection process, when the researcher was affirmed that no new information was generated and ceased the process of data collection.

Finally, the sample size of the study was determined as: 240 for group one and 13 for group two of the study.

3.6 Construction of Tools and Their Process

A self-designed standardized questionnaire for assessing the fellowship scheme and to get perception about the scheme was developed and used for getting the perception of the stakeholders as well as the deep insight about the fellowship scheme.

For constructing the above-mentioned tool various steps and processes were taken into the account. The steps involved are discussed as follows:

3.6.1 Construction of the questionnaire for evaluating fellowship scheme

3.6.2 Standardization of the questionnaire for evaluating fellowship scheme

3.6.3 Trustworthiness of the tool

3.6.1 Construction of the Questionnaire for Evaluating Fellowship Scheme

The semi-structured questionnaire for evaluating the fellowship scheme was developed to assess the various aspects of the fellowship scheme under the study. The questionnaire was administered on 30 respondents who were pursuing Ph.D. to finalize the items for the questionnaire. It was a semi-structured questionnaire consisting of 83 items but with the help of pilot study, through the process of literature review and based upon the suggestions by the research scholars and faculty members, it was reduced to 40 items for standardizing the same.

This questionnaire contains features of good questionnaire construction as illustrated by (Creswell, 2012). It begins with demographic or personal questions that respondents can easily answer, and in the process of answering them, they become committed to completing the questionnaire. For variety, the researcher used different types of closed-ended questions, from checking the appropriate response to an extent of agreement scale (“strongly disagree” to “strongly

agree"), to multiple choice questions. The questionnaire also contains open-ended items to encourage participants to elaborate on their experiences and definitions. It also contains a pleasing layout with much "white space" between the questions and the use of one scale (e.g., "strongly disagree" to "strongly agree") for multiple questions so that participants do not repeat responses.

3.6.2 Standardization of the Questionnaire for Evaluating Fellowship Scheme

Development of the Questionnaire

The items of the questionnaire were created on the basis of the research objectives, research questions and the literature review and were structured on the basis of opinions of various stakeholders and discussion with various research scholars and faculty members. The researcher has reviewed a few of the questionnaires for fellowship evaluation, but those questionnaires were the structured ones, and they seek to explore only one or two aspects of the fellowships using quantitative data. But the present questionnaire was developed to assess multiple aspects of the fellowship scheme along with the perceptions of the respondents.

The first draft of the questionnaire constituted 83 items which have been critically examined and edited keeping in mind the simplicity, precision, and clarity.

Pre tryout

The first draft of the questionnaire was administered on a sample of 10 respondents for the pre tryout to check the language accuracy and sentence construction. Finally, 60 items were arranged for the final tryout.

Final tryout

For the final tryout, the questionnaire was administered on 30 respondents and based upon the feedback and suggestions of the respondents, their comments on the items and a thorough discussion on each item with fellow scholars and supervisor, 40 items were selected and slight modification in item ordering was done. But due to pandemic followed by the forced lock down, the researcher moved on to collect the data online, and for this reason, he has added one more question in the questionnaire that was a branching question and was positioned as fourth item of the questionnaire.

The questionnaire was distributed in four sections. Table 3.1 illustrates the format of the questionnaire that was used for conducting the online survey.

Table 3.1: Format of the Questionnaire

Section	Item Number	Variable	Response Type
1	1	Gender	MCQ
	2	Region	MCQ (Dichotomous)
	3	Marital Status	MCQ
	4	Subject Domain	MCQ (Dichotomous) (Branching)
2	5	Year of Thesis Submission	Open-Ended
	6	Length of PhD	MCQ
	7	Type of PG Institution	MCQ
	8	Type of PhD Institution	MCQ
	9	Nature of Occupation	MCQ
	10	Number of Participations in Research Events	Open-Ended
	11	National Visits	Scale
	12	International Visits	Scale
	13	Number of Publications as First Author	Interval Scale
	14	Number of Publications as Other Author	Interval Scale
	15	Number of Citations Received	Interval Scale
	16	Research Awards	MCQ (Dichotomous)
	17	Change in Mode of PhD	MCQ (Dichotomous)
	18	Self-Rating of Thesis Based on Contribution in Respective Field	11-Point Scale
	19	Self-Rating of Thesis Based on Innovation	11-Point Scale
	20	Self-Rating of Thesis Based on Readiness for Utilization	11-Point Scale
	21	Reason for Pursuing PhD	Multiple Choice Multiple Response
	22	Professional Preferences	Multiple Choice Multiple Response
	23	Ranking of Professional Preferences	Ranking
	24	Research Monitoring by UGC	MCQ
3	25	Pattern of UGC-NET/JRF Examination is Research-Oriented	5-Point Likert Scale
	26	Factors That Should Constitute Objectives of	5-Point Likert Scale

		Fellowship Scheme	
	27	Benefits That Should be Provided by Any Fellowship Scheme	5-Point Likert Scale
	28	JRF Scheme Fulfills Its Pre-Defined Objectives	5-Point Likert Scale
	29	Stated Objective is Enough and Complete	5-Point Likert Scale
	30	Change Recommendation in Objectives of JRF Scheme	MCQ (Dichotomous)
	31	Selection Process of JRF is Standard One	5-Point Likert Scale
	32	Bases for Selection of Fellows	Multiple Choice Multiple Response
	33	Recommended Change in Financial Assistance	5-Point Likert Scale
	34	Status of JRF Availing	MCQ (Dichotomous) (Branching)
4	35	Time of UGC NET/JRF Qualification	MCQ
	36	Regular Disbursement of Funds	5-Point Likert Scale
	37	DBT is Better Than Disbursement Through Institution	MCQ
	38	Involvement in Any Research Other Than Thesis	MCQ (Dichotomous)
	39	Involvement in Teaching	MCQ (Dichotomous)
	40	Facilitated Expenditures	Multiple Choice Multiple Response
	41	Areas JRF Helped In	Multiple Choice Multiple Response

3.6.3 Trustworthiness of the tool

In qualitative or mixed methods research, where the questions are either semi-structured or unstructured, we do not usually test tools for reliability and validity – as we do for the structured quantitative questionnaires. Qualitative questionnaires are often unique and not designed to be generalizable to other studies. (Lincoln & Guba, 1985) stated that trustworthiness of a research study is important to evaluate its worth. It involves establishing Credibility, Transferability, Dependability, and Confirmability which answers about the truth-value, applicability, consistency, and neutrality.

Within the conventional paradigm, the criteria that have evolved in response to these questions are termed 'internal validity', 'external validity', 'reliability', and 'objectivity'. They also described a series of techniques to achieve the outlined criteria: Prolonged engagement, persistent observation, triangulation, peer debriefing, negative case analysis, referential adequacy and member-checking for establishing credibility, thick description for establishing transferability, inquiry audit for establishing dependability, and confirmability audit, audit trail, triangulation, and reflexivity for establishing confirmability. They have asked the qualitative researchers to lay emphasis over ensuring rigor of their actions during their research. Later, (Guba & Lincoln, 1989) developed authenticity criteria that were unique to the constructivist assumptions and that could be used to evaluate the quality of research beyond the methodological assumptions.

Without rigor, research is worthless, becomes fiction and loses its utility. (Morse et al., 2002) suggested that by focusing on strategies to establish trustworthiness at the end of the study, rather than focusing on processes of verification during the study, the investigator runs the risk of missing serious threats to the reliability and validity until it is too late to correct them. Also, they argued that strategies for ensuring rigor must be built into the qualitative research process per se. These strategies include investigator responsiveness, methodological coherence, theoretical sampling and sampling adequacy, an active analytic stance, and saturation. These strategies, when used appropriately, force the researcher to correct both the direction of the analysis and the development of the study as necessary, thus ensuring reliability and validity of the completed project.

Whenever, we evaluate any scheme, program or policy, we must be fully aware of the context in which the scheme, program or policy has been implemented and working which has been covered in this research in form of the context evaluation. (Schwartz & Ogilvy, 1979) argue that objects and behaviors take not only their meaning but their very existence from their contexts. It is of great importance, therefore, that the researcher spends enough time in becoming oriented to the situations, and to thoroughly appreciate and understand the context. The prolonged engagement, according to (Lincoln & Guba, 1985), helps in detecting and taking account of the distortions that might otherwise creep into the data. They also advised that the investigator must deal with personal distortions based on his or her own a priori values and constructions.

There are also some distortions introduced by the respondents. (Bilmes, 1975a, 1975b) gave an account of sources of misinformation, including *perceptual and selective distortions*; *retrospective distortions and selectivity*; *misconstruction of investigator's questions*; and *situated motives*. Some distortions are intended to deceive or confuse. (Douglas, 1976) argued that the cooperative posture that characterizes most inquiry is a case of misplaced confidence; that everyone has something to hide; and investigators are advised to adopt an investigative posture. He suggested that during the prolonged engagement, the investigator must decide, whether he or she has risen above his or her own preconceptions, whether misinformation has been forthcoming and whether that misinformation is deliberate or unintended, and what posture to take to combat that problem.

The period of prolonged engagement also enables the researcher to build trust among the participants, which is a developmental process. Building trust is a time-consuming process, while trust can be destroyed in an instant, and then take even more time to rebuild. The trust could be built by demonstrating that participants' confidence would not be used against them, the data would be kept confidential and would be presented anonymously, the interests of the respondents would be honored, and that the respondents will have input into and influence the enquiry process.

Based upon the discussion, the researcher has used various techniques and steps from the starting of this research. For establishing credibility of the present study, the researcher has gone through various reports, notices and documents presented by the UGC and the NTA from time-to-time. The researcher has also discussed about the scheme and its various aspects with the peers, faculty members and other potential resource persons, so as to clear away his own misconceptions and misinformation and to learn about various aspects of the fellowship scheme. The researcher was engaged in this process for about one year. Along with this, the researcher was actively participating in the workshops, various online courses, and even an internship program for contacting the potential respondents and built personal relationship with them so as to establish trust in the relationships before initiating the data collection. During this period the researcher was open to all the suggestions and views of the community members and was involved in persistent observations. (Denzin, 1978) has suggested four different modes of triangulation: use of different sources, methods, investigators, and theories. The researcher has incorporated multiple and different sources, and methods in the

study to establish the triangulation of the data as suggested whereas multiple investigators was not applicable in this research as it is a part of the dissertation, and use of different theories was neglected in the light of argument forwarded by (Lincoln & Guba, 1985) that facts are theory determined and do not have an existence independent of the theory within whose framework they achieve coherence. Also, the researcher has exposed himself to four of the fellow peers using peer debriefing technique for the purpose of exploring aspects of the enquiry that might otherwise remain only implicit within his own mind and for clearing the mind of emotions and feelings that may be clouding good judgment or preventing emergence of next sensible steps. The peers were neither the juniors nor the authority figures, to ensure that their suggestions are neither neglected nor treated as the mandates. The hypotheses formed before initiating the study were refined during the research process using negative case analysis until it accounts for all known cases without exception.

No other effort has been made to establish the transferability of the study, but the data base is provided by the researcher, as it is the responsibility of the researcher that makes transferability judgments possible by the potential appliers.

(Guba, 1981) has made an argument that since there can be no validity without reliability (and thus no credibility without dependability), a demonstration of the former is self-sufficient to establish the latter. Also, he demonstrated a more direct technique of "overlap methods". In effect, overlap methods represent a type of triangulation and reviewed in relation to credibility. But triangulation is typically undertaken to establish validity, not reliability, although, by the above argument that there can be no validity without reliability, demonstration of the former is equivalent to the demonstration of the latter. Hence, triangulation by the means of methods and sources as illustrated above are used to establish the dependability of this research.

As argued by (Guba, 1981; Lincoln & Guba, 1985) the confirmability of the present study has been established using the inter-subjective agreement, through methodology and sufficient number of subject-inclusion.

3.7 Procedure of Data Collection

The process of data collection for present research began with empirical data. Events are observed at the empiric level using two types of data: extensive (quantitative) and intensive

(qualitative). Both forms of data enabled the researcher in identification of demi-regularities (tendencies) for further analysis. Further elaboration of the procedures is discussed in upcoming subsections.

3.7.1 Procedure of Quantitative Data Collection

The quantitative data for the present study was collected through the questionnaire using survey method. At the stage of pre tryout, the questionnaire was distributed individually to 10 respondents at that stage after taking their consent in written on the proforma attached in Appendix 2. The respondents were provided three days duration to fill up the questionnaire. After three days, the questionnaire was received from them in-person. During the pre-tryout, the researcher has contacted one of the Assistant Professor of a Central University to fill out the questionnaire. The Assistant Professor asked the researcher to fill out the questionnaire by himself and get it undersigned by them. However, the researcher has not done as he was asked to do as it was unethical and unwarranted.

During the final tryout, the researcher has again distributed the questionnaire to the prospective respondents of the study in 3 different departments of different universities by taking due permission from the heads of the departments on a proforma attached in Appendix 3. There was also a form attached with this permission letter for obtaining some official records of the department. However, none of the departments have shown any interest in providing the data, even after getting the oral permission from the Heads of those departments. Finally, researcher has dropped the idea of collecting data on that datasheet. After taking due permission, the participants that include the faculty members and research scholars, some of which were JRF Fellows, were told about the study and their consent was taken in written on the form attached in Appendix 2 that was used during pre-tryout. Then, the questionnaire was distributed to them. Most of the respondents have filled-in the questionnaire in front of the researcher and have clarified the doubts on the items that seem to be ambiguous for them. Also, they have provided their suggestions and feedback regarding the questionnaire. A few of them have taken the questionnaire and provided their contact details. The

researcher has contacted them, and taken the filled-out questionnaire from them, along with their valuable feedback.

But before the commencement of final survey, the calamity of COVID-19 appeared, and the country was forced under lock down. The researcher used the opportunity and converted the format of the questionnaire into the online form and conducted the online survey. For conducting online survey and reaching out the participants, the researcher has used the email addresses of the faculty members provided in some universities' websites, the email addresses of the prospective participants were also identified during various online academic events that were boomed during the period, and also has forwarded the same through emails and social networking platforms. The researcher was constantly monitoring the responses received and removed the responses that were inappropriate or incomplete.

3.7.2 Procedure of Qualitative Data Collection

Qualitative data collection could be categorized in two categories: documents and interviews. The process of document retrieval was started in initial phase of the research and continued till the end. All the documents were retrieved in online mode, mostly from the websites of the UGC (ugc.ac.in) and NTA (ugcnet.nta.nic.in). The interviews were conducted in two different modes: telephonic and in-person. For conducting interview, the researcher has constructed two self-administering semi-structured interview schedules, one for the administrators and other one for faculty members and research scholars. The researcher has explained the motive of the interview to the participants and taken their consent in-written on the proforma attached in Appendix 4. Also, the researcher has asked for the permission to record the interview, and whether they want their identities to be disclosed or not. The three of the participants included in initial batch agreed to record the interview but disagreed to disclose their identities.

However, during their interview, when the participants were immersed in the conversation, they have asked to stop the recording and then told some of their experiences that they were hesitant to share on record. Also, during the interview and after the analysis of first batch of three interviews, the researcher found that the schedules were not that effective as most of them were not having the

direct experiences or knowledge about what was being asked and they were losing their attention while responding to such questions. On the other hand, when they were provided the freedom to drive the conversation, they were more energetic and have a lot of stories to share and gossiping their own experiences and experiences of their fellows. The participants were not equally aware of the terminologies or experiences that researcher was intending to look for. On the basis of this experience, the researcher has decided to conduct unstructured interviews to capture the experiences and stories of the participants at their expertise level and what they believe to be important for discussion. The researcher has offered participants the driving seat, however held the handbrakes in his own hand and redirected the focus of conversation when needed. The recording of the interviews was not done after the first three interviews, but the notes were jotted down and in place of transcription, the process of subtitling was carried out, as the majority of the portions of the interviews were bilingual (consisting of English and Hindi). After the jotting of the interviews and proper subtitling, the subtitles were provided to the interviewees to cross check them and inform about any changes in meanings that creeped while subtitling. After scrutinization of the subtitles, they were coded. The process of coding and further process that were involved in the analysis, have been discussed in 3.8.2 Techniques for Qualitative Data Analysis.

3.8 Techniques for Analysis of Data

3.8.1 Techniques for Quantitative Data Analysis

The quantitative data collected through the survey was coded, tabulated and analyzed using the appropriate statistical techniques i.e., mean, median, mode, standard deviation, frequency distribution, skewness, and kurtosis. Student's t-test, and non-parametric Mann-Whitney U test and Chi-Square Test were used to compare the non-JRFs and Junior Research Fellows in terms of duration of research completion, number of participations in research-oriented activities, research or academic visits, number of publications, number of citations, self-ratings of their research on the bases of contribution in the respective field, innovation and readiness for utilization etc.

It is often believed that if one or more assumptions about a parametric test are markedly violated, the test results would be unreliable, and it is therefore more prudent to use an analogous

nonparametric test, which usually has fewer or less stringent assumptions than its parametric analog. Using these non-parametric measures, the original interval/ratio scores must be transformed into a rank-order format. Due to this rank ordering of the data, information is sacrificed.

> *"The justification for using a parametric test in lieu of its non-parametric analog, even when one or more of the assumptions of the former test are violated, is that the results of numerous empirical sampling studies have demonstrated that under most conditions a parametric test like the t-test for two independent samples is reasonably robust ..... In addition, researchers who are reluctant to employ nonparametric tests argue that parametric tests, such as the t-test for two independent samples, are more powerful than their nonparametric analogs ..... Throughout this book it is demonstrated that in most instances when the same set of data is evaluated with both a parametric and a nonparametric test, the two tests yield comparable results. As a general rule, in instances where only one of the two tests is significant, the parametric test is the one that is more likely to be significant. However, in most cases where a parametric test achieves significance and the nonparametric test does not, the latter test will fall just short of being significant. In instances where both tests are significant, the alpha level at which the result is significant will generally be lower for the parametric test."* (Sheskin, 2000)

The two of the above tests have their own advantages as well as limitations. J.C.F. de Winter and Dimitra Dodou in their study 'Five-Point Likert Items: t-test versus Mann-Whitney-Wilcoxon' compared the Type I and Type II error rates of the t test versus the Mann-Whitney-Wilcoxon (MWW) for five-point Likert items (Winter & Dodou, 2010). Results showed that the two tests had equivalent power for most of the pairs. MWW had a power advantage when one of the samples was drawn from a skewed or peaked distribution. While strong power differences between t-test and MWW occurred when one of the samples was drawn from a multimodal distribution. Notably, the Type I error rate of both methods was never more than 3% above the nominal rate of 5%, even not when sample sizes were highly unequal. These results are consistent across group sizes of 10, 30, and 200. Concluding their paper, they asserted that the t-test and MWW generally have similar

power, and researchers do not have to worry about finding a difference whilst there is none in the population.

On the basis of above studies and claims, the researcher in the present study decided to use both: t-test as well as Mann-Whitney-Wilcoxon test. However, the researcher wants to defend a probable issue of using non-probability sampling. Probability sampling is usually preferred to enhance the generalizability of the results and overcoming any expected biasness. But for using probability sampling, the first prerequisite is the population size, based upon which further sampling process is drawn. The researcher tried but was not able to estimate the population, thus moved to the non-probability sampling.

3.8.2 Techniques for Qualitative Data Analysis

The qualitative data collected through the documents and notices of the University Grants Commission, the interview of the current as well as old research scholars and the educational administrators and the policymakers was analyzed manually using the method of Qualitative Content Analysis. Qualitative content analysis is a technique for the investigation of qualitative data. It focuses on the subject and meaning and illustrates distinction, e.g., similarities within and discrepancies between sections of the text. It provides the ability to examine manifest and descriptive content as well as latent and interpretative content (Graneheim & Lundman, 2004). The rationale for selecting this particular method lies in the nature of study the researcher wants to conduct. Here, the researcher aims at examining meanings of the contents for understanding the concepts and processes regarding the fellowship scheme so as to become efficient at evaluating the scheme. The intent was not only to comprehend the meaning of the words as they seem to convey, but also to examine the manifest or hidden meaning.

The process of coding is to be adopted or not was the next question that challenged the researcher. (Saldana, 2013) argued that rather than any purported theorist or dedicated methodologist, the researcher themself should decide whether or not coding is suitable for their study. The researcher found that it is the responsibility of a realist evaluator to consider “how, why, for whom, and under which conditions” interventions function (Pawson & Tilley, 1997). Incorporating theory into the study, realist evaluations seek to be realistic by generating policy-

relevant results at a level of abstraction that can be transferred through settings (A. Fletcher et al., 2016; Salter & Kothari, 2014). Facilitating this, the context-mechanism-outcome configuration is central to research and the theory building/refining phase for realist studies (Power et al., 2019). Coding is the technique that facilitates this context-mechanism-outcome configuration, and hence the researcher has moved on to use the coding techniques for qualitative analysis.

Choosing the Coding Process

The critical realism is a quest for causation that helps the researcher to understand and explain social phenomena and suggest realistic policy recommendations to tackle social problems. Analysis in critical realism essentially depends on a technique called retroduction. All social structures possess both causal powers and liabilities. These are potentialities innate in an entity or structure that enable or constrain it from acting in certain ways (Psillos, 2007). In keeping with the ontology of critical realism, the researcher started the analysis of data by looking for 'demi-regularities' at the empirical level of reality. While critical realism recognizes that social meanings , thoughts, and decisions may have causal effects on the world, these social artefacts do not obey the conception of causal law and the deterministic regularity of Humean constant conjunction (A. J. Fletcher, 2017). Simple prediction in terms of 'event x followed by event y' is not possible in the domain of social sciences as the social world consists of open structures, in which any number of occurrences and events can overlap and interact in which people can learn and adapt (Brown et al., 2002; Danermark et al., 2002). As such, critical realism looks for tendencies, not laws (Danermark et al., 2002). These tendencies are what critical realists claim as demi-regularities that can be effectively identified through qualitative data coding. Thus, qualitative data coding was adopted in the present research.

The dearth of literature on applied critical realism methods prompted a coding challenge. Even in literature, qualitative data processing approaches have been loosely described, such as "intensive grounding process in which concepts emerged" (Yeung, 1997). Some critical realists have employed a grounded theory approach for data coding and analysis. However, grounded theory in its pure form is not ideal for critical realist studies due to two major reasons (A. J. Fletcher, 2017). First,

the two approaches engage with existing theory in very different ways. However, in the present study, no existing theory was found so this conflict was overlooked by the researcher. Secondly, the inferential processes associated with grounded theory are inductive whereas the critical realism uses abduction and retroduction. However, Oliver argued that due to recent developments in grounded theory such as Charmaz's 'sensitizing concepts,' (Charmaz, 2006) grounded theory is 'capable of handling the preconceived analytical categories' valued by critical realists (Oliver, 2012).

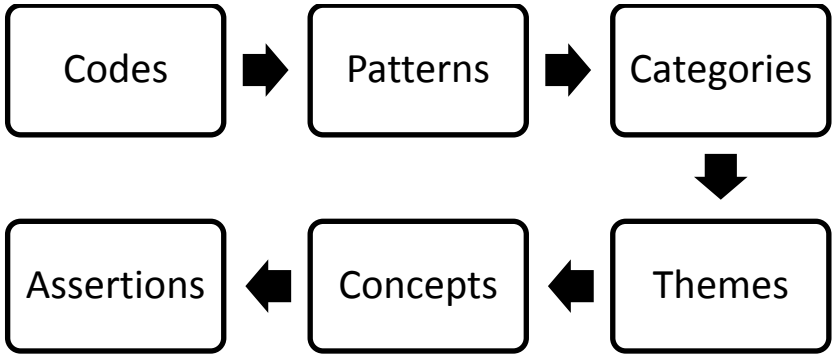
The abductive approach, also called complementary (Blackstone, 2012), combined (Elo & Kyngas, 2008), retroductive (Sayer, 1992), or fuzzy logic (Rolfe, 1997) was used for detecting hidden causal forces that lie behind known trends or shifts in patterns. The researcher has created a set of initial code structure consisting of codes and their properties. Each time, after coding 3 transcripts, the code structure was negotiated and revised. After the termination of the process of conducting interviews and document analysis, final code structure was created and applied to all the interview subtitles and documents.

The next major choice to be made was among the lumper coding or splitter coding. The researcher opted for splitter coding. Splitter is one who splits the data into smaller codable moments (Bernard, 2011, p. 379). Charmaz also advises that detailed line-by-line coding promotes a more trustworthy analysis that "reduces the likelihood of imputing your motives, fears, or unresolved personal issues to check your respondents and to your collected data" (Charmaz, 2008, p. 94).

In this study, some codes and categories were pre-defined before starting the coding process. The researcher has gone through the subtitles that were created manually and verified by the participants as illustrated in 3.7.2 Procedure of Qualitative Data Collection. These subtitles were read by the researcher twice without any pre-conceived notion to get familiar with the text and identifying the meaning as it was intended to convey. Then, the subtitle was coded line-by-line using splitter coding technique, according to the code and category structure at hand. The necessary modifications to the code structure were made after the coding of every 3 new subtitles. Also, analytical memos were jotted after coding every subtitle. After coding all the subtitles and documents in such a way, the final code structure was created and again all the subtitles and documents were once again recoded according to the final code structure. Through these codes, patterns were identified, and

codes were categorized. After the identification of patterns and categorization, themes were identified, on the basis of which the concepts have been forwarded that in turn, were used to make specific assertions. Figure 3.2 epitomizes the schema of analytical process used for analyzing qualitative data in this study.

Figure 3.2: Employed Process of Qualitative Data Analysis



Lastly, it was to be decided whether the researcher would like to share the codebook and analytic memos. On the line of argument forwarded by Constas that the researcher should just acknowledge that the long time and rigorous effort they put into, and joyous personal analytic growth they experience through, coding and analytic memo writing are private affairs between the researcher and their data (Constas, 1992), and carried forward by Saldana, "When you invite important guests to your home for dinner, you do not ask them to appear two or three hours before the scheduled serving time to watch you cook in the kitchen. They arrive just before the meal to feast on and enjoy what you have worked so hard to prepare" (Saldana, 2013, p. 38), the researcher has decided not to share the codebook and analytic memos, however, the themes, sub-themes, categories, and processed codes along with the detailed process have been discussed in Chapter 4.

Chapter 4

Data Description, Analysis and Interpretation

Chapter 4 : Data Description, Analysis and Interpretation

This chapter deals with the analysis of the data gathered through survey and interview and interpretation of the data. The analysis and interpretation of the data is a crucial part of any research, as at this point, the researcher has to overcome some sort of biases and have to present the findings in a way that they can be comprehended by others easily. The present study deals with quantitative as well as quantitative data and the results are outlined in this chapter. The research question to which the researcher is seeking to answer is stated as:

"How different aspects of the Junior Research Fellowship scheme provided in the disciplinary areas of humanities and social sciences work, for whom, and in what context?"

The researcher has also connected the analysis to the research question and demonstrated consistency with the methodology adopted for conducting the analysis. The chapter has been divided in several sections. The chapter would be divided as under:

4.1 Description and Analysis of Data Collected through Survey

4.2 Analysis of Data Collected through Interviews and Documents

4.3 Programme Theories

4.4 Summary of Findings

4.1 Description and Analysis of Data Collected through Survey

The quantitative and qualitative data was collected through survey from 240 respondents using mixed questionnaire (annexed in Appendix 1) in online mode. The researcher was constantly engaged in observing and screening responses throughout the process of data collection. The researcher has removed the responses which were partially filled or were duplicated. Also, the responses were categorically counted, so as to maintain the balance between the responses received by the JRFs and non-JRF scholars. The data collection was started on 01 March 2020 and was continued till 15 November 2020. The responses received at the end were encoded and analysis was carried out. The description and analysis of this dataset is discussed here in detail.

The first section of the questionnaire was regarding the demographic distribution of the sample, which was intended to know the distribution of the sample and to ease the participants. The data collected through the first three items of the questionnaire, regarding gender, region, and the marital status, are tabulated below in Tables 4.1, 4.2, and 4.3, respectively.

Table 4.1: Gender Distribution of Participants

Gender	JRF Qualified		Total
	Yes	No	(Percent)
Male	83	82	165 (68.75)
Female	37	38	75 (31.25)
Total (Total)	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.1 can also be represented graphically as shown below in Figure 4.1.

Figure 4.1: Gender Distribution

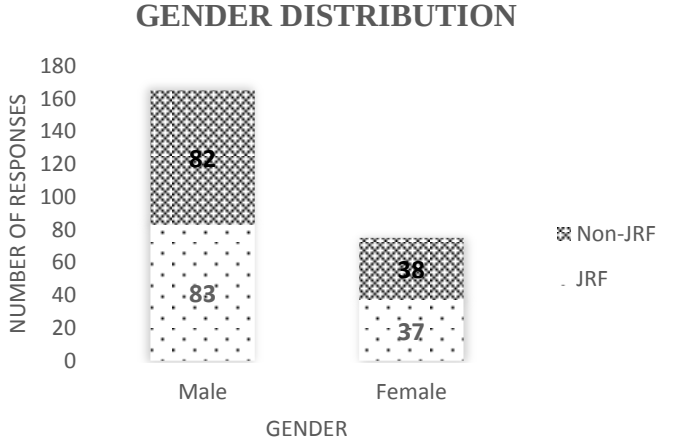


Table 4.1 as well as Figure 4.1 depict that this study group consisted of 165 males, of which 82 were not availing or availed JRF and 83 were either availing or availed the JRF scheme, and 75 females, of which 37 were availing or have availed the JRF and 38 were not availing or availed the benefits of JRF scheme.

Table 4.2: Region Distribution

Gender	JRF Qualified		Total
	Yes	No	(Percent)
Rural	44	55	99

			(41.25)
Urban	76	65	141 (58.75)
Total	120	120	240
(Percent)	(50.00)	(50.00)	(100)

The data tabulated above in Table 4.2 can also be represented graphically as shown below in Figure 4.2.

Figure 4.2: Region Distribution

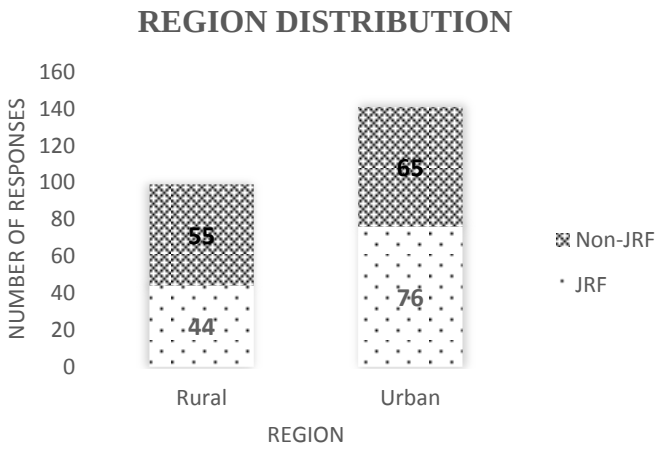


Table 4.2 reveals that 44 of JRF respondents and 55 of non-JRF respondents in this study were from rural regions and 76 of JRF respondents and 65 of non-JRF respondents belong to urban regions.

Table 4.3: Distribution of Marital Status

Marital Status	**JRF Qualified**		**Total (Percent)**
	Yes	**No**	
Married	48	44	92 (38.33)
Unmarried	71	76	147 (61.25)
Others	1	0	1 (0.42)
Total	120	120	240
(Percent)	(50.00)	(50.00)	(100)

The data tabulated in Table 4.3 can also be represented graphically as shown below in Figure 4.3.

Figure 4.3: Distribution of Marital Status

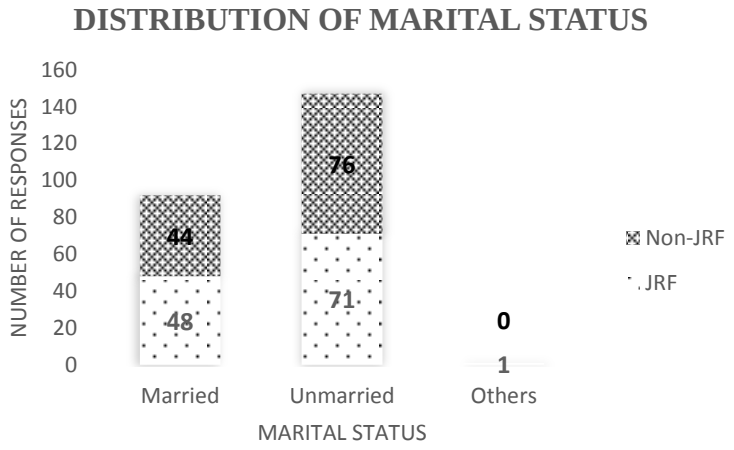


Table 4.3 implies that 48 JRF holders and 44 non-JRFs who are married, 71 JRFs and 76 non JRFs who are unmarried and 1 JRF holder with others status were included in this study.

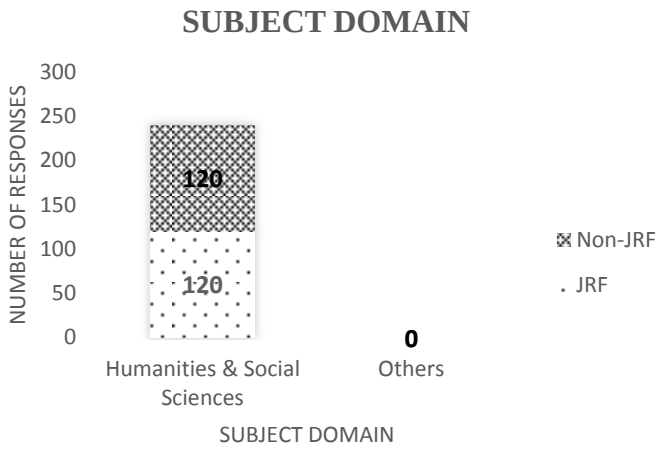
Fourth item was a branching question for cross-checking that whether the respondent belongs to the sample of this study or not, on the basis of whether UGC provides the fellowship in their subject domain. The received data are tabulated below in Table 4.4.

Table 4.4: Subject Domain

Subject Domain	**JRF Qualified**		**Total (Percent)**
	Yes	**No**	
Humanities & Social Sciences	120	120	240 (100.00)
Others	0	0	0 (0.00)
Total (Percent)	120 (50.00)	120 (50.00)	240 (100)

The data represented in Table 4.4 can also be shown graphically as in Figure 4.4.

Figure 4.4: Subject Domain



The data represented in Table 4.4 and Figure 4.4 indicates that all the respondents of the questionnaire are studying subjects which belongs to either humanities or social sciences.

Second section of the questionnaire consists of 21 items regarding the academic background, research activities carried by, research outputs, self-ratings of the participants, and others. The data description and analysis for this section of the questionnaire are discussed hereon.

The fifth item of the questionnaire is an open-ended question regarding year of completion of their PhD thesis. The received data are tabulated below in Table 4.5Table 4.5.

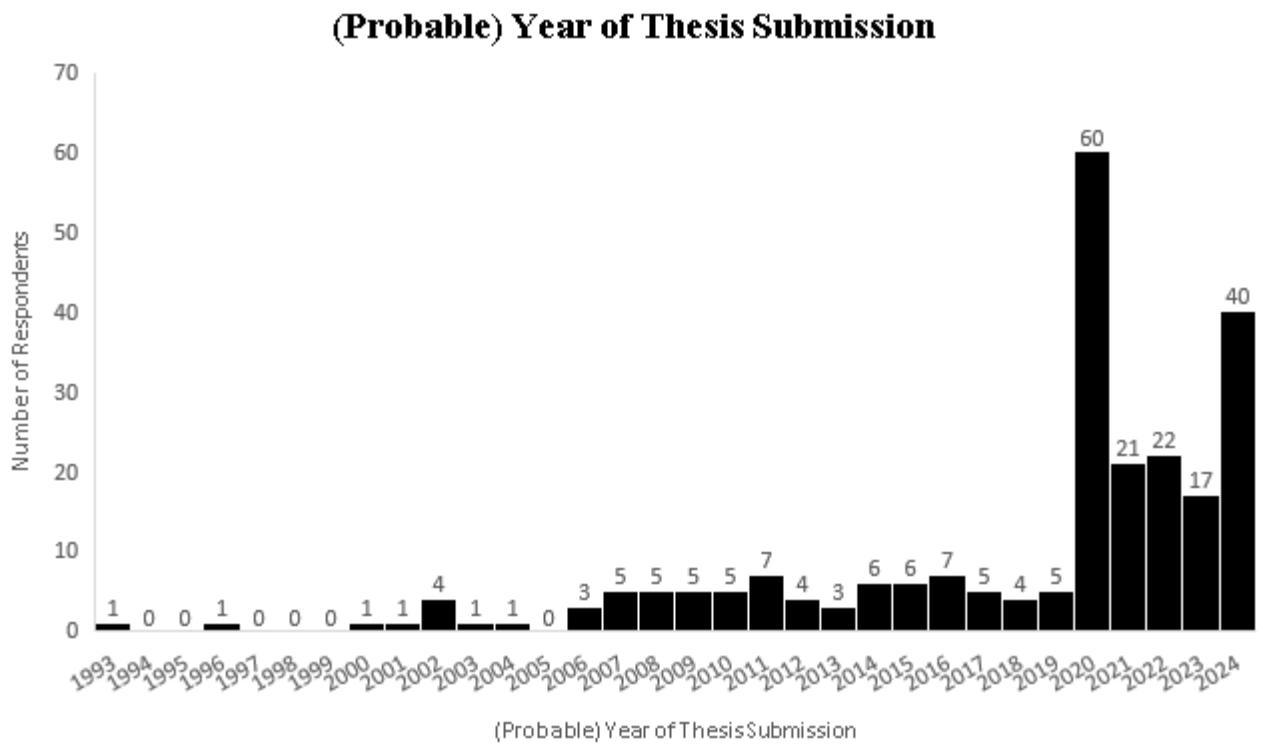
Table 4.5: (Probable) Year of Thesis Submission

Year of Thesis Submission	Frequency	Percentage	Cumulative Percentage
1993	1	0.42	0.42
1996	1	0.42	0.83
2000	1	0.42	1.25
2001	1	0.42	1.67
2002	4	1.67	3.33
2003	1	0.42	3.75
2004	1	0.42	4.17
2006	3	1.25	5.42
2007	5	2.08	7.50
2008	5	2.08	9.58
2009	5	2.08	11.67
2010	5	2.08	13.75
2011	7	2.92	16.67

2012	4	1.67	18.33
2013	3	1.25	19.58
2014	6	2.50	22.08
2015	6	2.50	24.58
2016	7	2.92	27.50
2017	5	2.08	29.58
2018	4	1.67	31.25
2019	5	2.08	33.33
2020	60	25.00	58.33
2021	21	8.75	67.08
2022	22	9.17	76.25
2023	17	7.08	83.33
2024	40	16.67	100.00
Total	240	100	

The data represented in Table 4.5 can also be shown graphically as in Figure 4.5.

Figure 4.5: (Probable) Year of Thesis Submission



The data represented in Table 4.5 and Figure 4.5 indicates the distribution of respondents on the basis of year in which they have submitted their thesis. To understand the distribution of the respondents more clearly and for the purpose of comparison between those who are receiving/have

received the fellowship and those who do not, the Table 4.5 and Figure 4.5 can also be illustrated as shown below in Table 4.6 and Figure 4.6.

Table 4.6: (Probable) Year of Thesis Submission (Comparative)

Year of Thesis Submission	JRF Qualified		Total
	No	Yes	
1993	0	1	1
1996	0	1	1
2000	1	0	1
2001	1	0	1
2002	2	2	4
2003	0	1	1
2004	1	0	1
2006	1	2	3
2007	3	2	5
2008	3	2	5
2009	4	1	5
2010	0	5	5
2011	4	3	7
2012	1	3	4
2013	0	3	3
2014	4	2	6
2015	4	2	6
2016	3	4	7
2017	3	2	5
2018	3	1	4
2019	2	3	5
2020	30	30	60
2021	7	14	21
2022	13	9	22
2023	10	7	17
2024	20	20	40
Total	120	120	240

The data represented in Table 4.6 can also be shown graphically as in Figure 4.6.

Figure 4.6: (Probable) Year of Thesis Submission (Comparative)

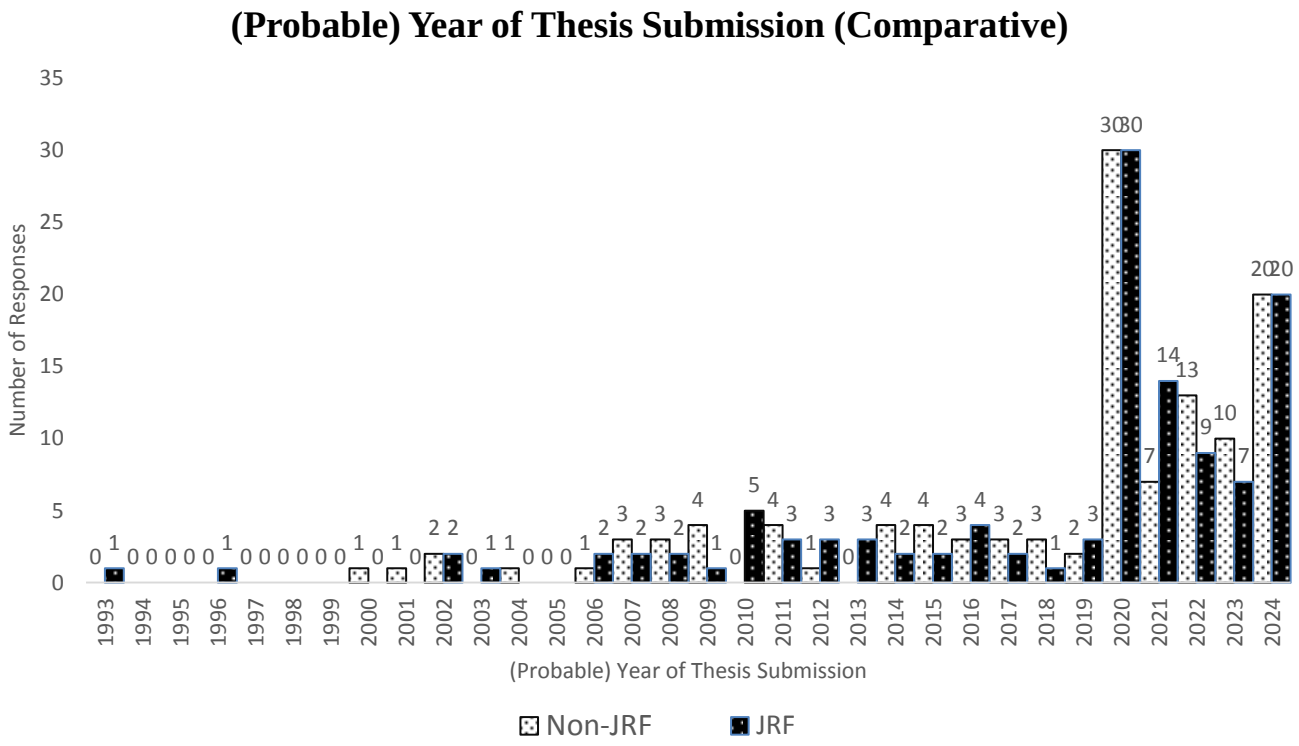


Table 4.6 along with Figure 4.6 shows the distribution of JRF holders and non JRF holders along the timeline of thesis submission. Now, the year of thesis submission has been grouped as discussed in Chapter 3 into 5 subgroups: Subgroup 1 (2024), Subgroup 2 (2021-2023), Subgroup 3 (2020), Subgroup 4 (2012-2019), Subgroup 5 (2011 and before). The rationale behind such a grouping is that each of this subgroup has different power for drawing different conclusions. For instance, we cannot rely on the data of any group other than subgroup 5 for drawing any inferences of impact, we cannot judge the outcomes through any group other than subgroup 4, and so on. The data regarding year of thesis submission on the basis of these subgroups are tabulated below in Table 4.7.

Table 4.7: Frequency Distribution of Subgroups (Comparative)

Subgroup	JRF Qualified		Total
	No	Yes	
1	20	20	40
2	30	30	60
3	30	30	60
4	20	20	40
5	20	20	40
Total	120	120	240

The data represented in Table 4.7Table 4.7 can also be shown graphically as in Figure 4.7.

Figure 4.7: Frequency Distribution of Subgroups (Comparative)

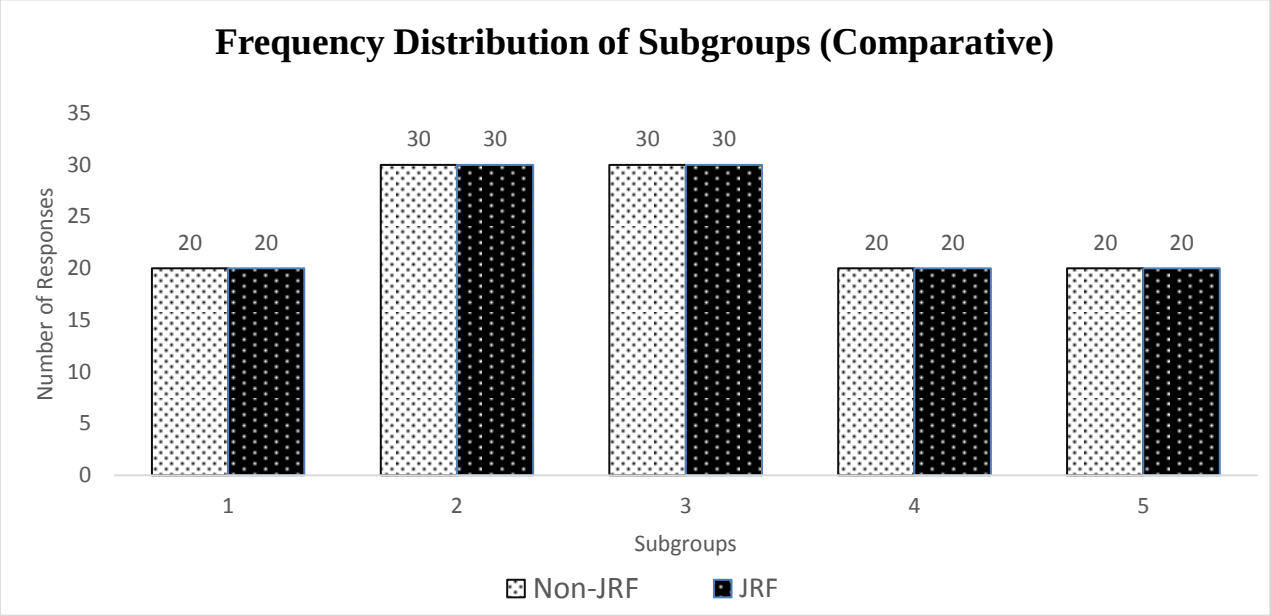


Table 4.7 and Figure 4.7 indicated that the sample consists of the Subgroup 1 having 20 non-JRFs and 20 JRFs, Subgroup 2 comprising of 30 non-JRFs and 30 JRFs, Subgroup3 consists of 30 non-JRFs and 30 JRFs, Subgroup 4 comprising of 20 non-JRFs and 20 JRFs, and Subgroup 5 that consists of 20 non-JRFs and 20 JRFs.

The researcher has applied independent sample t-test and Mann-Whitney U Test for comparing the mean and median years of thesis submission by the non-JRFs and JRFs taken into the study and lying-in sub-groups 2, 4, and 5 based upon the year of thesis submission. Since the subgroups 1 and 3 comprise of a single year, there is no difference in year of thesis submission between the non JRFs and JRFs. For subgroups 2, 4 and 5, the null and alternative hypotheses for each of these subgroups are as given below:

Hypotheses for t test:

H_0: There is no significant difference between the mean years in which non-JRFs and JRFs have submitted their thesis.

H_a: There is a significant difference between the mean years in which non-JRFs and JRFs have submitted their thesis.

Hypotheses for Mann-Whitney U Test:

H_0: There is no significant difference between the median years in which non-JRFs and JRFs have submitted their thesis.

H_a: There is a significant difference between the median years in which non-JRFs and JRFs have submitted their thesis.

The results of the tests for subgroup 2 are tabulated below in Table 4.8, Table 4.9, Table 4.10 and Table 4.11. The results of the tests for subgroup 4 are tabulated below in Table 4.12, Table 4.13, Table 4.14 and Table 4.15. The results of the tests for subgroup 5 are tabulated below in Table 4.16, Table 4.17, Table 4.18 and Table 4.19.

The results of the t-test for subgroup 2 are tabulated below in Table 4.8 and Table 4.9.

Table 4.8: Group Statistics for Subgroup 2

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Year of Thesis Submission	No	30	2022.10	0.76	0.14
	Yes	30	2021.77	0.82	0.15

Table 4.9: Independent Samples t-Test for Subgroup 2

		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Year of Thesis Submission	Equal Variances Assumed	1.17	0.283	1.64	58.00	0.107	0.33	0.20	-0.07	0.74
	Equal Variances Not Assumed			1.64	57.68	0.107	0.33	0.20	-0.07	0.74

From the interpretation of Levene's test as shown in Table 4.9, it is observed that the samples were having equal variances, since the probability (*Sig.* = 0.283) for the *F* value = 1.17 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of t-test indicate

that there is no statistically significant difference in the year of thesis submission between non-JRFs and JRFs, t (58) = 1.64, p = 0.107. That is, the average year of thesis submission by JRFs (M = 2022.10, SD = 0.76) is not significantly different from the average year of thesis submission by non-JRFs (M = 2021.77, SD = 0.82).

Similarly, the results of Mann-Whitney U test for subgroup 2 are tabulated below in Table 4.10 and Table 4.11.

Table 4.10: Ranks for Subgroup 2

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Year of Thesis Submission	30	30	60	33.98	27.02	1019.50	810.50

Table 4.11: U-Test Statistics for Subgroup 2

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Length of PhD	345.50	810.50	-1.64	0.101

The year of thesis submission by the non-JRFs (Mdn = 2022) is same as the year of thesis submission by the JRFs (Mdn = 2022). Mann-Whitney U test result (Table 4.11) also showed that there is no statistically significant difference (U = 345.50, z = -1.64, p = 0.101 > 0.05) for subgroup 2.

The results of the t-test for subgroup 4 are tabulated below in Table 4.12 and Table 4.13.

Table 4.12: Group Statistics for Subgroup 4

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Year of Thesis Submission	No	20	2015.95	1.90	0.43
	Yes	20	2015.30	2.39	0.53

Table 4.13: Independent Samples t-Test for Subgroup 4

	Levene's Test for Equality of Variances		**t-test for Equality of Means**						
	F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
								Lower	*Upper*

Year of Thesis Submission	Equal Variances Assumed	1.54	0.222	0.95	38.00	0.347	0.65	0.68	-0.73	2.03
	Equal Variances Not Assumed			0.95	36.22	0.347	0.65	0.68	-0.73	2.03

From the interpretation of Levene's test as shown in Table 4.13, it is observed that the samples were having equal variances, since the probability (*Sig*. = 0.222) for the *F* value = 1.54 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the year of thesis submission between non-JRFs and JRFs, t (38) = 0.95, p = 0.347. That is, the average year of thesis submission by JRFs (M = 2015.30, SD = 2.39) is not significantly different from the average year of thesis submission by non-JRFs (M = 2015.95, SD = 1.90).

Similarly, the results of Mann-Whitney U test for subgroup 4 are tabulated below in Table 4.14 and Table 4.15.

Table 4.14: Ranks for Subgroup 4

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Year of Thesis Submission	20	20	40	22.15	18.85	443.00	377.00

Table 4.15: U-Test Statistics for Subgroup 4

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Year of Thesis Submission	167.00	377.00	-0.90	0.368

The year of thesis submission by the non-JRFs (Mdn = 2016) is same as the year of thesis submission by the JRFs (Mdn = 2016). Mann-Whitney U test result (Table 4.15) also showed that there is no statistically significant difference (U = 167.00, z = -0.90, p = 0.368 > 0.05) for subgroup 4 comprising of the scholars who have submitted their thesis in any of the years from 2012 to 2019.

For subgroup 5, the results of the t-test are tabulated below in Table 4.16 and Table 4.17.

Table 4.16: Group Statistics for Subgroup 5

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Year of Thesis Submission	No	20	2007.00	3.46	0.77
	Yes	20	2006.50	5.02	1.12

Table 4.17: Independent Samples t-Test for Subgroup 5

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Year of Thesis Submission	Equal Variances Assumed	1.50	0.229	0.37	38.00	0.716	0.50	1.36	-2.26	3.26
	Equal Variances Not Assumed			0.37	33.75	0.716	0.50	1.36	-2.27	3.27

From the interpretation of Levene's test as shown in Table 4.17, it is observed that the samples were having equal variances, since the probability (*Sig*. = 0.229) for the *F* value = 1.50 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the year of thesis submission between non-JRFs and JRFs, t (38) = 0.37, p = 0.716. That is, the average year of thesis submission by JRFs (M = 2006.50, SD = 5.02) is not significantly different from the average year of thesis submission by non-JRFs (M = 2007.00, SD = 3.46).

Similarly, the results of Mann-Whitney U test for subgroup 5 are tabulated below in Table 4.18 and Table 4.19.

Table 4.18: Ranks for Subgroup 5

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	Yes	Total	No	Yes	No	Yes
Year of Thesis Submission	20	20	40	20.25	20.75	405.00	415.00

Table 4.19: U-Test Statistics for Subgroup 5

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Year of Thesis Submission	195.00	405.00	-0.14	0.892

The year of thesis submission by the non-JRFs (*Mdn* = 2008) is same as the year of thesis submission by the JRFs (*Mdn* = 2008). Mann-Whitney U test result (Table 4.19) also showed that there is no statistically significant difference ($U = 164.00$, $z = -0.98$, $p = 0.326 > 0.05$) in the median years of thesis submission by non-JRFs and JRFs for subgroup 5 comprising of the scholars who have submitted their thesis in any year before 2012.

In the light of above analysis, the homogeneity of the samples was confirmed, and the sample was found fit for further analysis.

The next i.e., sixth item of the questionnaire deals with the time taken to complete the PhD. The synthesized account of time taken to complete PhD by each respondent can be given as shown below in Table 4.20.

Table 4.20: Length of PhD

Length of PhD	JRF Qualified		Total
	No	Yes	
NaN*	50	50	100
3.00	8	5	13
3.25	7	5	12
3.50	14	6	20
3.75	11	10	21
4.00	13	15	28
4.25	8	12	20
4.50	4	9	13
4.75	4	5	9
5.00	1	3	4
Total	120	120	240

* Number of responding participants who are still writing their theses.

The data represented in Table 4.20 can also be represented graphically as in Figure 4.8.

Figure 4.8: Length of PhD

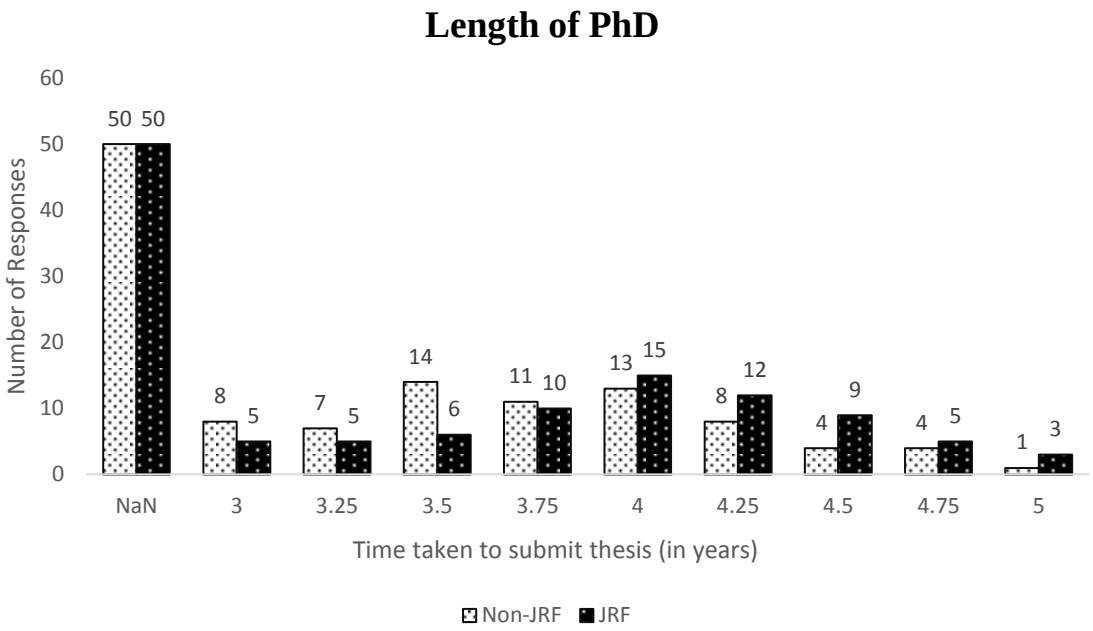


Table 4.20 and Figure 4.8 illustrates the time taken by the non-JRF and JRF holders to submit their thesis. The descriptive statistics related to this item were also calculated and are tabulated below in Table 4.21.

Table 4.21: Descriptive Statistics Regarding Length of PhD

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	70	70	140
N (Missing)	50	50	100
Mean	3.79	4.00	3.89
Mode	3.50	4.00	4.00
Standard Deviation	0.51	0.52	0.52
Skewness	0.29	- 0.17	0.06
S.E. Skewness	0.29	0.29	0.20
Kurtosis	- 0.53	- 0.53	- 0.68
S.E. Kurtosis	0.57	0.57	0.41
Minimum	3.00	3.00	3.00
Maximum	5.00	5.00	5.00
Range	2.00	2.00	2.00
Median	3.75	4.00	4.00

Table 4.21 suggests that the mean time taken by the participants, the JRFs only, and non-JRFs only to submit their thesis are 3.89 years (*SD* = 0.52), 4.00 years (*SD* = 0.52), and 3.79 years (*SD* = 0.51), respectively. The time taken by all the respondents to submit their thesis ranged from 3.00 to

5.00 years (*M* = 3.89, *SD* = 0.52), distributed with skewness of 0.06 (*SE* = 0.20) and kurtosis of –0.68 (*SE* = 0.41). The time taken by JRFs to submit their thesis ranged from 3.00 to 5.00 years (*M* = 4.00, *SD* = 0.52), distributed with skewness of –0.17 (*SE* = 0.29) and kurtosis of – 0.53 (*SE* =0.57). While the time taken by non-JRFs to submit their thesis ranged from 3.00 to 5.00 years (*M* = 3.79, *SD* = 0.51), distributed with skewness of 0.29 (*SE* = 0.29) and kurtosis of – 0.53 (*SE* =0.57).

Observing the above data and analysis, there seems to be some difference in the means and medians of the time taken by the non-JRFs and JRFs to submit their thesis. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. Rationale for using these tests has already been discussed in detail in Chapter 3. The results of the two tests are discussed below.

For conducting t-test, the hypothesis formed is stated as:

H_0: There is no significant difference between the mean time taken by non-JRFs and JRFs to submit their thesis.

H_a: There is a significant difference between the mean time taken by non-JRFs and JRFs to submit their thesis.

The results of the t test are tabulated below in Table 4.22 and Table 4.23.

Table 4.22: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Length of PhD	No	70	3.79	0.51	0.06
	Yes	70	4.00	0.52	0.06

Table 4.23: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Length of PhD	Equal Variances Assumed	0.01	0.922	-2.47	138.00	0.015	-0.21	0.09	-0.39	-0.04

Equal Variances Not Assumed		-2.47	137.88	0.015	-0.21	0.09	-0.39	-0.04

As shown in Table 4.23, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.922) for the *F* value = 0.01 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is a significant difference in the length of the PhD between non-JRFs and JRFs, t (138) = -2.47, p = 0.015. That is, the average time taken by JRFs for submitting their thesis (M = 4.00, SD = 0.052) is significantly greater than the average time taken by the non-JRFs for submitting their thesis (M = 3.79, SD = 0.51).

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median time taken by non-JRFs and JRFs to submit their thesis.

H_a: There is a significant difference between the median time taken by non-JRFs and JRFs to submit their thesis.

The results of the Mann-Whitney U test are tabulated below in Table 4.24 and Table 4.25.

Table 4.24: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Length of PhD	70	70	140	61.98	79.02	4338.50	5531.50

Table 4.25: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Length of PhD	1853.50	4338.50	-2.51	0.012

A Mann-Whitney U Test shows that there is a significant difference (U = 1853.50, Z = -2.51, p = 0.012) between the time taken to submit the thesis for the non-JRFs as compared to JRFs. The median time taken by the non-JRFs to submit the thesis (*Mdn* = 3.75 years) compared to median time

taken by JRFs (*Mdn* = 4.00 years) is suggesting that the JRF scheme is helping the scholars in devoting more time duration for their research.

Now, the seventh item of the questionnaire deals with the type of institution from where the respondents have completed their master's degree. The data helps us to know how the sample was distributed over different classes of institutions. The data has been tabulated as shown below in Table 4.26.

Table 4.26: Types of Post-Graduation Institutions

Type of Institution	**JRF Qualified**		**Total (Percent)**
	No	**Yes**	
Central University	32	33	65 (27.08)
State University	46	44	90 (37.50)
Private University	24	22	46 (19.17)
Deemed-to-be-University	5	6	11 (4.58)
Government Aided College	6	8	14 (5.83)
Private College	6	6	12 (5.00)
Open University	1	1	2 (0.83)
Total (Percent)	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.26 can also be represented as shown below in Figure 4.7.

Figure 4.9: Types of Post-Graduation Institutions

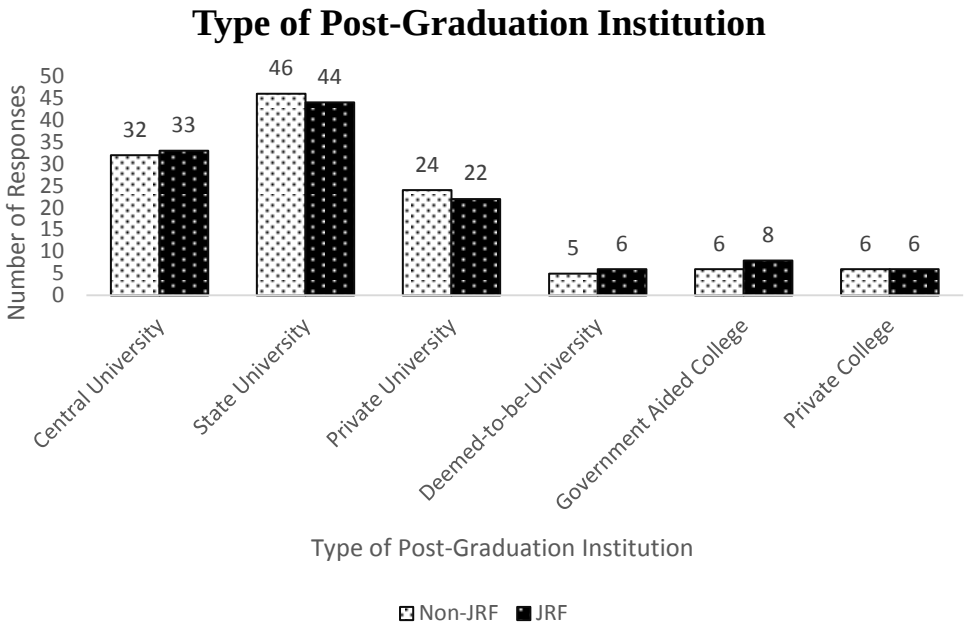


Table 4.26 along with Figure 4.9 illustrates that the reachability of the JRF scheme is not limited to any particular institution or a group of institution. However, the absence of any response from the Institution of National Importance is due to non-random sampling.

Eighth item of the questionnaire is related to the type of PhD institutions where the respondents are conducting or have conducted their research. The data helps us to know how the sample was distributed over different classes of institutions. The received responses are tabulated in Table 4.27 below.

Table 4.27: Types of PhD Institutions

Type of PhD Institution	**JRF Qualified**		**Total (Percent)**
	No	**Yes**	
Institutions of National Importance	3	11	14 (5.83)
Central University	41	57	98 (40.83)
State University	46	39	85 (35.42)
Private University	30	13	43 (17.92)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.27 can also be represented as shown below in Figure 4.10.

Figure 4.10: Types of PhD Institutions

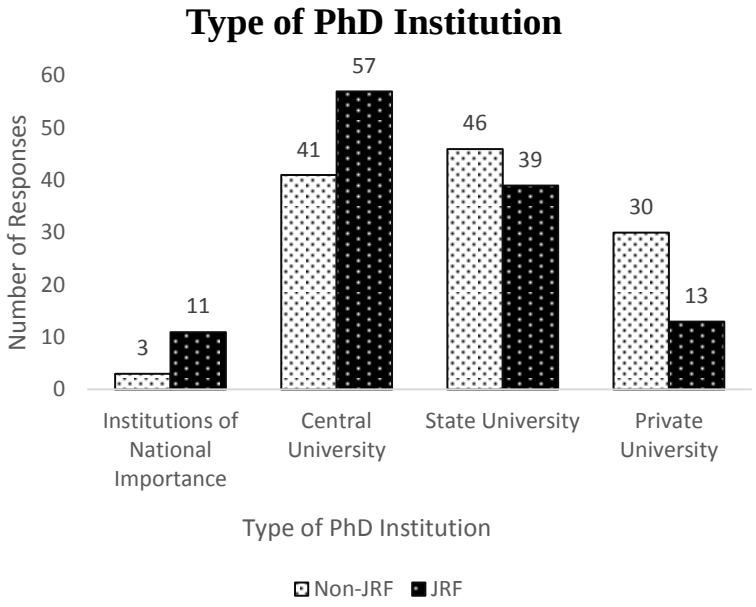


Table 4.27 along with Figure 4.10 shows that responders included in this study are pursuing or have pursued their PhD from the most common type of institutions i.e., central university, state universities or private universities. Only a small representation from the Institutions of National Importance (3 non-JRFs and 11 JRFs) have been included in the present study. Such small numbers from the Institutes of National Importance are due to the lack of social science and humanities departments in these premiere institutions. Also, it was interesting to find out the association between the availing of JRF and the type of institutions. The chi test was performed to find the relevance of this association. The null and alternative hypotheses for the Chi-Square Test of Association are stated as below:

H_0: There is no association between JRF qualification and the PhD institution.

H_a: There is an association between JRF qualification and the PhD institutions.

The results of the Chi-Square Test are tabulated below in Table 4.28 and Table 4.29.

Table 4.28: Crosstab Distribution

Type of PhD Institution	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	

Institutions of National Importance	3 (1.25)	11 (4.58)	14 (5.83)
Central University	41 (17.08)	57 (23.75)	98 (40.83)
State University	46 (19.17)	39 (16.25)	85 (35.42)
Private University	30 (12.50)	13 (5.42)	43 (17.92)
Total	120 (50.00)	120 (50.00)	240 (100)

Table 4.29: Chi-Square Tests

Statistic	Value	df	Asymp. Sig. (2-tailed)
Pearson Chi-Square	14.48	3	0.002
Likelihood Ratio	14.97	3	0.002
Linear-by-Linear Association	14.21	1	0.000
N of Valid Cases	240		

Since the assumptions of Chi-Square test that are: (a) Individual observations are independent of each other, and (b) Expected cell frequencies are not too small are met. Thus, the results of Pearson Chi-Square Statistic from Table 4.29 have been used to interpret the results. The Chi-Square Test showed that there is a significant association between JRF qualification and the type of PhD institution, X^2 (3, N = 240) = 14.48, p = 0.002.

Ninth item of the questionnaire deals with the nature of occupation of the responding participants. The data has been tabulated as shown below in Table 4.30.

Table 4.30: Nature of Occupation

Nature of Occupation	JRF Qualified		Total (Percent)
	No	Yes	
Academic (Higher Education)	31	26	57 (23.75)
Research Oriented	1	7	8 (3.33)
Other Discipline Oriented	7	5	12 (5.00)

Other Non-Academic Non-Discipline Oriented	8	5	13 (5.42)
Research Scholar	73	77	150 (62.50)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.30 can also be represented as shown below in Figure 4.11.

Figure 4.11: Nature of Occupation

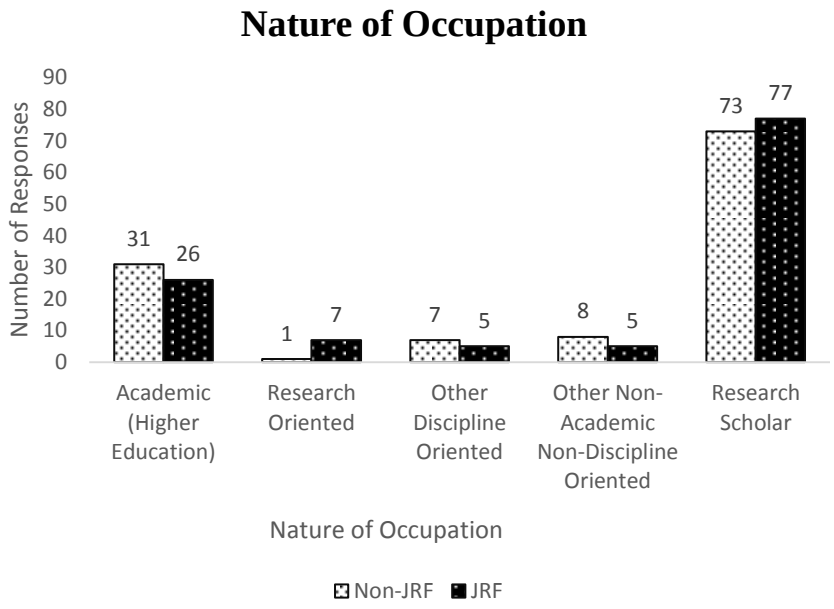


Table 4.32 along with Figure 4.11 shows the distribution of respondents' occupation and reveals that majority of the responding non-JRFs as well as JRFs are pursuing PhD followed by the academic fields that comprise of the teachers at the institutions of higher education. It seems that the majority of the JRF fellows as well as non-JRF scholars opt to go for academic positions in comparison to other career areas. Research-oriented careers are seemingly selected by more of the JRF holders as compared to non-JRF fellows.

The tenth item of the questionnaire enquires about the participation in research-oriented events such as seminars, workshops, conferences, symposiums, and others. Although, the responses were recorded in discrete numbers. But, for the sake of representation, the responses were later grouped into classes. The recorded responses can be tabulated as shown below in Table 4.31.

Table 4.31: Participation in Research-Oriented Events

Participation	JRF Qualified		Total (Percent)
	No	Yes	
0 to 4	70	68	138 (57.50)
5 to 9	14	16	30 (12.50)
10 to 14	12	10	22 (9.17)
15 to 19	9	13	22 (9.17)
20 to 24	15	5	20 (8.33)
25 to 29	0	5	5 (2.08)
30 to 34	0	3	3 (1.25)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.31 can also be represented as shown below in Figure 4.12.

Figure 4.12: Participation in Research-Oriented Events

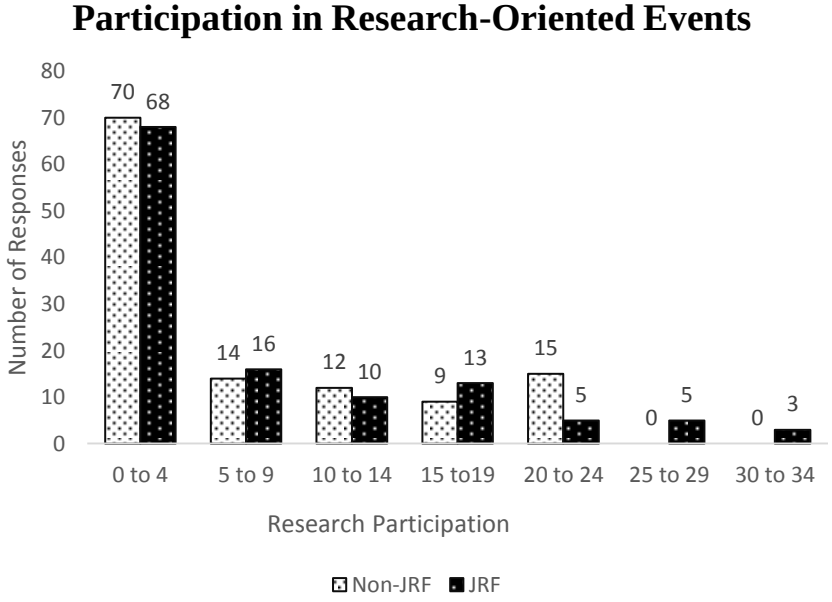


Table 4.31 along with Figure 4.12 describes the group-wise distribution of the participation of JRFs as well as non-JRFs in research-oriented events. The absence of responses from non-JRFs at the right end suggests the difference in the groups.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.32 as shown below.

Table 4.32: Descriptive Statistics Regarding Participation in Research-Oriented Events

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	120	120	240
Mean	7.22	7.76	7.49
SE Mean	0.68	0.78	0.52
Mode	2	1	2
Standard Deviation	7.47	8.54	8.01
Skewness	1.04	1.37	1.25
S.E. Skewness	0.22	0.22	0.16
Kurtosis	- 0.34	1.06	0.63
S.E. Kurtosis	0.44	0.44	0.31
Minimum	0	0	0
Maximum	24	34	34
Range	24	34	34
Median	3	4	4

Table 4.32 suggests that the mean research participation for the non-JRFs only, JRFs only and all the participants are 7.22 (*SE* = 0.68, *SD* = 7.47), 7.76 (*SE* = 0.78, *SD* = 8.54), and 7.49 (SE = 0.52, *SD* = 8.01), respectively. The number of participated events by non-JRFs ranged from 0 to 24 (*M* = 7.22, *SD* = 7.47). The number of participated events by non-JRFs was distributed with skewness of 1.04 (*SE* = 0.22) and kurtosis of – 0.34 (*SE* =0.44). The number of participated events by JRFs ranged from 0 to 34 (*M* = 7.76, *SD* = 8.54). The number of participated events by JRFs was distributed with skewness of 1.37 (*SE* = 0.22) and kurtosis of 1.06 (*SE* =0.44). The number of participated events by all the respondents ranged from 0 to 34 (*M* = 7.49, *SD* = 8.01). The number of participated events by them was distributed with skewness of 1.25 (*SE* = 0.16) and kurtosis of – 0.63 (*SE* = 0.31).

Observing the above data and analysis, there seems to be some difference in the means and medians of the time taken by the non-JRFs and JRFs to submit their thesis. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean number of participations in research-oriented events by non-JRFs and JRFs.

H_a: There is a significant difference between the mean number of participations in research-oriented events by non-JRFs and JRFs.

The results of the t test are tabulated below in Table 4.333 and Table 4.344.

Table 4.33: Group Statistics

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Research Participation	No	120	7.22	7.47	0.68
	Yes	120	7.76	8.54	0.78

Table 4.34: Independent Samples t-test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Research Participation	Equal Variances Assumed	0.78	0.379	-0.51	238.00	0.607	-0.53	1.04	-2.57	1.51
	Equal Variances Not Assumed			-0.51	233.00	0.607	-0.53	1.04	-2.57	1.51

As shown in Table 4.344, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.379) for the *F* value = 0.78 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean number of participations in research-

oriented events by non-JRFs and JRFs., t (238) = -0.51, p = 0.607. That is, the average number of participations in research-oriented activities by JRFs (M = 7.76, SD = 8.54) and non-JRFs (M = 7.22, SD = 7.47) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median number of participations in research-oriented events by non-JRFs and JRFs.

H_a: There is a significant difference between the median number of participations in research-oriented events by non-JRFs and JRFs.

The results of the Mann-Whitney U test are tabulated below in Table 4.355 and Table 4.366.

Table 4.35: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Research Participation	120	120	240	119.42	121.58	14330.50	14589.50

Table 4.36: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Research Participation	7070.50	14330.50	-0.24	0.809

A Mann-Whitney U Test shows that there is no significant difference (U = 7070.50, Z = -0.24, p = 0.809) between the non-JRFs and JRFs in terms of number of participations in research-oriented events. The median of number of participations in research-oriented events by the non-JRFs (Mdn = 3) compared to median of number of participations in research-oriented events by JRFs (Mdn = 4) is statistically similar. It suggests that the JRF scheme is having no significant effect on the number of participations in research-oriented events.

Eleventh item of the questionnaire deals with the number of national visits of the participants regarding their research during their PhD which has been lasted for at least 3 days. The data has been tabulated as shown below in Table 4.377.

Table 4.37: National Visits During PhD

National Visits	JRF Qualified		Total (Percent)
	No	Yes	
0	84	85	169 (70.42)
1	15	14	29 (12.08)
2	9	9	18 (7.50)
3	7	6	13 (5.42)
4	3	3	6 (2.50)
5	2	1	3 (1.25)
6	0	1	1 (0.42)
8	0	1	1 (0.42)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.377 can also be represented as shown below in Figure 4.13.

Figure 4.13: National Visits During PhD

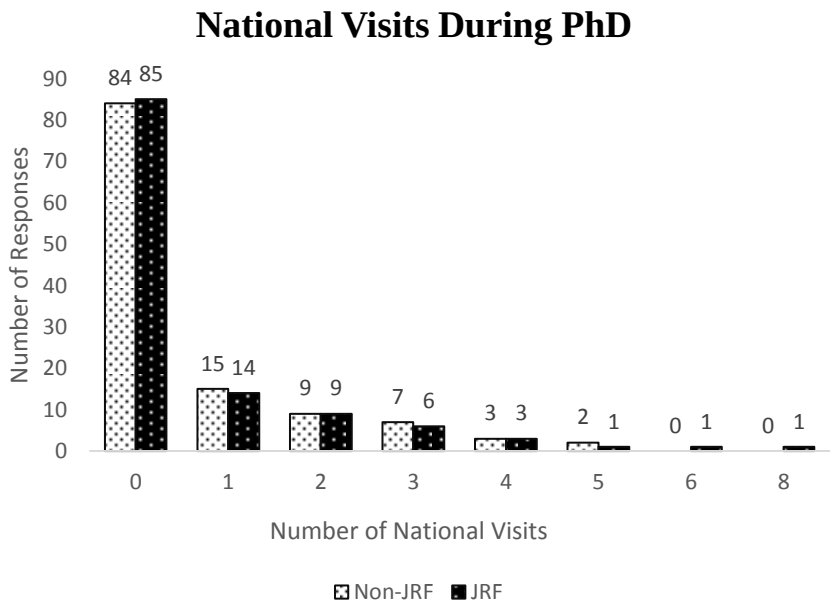


Table 4.37 along with Figure 4.13 shows the responses of the participants regarding their national visits of minimum three days during their PhD.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.388 as shown below.

Table 4.38: Descriptive Statistics Regarding Number of National Visits

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	120	120	240
Mean	0.63	0.68	0.65
SE Mean	0.11	0.12	0.08
Standard Deviation	1.17	1.37	1.27
Skewness	1.99	2.70	2.43
S.E. Skewness	0.22	0.22	0.16
Kurtosis	3.34	8.62	6.87
S.E. Kurtosis	0.44	0.44	0.31
Minimum	0	0	0
Maximum	5	8	8
Range	5	8	8
Mode	0	0	0
Median	0	0	0

Table 4.388 suggests that the mean number of national visits during PhD by the non-JRFs only, JRFs only and all the participants are 0.63 (*SE* = 0.11, *SD* = 1.17), 0.68 (*SE* = 0.12, *SD* = 1.37), and 0.65 (SE = 0.08, *SD* = 1.27), respectively. The number of visits by non-JRFs ranged from 0 to 5 (*M* = 0.63, *SD* = 1.17). The number of national visits by non-JRFs was distributed with skewness of 1.99 (*SE* = 0.22) and kurtosis of 3.34 (*SE* =0.44). The number of visits by JRFs ranged from 0 to 8 (*M* = 0.68, *SD* = 1.37). The number of national visits by JRFs was distributed with skewness of 2.70 (*SE* = 0.22) and kurtosis of 8.62 (*SE* = 0.44). The number of visits by all the respondents ranged from 0 to 8 (*M* = 0.65, *SD* = 1.27). The number of national visits by them was distributed with skewness of 2.43 (*SE* = 0.16) and kurtosis of 6.87 (*SE* = 0.31).

Observing the above data and analysis, there seems to be insignificant difference in the means and medians of the number of national visits by the non-JRFs and JRFs. For checking whether

these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean number of national visits during PhD by non-JRFs and JRFs.

H_a: There is a significant difference between the mean number of national visits during PhD by non-JRFs and JRFs.

The results of the t test are tabulated below in Table 4.399 and Table 4.4040.

Table 4.39: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
National Visits	No	120	0.63	1.17	0.11
	Yes	120	0.68	1.37	0.12

Table 4.40: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
National Visits	Equal Variances Assumed	0.38	0.538	-0.25	238.00	0.800	-0.04	0.16	-0.37	0.28
	Equal Variances Not Assumed			-0.25	232.67	0.800	-0.04	0.16	-0.37	0.28

As shown in Table 4.40, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.538) for the *F* value = 0.38 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean number of national visits during their PhD by non-JRFs and JRFs., t (238) = -0.25, p = 0.800. That is, the average number of National visits

during PhD by JRFs (M = 0.68, SD = 1.37) and non-JRFs (M = 0.63, SD = 1.17) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median number of national visits during PhD by non-JRFs and JRFs.

H_a: There is a significant difference between the median number of national visits during PhD by non-JRFs and JRFs.

The results of the Mann-Whitney U test are tabulated below in Table 4.35 and Table 4.42.

Table 4.41: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
National Visits	120	120	240	120.83	120.17	14500.00	14420.00

Table 4.42: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
National Visits	7160.00	14420.00	-0.09	0.926

A Mann-Whitney U Test shows that there is no significant difference (U = 7160.00, Z = -0.09, p = 0.926) between the non-JRFs and JRFs in terms of number of national visits during their PhD. The median number of national visits by the non-JRFs (Mdn = 0) compared to median of number of national visits during their PhD events by JRFs (Mdn = 0) is suggesting that the JRF scheme is having no significant effect on the number of national visits during PhD.

In the questionnaire, twelfth item deals with the number of international visits of the participants regarding their research during their PhD which has been lasted for at least 3 days. The data has been tabulated as shown below in Table 4.43.

Table 4.43: International Visits During PhD

International Visits	**JRF Qualified**		**Total**
	No	**Yes**	**(Percent)**

0	116	112	228 (95.00)
1	4	5	9 (3.75)
2	0	2	2 (0.83)
3	0	1	1 (0.42)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.43 can also be represented as shown below in Figure 4.14.

Figure 4.14: International Visits During PhD

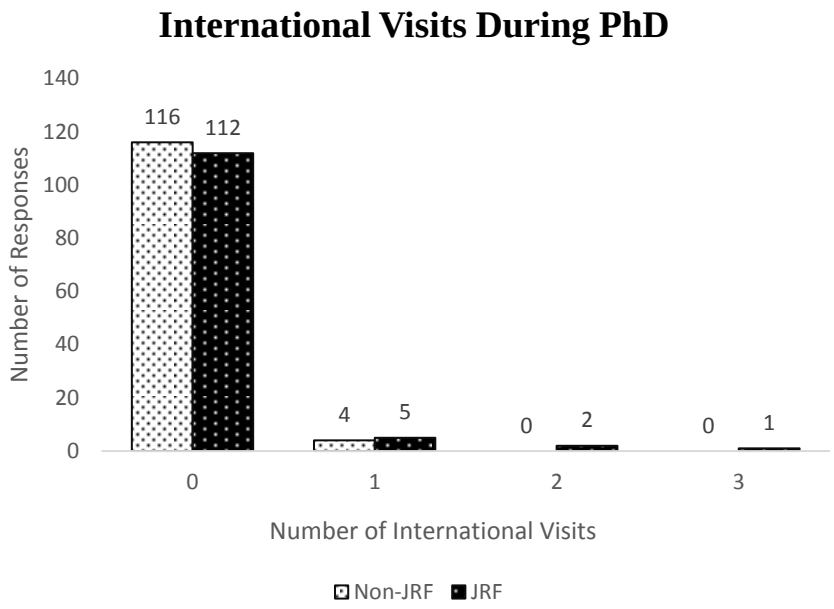


Table 4.43 along with Figure 4.14 shows the responses of the participants regarding their international visits of minimum three days during their PhD.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.44 as shown below.

Table 4.44: Descriptive Statistics Regarding Number of International Visits

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	120	120	240
Mean	0.03	0.10	0.07
SE Mean	0.02	0.04	0.02

Standard Deviation	0.18	0.42	0.32
Skewness	5.27	4.87	5.88
S.E. Skewness	0.22	0.22	0.16
Kurtosis	26.16	25.88	39.86
S.E. Kurtosis	0.44	0.44	0.31
Minimum	0	0	0
Maximum	1	3	3
Range	1	3	3
Mode	0	0	0
Median	0	0	0

Table 4.44 suggests that the mean number of international visits during PhD for the non-JRFs only, JRFs only and all the participants to submit their thesis are 0.03 (*SE* = 0.02, *SD* = 0.18), 0.10 (*SE* = 0.04, *SD* = 0.42), and 0.07 (SE = 0.02, *SD* = 0.32), respectively. The number of international visits by non-JRFs ranged from 0 to 1 (*M* = 0.03, *SD* = 0.18). The number of international visits by non-JRFs was distributed with skewness of 5.27 (*SE* = 0.22) and kurtosis of 26.16 (*SE* =0.44). The number of international visits by JRFs ranged from 0 to 3 (*M* = 0.10, *SD* = 0.42). The number of international visits by JRFs was distributed with skewness of 4.87 (*SE* = 0.22) and kurtosis of 25.88 (*SE* =0.44). The number of international visits by all the respondents ranged from 0 to 3 (*M* = 0.07, *SD* = 0.32). The number of international visits by them was distributed with skewness of 5.88 (*SE* = 0.16) and kurtosis of 39.86 (*SE* = 0.31).

Observing the above data and analysis, there seems to be some difference in the means and medians of the time taken by the non-JRFs and JRFs to submit their thesis. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean number of international visits during PhD by non-JRFs and JRFs.

H_a: There is a significant difference between the mean number of international visits during PhD by non-JRFs and JRFs.

The results of the t test are tabulated below in Table 4.45 and Table 4.46.

Table 4.45: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
International Visits	No	120	0.03	0.18	0.02
	Yes	120	0.10	0.42	0.04

Table 4.46: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
International Visits	Equal Variances Assumed	10.67	0.001	-1.60	238.00	0.110	-0.53	1.04	-2.57	1.51
	Equal Variances Not Assumed			-1.60	161.77	0.111	-0.53	1.04	-2.57	1.51

As shown in Table 4.46, Levene's test suggested that the samples were not having equal variances, since the probability (*Sig*. = 0.001) for the *F* value = 10.67 is less than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean number of international visits by non-JRFs and JRFs., t (161.77) = -0.53, p = 0.111. That is, the average number of international visits by JRFs (M = 0.10, SD = 0.18) and non-JRFs (M = 0.03, SD = 0.42) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median number of international visits by non-JRFs and JRFs.

H_a: There is a significant difference between the median number of international visits by non-JRFs and JRFs.

The results of the Mann-Whitney U test are tabulated below in Table 4.47 and Table 4.48.

Table 4.47: Ranks for Groups

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
International Visits	120	120	240	118.45	122.55	14214.00	14706.00

Table 4.48: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
International Visits	6954.00	14214.00	-1.21	0.226

A Mann-Whitney U Test shows that there is no significant difference (U = 6954.00, Z = -1.21, p = 0.226) between the non-JRFs and JRFs in terms of number of participations in research-oriented events. The median of number of international visits by the non-JRFs (Mdn = 0) compared to median of number of participations in research-oriented events by JRFs (Mdn = 0) is suggesting that the JRF scheme is having no significant effect on the number of international visits during PhD.

The thirteenth item of the questionnaire was regarding the number of publications as first author. The item was designed such that it takes data on interval scale. The responses received were recorded and have been tabulated below in Table 4.49

Table 4.49: Number of Publications as First Author

Number of Publications		JRF Qualified		Total
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	67	62	129 (53.75)
1	5 to 9	28	32	60 (25.00)
2	10 to 14	13	16	29 (12.08)
3	15 to 19	11	5	16 (6.67)
4	25 to 29	0	1	1 (0.42)

5	30 to 34	1	0	1 (0.42)
6	35 to 39	0	1	1 (0.42)
7	40 to 44	0	1	1 (0.42)
8	45 to 49	0	1	1 (0.42)
9	50 to 54	0	1	1 (0.42)
Total		120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.49 can also be represented as shown below in Figure 4.15.

Figure 4.15: Number of Publications as First Author

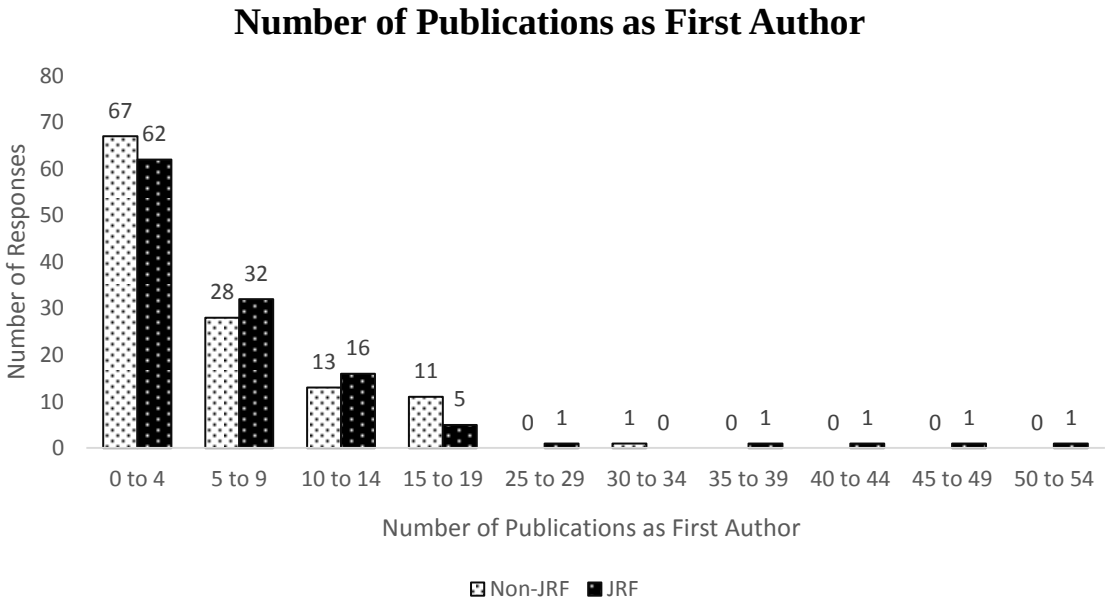


Table 4.49 along with Figure 4.15 shows the responses of the participants regarding their number of publications as first author.

Also, calculating the descriptive statistics for this item for the two groups of JRFs and non-JRFs, the results have been tabulated in Table 4.50 as shown below.

Table 4.50: Descriptive Statistics Regarding Number of Publications as First Author

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	120	120	240

Mean	0.78	0.98	0.88
SE Mean	0.10	0.16	0.09
Standard Deviation	1.10	1.70	1.43
Skewness	1.67	3.26	3.16
S.E. Skewness	0.22	0.22	0.16
Kurtosis	3.47	12.68	14.01
S.E. Kurtosis	0.44	0.44	0.31
Minimum	0	0	0
Maximum	6	10	10
Range	6	10	10
Mode	0	0	0
Median	0	0	0

Table 4.50 suggests that the mean number of publications as first author for the non-JRFs only, JRFs only and all the participants are 0.78 (*SE* = 0.10, *SD* = 1.10), 0.98 (*SE* = 0.16, *SD* = 1.70), and 0.88 (SE = 0.09, *SD* = 1.43), respectively. The number of publications as first author by non-JRFs ranged from 0 to 6 (*M* = 0.78, *SD* = 1.10). The number of publications as first author by non-JRFs was distributed with skewness of 1.67 (*SE* = 0.22) and kurtosis of 3.47 (*SE* =0.44). The number of publications as first author by JRFs ranged from 0 to 10 (*M* = 0.98, *SD* = 1.70). The number of publications as first author by JRFs was distributed with skewness of 3.26 (*SE* = 0.22) and kurtosis of 12.68 (*SE* =0.44). The number of publications as first author by all the respondents ranged from 0 to 10 (*M* = 0.88, *SD* = 1.43). The number of publications as first author by them was distributed with skewness of 3.16 (*SE* = 0.16) and kurtosis of 14.01 (*SE* = 0.31).

However, this data provides extorted picture of the reality, as the sample consists of different subgroups. Thus, the data for the current item should be analyzed taking a subgroup at a time. The subgroups are formed on the basis of year of thesis submission as discussed earlier in analysis regarding fifth item of the questionnaire. Therefore, the subgroup-wise data distribution is represented below.

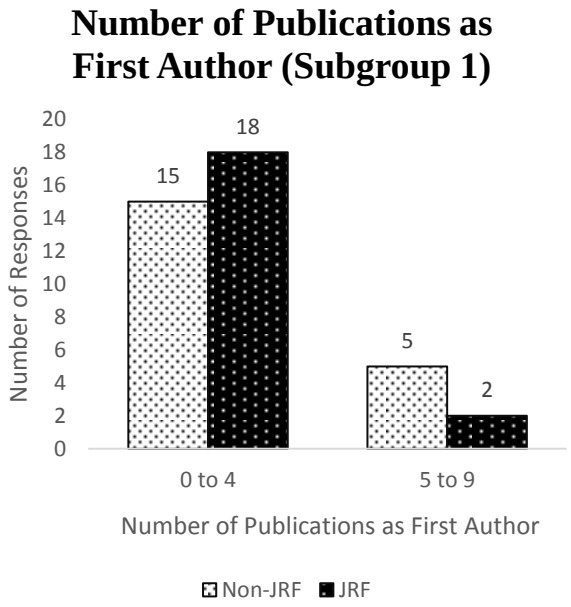
The responses received from the responders of subgroup 1 that consists of the current research scholars those are in their first year of PhD are tabulated below in Table 4.51.

Table 4.51: Number of Publications as First Author (Subgroup 1)

Number of Publications		JRF Qualified		Total
Value	Value Label	No	Yes	(Percent)
0	0 to 4	15	18	33 (82.50)
1	5 to 9	5	2	7 (17.50)
Total		20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.51 can also be represented as shown below in Figure 4.16.

Figure 4.16: Number of Publications as First Author (Subgroup 1)



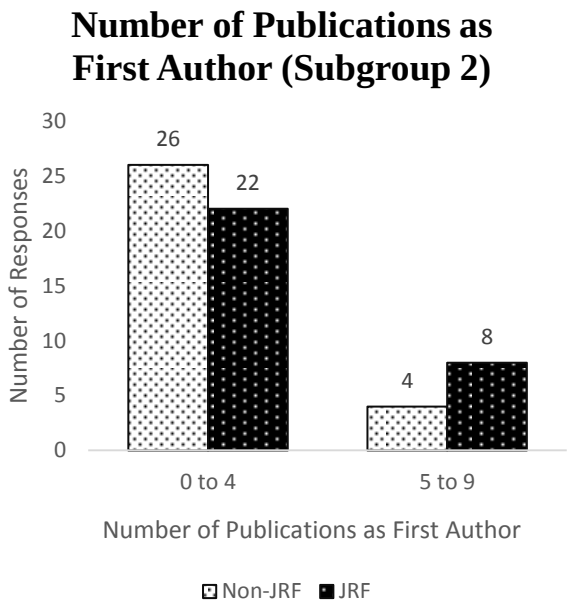
The responses received from the participants of subgroup 2 are tabulated below in Table 4.52

Table 4.52: Number of Publications as First Author (Subgroup 2)

Number of Publications		JRF Qualified		Total
Value	Value Label	No	Yes	(Percent)
0	0 to 4	26	22	48 (80.00)
1	5 to 9	4	8	12 (20.00)
Total		30 (50.00)	30 (50.00)	60 (100)

The data tabulated above in Table 4.52 can also be represented as shown below in Figure 4.17.

Figure 4.17: Number of Publications as First Author (Subgroup 2)



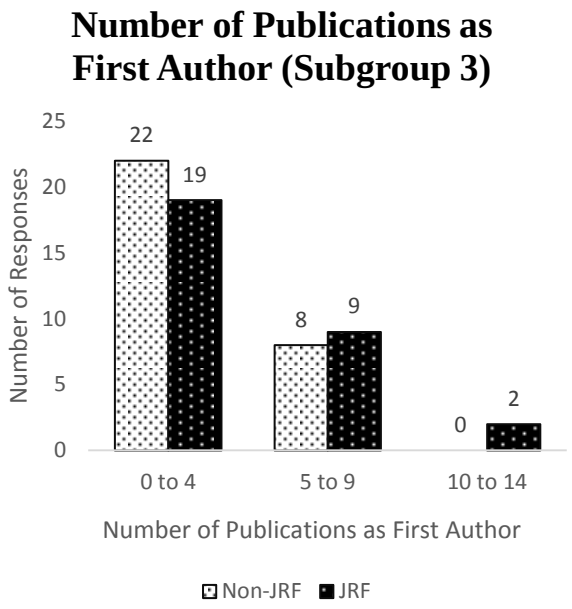
The responses received from the participants of subgroup 3 are tabulated below in Table 4.53

Table 4.53: Number of Publications as First Author (Subgroup 3)

Number of Publications		JRF Qualified		Total
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	22	19	41 (68.33)
1	5 to 9	8	9	17 (28.33)
2	10 to 14	0	2	2 (3.33)
Total		30 (50.00)	30 (50.00)	60 (100)

The data tabulated above in Table 4.53 can also be represented as shown below in Figure 4.18.

Figure 4.18: Number of Publications as First Author (Subgroup 3)



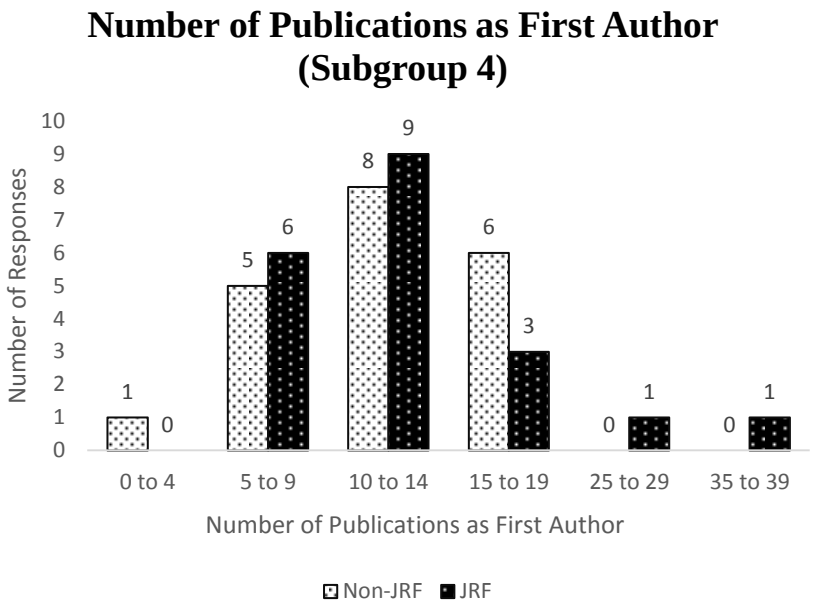
The responses received from the participants of subgroup 4 are tabulated below in Table 4.54

Table 4.54: Number of Publications as First Author (Subgroup 4)

Number of Publications		JRF Qualified		Total
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	1	0	1 (2.50)
1	5 to 9	5	6	11 (27.50)
2	10 to 14	8	9	17 (42.50)
3	15 to 19	6	3	9 (22.50)
5	25 to 29	0	1	1 (2.50)
7	35 to 39	0	1	1 (2.50)
Total		20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.54 can also be represented as shown below in Figure 4.19.

Figure 4.19: Number of Publications as First Author (Subgroup 4)



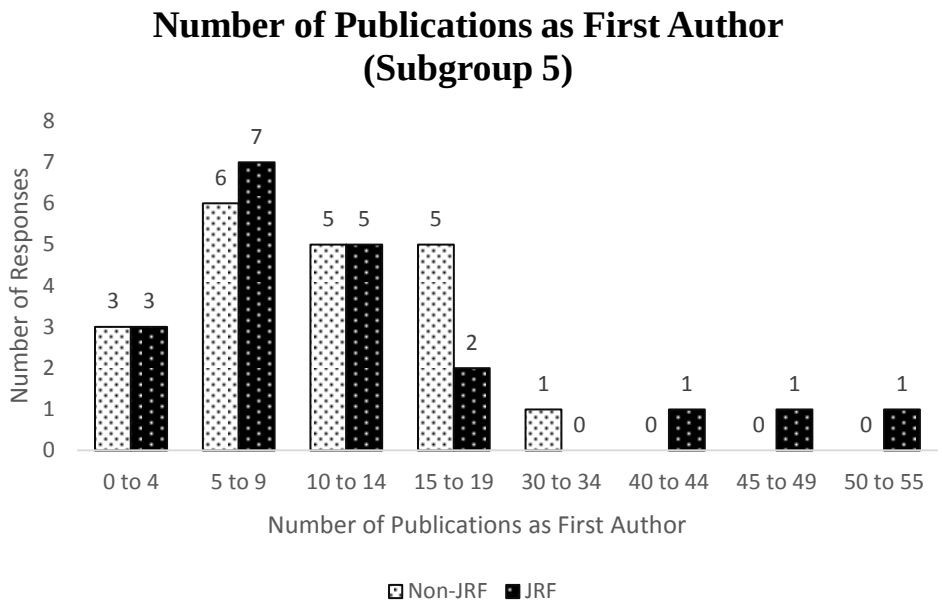
The responses received from the respondents of subgroup 5 are tabulated below in Table 4.55.

Table 4.55: Number of Publications as First Author (Subgroup 5)

Number of Publications		JRF Qualified		Total
Value	Value Label	No	Yes	(Percent)
0	0 to 4	3	3	6 (15.00)
1	5 to 9	6	7	13 (32.50)
2	10 to 14	5	5	10 (25.00)
3	15 to 19	5	2	7 (17.50)
6	30 to 34	1	0	1 (2.50)
8	40 to 44	0	1	1 (2.50)
9	45 to 49	0	1	1 (2.50)
10	50 to 54	0	1	1 (2.50)
Total		20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.55 can also be represented as shown below in Figure 4.20.

Figure 4.20: Number of Publications as First Author (Subgroup 5)



The researcher has applied independent sample t-test and Mann-Whitney U Test for comparing the mean and median number of publications as first author by the non-JRFs and JRFs taken into the study and lying-in sub-groups 1, 2, 3, 4, and 5 based upon the year of thesis submission. For each of these subgroups, the null and alternative hypotheses are as given below:

Hypotheses for t test:

H_0: There is no significant difference between the mean number of publications as first author among non-JRFs and JRFs.

H_a: There is a significant difference between the mean number of publications as first author among non-JRFs and JRFs.

Hypotheses for Mann-Whitney U Test:

H_0: There is no significant difference between the median number of publications as first author among non-JRFs and JRFs.

H_a: There is a significant difference between the median number of publications as first author among non-JRFs and JRFs.

The results of the t-test for subgroup 1 are tabulated below in Table 4.56 and Table 4.57.

Table 4.56: Group Statistics for Subgroup 1

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as First Author	No	20	0.25	0.44	0.10
	Yes	20	0.10	0.31	0.07

Table 4.57: Independent Samples t-Test for Subgroup 1

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as First Author	Equal Variances Assumed	6.92	0.012	1.24	38.00	0.222	0.15	0.12	-0.09	0.39
	Equal Variances Not Assumed			1.24	33.82	0.223	0.15	0.12	-0.10	0.40

From the interpretation of Levene's test as shown in Table 4.57, it is observed that the samples were not having equal variances, since the probability (*Sig*. = 0.012) for the *F* value = 6.92 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as first author between non-JRFs and JRFs, t (33.82) = 1.24, p = 0.223. That is, the average number of publications as first author by JRFs is not significantly different from the average publications as first author by non-JRFs. However, one should note that the means calculated here themselves are not of significance as they are mere the notations and not the real means of the publications. The means are used merely to represent the mid-point of the responses and facilitates the comparison among the two groups.

Similarly, the results of Mann-Whitney U test for subgroup 1 are tabulated below in Table 4.58 and Table 4.59.

Table 4.58: Ranks for Subgroup 1

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	Yes	Total	No	Yes	No	Yes

Publications as First Author	20	20	40	22.00	19.00	440.00	380.00

Table 4.59: U-Test Statistics for Subgroup 1

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as First Author	170.00	380.00	-1.23	0.218

The number of publications as first author by the non-JRFs (*Mdn* = 2.67) is same as the year of thesis submission by the JRFs (*Mdn* = 2.22). Mann-Whitney U test result (Table 4.59) also shows that there is no statistically significant difference in the number of publications as first author among the two groups (U = 170.00, z = -1.23, p = 0.218 > 0.05) for subgroup 1.

The results of the t-test for subgroup 2 are tabulated below in Table 4.60 and Table 4.61.

Table 4.60: Group Statistics for Subgroup 2

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as First Author	No	30	0.13	0.35	0.06
	Yes	30	0.27	0.45	0.08

Table 4.61: Independent Samples t-Test for Subgroup 2

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as First Author	Equal Variances Assumed	7.09	0.010	-1.29	58.00	0.203	-0.13	0.10	-0.34	0.07
	Equal Variances Not Assumed			-1.29	54.40	0.203	-0.13	0.10	-0.34	0.07

From the interpretation of Levene's test as shown in Table 4.61, it is observed that the samples were not having equal variances, since the probability (*Sig.* = 0.010) for the F value = 7.09 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as first author between non-JRFs and JRFs, t (54.40) = -1.29, p = 0.203. That is, the number of publications

as first author by JRFs is not significantly different from the number of publications as first author by non-JRFs. However, the means measured here are of little value as they are merely the notes and not the actual means of publishing. The means are used only to represent the midpoint of the answers and encourage comparisons between the two classes.

Similarly, the results of Mann-Whitney U test for subgroup 2 are tabulated below in Table 4.62 and Table 4.63.

Table 4.62: Ranks for Subgroup 2

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as First Author	30	30	60	28.50	32.50	855.00	975.00

Table 4.63: U-Test Statistics for Subgroup 2

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Publications as First Author	390.00	855.00	-1.28	0.200

The number of publications as first author by the non-JRFs (*Mdn* = 2.31) is same as the number of publications as first author by the JRFs (*Mdn* = 2.73). Mann-Whitney U test result (Table 4.63) also showed that there is no statistically significant difference ($U = 390$, $z = -1.28$, $p = 0.200 > 0.05$) for subgroup 4 comprising of the scholars who have submitted their thesis in any of the years from 2012 to 2019.

For subgroup 3, the results of the t-test are tabulated below in Table 4.64 and Table 4.65.

Table 4.64: Group Statistics for Subgroup 3

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Publications as	No	30	0.27	0.45	0.08
First Author	Yes	30	0.43	0.63	0.11

Table 4.65: Independent Samples t-Test for Subgroup 3

	Levene's Test for Equality of Variances		**t-test for Equality of Means**						
	F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
								Lower	*Upper*

Publications as First Author	Equal Variances Assumed	6.01	0.017	-1.18	58.00	0.241	-0.17	0.14	-0.45	0.12
	Equal Variances Not Assumed			-1.18	52.64	0.242	-0.17	0.14	-0.45	0.12

From the interpretation of Levene's test as shown in Table 4.65, it is observed that the samples were not having equal variances, since the probability (*Sig*. = 0.017) for the *F* value = 6.01 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as first author between non-JRFs and JRFs, t (52.64) = -1.18, p = 0.242. That is, the average number of publications as first author by JRFs is not significantly different from the average number of publications as first author by non-JRFs. However, the means measured here are of little value as they are merely the notes and not the actual means of publishing. The means are used only to represent the midpoint of the answers and encourage comparisons between the two classes.

Similarly, the results of Mann-Whitney U test for subgroup 3 are tabulated below in Table 4.66 and Table 4.67.

Table 4.66: Ranks for Subgroup 3

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as First Author	30	30	60	28.73	32.27	862.00	968.00

Table 4.67: U-Test Statistics for Subgroup 3

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Publications as First Author	397.00	862.00	-0.97	0.334

The number of publications as first author by the non-JRFs (*Mdn* = 2.73) is same as the number of publications as first author by the JRFs (*Mdn* = 3.16). Mann-Whitney U test result (Table 4.67) also showed that there is no statistically significant difference (U = 397.00, z = -0.97, p = 0.334 > 0.05) in the median number of publications as first author by non-JRFs and JRFs for subgroup 3

comprising of the scholars who have submitted or are planning to submit their thesis in the year 2020.

The results of the t test for subgroup 4 are tabulated below in Table 4.68 and Table 4.69.

Table 4.68: Group Statistics for Subgroup 4

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as	No	20	1.95	0.89	0.20
First Author	Yes	20	2.25	1.48	0.33

Table 4.69: Independent Samples t-test for Subgroup 4

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as First Author	Equal Variances Assumed	1.23	0.274	-0.78	38.00	0.442	-0.30	0.39	-1.08	0.48
	Equal Variances Not Assumed			-0.78	31.06	0.443	-0.30	0.39	-1.09	0.49

As shown in Table 4.69, Levene's test suggested that the samples were having equal variances, since the probability (*Sig*. = 0.274) for the *F* value = 1.23 is more than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. However, the results of independent sample t-test indicate that there is no statistically significant difference in the mean number of publications as first author by non-JRFs and JRFs., t (38) = -0.78, p = 0.442. That is, the average number of publications as first author by JRFs and non-JRFs is statistically similar. It should be noted, however, that the means measured here are not significant since these are merely the annotations and not the actual means of publishing. The means are clearly used to represent the middle point of the answers and to promote comparisons between the two classes.

Similarly, the results of the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test for subgroup 4 are tabulated below in Table 4.70 and Table 4.71.

Table 4.70: Ranks for Subgroup 4

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	Yes	Total	No	Yes	No	Yes
Publications as First Author	20	20	40	20.40	20.60	408.00	412.00

Table 4.71: U-Test Statistics for Subgroup 4

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as First Author	198.00	408.00	-0.06	0.954

A Mann-Whitney U Test in Table 4.71 shows that there is no significant difference (U = 198.00, Z = -0.06, p = 0.954) between the non-JRFs and JRFs in terms of number of publications as first author. The median of number of publications as first author by the non-JRFs (*Mdn* = 12.00) compared to median of number of publications as first author by JRFs (*Mdn* = 11.72) is suggesting that the JRF scheme is having no significant effect on the number of publications as first author.

The results of the t test for subgroup 5 are tabulated below in Table 4.72 and Table 4.73.

Table 4.72: Group Statistics for Subgroup 5

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as First Author	No	20	1.85	1.42	0.32
	Yes	20	2.50	2.95	0.66

Table 4.73: Independent Samples t-test for Subgroup 5

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as First Author	Equal Variances Assumed	3.81	0.058	-0.89	38.00	0.380	-0.65	0.73	-2.13	0.83
	Equal Variances Not Assumed			-0.89	27.42	0.382	-0.65	0.73	-2.15	0.85

As shown in Table 4.73, Levene's test suggested that the samples were having equal variances, since the probability (*Sig*. = 0.058) for the F value = 3.81 is more than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. However, the results of independent sample t-test

indicate that there is no statistically significant difference in the mean number of publications as first author by non-JRFs and JRFs., t (38) = -0.89, p = 0.380. That is, the average number of publications as first author by JRFs and non-JRFs is statistically similar. However, one should note that the means calculated here themselves are not of significance as they are mere the notations and not the real means of the publications. The means are used merely to represent the mid-point of the responses and facilitates the comparison among the two groups.

Similarly, the results of the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test for subgroup 5 are tabulated below in Table 4.74 and Table 4.75.

Table 4.74: Ranks for Subgroup 5

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as First Author	20	20	40	20.65	20.35	413.00	407.00

Table 4.75: U-Test Statistics for Subgroup 5

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as First Author	197.00	407.00	-0.08	0.933

A Mann-Whitney U Test in Table 4.75 shows that there is no significant difference (U = 197.00, Z = -0.08, p = 0.933) between the non-JRFs and JRFs in terms of number of publications as first author. The median of number of publications as first author by the non-JRFs (Mdn = 10.5) compared to median of number of publications as first author by JRFs (Mdn = 9.5) is suggesting that the JRF scheme is having no significant effect on the number of publications as first author.

The fourteenth item in the questionnaire was regarding the number of publications as other author. The item was designed such that it receives data on interval scale. The responses received were recorded and have been tabulated below in Table 4.76.

Table 4.76: Number of Publications as Other Author

Number of Publications		JRF Qualified		Total
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	76	73	149 (62.08)

1	5 to 9	15	13	28 (11.67)
2	10 to 14	1	8	9 (3.75)
3	15 to 19	5	7	12 (5.00)
4	20 to 24	5	3	8 (3.33)
5	25 to 29	1	2	3 (1.25)
6	30 to 34	1	1	2 (0.83)
7	35 to 39	2	2	4 (1.67)
8	40 to 44	4	2	6 (2.50)
9	45 to 49	4	3	7 (2.92)
10	50 to 54	2	3	5 (2.08)
11	55 to 59	3	0	3 (1.25)
12	60 to 64	1	3	4 (1.67)
Total		120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.76 can also be represented as shown below in Figure 4.21.

Figure 4.21: Number of Publications as Other Author

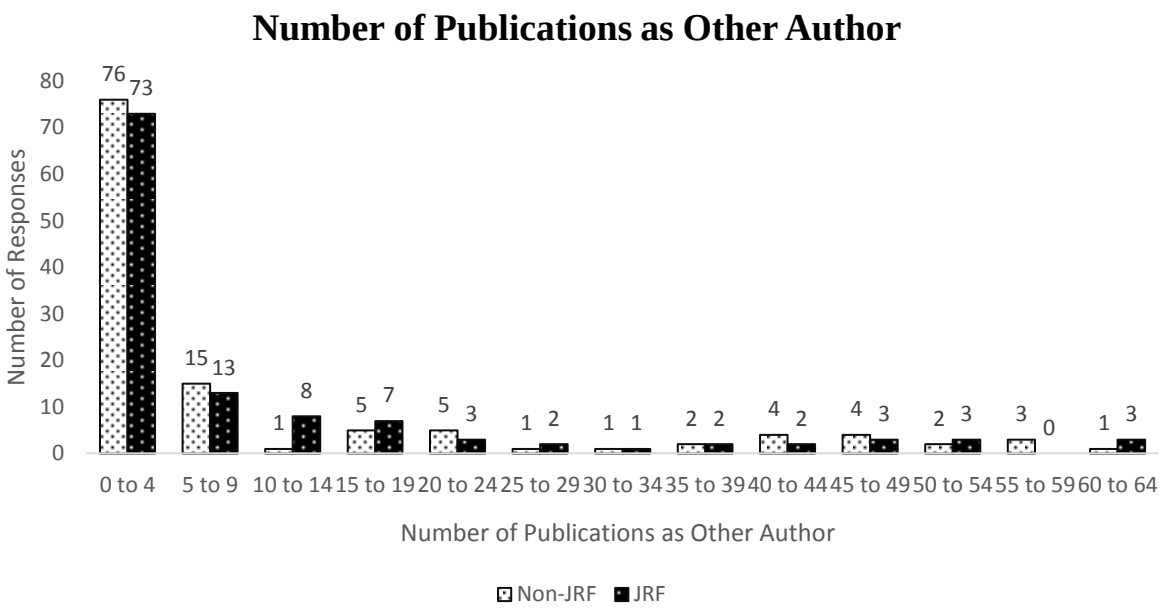


Table 4.76 along with Figure 4.21 shows the responses of the participants regarding the number of their publications as other author.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.77 as shown below.

Table 4.77: Descriptive Statistics Regarding Number of Publications as Other Author

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	120	120	240
Mean	1.75	1.68	1.71
SE Mean	0.29	0.28	0.20
Standard Deviation	3.21	3.05	3.12
Skewness	1.85	2.07	1.94
S.E. Skewness	0.22	0.22	0.16
Kurtosis	2.13	3.39	2.63
S.E. Kurtosis	0.44	0.44	0.31
Minimum	0	0	0
Maximum	12	12	12
Range	12	12	12
Mode	0	0	0
Median	0	0	0

Table 4.77 suggests that the mean number of publications as other author for the non-JRFs only, JRFs only and all the participants are 1.75 (*SE* = 0.29, *SD* = 3.21), 1.68 (*SE* = 0.28, *SD* = 3.05),

and 1.71 (SE = 0.20, *SD* = 3.12), respectively. The number of publications as other author by non-JRFs ranged from 0 to 12 (*M* = 1.75, *SD* = 3.21). The number of publications as other author by non-JRFs was distributed with skewness of 1.85 (*SE* = 0.22) and kurtosis of 2.13 (*SE* =0.44). The number of publications as other author by JRFs ranged from 0 to 12 (*M* = 1.68, *SD* = 3.05). The number of publications as other author by JRFs was distributed with skewness of 2.07 (*SE* = 0.22) and kurtosis of 3.39 (*SE* =0.44). The number of publications as other author by all the respondents ranged from 0 to 12 (*M* = 1.71, *SD* = 3.12). The number of publications as other author by them was distributed with skewness of 1.94 (*SE* = 0.16) and kurtosis of 2.63 (*SE* = 0.31).

However, this data provides distorted picture of the reality, as the sample consists of different subgroups. Thus, the data for the current item should be analyzed taking a subgroup at a time as done for the previous item. The subgroups are formed on the basis of year of thesis submission as discussed earlier in analysis regarding fifth item of the questionnaire. Therefore, the subgroup-wise data distribution and its descriptive statistics are represented below.

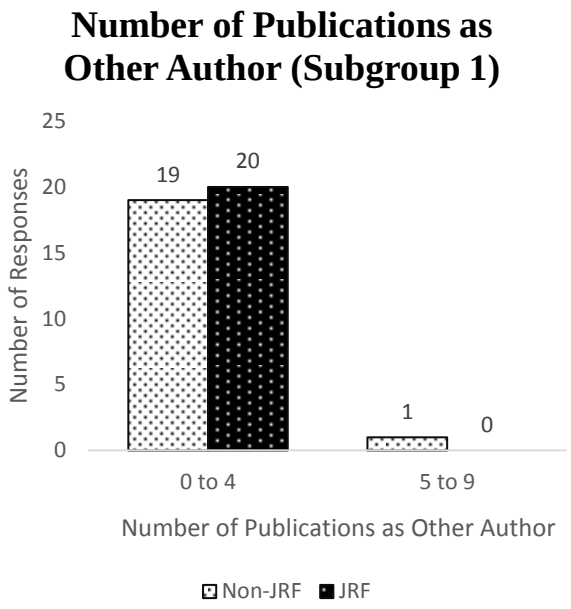
The responses received from the responders of subgroup 1 that consists of the current research scholars those are in their first year of PhD are tabulated below in Table 4.78

Table 4.78: Number of Publications as Other Author (Subgroup 1)

Number of Publications		**JRF Qualified**		**Total**
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	19	20	39 (97.50)
1	5 to 9	1	0	1 (2.50)
	Total	20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.78 can also be represented as shown below in Figure 4.22.

Figure 4.22: Number of Publications as Other Author (Subgroup 1)



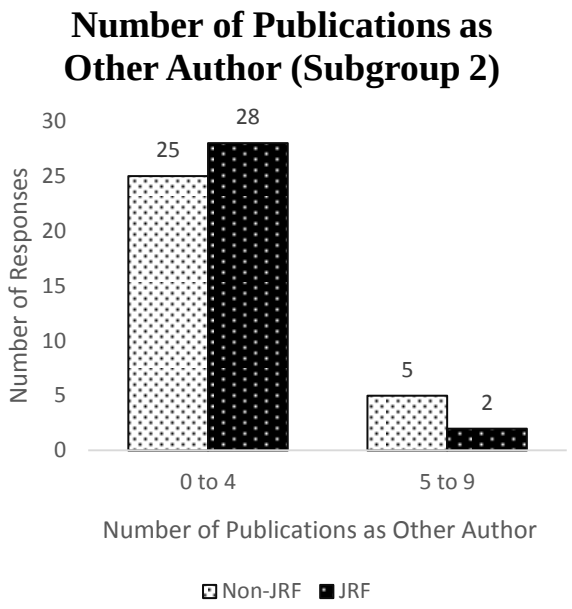
The responses received from the participants of subgroup 2 are tabulated below in Table 4.79.

Table 4.79: Number of Publications as First Author (Subgroup 2)

Number of Publications		JRF Qualified		Total
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	25	28	53 (88.33)
1	5 to 9	5	2	7 (11.67)
Total		30 (50.00)	30 (50.00)	60 (100)

The data tabulated above in Table 4.79 can also be represented as shown below in Figure 4.23: Number of Publications as Other Author (Subgroup 2).

Figure 4.23: Number of Publications as Other Author (Subgroup 2)



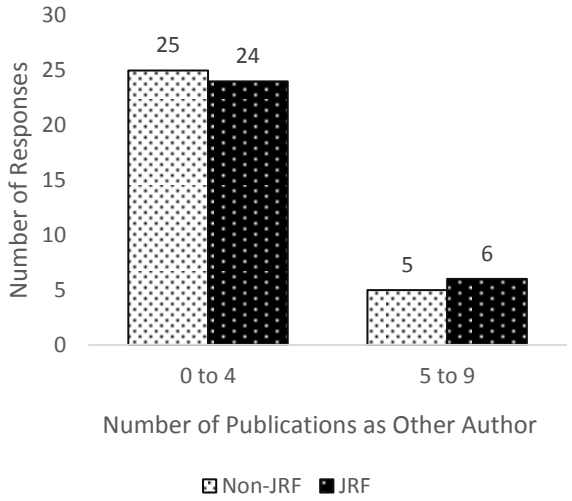
The responses received from the participants of subgroup 3 are tabulated below in Table 4.80

Table 4.80: Number of Publications as Other Author (Subgroup 3)

Number of Publications		JRF Qualified		Total
Value	Value Label	No	Yes	(Percent)
0	0 to 4	25	24	49 (81.67)
1	5 to 9	5	6	11 (18.33)
Total		30 (50.00)	30 (50.00)	60 (100)

The data tabulated above in Table 4.80 can also be represented as shown below in Figure 4.24.

Figure 4.24: Number of Publications as Other Author (Subgroup 3)



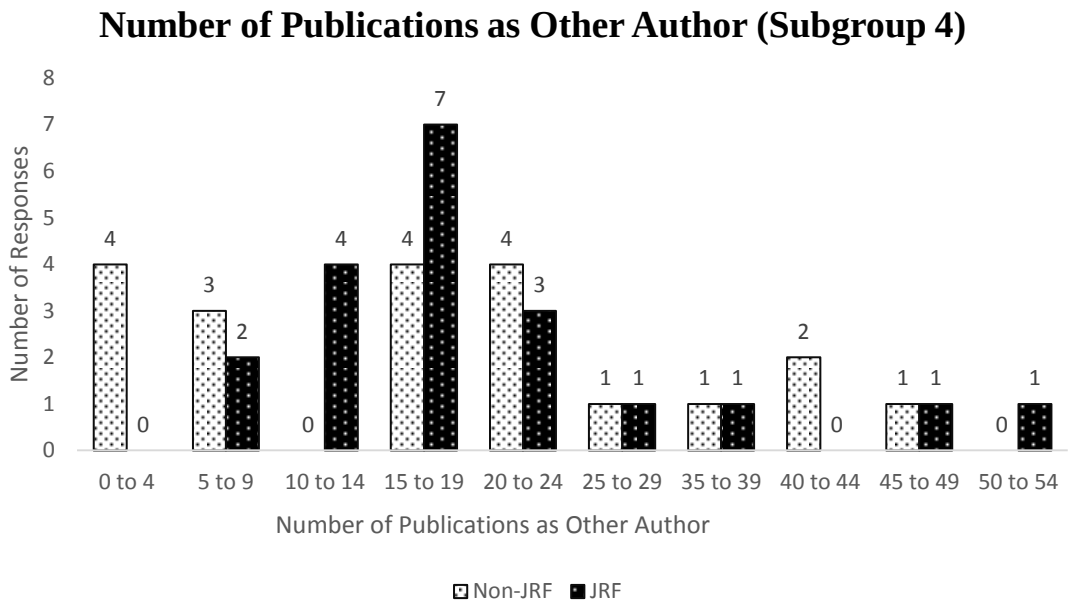
The responses received from the participants of subgroup 4 are tabulated below in Table 4.81

Table 4.81: Number of Publications as Other Author (Subgroup 4)

Number of Publications		**JRF Qualified**		**Total**
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	0 to 4	4	0	4 (10.00)
1	5 to 9	3	2	5 (12.50)
2	10 to 14	0	4	4 (10.00)
3	15 to 19	4	7	11 (27.50)
4	20 to 24	4	3	7 (17.50)
5	25 to 29	1	1	2 (5.00)
7	35 to 39	1	1	2 (5.00)
8	40 to 44	2	0	2 (5.00)
9	45 to 49	1	1	2 (5.00)
10	50 to 54	0	1	1 (2.50)
Total		20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.81 can also be represented as shown below in Figure 4.25.

Figure 4.25: Number of Publications as Other Author (Subgroup 4)



The responses received from the respondents of subgroup 5 are tabulated below in Table 4.82.

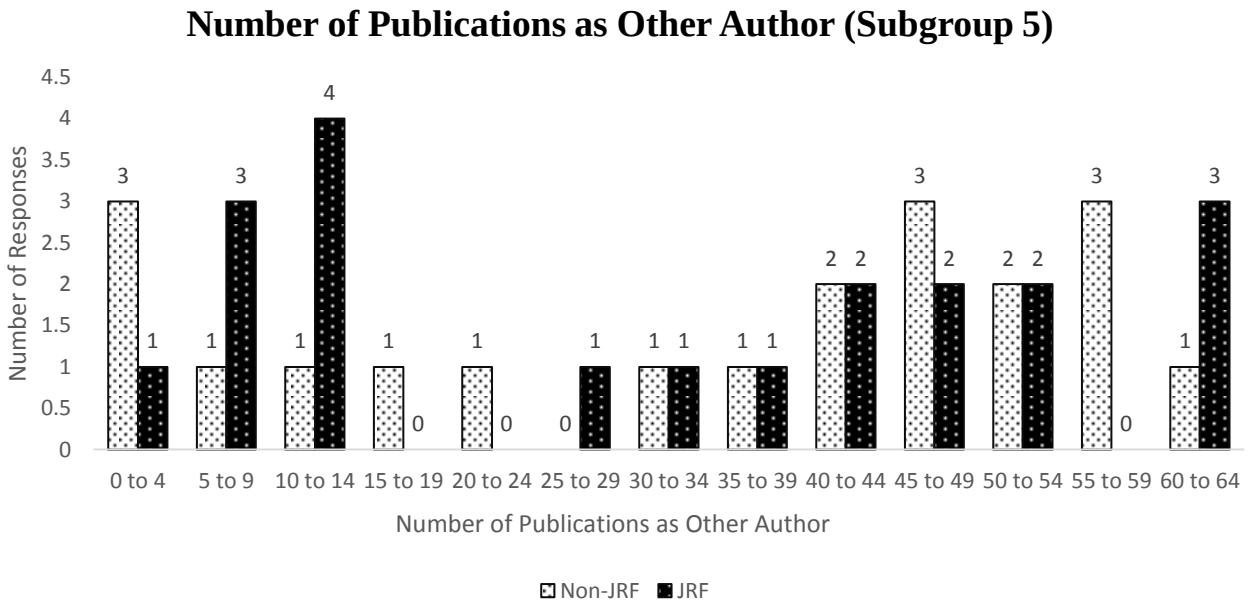
Table 4.82: Number of Publications as Other Author (Subgroup 5)

Number of Publications		JRF Qualified		Total
Value	Value Label	No	Yes	(Percent)
0	0 to 4	3	1	4 (10.00)
1	5 to 9	1	3	4 (10.00)
2	10 to 14	1	4	5 (12.50)
3	15 to 19	1	0	1 (2.50)
4	20 to 24	1	0	1 (2.50)
5	25 to 29	0	1	1 (2.50)
6	30 to 34	1	1	2 (5.00)
7	35 to 39	1	1	2 (5.00)
8	40 to 44	2	2	4 (10.00)

9	45 to 49	3	2	5 (12.50)
10	50 to 54	2	2	4 (10.00)
11	55 to 59	3	0	3 (7.50)
12	60 to 64	1	3	4 (10.00)
Total		20 (50.00)	20 (50.00)	40 (100)

The data tabulated above in Table 4.82 can also be represented as shown below in Figure 4.26.

Figure 4.26: Number of Publications as Other Author (Subgroup 5)



The researcher has applied independent sample t-test and Mann-Whitney U Test for comparing the mean and median number of publications as other author by the non-JRFs and JRFs taken into the study and lying-in sub-groups 1, 2, 3, 4, and 5 based upon the year of thesis submission. For each of these subgroups, the null and alternative hypotheses are as given below:

Hypotheses for t test:

H_0: There is no significant difference between the mean number of publications as other author among non-JRFs and JRFs.

H_a: There is a significant difference between the mean number of publications as other author among non-JRFs and JRFs.

Hypotheses for Mann-Whitney U Test:

H_0: There is no significant difference between the median number of publications as other author among non-JRFs and JRFs.

H_a: There is a significant difference between the median number of publications as other author among non-JRFs and JRFs.

The results of the t-test for subgroup 1 are tabulated below in Table 4.83 and Table 4.84.

Table 4.83: Group Statistics for Subgroup 1

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as Other Author	No	20	0.05	0.22	0.05
	Yes	20	0.00	0.00	0.00

Table 4.84: Independent Samples t-Test for Subgroup 1

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as Other Author	Equal Variances Assumed	4.46	0.041	1.00	38.00	0.324	0.05	0.05	-0.05	0.15
	Equal Variances Not Assumed			1.00	19.00	0.330	0.05	0.05	-0.05	0.15

From the interpretation of Levene's test as shown in Table 4.84, it is observed that the samples were not having equal variances, since the probability (*Sig*. = 0.041) for the *F* value = 4.46 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as other author between non-JRFs and JRFs, t (19) = 1.00, p = 0.330. That is, the average number of

publications as other author by JRFs is not significantly different from the average publications as other author by non-JRFs. However, one should note that the means calculated here themselves are not of significance as they are mere the notations and not the real means of the publications. The means are used merely to represent the mid-point of the responses and facilitates the comparison among the two groups.

Similarly, the results of Mann-Whitney U test for subgroup 1 are tabulated below in Table 4.85 and Table 4.86.

Table 4.85: Ranks for Subgroup 1

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as Other Author	20	20	40	21.00	20.00	420.00	400.00

Table 4.86: U-Test Statistics for Subgroup 1

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as Other Author	190.00	400.00	-1.00	0.317

The number of publications as other author by the non-JRFs (*Mdn* = 2.11) is same as the number of publications as other author by the JRFs (*Mdn* = 2.00). Mann-Whitney U test result (Table 4.86) also shows that there is no statistically significant difference in the number of publications as other author among the two groups ($U = 190.00$, $z = -1.00$, $p = 0.317 > 0.05$) for subgroup 1.

The results of the t-test for subgroup 2 are tabulated below in Table 4.87 and Table 4.88.

Table 4.87: Group Statistics for Subgroup 2

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as Other Author	No	30	0.17	0.38	0.07
	Yes	30	0.07	0.25	0.05

Table 4.88: Independent Samples t-Test for Subgroup 2

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as Other Author	Equal Variances Assumed	6.29	0.015	1.20	58.00	0.235	0.10	0.08	-0.07	0.27
	Equal Variances Not Assumed			1.20	50.64	0.235	0.10	0.08	-0.07	0.27

From the interpretation of Levene's test as shown in Table 4.88, it is observed that the samples were not having equal variances, since the probability (*Sig.* = 0.015) for the *F* value = 6.29 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as other author between non-JRFs and JRFs, t (50.64) = 1.20, p = 0.235. That is, the number of publications as other author by JRFs is not significantly different from the number of publications as other author by non-JRFs. It should be remembered, however, that the means measured here alone do not matter, as they are merely the notations and not the actual means of the publications. The methods are only used to represent the mid-point of the replies and promote the contrast between the two classes.

Similarly, the results of Mann-Whitney U test for subgroup 2 are tabulated below in Table 4.89 and Table 4.90.

Table 4.89: Ranks for Subgroup 2

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as Other Author	30	30	60	32.00	29.00	960.00	870.00

Table 4.90: U-Test Statistics for Subgroup 2

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Publications as Other Author	405.00	870.00	-1.20	0.232

The number of publications as other author by the non-JRFs (*Mdn* = 2.40) is same as the number of publications by the JRFs (*Mdn* = 2.14) as other authors. Mann-Whitney U test result

(Table 4.90) also showed that there is no statistically significant difference (U = 405.00, z = -1.20, p = 0.232 > 0.05) for subgroup 2 in terms of the number of publications as other author.

For subgroup 3, the results of the t-test are tabulated below in Table 4.91 and Table 4.92.

Table 4.91: Group Statistics for Subgroup 3

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as Other Author	No	30	0.17	0.38	0.07
	Yes	30	0.20	0.41	0.07

Table 4.92: Independent Samples t-Test for Subgroup 3

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as Other Author	Equal Variances Assumed	0.43	0.513	-0.33	58.00	0.744	-0.03	0.10	-0.24	0.17
	Equal Variances Not Assumed			-0.33	57.71	0.744	-0.03	0.10	-0.24	0.17

From the interpretation of Levene's test as shown in Table 4.92, it is observed that the samples were having equal variances, since the probability (*Sig*. = 0.513) for the *F* value = 0.43 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. The results of t-test indicate that there is no statistically significant difference in the number of publications as other author between non-JRFs and JRFs, t (58.00) = -0.33, p = 0.744. That is, the average number of publications as other author by JRFs is not significantly different from the average number of publications as other author by non-JRFs. However, it should be noted that the means measured here do not matter as they are merely comments, and not actual means of publications. The means are only used to represent the medium of the answers and promote comparisons between the two categories.

Similarly, the results of Mann-Whitney U test for subgroup 3 are tabulated below in Table 4.93 and Table 4.94.

Table 4.93: Ranks for Subgroup 3

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	Yes	Total	No	Yes	No	Yes
Publications as Other Author	30	30	60	30.00	31.00	900.00	930.00

Table 4.94: U-Test Statistics for Subgroup 3

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as Other Author	435.00	900.00	-0.33	0.741

The number of publications as other author by the non-JRFs (*Mdn* = 2.40) is same as the number of publications as other author by the JRFs (*Mdn* = 2.50). Mann-Whitney U test result (Table 4.94) also showed that there is no statistically significant difference (U = 435.00, z = -0.33, p = 0.741 > 0.05) in the median number of publications as other author by non-JRFs and JRFs for subgroup 3 comprising of the scholars who have either submitted or are planning to submit their thesis in the year 2020.

The results of the t test for subgroup 4 are tabulated below in Table 4.95 and Table 4.96.

Table 4.95: Group Statistics for Subgroup 4

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Publications as Other Author	No	20	3.40	2.85	0.64
	Yes	20	3.70	2.41	0.54

Table 4.96: Independent Samples t-test for Subgroup 4

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as Other Author	Equal Variances Assumed	1.01	0.322	-0.36	38.00	0.721	-0.30	0.84	-1.99	1.39
	Equal Variances Not Assumed			-0.36	36.95	0.721	-0.30	0.84	-1.99	1.39

As shown in Table 4.96, Levene's test suggested that the samples were having equal variances, since the probability (*Sig*. = 0.322) for the F value = 1.01 is more than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row

has been used to interpret the results of t-test. However, the results of independent sample t-test indicate that there is no statistically significant difference in the mean number of publications as other author by non-JRFs and JRFs., t (38) = -0.36, p = 0.721. That is, the average number of publications as other author by JRFs and non-JRFs is statistically similar. However, it should be noted that the means measured here alone are not significant as they are merely comments and not the actual means of publications. The means are merely used to represent the middle point of the answers and promote the comparison between the two classes.

Similarly, the results of the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test for subgroup 4 are tabulated below in Table 4.97 and Table 4.98.

Table 4.97: Ranks for Groups for Subgroup 4

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as Other Author	20	20	40	19.88	21.13	397.50	422.50

Table 4.98: U-Test Statistics for Groups for Subgroup 4

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Publications as Other Author	187.50	397.50	-0.34	0.731

A Mann-Whitney U Test in Table 4.98 shows that there is no significant difference (U = 187.50, Z = -0.34, p = 0.731) between the non-JRFs and JRFs in terms of number of publications as other author. The median of number of publications as other author by the non-JRFs (Mdn = 19.50) compared to median of number of publications as other author by JRFs (Mdn = 17.36) is suggesting that the JRF scheme is having no significant effect on the number of publications as other author.

The results of the t test for subgroup 5 are tabulated below in Table 4.99 and Table 4.100.

Table 4.99: Group Statistics for Subgroup 5

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Publications as	No	20	6.55	4.20	0.94
Other Author	Yes	20	5.95	4.25	0.95

Table 4.100: Independent Samples t-test for Subgroup 5

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Publications as Other Author	Equal Variances Assumed	0.04	0.846	0.45	38.00	0.656	0.60	1.34	-2.10	3.30
	Equal Variances Not Assumed			0.45	37.99	0.656	0.60	1.34	-2.10	3.30

As shown in Table 4.100, Levene's test suggested that the samples were having equal variances, since the probability (*Sig*. = 0.846) for the *F* value = 0.04 is more than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances Assumed row has been used to interpret the results of t-test. However, the results of independent sample t-test indicate that there is no statistically significant difference in the mean number of publications as other author by non-JRFs and JRFs, t (38) = 0.45, p = 0.656. That is, the average number of publications as other author by JRFs and non-JRFs is statistically similar. It should be remembered, however, that the means measured here are not important as the publications are merely annotations and not the real means. The means are clearly used to represent the centrality of the responses and to promote the contrast between the two groups.

Similarly, the results of the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test for subgroup 5 are tabulated below in Table 4.101 and Table 4.102.

Table 4.101: Ranks for Groups for Subgroup 5

	JRF Qualified			Mean Rank		Sum of Ranks	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Publications as Other Author	20	20	40	21.18	19.82	423.50	396.50

Table 4.102: U-Test Statistics for Groups for Subgroup 5

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Publications as Other Author	186.50	396.50	-0.37	0.714

A Mann-Whitney U Test in Table 4.102 shows that there is no significant difference (U = 186.50, Z = -0.37, p = 0.714) between the non-JRFs and JRFs in terms of number of publications as

other author. The median of number of publications as other author by the non-JRFs (*Mdn* = 42.00) compared to median of number of publications as other author by JRFs (*Mdn* = 34.50) is suggesting that the JRF scheme is having no significant effect on the number of publications as other author.

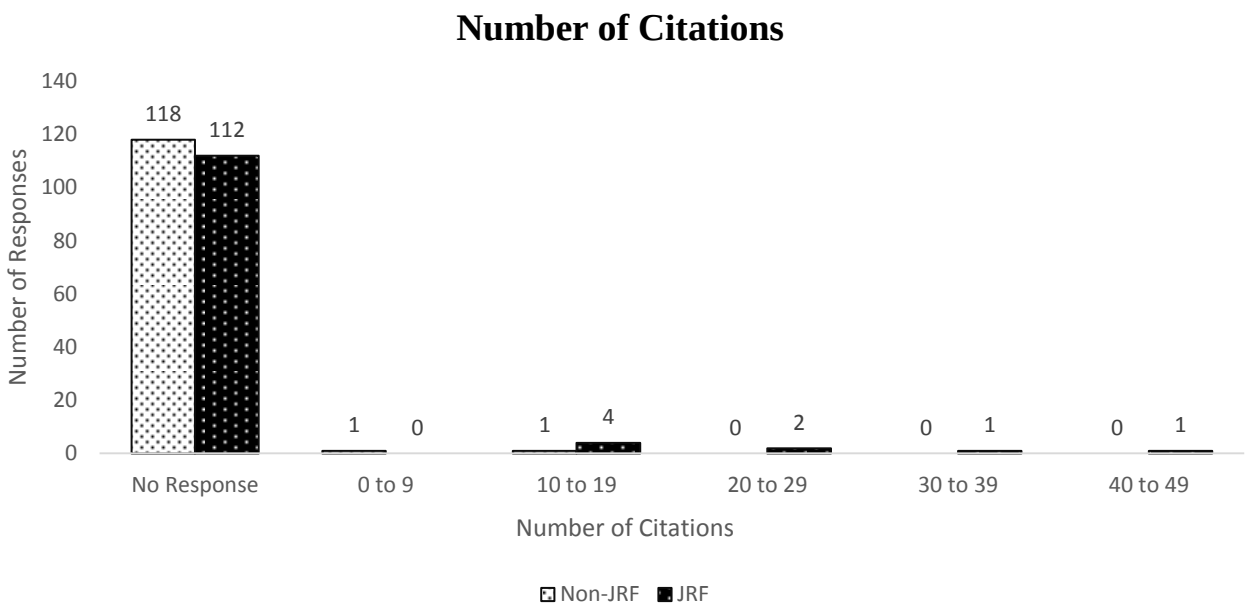
Fifteenth item of the questionnaire was regarding the number of citations they have got for their research. The responses were received on the interval scale. The received responses are tabulated as shown below in Table 4.103.

Table 4.103: Number of Citations

Number of Publications		**JRF Qualified**		**Total**
Value	**Value Label**	**No**	**Yes**	**(Percent)**
0	No Response	118	112	230 (95.83)
1	0 to 9	1	0	1 (0.42)
2	10 to 19	1	4	5 (2.08)
3	20 to 29	0	2	2 (0.83)
4	30 to 39	0	1	1 (0.42)
5	40 to 49	0	1	1 (0.42)
	Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated above in Table 4.103 can also be represented as shown below in Figure 4.27.

Figure 4.27: Number of Citations



For the analysis of this item through Table 4.103 and Figure 4.27, the received responses shows that the majority of the responders are not interested or are not being able to keep track over the number of citations they receive. The number of responses were too small to make us able to use t-test or Mann-Whitney U Test for comparison.

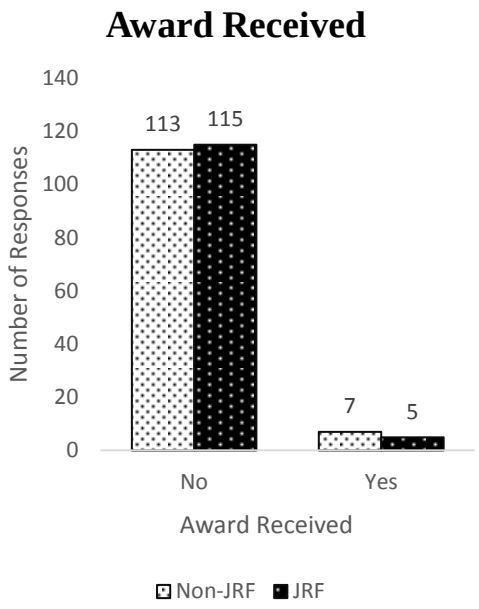
The sixteenth item of the questionnaire was regarding the grant of any award for their research. The responses were asked in dichotomous Yes/No form. The received responses are tabulated below in Table 4.104.

Table 4.104: Award Received

Award Received			JRF Qualified		Total
Value	**Value Label**		**No**	**Yes**	
0	No	Count	113	115	228
		Expected Count	114.00	114.00	228.00
1	Yes	Count	7	5	12
		Expected Count	6.00	6.00	12.00
Total		Count	120	120	240
		Expected Count	120.00	120.00	240.00

The data tabulated above in Table 4.104 can also be represented as shown below in Figure 4.28.

Figure 4.28: Award Received



For the analysis of this item through Table 4.104 and Figure 4.28, the received responses shows that the majority of the responders have not received any award, which is quite obvious. However, to see whether the reception of any award is associated with being a JRF or not, Chi-Square Test has been conducted. The null and alternative hypotheses for the Chi-Square Test of Association are stated as below:

H_0: There is no association between JRF qualification and the reception of any award for research.

H_a: There is an association between JRF qualification and the reception of any award for research.

The results of the Chi-Square Test are tabulated below in Table 4.105

Table 4.105: Chi-Square Tests

Statistic	Value	df	Asymp. Sig. (2-tailed)	Exact Sig. (2-tailed)	Exact Sig. (1-tailed)
Pearson Chi-Square	0.35	1	0.554		
Likelihood Ratio	0.35	1	0.553		
Fischer's Exact Test				0.572	0.384
Continuity Correction	0.09	1	0.767		
Linear-by-Linear Association	0.35	1	0.554		
N of Valid Cases	240				

Since the assumptions of Chi-Square test that are: (a) Individual observations are independent of each other, and (b) Expected cell frequencies are not too small are met. Thus, the results of Pearson Chi-Square Statistic from Table 4.105 have been used to interpret the results. The Chi-Square Test showed that there was no significant association between JRF qualification and the reception of any award for research, X^2 (1, N = 240) = 0.35, p = 0.554.

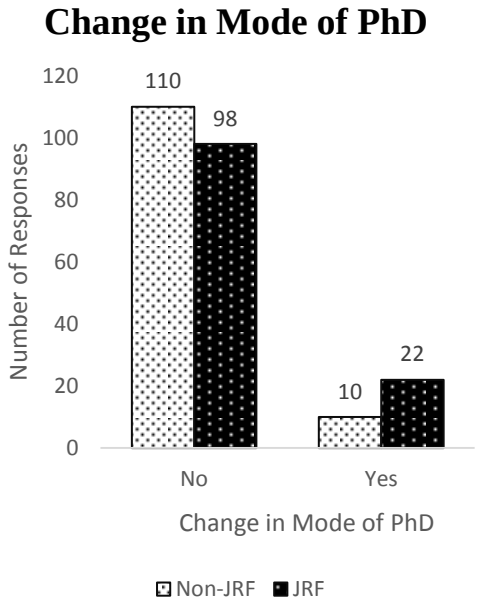
The seventeenth item of the questionnaire was regarding the change in mode of their PhD from regular to non-regular. The responses were asked in dichotomous Yes/No form. The received responses are tabulated below in Table 4.106.

Table 4.106: Change in Mode of PhD

Change in Mode of PhD			JRF Qualified		Total
Value	Value Label		No	Yes	
0	No	Count	110	98	208
		Expected Count	104.00	104.00	208.00
1	Yes	Count	10	22	32
		Expected Count	16.00	16.00	32.00
Total		Count	120	120	240
		Expected Count	120.00	120.00	240.00

The data tabulated above in Table 4.106 can also be represented as shown below in Figure 4.29.

Figure 4.29: Change in Mode of PhD



For the analysis of this item through Table 4.106 and Figure 4.29, the received responses shows that the majority of the responders have not changed the mode of their PhD, which is quite obvious. However, to see whether the change in mode of PhD is associated with being a JRF or not, Chi-Square Test has been conducted. The null and alternative hypotheses for the Chi-Square Test of Association are stated as below:

H_0: There is no association between JRF qualification and the change in mode of PhD.

H_a: There is an association between JRF qualification and the change in mode of PhD.

The results of the Chi-Square Test are tabulated below in Table 4.107.

Table 4.107: Chi-Square Tests

Statistic	Value	df	Asymp. Sig. (2-tailed)	Exact Sig. (2-tailed)	Exact Sig. (1-tailed)
Pearson Chi-Square	5.19	1	0.023		
Likelihood Ratio	5.30	1	0.021		
Fischer's Exact Test				0.024	0.018
Continuity Correction	4.36	1	0.037		
Linear-by-Linear Association	5.17	1	0.023		
N of Valid Cases	240				

Since the assumptions of Chi-Square test that are: (a) Individual observations are independent of each other, and (b) Expected cell frequencies are not too small are met. Thus, the results of Pearson Chi-Square Statistic from Table 4.107 have been used to interpret the results. The Chi-Square Test showed that there is a significant association between JRF qualification and the change in mode of PhD, X^2 (1, N = 240) = 5.19, p = 0.023.

The next item of the questionnaire, i.e., eighteenth item deals with the self-ratings of their PhD thesis by the respondents on the basis of contribution in their respective fields. For this purpose, 9-point rating scale was used. The responses varied from 1 to 9. Moreover, the whole dataset regarding the item would not be able to provide a better view as it also includes the responses from the respondents who are still writing their thesis or those who have not yet started writing their

thesis. So, these two subgroups have been eliminated. The responses of remaining 140 respondents have been tabulated below in Table 4.108.

Table 4.108: Self-Ratings of Contribution

Self-Ratings of Contribution	JRF Qualified		Total (Percent)
	No	Yes	
1	0	0	0 (0.00)
2	0	0	0 (0.00)
3	0	0	0 (0.00)
4	11	14	25 (17.86)
5	21	16	37 (26.43)
6	18	22	40 (28.57)
7	17	10	27 (19.29)
8	3	08	11 (7.86)
9	0	0	0 (0.00)
Total	70 (50.00)	70 (50.00)	140 (100)

The data tabulated above in Table 4.108 can also be represented as shown below in Figure 4.30.

Figure 4.30: Self-Ratings of Contribution

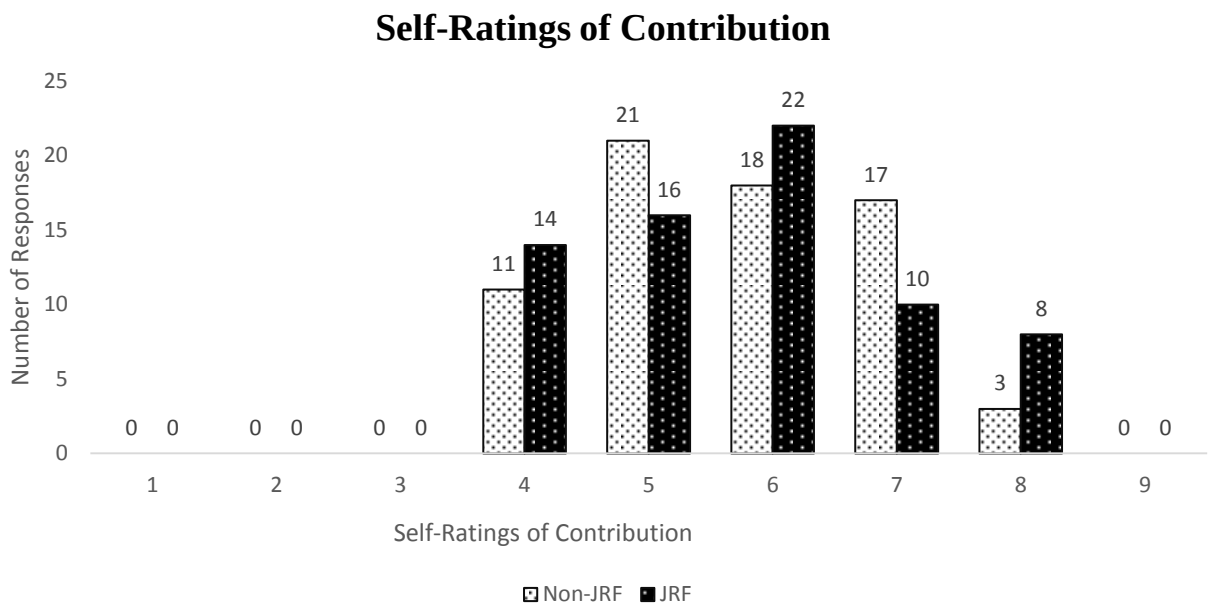


Table 4.108 along with Figure 4.30 shows the responses of the participants regarding self-ratings of their thesis on the basis of contribution in their respective fields.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.109 as shown below.

Table 4.109: Descriptive Statistics Regarding Self-Ratings of Contribution

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	70	70	140
Mean	5.71	5.74	5.73
SE Mean	0.14	0.15	0.10
Standard Deviation	1.13	1.26	1.19
Skewness	0.10	0.24	0.18
S.E. Skewness	0.29	0.29	0.20
Kurtosis	- 0.92	- 0.83	- 0.85
S.E. Kurtosis	0.57	0.57	0.41
Minimum	4	4	4
Maximum	8	8	8
Range	4	4	4
Mode	6	6	6
Median	6	6	6

Table 4.109 suggests that the mean self-rating on the basis of contribution in their respective field by the non-JRFs only, JRFs only and all the participants are 5.71 (*SE* = 0.14, *SD* = 1.13), 5.74

(*SE* = 0.15, *SD* = 1.26), and 5.73 (SE = 0.10, *SD* = 1.19), respectively. The self-ratings by non-JRFs ranged from 4 to 8 (*M* = 5.71, *SD* = 1.13). The self-ratings by non-JRFs were distributed with skewness of 0.10 (*SE* = 0.29) and kurtosis of – 0.92 (*SE* =0.57). The self-ratings by JRFs ranged from 4 to 8 (*M* = 5.74, *SD* = 1.26). The self-ratings by JRFs were distributed with skewness of 0.24 (*SE* = 0.29) and kurtosis of – 0.83 (*SE* = 0.57). The self-ratings by all the respondents ranged from 4 to 8 (*M* = 5.73, *SD* = 1.19). The self-ratings regarding contribution in their respective fields were distributed with skewness of 0.18 (*SE* = 0.20) and kurtosis of – 0.85 (*SE* = 0.41).

However, one should note here that the means stated above are just for the sake of representation and do not have any significant meaning as the ratings are not the quantities measured on the ratio scale. Observing the above data and analysis, there seems to be insignificant difference in the means and medians of the self-ratings of their thesis by the non-JRFs and JRFs on the basis of their contribution in respective fields. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of their contribution in the respective field.

H_a: There is a significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of their contribution in their respective fields.

The results of the t test are tabulated below in Table 4.110 and Table 4.111.

Table 4.110: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Self-Ratings of Contribution	No	70	5.71	1.13	0.14
	Yes	70	5.74	1.26	0.15

Table 4.111: Independent Samples t-test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Self-Ratings of Contribution	Equal Variances Assumed	0.41	0.524	-0.14	138.00	0.888	-0.03	0.20	-0.43	0.37
	Equal Variances Not Assumed			-0.14	136.45	0.888	-0.03	0.20	-0.43	0.37

As shown in Table 4.111, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.524) for the *F* value = 0.41 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean self-rating of their thesis by non-JRFs and JRFs on the basis of contribution in their respective fields, t (138) = -0.14, p = 0.888. That is, the average number of self-rating by JRFs (M = 5.74, SD = 1.26) and non-JRFs (M = 5.71, SD = 1.13) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of their contribution in the respective field.

H_a: There is a significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of their contribution in the respective field.

The results of the Mann-Whitney U test are tabulated below in Table 4.112 and Table 4.113.

Table 4.112: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Self-Ratings of Contribution	70	70	140	70.41	70.59	4929.00	4941.00

Table 4.113: U-Test Statistics for Groups

Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**

Self-Ratings of Contribution	2444.00	4929.00	-0.03	0.979

A Mann-Whitney U Test (Table 4.113) shows that there is no significant difference (U = 2444.00, Z = -0.03, p = 0.979) between the non-JRFs and JRFs in terms of self-ratings of their thesis on the basis of contribution in their respective fields. The median of self-ratings by the non-JRFs (*Mdn* = 6) as compared to median of self-ratings by JRFs (*Mdn* = 6) is suggesting that the JRF scheme is having no significant effect on the perceived contribution in their respective fields.

The next item of the questionnaire, i.e., nineteenth item deals with the self-ratings of their PhD thesis by the respondents on the basis of innovation. For this purpose, again 9-point rating scale was used. The responses varied from 1 to 9. Moreover, as discussed above for the previous item, the whole dataset regarding the item would not be able to provide a better view as it also includes the responses from the respondents who are still writing their thesis or those who have not yet started writing their thesis. So, these two subgroups have been eliminated. The responses of remaining 140 respondents have been tabulated below in Table 4.114.

Table 4.114: Self-Ratings of Innovation

Self-Ratings of Innovation	**JRF Qualified**		**Total (Percent)**
	No	**Yes**	
1	0	0	0 (0.00)
2	0	0	0 (0.00)
3	2	2	4 (2.86)
4	9	7	16 (11.43)
5	17	18	35 (25.00)
6	25	26	51 (36.43)
7	15	16	31 (22.14)
8	2	1	3 (2.14)

9	0	0	0 (0.00)
Total	70 (50.00)	70 (50.00)	140 (100)

The data tabulated above in Table 4.114 can also be represented as shown below in Figure 4.31.

Figure 4.31: Self-Ratings of Innovation

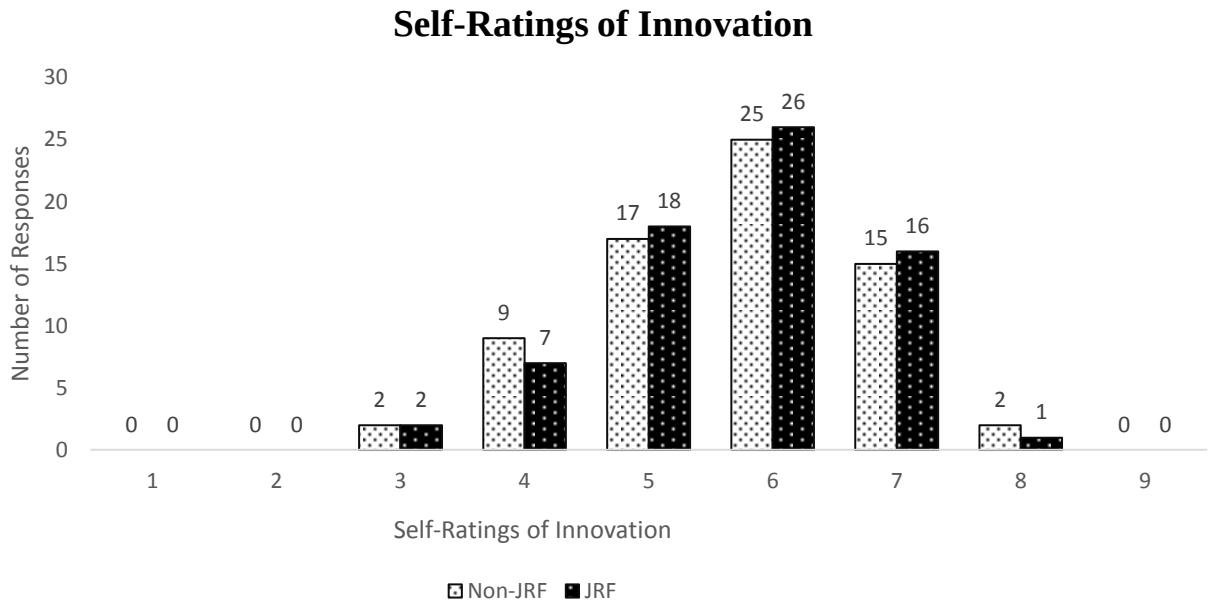


Table 4.114 along with Figure 4.31 shows the responses of the participants regarding self-ratings of their thesis on the basis of innovation.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.115 as shown below.

Table 4.115: Descriptive Statistics Regarding Self-Ratings of Innovation

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	70	70	140
Mean	5.69	5.71	5.70
SE Mean	0.13	0.13	0.09
Standard Deviation	1.12	1.07	1.09
Skewness	- 0.29	- 0.44	- 0.36
S.E. Skewness	0.29	0.29	0.20
Kurtosis	- 0.33	- 0.13	- 0.27
S.E. Kurtosis	0.57	0.57	0.41

Minimum	3	3	3
Maximum	8	8	8
Range	5	5	5
Mode	6	6	6
Median	6	6	6

Table 4.115 suggests that the mean self-rating on the basis of innovation by the non-JRFs only, JRFs only and all the participants are 5.69 (*SE* = 0.13, *SD* = 1.12), 5.71 (*SE* = 0.13, *SD* = 1.07), and 5.70 (SE = 0.09, *SD* = 1.09), respectively. The self-ratings by non-JRFs ranged from 3 to 8 (*M* = 5.69, *SD* = 1.12). The self-ratings by non-JRFs were distributed with skewness of – 0.29 (*SE* = 0.29) and kurtosis of – 0.33 (*SE* =0.57). The self-ratings by JRFs ranged from 3 to 8 (*M* = 5.71, *SD* = 1.07). The self-ratings by JRFs were distributed with skewness of – 0.44 (*SE* = 0.29) and kurtosis of – 0.13 (*SE* = 0.57). The self-ratings by all the respondents ranged from 3 to 8 (*M* = 5.70, *SD* = 1.09). The self-ratings by them were distributed with skewness of – 0.36 (*SE* = 0.20) and kurtosis of – 0.27 (*SE* = 0.41).

However, one should note here that the means stated above are just for the sake of representation and do not have any significant meaning as the ratings are not the quantities measured on the ratio scale. Observing the above data and analysis, there seems to be insignificant difference in the means and medians of the self-ratings of their thesis by the non-JRFs and JRFs on the basis of their innovation. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of Innovation.

H_a: There is a significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of innovation.

The results of the t test are tabulated below in Table 4.116 and Table 4.117.

Table 4.116: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Self-Ratings of Innovation	No	70	5.69	1.12	0.13
	Yes	70	5.71	1.07	0.13

Table 4.117: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Self-Ratings of Innovation	Equal Variances Assumed	0.27	0.605	-0.15	138.00	0.878	-0.03	0.19	-0.39	0.34
	Equal Variances Not Assumed			-0.15	137.61	0.878	-0.03	0.19	-0.39	0.34

As shown in Table 4.117, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.605) for the *F* value = 0.27 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean self-rating of their thesis by non-JRFs and JRFs on the basis of innovation, t (138) = -0.15, p = 0.878. That is, the average number of self-rating by JRFs (M = 5.71, SD = 1.07) and non-JRFs (M = 5.69, SD = 1.12) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of innovation.

H_a: There is a significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of innovation.

The results of the Mann-Whitney U test are tabulated below in Table 4.118 and Table 4.119.

Table 4.118: Ranks for Groups

	JRF Qualified	Mean Rank	Sum of Ranks

	No	Yes	Total	No	Yes	No	Yes
Self-Ratings of Innovation	70	70	140	69.95	71.05	4896.50	4973.50

Table 4.119: U-Test Statistics for Groups

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Self-Ratings of Innovation	2411.50	4896.50	-0.17	0.867

A Mann-Whitney U Test (Table 4.119) shows that there is no significant difference (U = 2411.50, Z = -0.17, p = 0.867) between the non-JRFs and JRFs in terms of self-ratings of their thesis on the basis of contribution in their respective fields. The median of self-ratings by the non-JRFs (Mdn = 6) compared to median of self-ratings by JRFs (Mdn = 6) is suggesting that the JRF scheme is having no significant effect on the perceived innovation.

Twentieth item of the questionnaire deals with the self-ratings of their PhD thesis by the respondents on the basis of their readiness for utilization. For this purpose, again 9-point rating scale was used. The responses varied from 1 to 9. Moreover, as discussed above for the previous item, the whole dataset regarding the item would not be able to provide a better view as it also includes the responses from the respondents who are still writing their thesis or those who have not yet started writing their thesis. So, these two subgroups have been eliminated. The responses of remaining 140 respondents have been tabulated below in Table 4.120.

Table 4.120: Self-Ratings of Readiness for Utilization

Self-Ratings of Readiness for Utilization	JRF Qualified		Total (Percent)
	No	Yes	
1	0	0	0 (0.00)
2	0	0	0 (0.00)
3	1	0	1 (0.71)
4	5	7	12 (8.57)
5	16	21	37 (26.43)

6	29	22	51 (36.43)
7	18	19	37 (26.43)
8	1	1	2 (1.43)
9	0	0	0 (0.00)
Total	70 (50.00)	70 (50.00)	140 (100)

The data tabulated above in Table 4.120 can also be represented as shown below in Figure 4.32.

Figure 4.32: Self-Ratings of Readiness for Utilization

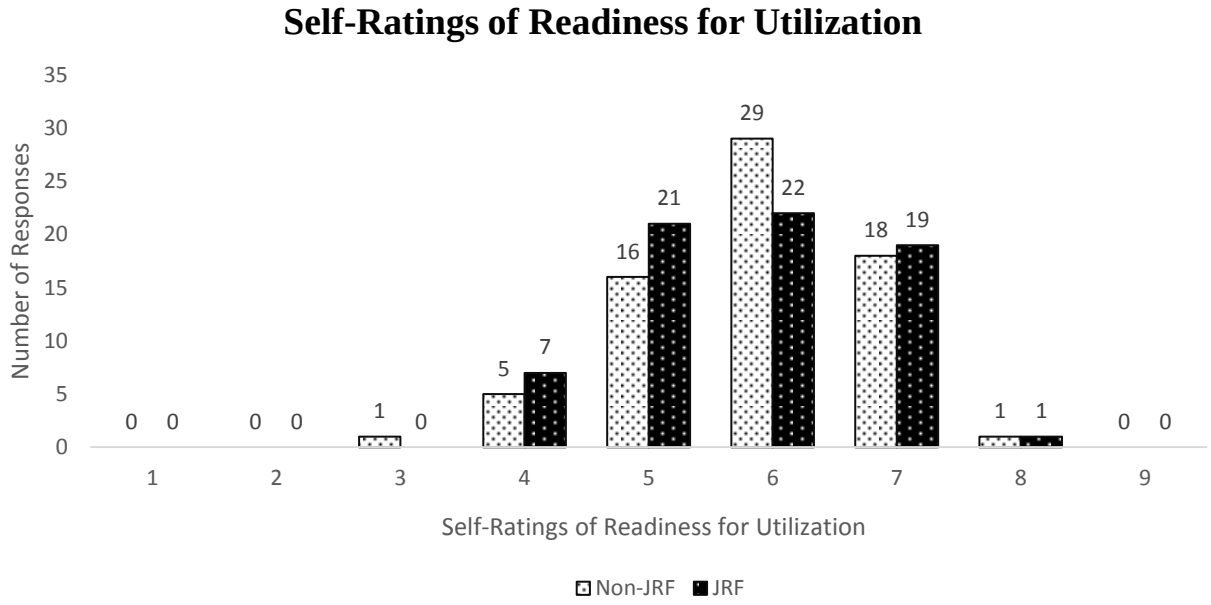


Table 4.120 along with Figure 4.32 shows the responses of the participants regarding self-ratings of their thesis on the basis of readiness for utilization.

Also, calculating the descriptive statistics for this item for the two groups, the results have been tabulated in Table 4.121 as shown below.

Table 4.121: Descriptive Statistics Regarding Self-Ratings of Readiness for Utilization

Measures	JRF Qualified		Total
	No	Yes	
N (Valid)	70	70	140
Mean	5.87	5.80	5.84

SE Mean	0.12	0.12	0.08
Standard Deviation	0.98	1.00	0.99
Skewness	- 0.50	- 0.12	- 0.30
S.E. Skewness	0.29	0.29	0.20
Kurtosis	0.13	- 0.86	- 0.44
S.E. Kurtosis	0.57	0.57	0.41
Minimum	3	4	3
Maximum	8	8	8
Range	5	4	5
Mode	6	6	6
Median	6	6	6

Table 4.121 suggests that the mean self-ratings of their thesis on the basis of readiness for utilization by the non-JRFs only, JRFs only and all the participants are 5.87 (*SE* = 0.12, *SD* = 0.98), 5.80 (*SE* = 0.12, *SD* = 1.00), and 5.84 (SE = 0.08, *SD* = 0.99), respectively. The self-ratings by non-JRFs ranged from 3 to 8 (*M* = 5.87, *SD* = 0.98). The self-ratings by non-JRFs were distributed with skewness of – 0.50 (*SE* = 0.29) and kurtosis of 0.13 (*SE* =0.57). The self-ratings by JRFs ranged from 4 to 8 (*M* = 5.80, *SD* = 1.00). The self-ratings by JRFs were distributed with skewness of – 0.12 (*SE* = 0.29) and kurtosis of – 0.86 (*SE* = 0.57). The self-ratings by all the respondents ranged from 3 to 8 (*M* = 5.84, *SD* = 0.99). The self-ratings by them were distributed with skewness of – 0.30 (*SE* = 0.20) and kurtosis of – 0.44 (*SE* = 0.41).

However, one should note here that the means stated above are just for the sake of representation and do not have any significant meaning as the ratings are not the quantities measured on the ratio scale. Observing the above data and analysis, there seems to be insignificant difference in the means and medians of the self-ratings of their thesis by the non-JRFs and JRFs on the basis of their readiness for utilization. For checking whether these differences are statistically significant or not, the researcher has conducted the t-test and Mann-Whitney U tests. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of their readiness for utilization.

H_a: There is a significant difference between the mean self-rating of their thesis by non-JRFs and JRFs on the basis of their readiness for utilization.

The results of the t test are tabulated below in Table 4.122 and Table 4.123.

Table 4.122: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Self-Ratings of Readiness for Utilization	No	70	5.87	0.98	0.12
	Yes	70	5.80	1.00	0.12

Table 4.123: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Self-Ratings of Readiness for Utilization	Equal Variances Assumed	0.88	0.349	0.43	138.00	0.670	0.07	0.17	-0.26	0.40
	Equal Variances Not Assumed			0.43	137.91	0.670	0.07	0.17	-0.26	0.40

As shown in Table 4.123, Levene's test suggested that the samples were having equal variances, since the probability (*Sig*. = 0.349) for the *F* value = 0.88 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean self-rating of their thesis by non-JRFs and JRFs on the basis of their readiness for utilization, t (138) = 0.43, p = 0.670. That is, the average number of self-rating by JRFs (M = 5.80, SD = 1.00) and non-JRFs (M = 5.87, SD = 0.98) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of their readiness for utilization.

H_a: There is a significant difference between the median self-rating of their thesis by non-JRFs and JRFs on the basis of their readiness of utilization.

The results of the Mann-Whitney U test are tabulated below in Table 4.124 and Table 4.125.

Table 4.124: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Self-Ratings of Readiness for Utilization	70	70	140	72.20	68.80	5054.00	4816.00

Table 4.125: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Self-Ratings of Readiness for Utilization	2331.00	4816.00	-0.52	0.604

A Mann-Whitney U Test (Table 4.125) shows that there is no significant difference (U = 2331.00, Z = -0.52, p = 0.604) between the non-JRFs and JRFs in terms of self-ratings of their thesis on the basis of readiness for utilization. The median of self-ratings by the non-JRFs (Mdn = 6) compared to median of self-ratings by JRFs (Mdn = 6) is suggesting that the JRF scheme is having no significant effect on the perceived readiness of their thesis for utilization.

Twenty first item of the questionnaire was a multiple-choice multiple answer item that asks the respondents for the reasons for pursuing their PhD. This type of item setting was adopted as the choices or characteristics were related to each other and a subject can possess one or more of these characteristics. The five options were related to Personal Knowledge, Employability, Collective Knowledge Base, Promotion, and Social Identity. Data regarding this item was recorded in multiple columns, with one column per answer option. For the analysis of this item, 0 (Labeled as 'NO') was encoded for the absence of the response and 1 (Labeled as 'YES') for the presence of response for each option. Then, the new variable named Count_Value_Within_Cases_21 was created using Count

Transformation. Then the frequency table of this new variable is represented as shown below in Table 4.126.

Table 4.126: Frequency Distribution of Reasons for PhD

Number of Options Selected	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
No Response	3 (1.25)	5 (2.08)	8 (3.33)
1	30 (12.50)	30 (12.50)	60 (25.00)
2	45 (18.75)	41 (17.08)	86 (35.83)
3	29 (12.08)	32 (13.33)	61 (25.42)
4	13 (5.42)	12 (5.00)	25 (10.42)
Total	120 (50.00)	120 (50.00)	240 (100)
Sum	259	256	515

From the analysis of Table 4.126, we could see that 3 of the non-JRFs and 5 JRFs, summing to 8 of total respondents have not chosen any response, which means they left this item unanswered. The Sum Row of the table indicates, the total number of responses given by non-JRFs, JRFs and all the respondents, respectively.

Option-wise tabulation of the responses is represented below in Table 4.128 along with the case processing summary as shown in Table 4.127.

Table 4.127: Case Processing Summary

		Valid Cases		Missing Cases		Total Cases	
		N	Percent	N	Percent	N	Percent
Reasons for PhD	Non-JRFs	117	48.75	3	1.25	120	50
	JRFs	115	47.92	5	2.08	120	50
	Total	232	96.67	8	3.33	240	100

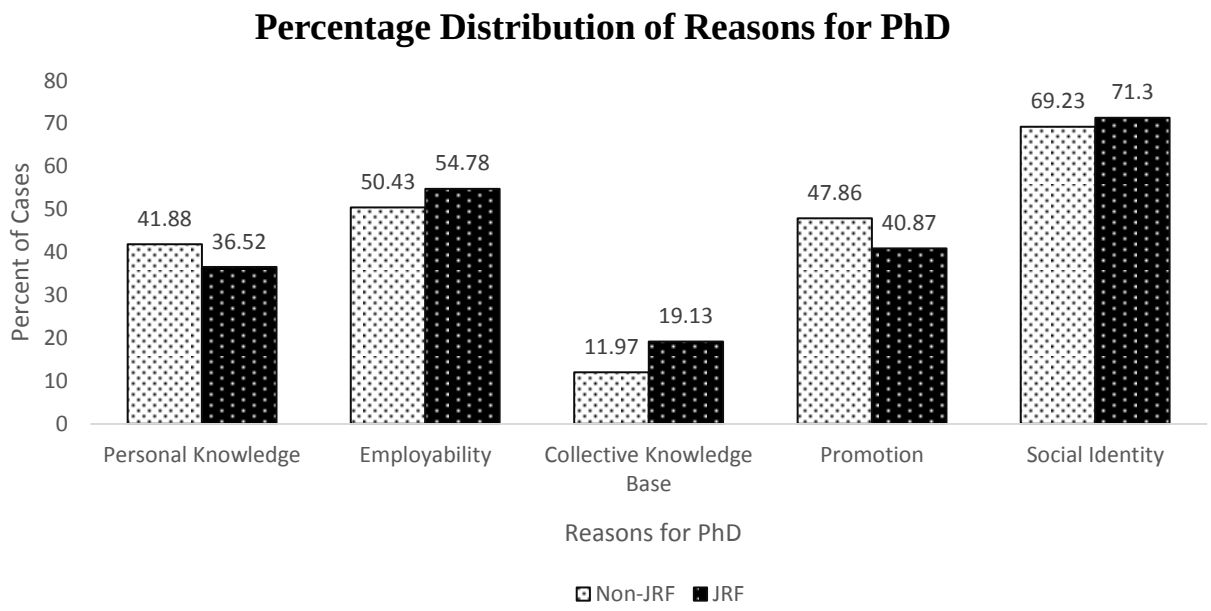
Table 4.128: Percentage Distribution of Reasons for PhD

	Responses

		Non-JRFs			JRFs			Total		
		N	Per cent	Per cent of Cases	N	Per cent	Per cent of Cases	N	Per cent	Per cent of Cases
Reasons for PhD	Personal Knowledge	49	18.92	41.88	42	16.41	36.52	91	17.67	39.22
	Employability	59	22.78	50.43	63	24.61	54.78	122	23.69	52.59
	Collective Knowledge Base	14	5.41	11.97	22	8.60	19.13	36	6.99	15.52
	Promotion	56	21.62	47.86	47	18.36	40.87	103	20.00	44.40
	Social Identity	81	31.27	69.23	82	32.03	71.30	163	31.65	70.26
Total		259	100	221.37	256	100	222.61	515	100	221.98

The data described in Table 4.128 can also be represented pictorially as shown below in Figure 4.33.

Figure 4.33: Percentage Distribution of Reasons for PhD



From the analysis of Table 4.127 and Table 4.128 along with Figure 4.33, it is evident that total 232 respondents have responded to the item, i.e., selected at least one of the five reason options for pursuing PhD. Out of these 232 respondents, 117 were non-JRFs and 115 were JRFs. The vast majority of the responders opted for pursuing PhD to attain social identity (70.26%). Also, majority of them are pursuing or pursued PhD for enhancing the scope of their employability (52.59%). 44.40% of them have decided to go for PhD, so as to increase their chances of getting promotions. For intensifying their personal knowledge, 39.22% of the responders have chosen to enroll in PhD.

Interestingly, only 15.52% of the responders have chosen PhD to contribute to the collective knowledge base.

On comparing the responses of the two classes of the respondents based upon the availing of Junior Research Fellowship scheme, we get to know that the reason of social identity is higher among the JRFs than the non-JRFs (71.30% of JRFs versus 69.23% of non-JRFs). 54.78% of the JRFs are doing PhD for increasing their employability in contrast to 50.43% of non-JRFs. However, 47.87% of non-JRFs are pursuing PhD for increasing their chances of promotion in respect to 40.87% of JRFs. For increasing personal knowledge, 41.88% of non-JRFs are doing their PhD in contrast to 36.52% of JRFs. Moreover, only 19.13% of JRFs and 11.97% of non-JRFs are pursuing PhD to enhance the collective knowledge base of the society.

Twenty-second item of the questionnaire was a multiple-choice multiple answer item that deals with the preferences of the respondents regarding their professional careers. This type of item setting was adopted as the choices of professions were related to each other and a subject can opt for one or more of these choices. The five options were full-time researcher, part-time researcher, full time academician, part-time academician, and author/editor. Also, there was an open option, labelled others, where respondents could provide any other specified profession. Data regarding this item was recorded in multiple columns, with one column per answer option. For the analysis of this item, 0 (Labelled as 'NO') was encoded for the absence of the response and 1 (Labelled as 'YES') for the presence of response for each option. Then, the new variable named Choice_of_Profession was created using Count Transformation. Then the frequency table of this new variable is represented as shown below in Table 4.129.

Table 4.129: Frequency Distribution for Choice of Profession

Number of Options Selected	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
No Response	1 (0.42)	0 (0.00)	1 (0.42)
1	14 (5.83)	4 (1.67)	18 (7.50)
2	34 (14.17)	15 (6.25)	49 (20.42)

3	36 (15.00)	53 (22.08)	89 (37.08)
4	29 (12.08)	41 (17.08)	70 (29.17)
5	6 (2.50)	7 (2.92)	13 (5.42)
Total	120 (50.00)	120 (50.00)	240 (100)
Sum	336	392	728

From the analysis of Table 4.129, we could see that 1 of the non-JRFs respondents has not chosen any response, which means they left this item unanswered. The Sum Row of the table indicates, the total number of responses given by non-JRFs, JRFs and all the respondents, that are 336, 392, and 728, respectively.

Option-wise tabulation of the responses is represented below in Table 4.131 along with the case processing summary as shown in Table 4.130.

Table 4.130: Case Processing Summary

		Valid Cases		Missing Cases		Total Cases	
		N	**Percent**	**N**	**Percent**	**N**	**Percent**
Choice of Profession	Non-JRFs	119	49.58	1	0.42	120	50.00
	JRFs	120	50.00	0	0.00	120	50.00
	Total	239	99.58	1	0.42	240	100

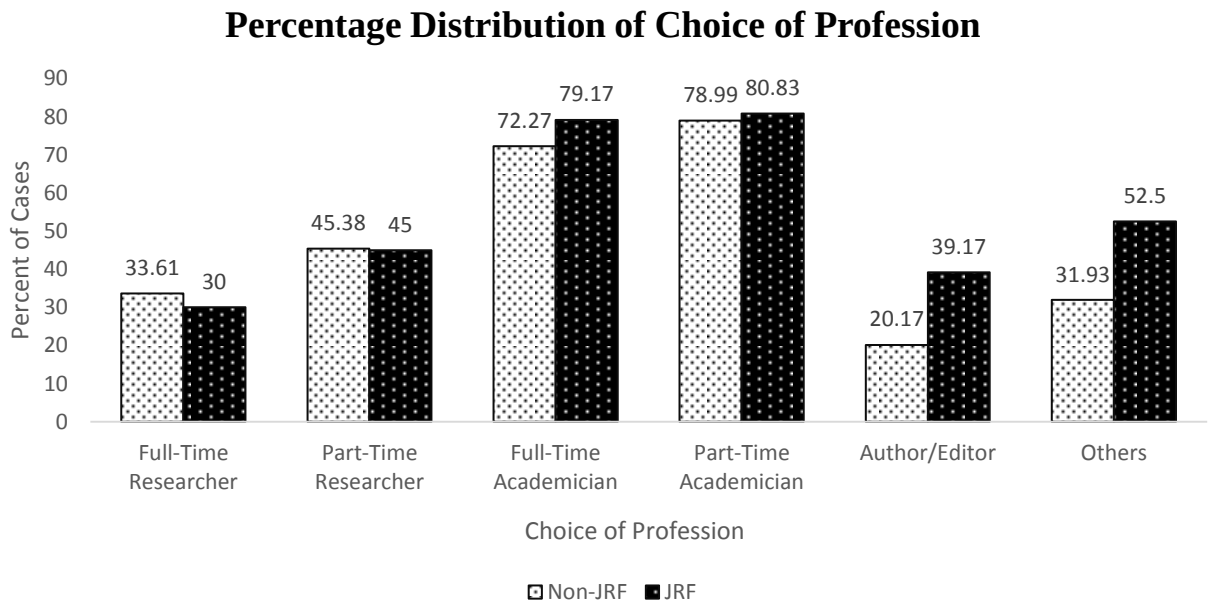
Table 4.131: Percentage Distribution of Choice of Profession

		Responses								
		Non-JRFs			JRFs			Total		
		N	**Per cent**	**Per cent of Cases**	**N**	**Per cent**	**Per cent of Cases**	**N**	**Per cent**	**Per cent of Cases**
Choice of Profession	Full-Time Researcher	40	11.90	33.61	36	9.18	30.00	76	10.44	31.80
	Part-Time Researcher	54	16.07	45.38	54	13.78	45.00	108	14.84	45.19
	Full-Time Academician	86	25.60	72.27	95	24.23	79.17	181	24.86	75.73
	Part-Time Academician	94	27.98	78.99	97	24.75	80.83	191	26.24	79.92

	Author/Editor	24	7.14	20.17	47	11.99	39.17	71	9.75	29.71
	Other	38	11.31	31.93	63	16.07	52.50	101	13.87	42.26
Total		336	100	282.35	392	100	326.67	728	100	304.61

The data represented above in Table 4.131 can also be represented as shown below in Figure 4.34.

Figure 4.34: Percentage Distribution of Choice of Profession



From the analysis of Table 4.130 and Table 4.131 along with Figure 4.34, it is evident that total 239 respondents have responded to the item, i.e., selected at least one of the five options of professional choices. Out of these 239 respondents, 119 were non-JRFs and 120 were JRFs. The vast majority of the responders opted for pursuing PhD with an aim to become part-time academician (79.92%). Also, majority of them are pursuing or pursued PhD for becoming full-time academician (75.73%). 45.19% of them have decided to go for PhD, so as to become part-time researchers. For opting any other profession, 42.26% of the responders have chosen to enroll in PhD. Interestingly, only 31.80% of the responders have chosen PhD to become full-time researcher. The professional choice of becoming an author or editor has been opted by only 29.71% of the responders.

On comparing the responses of the two classes of the respondents based upon the availing of Junior Research Fellowship scheme, we get to know that the choice of part-time academician is higher among the JRFs than the non-JRFs (80.83% of JRFs versus 78.93% of non-JRFs). 79.17% of

the JRFs are doing PhD for becoming full-time academician in contrast to 72.27% of non-JRFs. However, 45.38% of non-JRFs are pursuing PhD for becoming part-time researcher in respect to 45% of JRFs. For opting any other profession, 52.50% of JRFs are doing their PhD in contrast to 31.93% of non-JRFs. Moreover, only 30.00% of JRFs and 33.61% of non-JRFs are pursuing PhD to become full-time researcher. However, 39.17% of the JRFs want to become author or editor in contrast to 20.17% of the non-JRFs.

The next item of the questionnaire, that is twenty-third item was regarding the ranking of the professional choices those were mentioned in the twenty-second item above. The respondents were asked to rank their choices in decreasing order of their preferences from top to bottom. The top-most item was assigned the rank of 1, following the second item with rank of 2. The third item on the response was assigned the rank of 3. Similarly, the other items on the response list on fourth, fifth and sixth item were assigned the ranks of 4, 5, and 6, respectively. The data thus got in the form as represented below in Table 4.132.

Table 4.132: Rank Frequency Distribution of Choices of Profession

Ranks	JRF	Full-Time Researcher	Part-Time Researcher	Full-Time Academician	Part-time Academician	Author /Editor	Other	Total
	No	17	1	68	9	9	16	120
1	**Yes**	17	0	73	3	14	13	120
	Total	34	1	141	12	23	29	240
	No	3	18	15	75	5	4	120
2	**Yes**	3	21	7	77	3	9	120
	Total	6	39	22	152	8	13	240
	No	6	27	19	16	15	37	120
3	**Yes**	8	19	15	17	27	34	120
	Total	14	46	34	33	42	71	240
	No	22	23	14	13	32	16	120
4	**Yes**	15	34	14	13	25	19	120
	Total	37	57	28	26	57	35	240
5	**No**	14	49	3	6	17	31	120

	Yes	45	35	7	8	8	17	120
	Total	59	84	10	14	25	48	240
	No	58	2	1	1	42	16	120
6	**Yes**	32	11	4	2	43	28	120
	Total	90	13	5	3	85	44	240

Now the ranks represented in Table 4.132 have been assigned the weights. The assigned weights ranged from 1 to 6. The weights have been assigned such that 1 has been assigned to the least preferred choice, 6 has been assigned to the most preferred choice and similarly all other choices in between. Now, the total weights had been calculated and overall ranks based on these total weights have been calculated. This data has been illustrated in Table 4.133.

Table 4.133: Total Weights and Overall Ranks

		Weights					
Ranks	**JRF**	**Full-Time Researcher**	**Part-Time Researcher**	**Full-Time Academician**	**Part-time Academician**	**Author /Editor**	**Other**
	No	102	6	408	54	54	96
1	**Yes**	102	0	438	18	84	78
	Total	204	6	846	72	138	174
	No	15	90	75	375	25	20
2	**Yes**	15	105	35	385	15	45
	Total	30	195	110	760	40	65
	No	24	108	76	64	60	148
3	**Yes**	32	76	60	68	108	136
	Total	56	184	136	132	168	284
	No	66	69	42	39	96	48
4	**Yes**	45	102	42	39	75	57
	Total	111	171	84	78	171	105
	No	28	98	6	12	34	62
5	**Yes**	90	70	14	16	16	34
	Total	118	168	20	28	50	96
	No	58	2	1	1	42	16
6	**Yes**	32	11	4	2	43	28
	Total	90	13	5	3	85	44

Total Weights	**No**	293	373	608	545	311	390
	Yes	316	364	593	528	341	378
	Total	609	737	1201	1073	652	768
Overall Rank	**No**	6	4	1	2	5	3
	Yes	6	4	1	2	5	3
	Total	6	4	1	2	5	3

The summarized data of the Table 4.133 can also be represented graphically as shown below in Figure 4.35.

Figure 4.35: Total Weights for Professional Choices

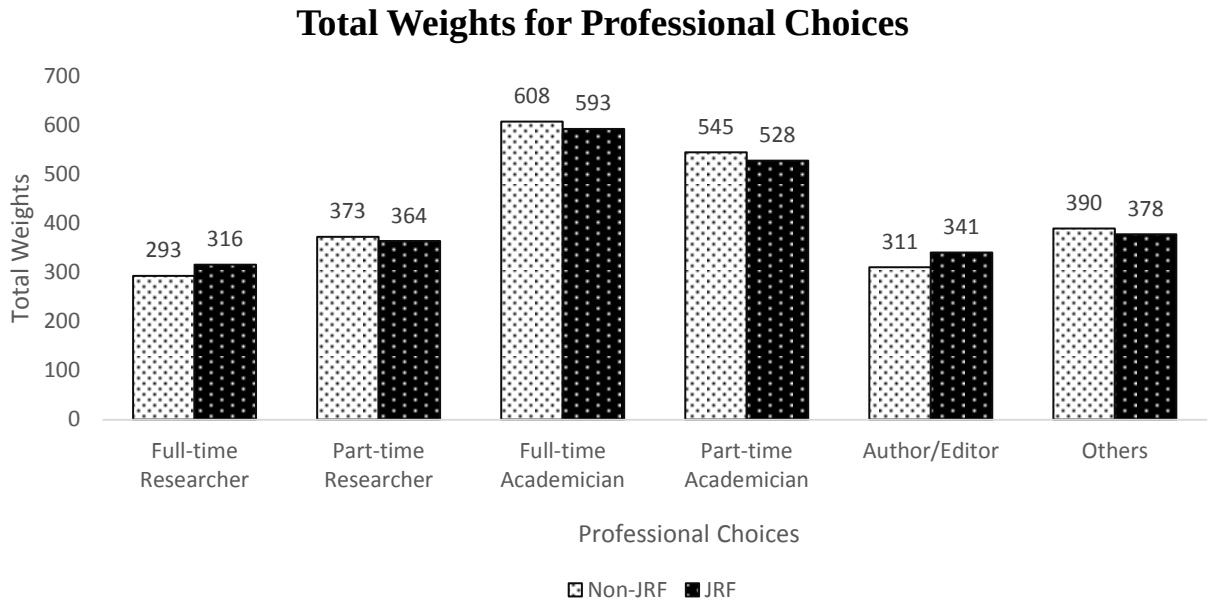


Table 4.133 along with Figure 4.35 shows that there is no difference among the two groups of the respondents in their professional choices, and both the groups had the same aspiration of becoming full-time researcher (Total Weights being 608 and 593 for non-JRFs and JRFs). Then, the second choice of both groups that are non-JRFs and JRFs are part-time academician, with total weights being 545 and 528, respectively. Also, the third choice of both the groups of non-JRFs and JRFs is found to be other than the provided options, with the total weights of 390 and 378 respectively for both the groups. Moreover, the fourth choice of the groups comprising of non-JRFs and JRFs is part-time researcher, with the total weights of 373 and 364, respectively. Whereas the fifth choice of profession for both the groups under the study, that are non-JRFs and JRFs unanimously is becoming an author or editor, with the total weights for the two groups being 311 and

341, respectively. Interestingly, the last choice of the respondents is becoming full-time researcher, for both the groups of non-JRFs and JRFs with the total weights of 293 and 316, respectively.

The next item i.e., twenty-fourth item of the questionnaire asks the respondents whether their research was periodically monitored as stated by UGC. It was a multiple choice-question. The data collected for this item has been tabulated below in Table 4.134.

Table 4.134: Research Monitoring by UGC

Number of Options Selected	JRF Qualified No (Percent)	JRF Qualified Yes (Percent)	Total (Percent)
Yes	43 (17.92)	39 (16.25)	82 (34.17)
No	56 (23.33)	65 (27.08)	121 (50.42)
Do not know about UGC Monitoring	21 (8.75)	16 (6.67)	37 (15.42)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.134 above can also be represented graphically as shown below in Figure 4.36.

Figure 4.36: Research Monitoring by UGC

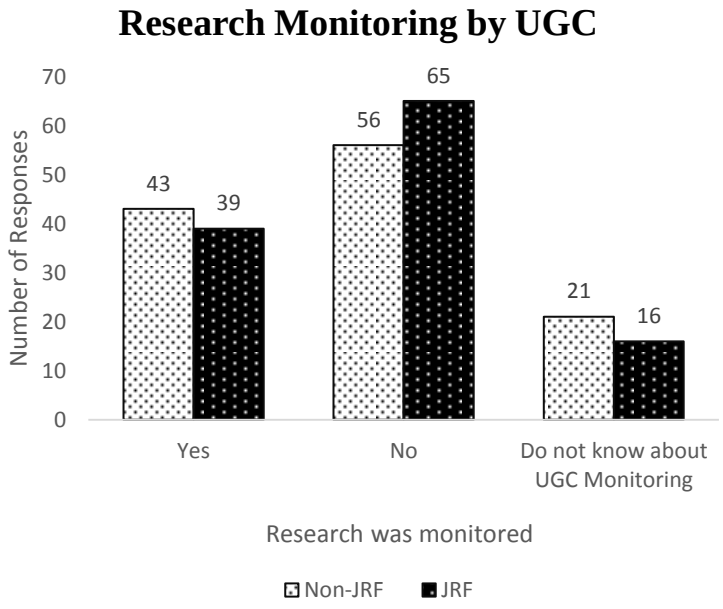


Table 4.134 along with Figure 4.36 shows that only 43 (17.92%) non-JRFs and 39 (16.25%) JRFs have affirmed that their research has been periodically monitored as stated by UGC, whereas

56 (23.33%) non-JRFs and 65 (27.08%) JRFs negated the assertion. Also, 21 (8.75%) non-JRFs and 16 (6.67%) JRFs stated that they do not know about the UGC monitoring.

The third section of the questionnaire dealt with the perceptions of the respondents regarding various aspects of the fellowship. This section of the questionnaire consists of ten items, numbered from twenty-five to thirty-four. Twenty-fifth item of the questionnaire asks for the perception of the respondents on whether the pattern of UGC NET/JRF Examination is research oriented. The data was collected on a five-point Likert scale. The received responses are tabulated below in Table 4.135.

Table 4.135: Pattern of UGC NET/JRF Examination is Research-Oriented

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	12 (5.00)	10 (4.17)	22 (9.17)
Somewhat Agree	37 (15.42)	28 (11.67)	65 (27.08)
Cannot Say	15 (6.25)	18 (7.50)	33 (13.75)
Somewhat Disagree	41 (17.08)	49 (20.42)	90 (37.50)
Strongly Disagree	15 (6.25)	15 (6.25)	30 (12.50)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.135 above can also be represented graphically as shown below in Figure 4.37.

Figure 4.37: Pattern of UGC NET/JRF Examination is Research-Oriented

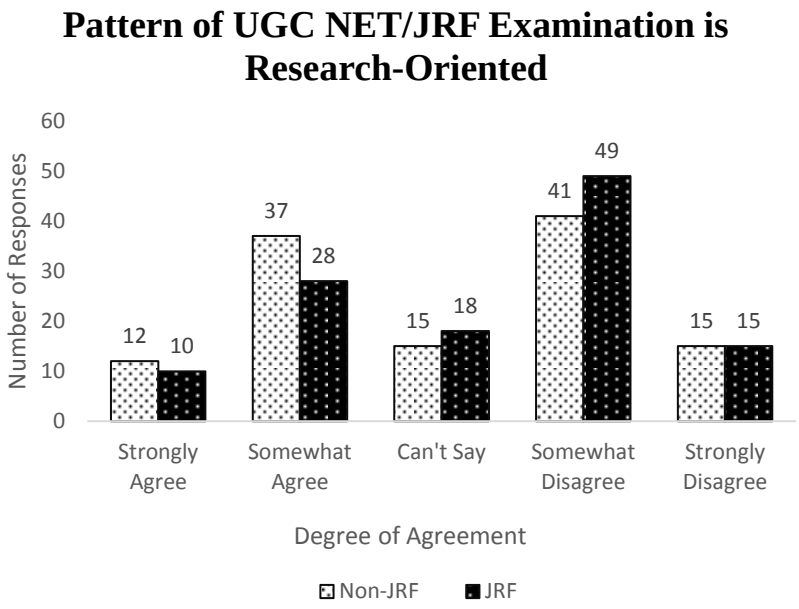


Table 4.135 along with Figure 4.37 shows that only 12 (5%) and 10 (4.17%) respondents among non-JRFs and JRFs respectively strongly agree with the statement that "The pattern of the UGC NET/JRF Examination is research-oriented". A large number of respondents i.e., 37 (15.42%) and 28 (11.67%) non-JRFs and JRFs respectively are somewhat in agreement with the statement. 15 (6.25%) and 18 (7.50%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents (41, 17.08%) and (49, 20.42%) of the non-JRFs and JRFs respectively disagree with the above statement. Also, 15 respondents from non-JRFs and JRFs each strongly disagree with the statement.

The twenty-sixth item of the questionnaire asks the respondents to choose the factors among the given list that should constitute the objectives of any fellowship scheme. The responses were recorded on the Likert Scale. The options provided for this item include: Preference for accessibility to advanced studies and research, Increase the number of participants, and Quality assurance. The responses received for each option are represented here separately. The responses received for the first option "Objectives of a fellowship scheme should include preference for accessibility to advanced studies and research" are tabulated below in Table 4.136.

Table 4.136: Preference for Accessibility to Advanced Studies and Research

Options	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	

Strongly Agree	15 (6.25)	19 (7.92)	34 (14.17)
Somewhat Agree	60 (25.00)	56 (23.33)	116 (48.33)
Cannot Say	21 (8.75)	15 (6.25)	36 (15.00)
Somewhat Disagree	23 (9.58)	22 (9.17)	45 (18.75)
Strongly Disagree	1 (0.42)	8 (3.33)	9 (3.75)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.136 above can also be represented graphically as shown below in Figure 4.38.

Figure 4.38: Preference for Accessibility to Advanced Studies and Research

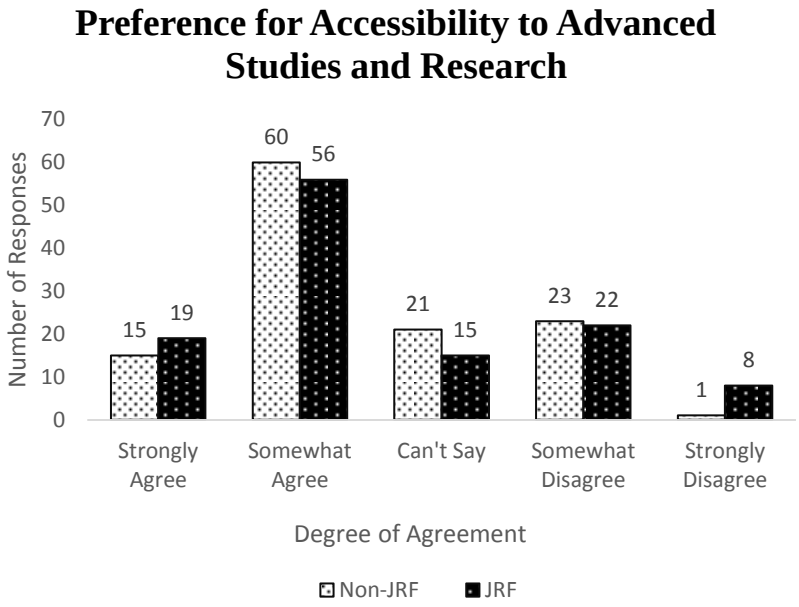


Table 4.136 along with Figure 4.38 shows that only 1 (0.42%) and 8 (3.33%) respondents among non-JRFs and JRFs respectively strongly disagree with the statement that "Objectives of a fellowship scheme should include preference for accessibility to advanced studies and research". A fair number of respondents i.e., 23 (9.58%) and 22 (9.17%) non-JRFs and JRFs respectively are somewhat in disagreement with the statement. 21 (8.75%) and 15 (6.25%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents (60, 25.00%) and (56,

23.33%) of the non-JRFs and JRFs respectively somewhat agree with the above statement. Also, 15 (6.25%) and 19 (7.92%) of the respondents from non-JRFs and JRFs respectively strongly agree with the statement.

The responses received for the second option "Objectives of a fellowship scheme should include increasing the number of participants" are tabulated below in Table 4.137.

Table 4.137: Increasing the Number of Participants

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	3 (1.25)	6 (2.50)	9 (3.75)
Somewhat Agree	41 (17.08)	38 (15.83)	79 (32.92)
Cannot Say	10 (4.17)	10 (4.17)	20 (8.33)
Somewhat Disagree	63 (26.25)	55 (22.92)	118 (49.17)
Strongly Disagree	3 (1.25)	11 (4.58)	14 (5.83)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.137 above can also be represented graphically as shown below in Figure 4.39.

Figure 4.39: Increasing the Number of Participants

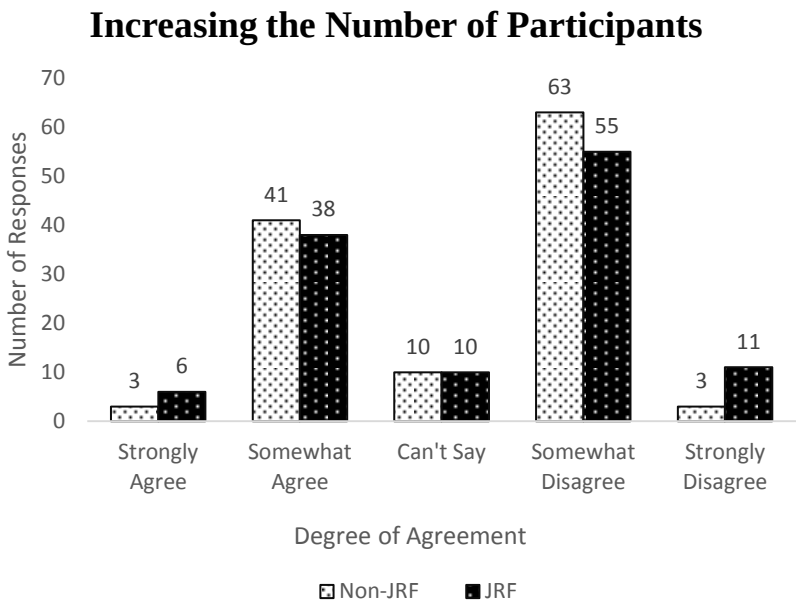


Table 4.137 along with Figure 4.39 shows that only 3 (1.25%) and 6 (2.50%) respondents among non-JRFs and JRFs respectively strongly agree with the statement that "Objectives of a fellowship scheme should include increasing the number of participants". A fair number of respondents i.e., 41 (17.08%) and 38 (15.83%) non-JRFs and JRFs respectively are somewhat in agreement with the statement. 10 (4.17%) respondents from each of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 63 (26.25%) and 55 (22.92%) of the non-JRFs and JRFs respectively somewhat disagreed with the above statement. Also, 3 (1.25%) and 11 (4.58%) of the respondents from non-JRFs and JRFs respectively strongly disagreed with the statement.

The responses received for the third option "Objectives of a fellowship scheme should include quality assurance of research products" are tabulated below in Table 4.138.

Table 4.138: Quality Assurance of Research Products

Options	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
Strongly Agree	21 (8.75)	22 (9.17)	43 (17.92)
Somewhat Agree	92 (38.33)	91 (37.92)	183 (76.25)

Cannot Say	3 (1.25)	1 (0.42)	4 (1.67)
Somewhat Disagree	4 (1.67)	6 (2.50)	10 (4.17)
Strongly Disagree	0 (0.00)	0 (0.00)	0 (0.00)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.138 above can also be represented graphically as shown below in Figure 4.40.

Figure 4.40: Quality Assurance of Research Products

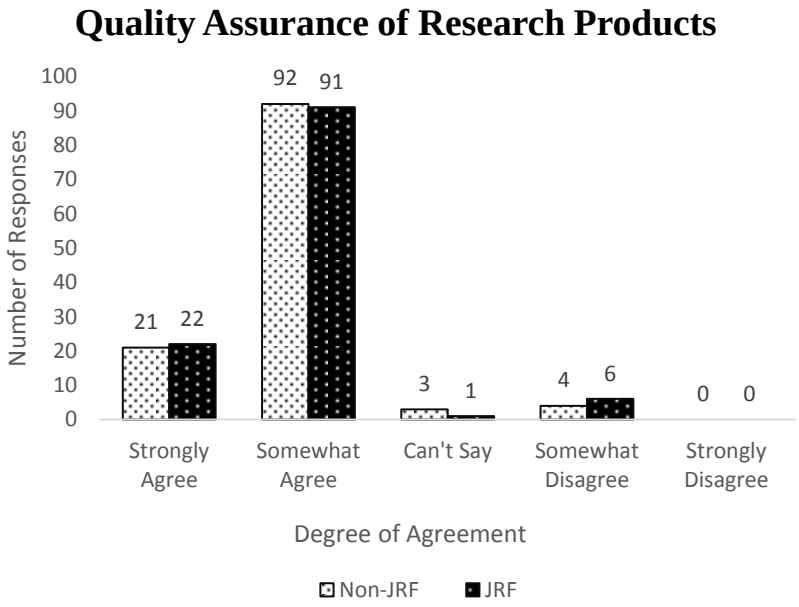


Table 4.138 along with Figure 4.40 shows that none of the respondents among either non-JRFs or JRFs strongly disagreed with the statement that "Objectives of a fellowship scheme should include quality assurance of research products". However, a small number of respondents i.e., 4 (1.67%) non-JRFs and 6 (2.50%) JRFs are somewhat in disagreement with the statement. 3 (1.25%) and 1 (0.42%) of the non-JRFs and JRFs respectively are unable to express their stand over the statement. Moreover, the majority of the respondents i.e., 92 (38.33%) non-JRFs and 91 (37.92%) JRFs somewhat agreed with the above statement. Also, 21 (8.75%) and 22 (9.17%) of the responding non-JRFs and JRFs respectively strongly agreed with the statement.

The twenty-seventh item of the questionnaire asks the respondents to choose the benefits among the given list that should be provided through any fellowship scheme. The responses were recorded on the Likert Scale. The options provided for this item include: Financial Assistance, House Rent Allowance, Medical Facilities and Preference in Jobs. The responses received for each option are represented here separately. The responses received for the first option "Benefits of a fellowship scheme should include financial assistance" are tabulated below in Table 4.139.

Table 4.139: Financial Assistance

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	5 (2.08)	18 (7.50)	23 (9.58)
Somewhat Agree	74 (30.83)	60 (25.00)	134 (55.83)
Cannot Say	8 (3.33)	5 (2.08)	13 (5.42)
Somewhat Disagree	30 (12.50)	31 (12.92)	61 (25.42)
Strongly Disagree	3 (1.25)	6 (2.50)	9 (3.75)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.139 above can also be represented graphically as shown below in Figure 4.41.

Figure 4.41: Financial Assistance

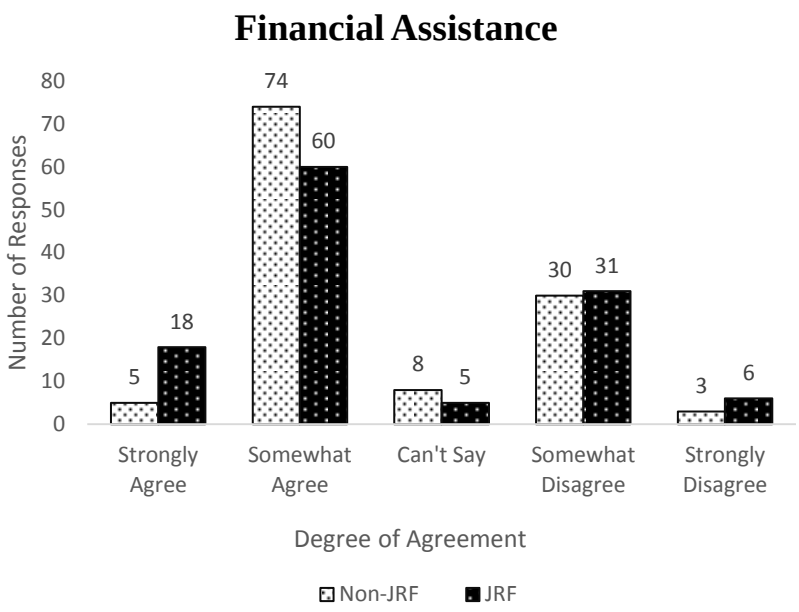


Table 4.139 along with Figure 4.41 shows that only 3 (1.25%) and 6 (2.50%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "Objectives of a fellowship scheme should include financial assistance". A fair number of respondents i.e., 30 (12.50%) non-JRFs and 31 (12.92%) JRFs are somewhat in disagreement with the statement. 8 (3.33%) and 5 (2.08%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 74 (30.83%) non-JRFs and 60 (25.00%) JRFs somewhat agreed with the above statement. Also, 5 (2.08%) and 18 (7.50%) of the respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

The responses received for the second option "Benefits of a fellowship scheme should include house rent allowance" are tabulated below in Table 4.140.

Table 4.140: House Rent Allowance

Options	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
Strongly Agree	14 (5.83)	14 (5.83)	28 (11.67)
Somewhat Agree	56 (23.33)	62 (25.83)	118 (49.17)
Cannot Say	12 (5.00)	13 (5.42)	25 (10.42)

Somewhat Disagree	27 (11.25)	19 (7.92)	46 (19.17)
Strongly Disagree	11 (4.58)	12 (5.00)	23 (9.58)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.140 above can also be represented graphically as shown below in Figure 4.42.

Figure 4.42: House Rent Allowance

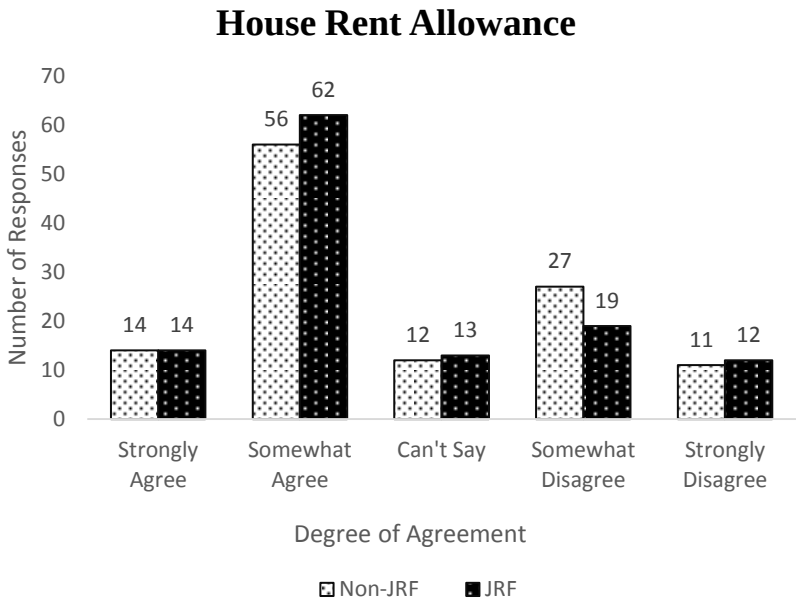


Table 4.140 along with Figure 4.42 shows that 11 (4.58%) and 12 (5.00%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "Benefits of a fellowship scheme should include house rent allowance". A fair number of respondents i.e., 27 (11.25%) non-JRFs and 19 (7.92%) JRFs are somewhat in disagreement with the statement. 12 (5.00%) and 13 (5.42%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 56 (23.33%) non-JRFs and 62 (25.83%) JRFs somewhat agreed with the above statement. Also, 14 (5.83%) of the respondents each from non-JRFs and JRFs respectively strongly agreed with the statement.

The responses received for the third option "Benefits of a fellowship scheme should include medical facilities" are tabulated below in Table 4.141.

Table 4.141: Medical Facilities

Options	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
Strongly Agree	10 (4.17)	17 (7.08)	27 (11.25)
Somewhat Agree	89 (37.08)	74 (30.83)	163 (67.92)
Cannot Say	10 (4.17)	8 (3.33)	18 (7.50)
Somewhat Disagree	10 (4.17)	17 (7.08)	27 (11.25)
Strongly Disagree	1 (0.42)	4 (1.67)	5 (2.08)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.141 above can also be represented graphically as shown below in Figure 4.43.

Figure 4.43: Medical Facilities

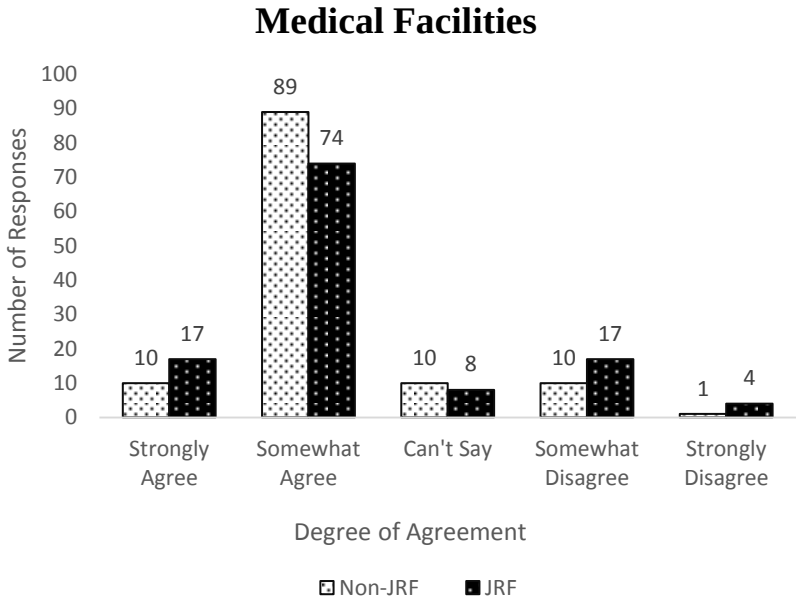


Table 4.141 along with Figure 4.43 shows that only 1 (0.42%) and 4 (1.67%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "Benefits of a fellowship scheme should include medical facilities". A small number of respondents i.e., 10 (4.17%) non-JRFs and 17 (7.08%) JRFs are somewhat in disagreement with the statement. 10

(4.17%) and 8 (3.33%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 89 (37.08%) non-JRFs and 74 (30.83%) JRFs somewhat agreed with the above statement. Also, 10 (4.17%) and 17 (7.08%) respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

The responses received for the fourth option "Benefits of a fellowship scheme should include preference in jobs" are tabulated below in Table 4.142.

Table 4.142: Preference in Jobs

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	6 (2.50)	17 (7.08)	23 (9.58)
Somewhat Agree	53 (22.08)	56 (23.33)	109 (45.42)
Cannot Say	6 (2.50)	12 (5.00)	18 (7.50)
Somewhat Disagree	45 (18.75)	29 (12.08)	74 (30.83)
Strongly Disagree	10 (4.17)	6 (2.50)	16 (6.67)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.142 above can also be represented graphically as shown below in Figure 4.44.

Figure 4.44: Preference in Jobs

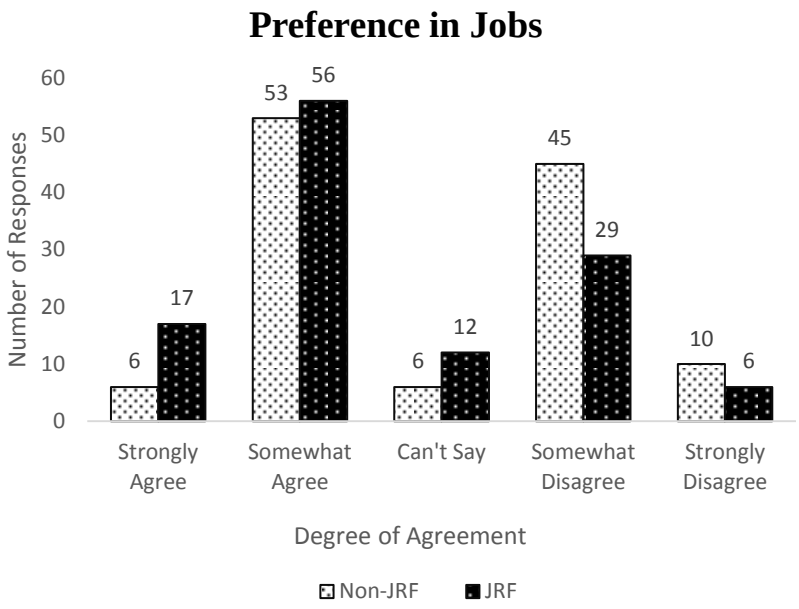


Table 4.142 along with Figure 4.44 shows that 10 (4.17%) and 6 (2.50%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "Benefits of a fellowship scheme should include Preference in jobs". A large number of respondents i.e., 45 (18.75%) non-JRFs and 29 (12.08%) JRFs are somewhat in disagreement with the statement. 6 (2.50%) and 12 (5.00%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 53 (22.08%) non-JRFs and 56 (23.33%) JRFs somewhat agreed with the above statement. Also, 6 (2.50%) and 17 (7.08%) respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

For this option, the association between availing of fellowship and preference in jobs was found to be significant. The chi-square test results are represented below in Table 4.143.

Table 4.143: Chi-Square Tests

Statistic	Value	df	Asymp. Sig. (2-tailed)
Pearson Chi-Square	11.80	4	0.019
Likelihood Ratio	12.10	4	0.017
Linear-by-Linear Association	7.27	1	0.007
N of Valid Cases	240		

Since the assumptions of Chi-Square test that are: (a) Individual observations are independent of each other, and (b) Expected cell frequencies are not too small are met. Thus, the results of

Pearson Chi-Square Statistic from Table 4.143 have been used to interpret the results. The Chi-Square Test showed that there was a significant association between JRF qualification and the agreement level with the statement that benefits of fellowship scheme should include preference in jobs, X^2 (4, N = 240) = 11.80, p = 0.019.

On the basis of this association, the researcher has also applied the independent sample t-test and Mann-Whitney Wilcoxon Test to check whether there is any statistically significant difference among the two subgroups or not. However, one should note here that the means to be found for t-test are just for the sake of representation and do not have any significant meaning as the Likert scale data like collected are not the quantities measured on the ratio scale. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean agreement level among non-JRFs and JRFs with the statement that 'Benefits of fellowship scheme should include preference in jobs.'

H_a: There is a significant difference between the mean agreement level among non-JRFs and JRFs with the statement that 'Benefits of fellowship scheme should include preference in jobs.'

The results of the t test are tabulated below in Table 4.144 and Table 4.145.

Table 4.144: Group Statistics

	JRF Qualified	N	Mean	Standard Deviation	S.E. Mean
Agreement Level	No	120	3.00	1.17	0.11
	Yes	120	2.59	1.15	0.10

Table 4.145: Independent Samples t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Agreement	Equal Variances Assumed	1.60	0.207	2.73	238.00	0.007	0.41	0.15	0.11	0.70

Level	Equal Variances Not Assumed		2.73	237.94	0.007	0.41	0.15	0.11	0.70

As shown in Table 4.145, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.207) for the *F* value = 1.60 is greater than 0.05. Thus, the variances of the two groups are equal, and therefore the output in the Equal Variances assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is a statistically significant difference in the mean agreement level among non-JRFs and JRFs with the statement that 'Benefits of fellowship scheme should include preference in jobs.', t (238) = 2.73, p = 0.007. That is, the mean agreement level among non-JRFs (M = 3.00, SD = 1.17) and JRFs (M = 2.59, SD = 1.15) is statistically different.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median agreement level among non-JRFs and JRFs with the statement that 'Benefits of fellowship scheme should include preference in jobs.'

H_a: There is a significant difference between the median agreement level among non-JRFs and JRFs with the statement that 'Benefits of fellowship scheme should include preference in jobs.'

The results of the Mann-Whitney U test are tabulated below in Table 4.146 and Table 4.147.

Table 4.146: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Agreement Level	120	120	240	131.81	109.19	15817.50	13102.50

Table 4.147: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Agreement Level	5842.50	13102.50	-2.70	0.007

A Mann-Whitney U Test (Table 4.147) shows that there is a significant difference (U = 5842.50, Z = -2.70, p = 0.007) between the non-JRFs and JRFs in terms of agreement level with the statement that 'Benefits of fellowship scheme should include preference in jobs.' The median of

agreement level among the non-JRFs (*Mdn* = 3) compared to median of agreement level among JRFs (*Mdn* = 2) is suggesting that the JRF scheme is having a significant effect on the perception of the fellows regarding the agreement level with the statement stated above.

The twenty-eighth item of the questionnaire asks the respondents whether they think that the Junior Research Fellowship (JRF) scheme is fulfilling its pre-defined objectives or not. The item was designed to gather the data regarding this item on 5-point Likert Scale. The responses received for this item are represented here and are tabulated below in Table 4.148.

Table 4.148: JRF is Fulfilling Its Pre-Defined Objectives

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	18 (7.50)	11 (4.58)	29 (12.08)
Somewhat Agree	46 (19.17)	72 (30.00))	118 (49.17)
Cannot Say	9 (3.75)	1 (0.42)	10 (4.17)
Somewhat Disagree	30 (12.50)	26 (10.83)	56 (23.33)
Strongly Disagree	17 (7.08)	10 (4.17)	27 (11.25)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.148 above can also be represented graphically as shown below in Figure 4.45.

Figure 4.45: JRF is Fulfilling Its Pre-Defined Objectives

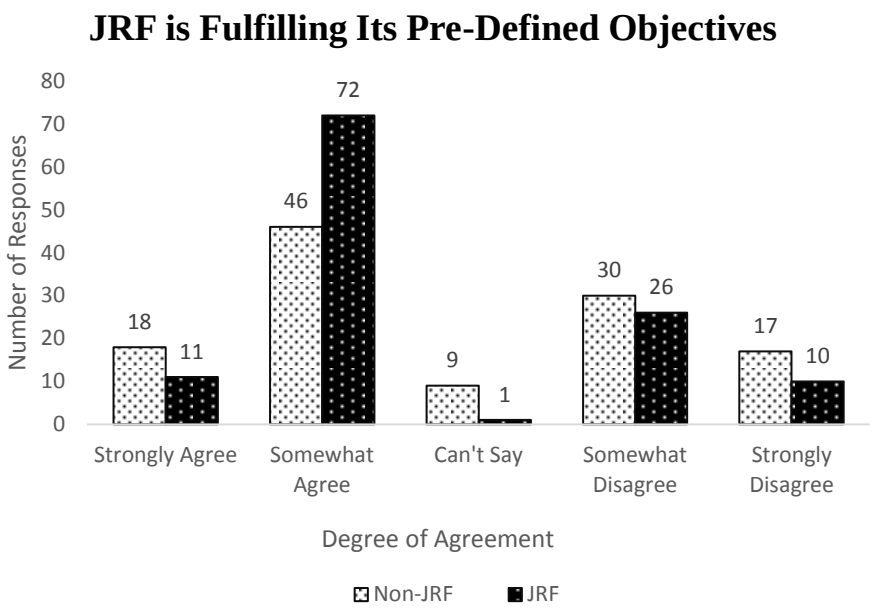


Table 4.148 along with Figure 4.45 shows that only 17 (7.08%) and 10 (4.17%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "JRF scheme is fulfilling its pre-defined objectives". A fair number of respondents i.e., 30 (12.50%) non-JRFs and 26 (10.83%) JRFs are somewhat in disagreement with the statement. 9 (3.75%) and 1 (0.42%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 46 (19.17%) non-JRFs and 72 (30.00%) JRFs somewhat agreed with the above statement. Also, 18 (7.50%) and 11 (4.58%) of the respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

For this item, the association between availing of fellowship and perception that JRF scheme is fulfilling its pre-defined objectives. The chi-square test results are represented below in Table 4.149.

Table 4.149: Chi-Square Tests

Statistic	Value	df	Asymp. Sig. (2-tailed)
Pearson Chi-Square	15.92	4	0.003
Likelihood Ratio	16.97	4	0.002
Linear-by-Linear Association	2.36	1	0.125
N of Valid Cases	240		

Since the assumptions of Chi-Square test that are: (a) Individual observations are independent of each other, and (b) Expected cell frequencies are not too small are met. Thus, the results of Pearson Chi-Square Statistic from Table 4.149 have been used to interpret the results. The Chi-Square Test showed that there was a significant association between JRF qualification and the agreement level with the statement that the scheme is fulfilling its pre-defined objectives, X^2 (4, N = 240) = 15.92, p = 0.003.

On the basis of this association, the researcher has also applied the independent sample t-test and Mann-Whitney Wilcoxon Test to check whether there is any statistically significant difference among the two subgroups or not. However, one should note here that the means to be found for t-test are just for the sake of representation and do not have any significant meaning as the Likert scale data are not the quantities measured on the ratio scale. The results of the two tests are discussed below.

For conducting t-test, the null and alternative hypotheses are stated as:

H_0: There is no significant difference between the mean agreement level among non-JRFs and JRFs with the statement that 'JRF scheme is fulfilling its pre-defined objectives.'

H_a: There is a significant difference between the mean agreement level among non-JRFs and JRFs with the statement that 'JRF scheme is fulfilling its pre-defined objectives.'

The results of the t test are tabulated below in Table 4.150 and Table 4.151.

Table 4.150: Group Statistics

	JRF Qualified	**N**	**Mean**	**Standard Deviation**	**S.E. Mean**
Agreement Level	No	120	2.85	1.34	0.12
	Yes	120	2.60	1.17	0.11

Table 4.151: Independent Samples t-test

	Levene's Test for Equality of Variances		**t-test for Equality of Means**						
	F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
								Lower	*Upper*

Agreement Level	Equal Variances Assumed	6.83	0.010	1.54	238.00	0.125	0.25	0.16	-0.07	0.57
	Equal Variances Not Assumed			1.54	233.79	0.125	0.25	0.16	-0.07	0.57

As shown in Table 4.151, Levene's test suggested that the samples were having equal variances, since the probability (*Sig.* = 0.010) for the *F* value = 6.83 is smaller than 0.05. Thus, the variances of the two groups are not equal, and therefore the output in the Equal Variances Not Assumed row has been used to interpret the results of t-test. The results of independent sample t-test indicate that there is no statistically significant difference in the mean agreement level among non-JRFs and JRFs with the statement that 'JRF scheme is fulfilling its pre-defined objectives.', *t* (233.79) = 1.54, *p* = 0.125. That is, the mean agreement level among JRFs (*M* = 2.60, *SD* = 1.17) and non-JRFs (*M* = 2.85, *SD* = 1.34) is statistically similar.

Similarly, for conducting the Mann-Whitney-Wilcoxon (or Mann-Whitney U) test, following null and alternative hypothesis are formed:

H_0: There is no significant difference between the median agreement level among non-JRFs and JRFs with the statement that 'JRF scheme is fulfilling its pre-defined objectives.'

H_a: There is a significant difference between the median agreement level among non-JRFs and JRFs with the statement that 'JRF scheme is fulfilling its pre-defined objectives.'

The results of the Mann-Whitney U test are tabulated below in Table 4.152 and Table 4.153.

Table 4.152: Ranks for Groups

	JRF Qualified			**Mean Rank**		**Sum of Ranks**	
	No	**Yes**	**Total**	**No**	**Yes**	**No**	**Yes**
Agreement Level	120	120	240	126.15	114.85	15137.50	13782.50

Table 4.153: U-Test Statistics for Groups

	Mann-Whitney U	**Wilcoxon W**	**Z**	**Asymp. Sig. (2-tailed)**
Agreement Level	6522.50	13782.50	-1.35	0.176

A Mann-Whitney U Test (Table 4.153) shows that there is no significant difference (U = 6522.50, Z = -1.35, p = 0.176) between the non-JRFs and JRFs in terms of agreement level with the statement that 'JRF scheme is fulfilling its pre-defined objectives.' The median of agreement level among the non-JRFs (*Mdn* = 2) compared to median of agreement level among JRFs (*Mdn* = 2) is suggesting that the JRF scheme is having no significant effect on the perception of the fellows regarding the agreement level with the statement stated above.

The twenty-ninth item of the questionnaire asks the respondents whether they think that the objective of Junior Research Fellowship (JRF) scheme as stated in its documents is enough and complete or not. The item was designed to gather the data regarding this item on 5-point Likert Scale. The responses received for this item are represented here and are tabulated below in Table 4.154.

Table 4.154: Objective is Enough and Complete

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	3 (1.25)	6 (2.50)	9 (3.75)
Somewhat Agree	62 (25.83)	54 (22.50)	116 (48.33)
Cannot Say	2 (0.83)	4 (1.67)	6 (2.50)
Somewhat Disagree	42 (17.50)	52 (21.67)	94 (39.17)
Strongly Disagree	11 (4.58)	4 (1.67)	15 (6.25)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.154 above can also be represented graphically as shown below in Figure 4.46.

Figure 4.46: Objective is Enough and Complete

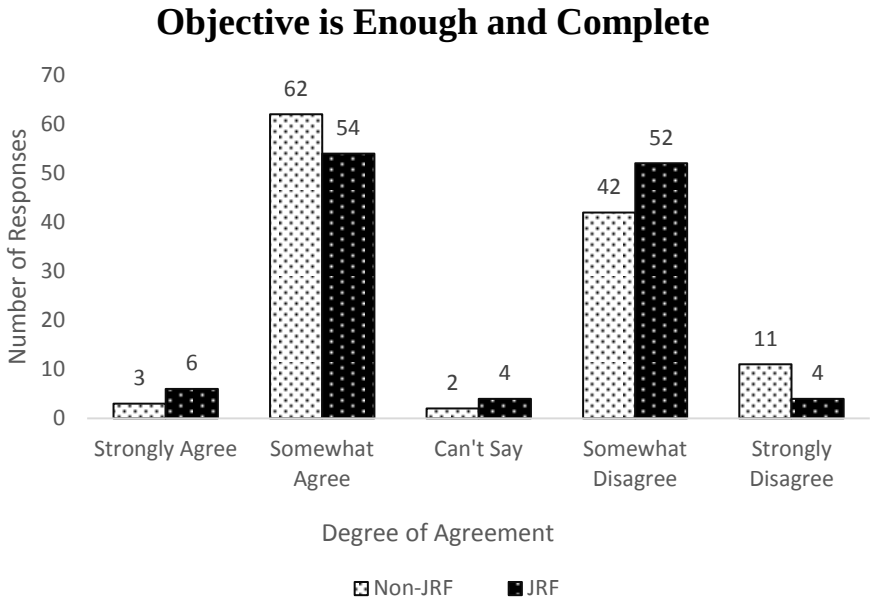


Table 4.154 along with Figure 4.46 shows that mixed responses have been received for this item. only 11 (4.58%) and 4 (1.67%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "Stated objective of JRF scheme is enough and complete". A large number of respondents i.e., 42 (17.50%) non-JRFs and 52 (21.67%) JRFs are somewhat in disagreement with the statement. 2 (0.83%) and 4 (1.67%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 62 (25.83%) non-JRFs and 54 (22.50%) JRFs somewhat agreed with the above statement. Also, 3 (1.25%) and 6 (2.50%) of the respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

The thirtieth item of the questionnaire asks the respondents whether they want any change to be made in the stated objective of Junior Research Fellowship (JRF) scheme. The item was designed as dichotomous that receives the responses in the form of 'Yes' or 'No'. The responses received for this item are tabulated below in Table 4.155.

Table 4.155: Change Recommendation in Objective of JRF Scheme

Options	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
Yes	49 (20.42)	54 (22.50)	103 (42.92)
No	71 (29.58)	66 (27.50)	137 (57.08)

Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.155 above can also be represented graphically as shown below in Figure 4.47.

Figure 4.47: Change Recommendation in Objective of JRF Scheme

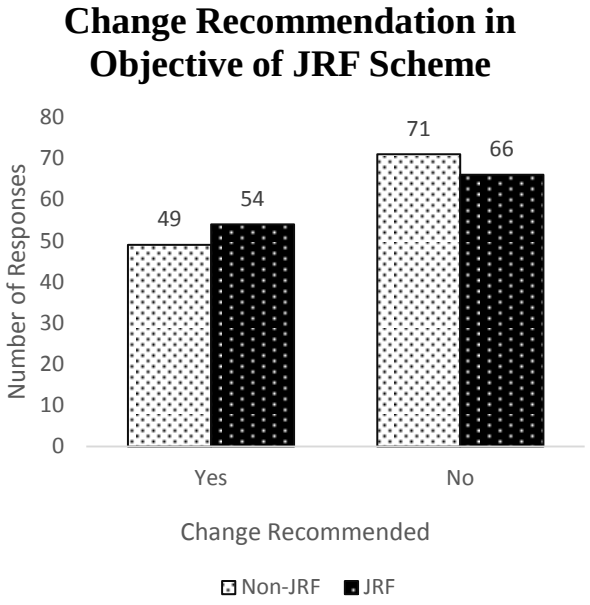


Table 4.155 along with Figure 4.47 shows that mixed responses have been received for this item also. The responses suggest that 49 non-JRFs and 54 JRFs recommend the changes in the stated objective of Junior Research Fellowship scheme. On contrary, 71 non-JRFs and 66 JRFs do not recommend any change in the stated objectives of JRF scheme. Out of 49 non-JRFs and 54 JRFs, who have marked 'Yes' in options, only 19 non-JRFs and 23 JRFs have briefly stated their recommendations. However, due to multiple recommendations by few participants, the frequency of recommendations exceeds the original number of respondents. These recommendations were thematically coded. The final recommendations and their frequencies are described in Table 4.156.

Table 4.156: Recommended Changes in Objective of JRF Scheme

Recommendations	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Inclusion	6 (12.24)	4 (8.16)	10 (20.41)
Quality Assurance	10 (20.41)	6 (12.24)	16 (32.65)

Teaching Skills Enhancement	1 (2.04)	2 (4.08)	3 (6.12)
Research Education	0 (0.00)	4 (8.16)	4 (8.16)
Internship	4 (8.16)	12 (24.49)	16 (32.65)
Total	21 (42.86)	28 (57.14)	49 (100)

The data tabulated in Table 4.156 above describes that 6 (12.24%) of the responses received from non-JRFs and 4 (8.16%) of the responses received from JRFs have recommended to include inclusivity in the stated objective of the JRF scheme. Whereas 10 (20.41%) and 6 (12.24%) of the responses received from non-JRFs and JRFs respectively have recommended to include establishment of the quality standards of the research output of the fellows. 1 (2.04%) non-JRF and 2 (4.08%) JRFs have recommended that teaching skills should be enhanced through fellowship, i.e., some teaching enhancement component should be introduced. 4 (8.16%) of the responses received from JRFs recommended to introduce research education or training in research methodology other than the coursework that they undertake during their PhD. Also, 4 (8.16%) and 12 (24.49%) of the responses received from non-JRFs and JRFs respectively recommended to introduce internships as a component of fellowship.

Thirty-first item of the questionnaire asks the respondents whether they think that the selection process of the Junior Research Fellowship (JRF) scheme is standard one or not. The item was designed to gather the data regarding this item on 5-point Likert Scale. The responses received for this item are represented here and are tabulated below in Table 4.157.

Table 4.157: Selection Process of JRF is Standard One

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Strongly Agree	7 (2.92)	6 (2.50)	13 (5.42)
Somewhat Agree	51 (21.25)	63 (26.25)	114 (47.50)

Cannot Say	6 (2.50)	8 (3.33)	14 (5.83)
Somewhat Disagree	48 (20.00)	33 (13.75)	81 (33.75)
Strongly Disagree	8 (3.33)	10 (4.17)	18 (7.50)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.157 above can also be represented graphically as shown below in Figure 4.48.

Figure 4.48: Selection Process of JRF is Standard One

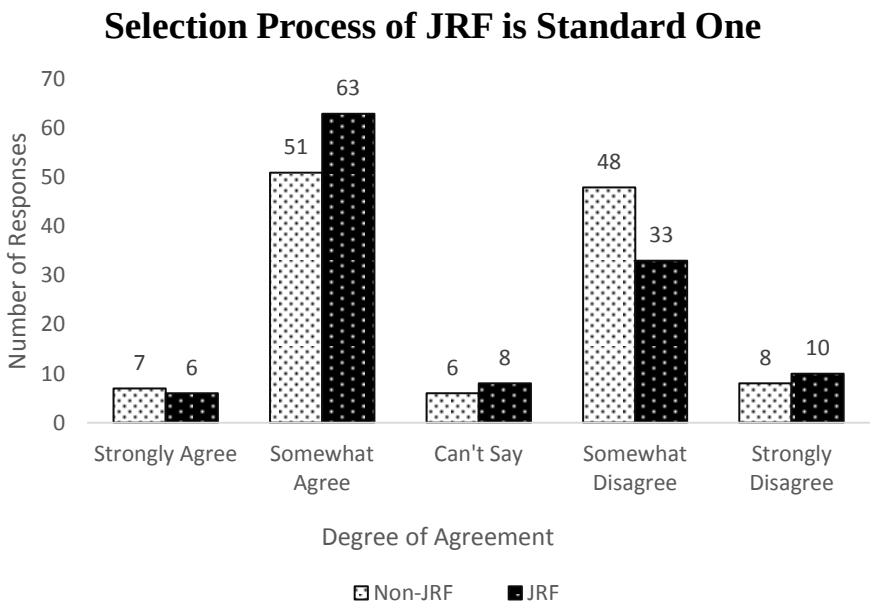


Table 4.157 along with Figure 4.48 shows that mixed responses have been received for this item. Only 8 (3.33%) and 10 (4.17%) respondents among non-JRFs and JRFs respectively strongly disagreed with the statement that "The selection process of the JRF scheme is standard one". A large number of respondents i.e., 48 (20.00%) non-JRFs and 33 (13.75%) JRFs are somewhat in disagreement with the statement. 6 (2.50%) and 8 (3.33%) of the non-JRFs and JRFs respectively cannot take any stand. Moreover, the majority of the respondents i.e., 51 (21.50%) non-JRFs and 63 (26.25%) JRFs somewhat agreed with the above statement. Also, 7 (2.92%) and 6 (2.50%) of the respondents from non-JRFs and JRFs respectively strongly agreed with the statement.

Thirty-second item of the questionnaire was a multiple-choice multiple answer item that deals with the bases suggested by the respondents regarding the selection of the fellows. This type of item setting was adopted as the choices of bases were related to each other and a subject can suggest a model based on one or more of these choices. The five options were objective examination, subjective examination, merit, interview and group discussion. Also, there was an open option, labelled others, where respondents could provide any other specified basis. However, none of the respondents have marked others as one of the options. Data regarding this item was recorded in multiple columns, with one column per answer option. For the analysis of this item, 0 (Labelled as 'NO') was encoded for the absence of the response and 1 (Labelled as 'YES') for the presence of response for each option. Then, the new variable named Selection_Bases was created using Count Transformation. Then the frequency table of this new variable is represented as shown below in Table 4.158.

Table 4.158: Frequency Distribution of Bases for Selection

Number of Options Selected	JRF Qualified		Total (Percent)
	No (Percent)	Yes (Percent)	
1	71 (29.58)	66 (27.50)	137 (57.08)
2	31 (12.92)	25 (10.42)	56 (23.33)
3	12 (5.00)	18 (7.50)	30 (12.50)
4	6 (2.50)	11 (4.58)	17 (7.08)
Total	120 (50.00)	120 (50.00)	240 (100)
Sum	193	214	407

From the analysis of Table 4.158, we could see that all of the respondents have responded with at least option, so none of the respondents have left this item unanswered. The Sum Row of the table indicates, the total number of responses given by non-JRFs, JRFs and all the respondents, that are 193, 214, and 407, respectively.

Option-wise tabulation of the responses is represented below in Table 4.160 along with the case processing summary as shown in Table 4.159.

Table 4.159: Case Processing Summary

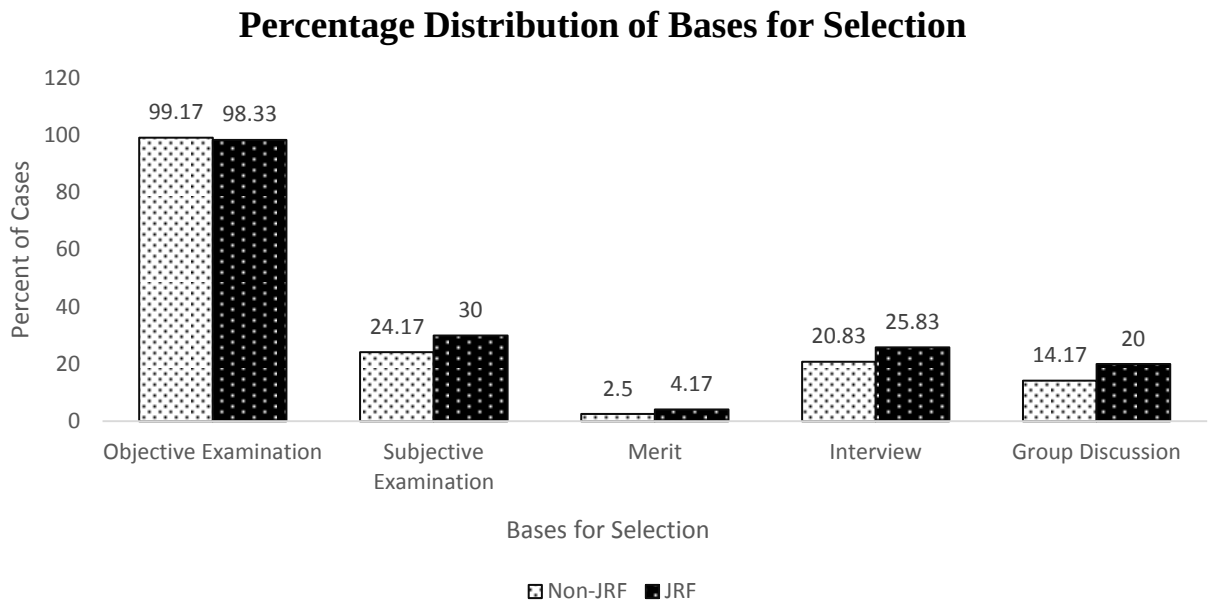
		Valid Cases		Missing Cases		Total Cases	
		N	Percent	N	Percent	N	Percent
Bases for Selection	Non-JRFs	120	50.00	0	0.00	120	50.00
	JRFs	120	50.00	0	0.00	120	50.00
	Total	240	100	0	0.00	240	100

Table 4.160: Percentage Distribution of Bases for Selection

		Responses								
		Non-JRFs			JRFs			Total		
		N	Per cent	Per cent of Cases	N	Per cent	Per cent of Cases	N	Per cent	Per cent of Cases
Bases for Selection	Objective Examination	119	61.66	99.17	118	55.14	98.33	237	58.23	98.75
	Subjective Examination	29	15.03	24.17	36	16.82	30.00	65	15.97	27.08
	Merit	3	1.55	2.50	5	2.34	4.17	8	1.97	3.33
	Interview	25	12.95	20.83	31	14.49	25.83	56	13.76	23.33
	Group Discussion	17	8.81	14.17	24	11.21	20.00	41	10.07	17.08
Total		193	100	160.83	214	100	178.33	407	100	169.57

The data represented above in Table 4.160 can also be represented as shown below in Figure 4.49.

Figure 4.49: Percentage Distribution of Bases for Selection



From the analysis of Table 4.158 and Table 4.160 along with Figure 4.49, it is evident that total 240 respondents have responded to the item, i.e., selected at least one of the five options of professional choices. Out of these 240 respondents, 120 were non-JRFs and 120 were JRFs. The vast majority of the responders opted for selecting the participants of the fellowship scheme on the basis of objective examination (98.75%). Also, a fair number of responders have opted to select the participants on the basis of subjective examination (27.08%). 23.33% of them have suggested the interview process for recruitment of fellows. For recruiting fellows, 17.08% of the responders have suggested the method of group discussion. Merit as the basis of selection of fellows has been suggested by only 3.33% of the responders.

On comparing the responses of the two classes of the respondents based upon the availing of Junior Research Fellowship scheme, we get to know that the choice of selection process based upon objective examination is almost similar among the JRFs and the non-JRFs (98.33% of JRFs versus 99.17% of non-JRFs). 30.00% of the JRFs have suggested the recruitment process to include subjective examination in contrast to 24.17% of non-JRFs. However, 20.83% of non-JRFs have suggested to conduct interview for selecting the fellows in respect to 25.83% of JRFs. For recruiting fellows on the basis of group discussion, 20.00% of JRFs came forward in contrast to 14.17% of

non-JRFs. Moreover, only 4.17% of JRFs and 2.50% of non-JRFs have suggested the basis of merit for the selection of the fellows.

The next item of the questionnaire i.e., thirty-third item was regarding by what amount (qualitative) the financial assistance provided under the fellowship scheme should be changed. The responses were gathered on 5-point Likert scale that ranges from substantially increased to substantially decreased. The recorded responses for this item have been tabulated in Table 4.161 given below.

Table 4.161: Recommended Change in Financial Assistance

Options	**JRF Qualified**		**Total (Percent)**
	No (Percent)	**Yes (Percent)**	
Substantially Increased	11 (4.58)	6 (2.50)	17 (7.08)
Slightly Increased	60 (25.00)	64 (26.67)	124 (51.67)
Not be Changed	34 (14.17)	32 (13.33)	66 (27.50)
Slightly Decreased	12 (5.00)	14 (5.83)	26 (10.83)
Substantially Decreased	3 (1.25)	4 (1.67)	7 (2.92)
Total	120 (50.00)	120 (50.00)	240 (100)

The data tabulated in Table 4.161 above can also be represented graphically as shown below in Figure 4.50.

Figure 4.50: Recommended Change in Financial Assistance

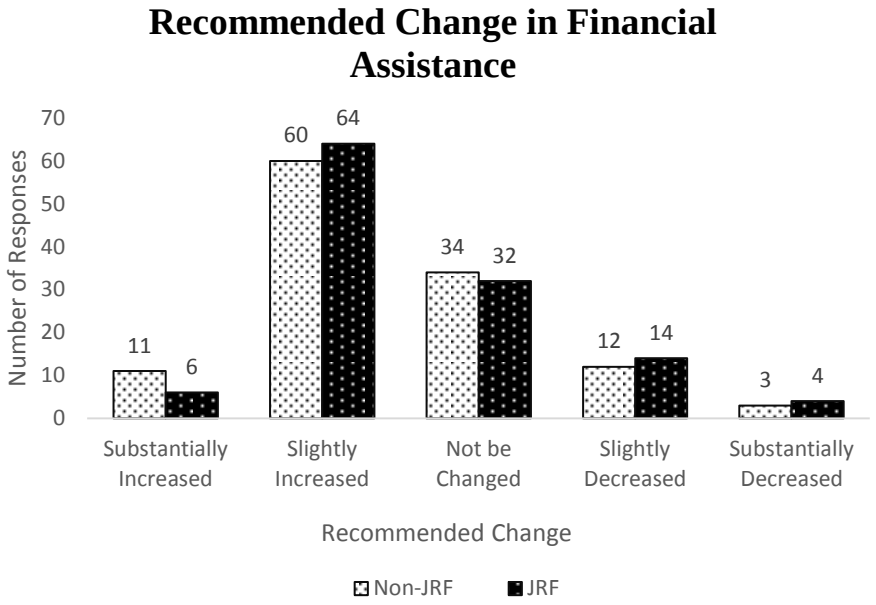


Table 4.161 along with Figure 4.50 shows that only 3 (3.33%) and 4 (4.17%) respondents among non-JRFs and JRFs respectively demanded substantial cut in financial assistance provided to the fellows. small number of respondents i.e., 12 (20.00%) non-JRFs and 14 (13.75%) JRFs have recommended slight deduction in the financial assistance. 34 (2.50%) and 32 (3.33%) of the non-JRFs and JRFs respectively have recommended to make no changes in the renumeration provided to the fellows. Moreover, the majority of the respondents i.e., 60 (21.50%) non-JRFs and 64 (26.25%) JRFs have advised to make slight increase in the renumeration provided to fellows. Also, 11 (2.92%) and 6 (2.50%) of the respondents from non-JRFs and JRFs respectively recommended a substantial increase in the amount of financial assistance provided to the fellows.

Thirty-fourth question of the questionnaire was a branching question. It directs the fellows who are availing or have ever availed JRF to fill out the next section of the questionnaire that was fourth and final section. For the respondents who are not the JRF fellows were sent to the end of the questionnaire on thanking message. The responses received for this item are tabulated below in Table 4.162.

Table 4.162: Status of JRF Availing

Availing/Availed JRF	Number of Responses
Yes	120 (50.00)

No	120 (50.00)
Total	240 (100.00)

The data tabulated in Table 4.162 above can also be represented graphically as shown below in Figure 4.51.

Figure 4.51: Status of JRF Availing

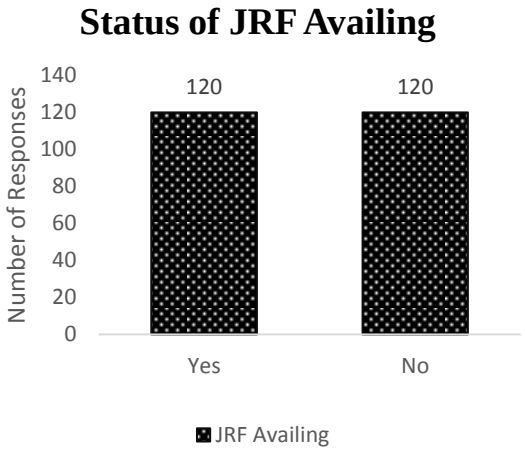


Table 4.162 along with Figure 4.51 shows that half of the respondents (120 out of 240) were either availing or have availed the JRF fellowship in the past. Whereas the other half of 120 respondents have not availed the fellowship. This item was used to distribute the sample in two sub-groups of JRFs and non-JRFs used in other items to carry out analysis and comparison.

The fourth section of the questionnaire was solely designed for receiving the responses from the JRF fellows only. This section contains seven items numbered from thirty-five to forty-one. It basically deals with the perception of the fellows and the situation of the process and implementation of the fellowship scheme. The thirty-fifth item of the questionnaire deals with the point of time in fellows' academic life, when he first qualified the JRF examination. The responses received have been tabulated below in Table 4.163.

Table 4.163: Time of UGC NET/JRF Qualification

Time of JRF Qualification	**Number of Responses (Percent)**
During PG	6 (5.00)

Between PG and M.Phil.	5 (4.17)
Between PG and PhD	32 (26.67)
During M.Phil.	9 (7.50)
Between M.Phil. and PhD	8 (6.67)
During PhD	60 (50.00)
Total	120 (100.00)

The data tabulated in Table 4.163 above can also be represented graphically as shown below in Figure 4.52.

Figure 4.52: Time of UGC NET/JRF Qualification

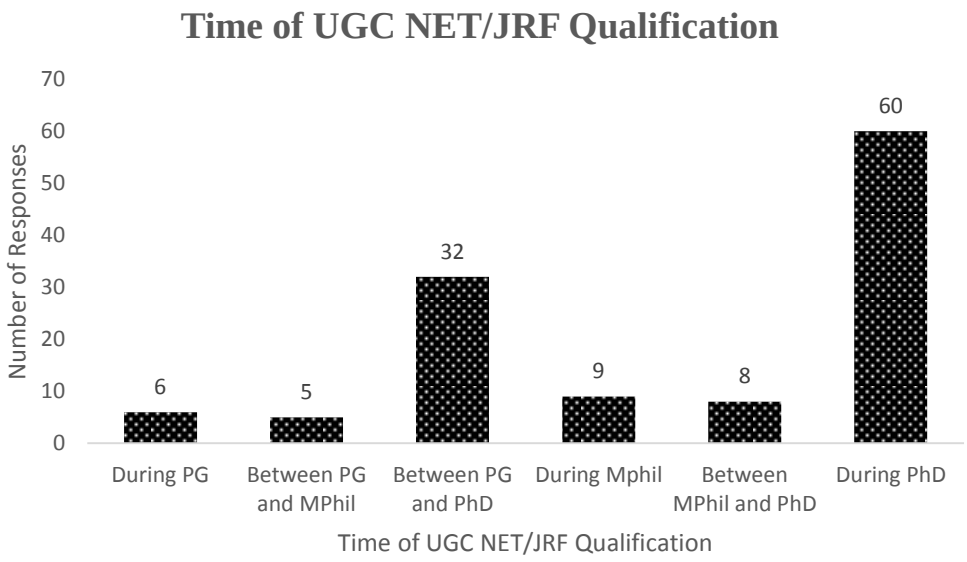


Table 4.163 along with Figure 4.52 shows that all of the 120 valid respondents have responded to this item. Out of these 120 respondents, 6 (5.00%) have qualified UGC NET/JRF examination during their postgraduation. 5 (4.17%) of the responding participants have qualified for UGC NET/JRF between their postgraduation and M.Phil. A fair number of respondents i.e., 32 (26.67%) have qualified for UGC NET/JRF examination between their postgraduation and PhD. Moreover, 9 (7.50%) of the responding fellows have qualified for their JRF during their M.Phil. Furthermore, 8 (6.67%) of the responding participants have cleared UGC NET/JRF examination between their

M.Phil. and PhD. Moreover, 50% of the respondents (60 out of 120) have qualified for JRF during their PhD.

Second item of this section and thirty-sixth question of the questionnaire was designed to measure the agreement level of the respondents with the statement: 'Funds are disbursed at regular interval/specified time'. The responses were recorded on 5-Point Likert Scale. The responses received for this item were recorded and are presented here in tabular form as shown in Table 4.164.

Table 4.164: Regular Disbursement of Funds

Agreement Level	**Number of Responses (Percent)**
Strongly Agree	4 (3.33)
Somewhat Agree	23 (19.17)
Cannot Say	19 (15.83)
Somewhat Disagree	61 (50.83)
Strongly Disagree	13 (10.83)
Total	120 (100.00)

The data tabulated in Table 4.164 above can also be represented graphically as shown below in Figure 4.53.

Figure 4.53: Regular Disbursement of Funds

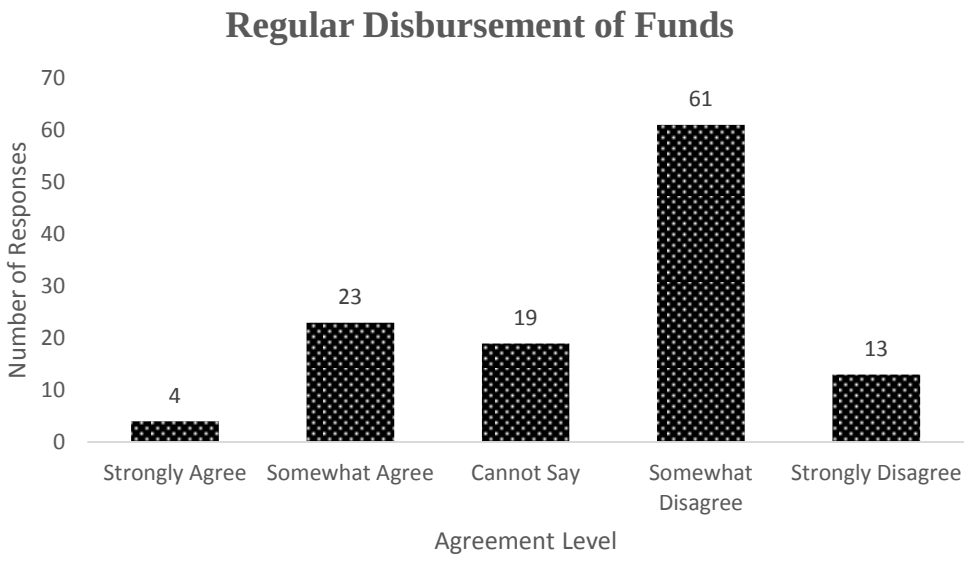


Table 4.164 along with Figure 4.53 shows that all of the 120 valid respondents have responded to this item. Out of these 120 respondents, 4 (3.33%) participants have strongly agreed with the statement: 'Funds are disbursed at regular interval/specified time'. 23 (19.17%) of the responding participants have agreed with the statement to some extent. Whereas 19 (15.83%) of the responders were not in the state to take any side. On contrary, 61 (50.83%) majority of the responders have shown some disagreement with the statement. Also, 13 (10.83%) of the respondents have strongly disagreed with the statement.

Thirty-seventh item of the questionnaire was designed to compare Direct Benefit Transfer with Institutional Disbursement Model. The item states DBT is better than Disbursement through Institution model. The responses were recorded as 'Yes', 'No', or 'Cannot Say'. The responses received for this item were recorded and are presented here in Table 4.165.

Table 4.165: DBT is Better Than Disbursement Through Institution

Response	Number of Responses (Percent)
Yes	78 (65.55)
No	25 (21.01)
Cannot Say	16 (13.45)

Total	119 (100.00)

The data tabulated in Table 4.165 above can also be represented pictorially as shown below in Figure 4.54.

Figure 4.54: DBT is Better Than Disbursement Through Institution

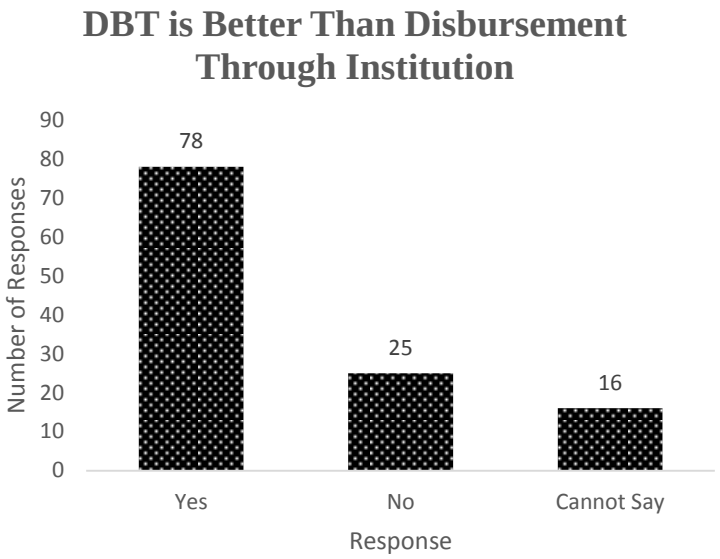


Table 4.165 along with Figure 4.54 shows that 119 respondents have responded to this item. Out of these 119 respondents, 78 (65.55%) participants have affirmed that the Direct Benefit Transfer is better in comparison to disbursement through their respective institutions. On perverse, 25 (21.01%) of the responding participants have negated with the statement. Whereas 16 (13.45%) responders were not in the state to take any side.

Thirty-eighth item of the questionnaire was a dichotomous item inquiring about the respondents' engagement in any research work other than their own thesis during their PhD. The responses were recorded as simply 'Yes', or 'No'. The responses received for this item were recorded and are presented here in Table 4.166.

Table 4.166: Involvement in Any Research Other Than Thesis

Response	Number of Responses (Percent)
Yes	29 (24.37)
No	90 (75.63)

Total	119 (100.00)

The data tabulated in Table 4.166 above can also be represented pictorially as shown below in Figure 4.55.

Figure 4.55: Involvement in Any Research Other Than Thesis

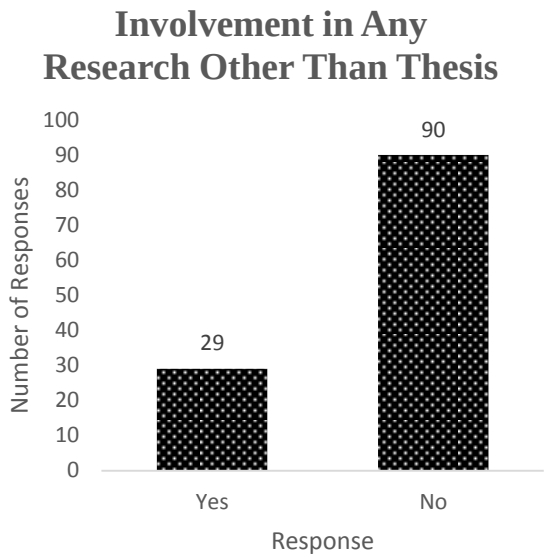


Table 4.166 along with Figure 4.55 shows that all of the 119 respondents have responded to this item. Out of these 119 respondents, 29 (24.37%) participants have affirmed that they have been engaged in research that have been conducted in their departments and were not related to their thesis. On perverse, a majority i.e., 90 (75.63%) of the responding participants have negated with the statement.

Thirty-ninth item of the questionnaire was a dichotomous item inquiring about the respondents' engagement in teaching during their PhD. The responses were recorded as simply 'Yes', or 'No'. The responses received for this item were recorded and are presented here in Table 4.167.

Table 4.167: Involvement in Teaching

Response	Number of Responses (Percent)
Yes	75 (63.03)
No	44 (36.97)

Total	119 (100.00)

The data tabulated in Table 4.167 above can also be represented pictorially as shown below in Figure 4.56.

Figure 4.56: Involvement in Teaching

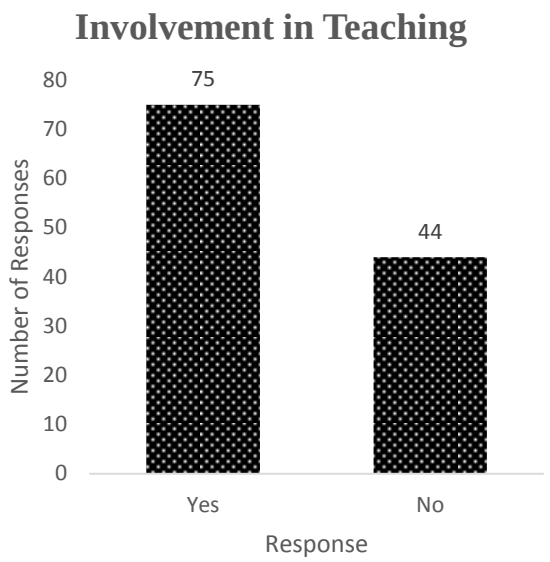


Table 4.167 along with Figure 4.56 shows that all of the 119 respondents have responded to this item. Out of these 119 respondents, a majority i.e., 75 (63.03%) participants have affirmed that they have been engaged in teaching in their departments. On perverse, 44 (36.97%) of the responding participants have negated with the statement.

Fortieth item of the questionnaire was a multiple-choice multiple answer item that deals with the bases suggested by the respondents regarding how the provided financial assistance helped them. This type of item setting was adopted as the choices of bases were related to each other and a subject can opt for one or more of these choices. The eight options were (1) Books, (2) Research Journals, (3) Stationery, (4) Electronic gadgets like laptop/mobile/tablet, (5) Software, (6) e-journals, (7) Library Memberships, (8) Participation forms for workshops, conferences, seminars and symposium. Also, there was an open option, labelled others, where respondents could provide any other specified object. However, none of the respondents have marked others as one of the options. Data regarding this item was recorded in multiple columns, with one column per answer option. For the analysis of this item, 0 (Labelled as 'NO') was encoded for the absence of the response and 1 (Labelled as

'YES') for the presence of response for each option. Then, the new variable named Facilitated_Expenditure was created using Count Transformation. Then the frequency table of this new variable is represented as shown below in Table 4.168.

Table 4.168: Frequency Distribution of Facilitated Expenditures

Number of Options Selected	Total (Percent)
None	2 (1.67)
1	9 (7.50)
2	18 (15.00)
3	26 (21.67)
4	39 (32.50)
5	16 (13.33)
6	6 (5.00)
7	4 (3.33)
Total	120 (100)
Sum	423

From the analysis of Table 4.168, we could see that out of 120 respondents 118 respondents have responded with at least one option, so only 2 respondents have left this item unanswered. The Sum Row of the table indicates, the total number of responses given by all the respondents, that is 423.

Option-wise tabulation of the responses is represented below in Table 4.170 along with the case processing summary as shown in Table 4.169.

Table 4.169: Case Processing Summary

	Valid Cases		Missing Cases		Total Cases	
	N	Percent	N	Percent	N	Percent
Facilitated Expenditure	118	98.33	2	1.67	120	100

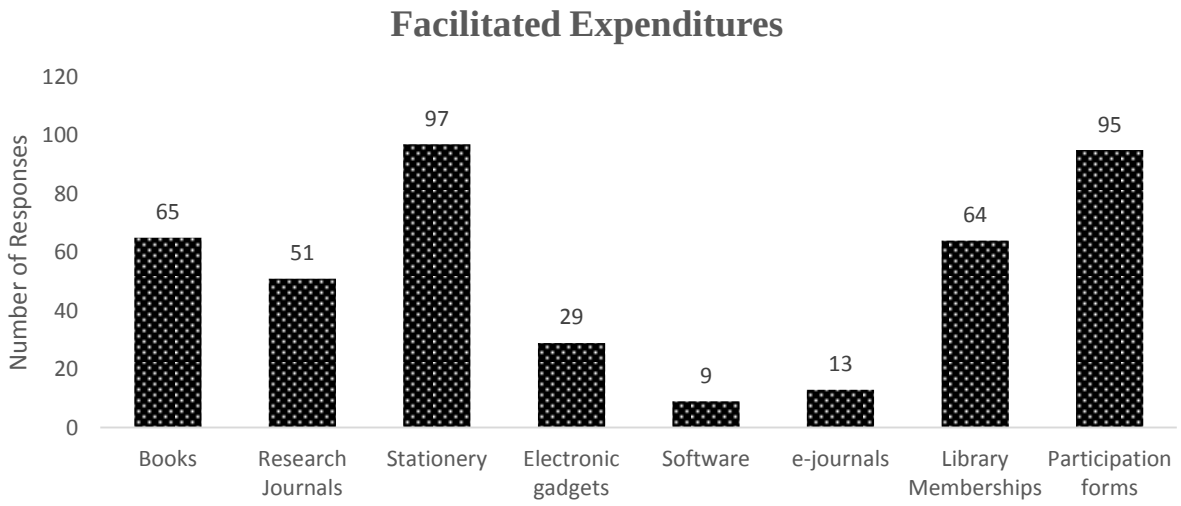
Table 4.170: Percentage Distribution of Facilitated Expenditures

		Responses		
		N	Percent	Percent of Cases
Facilitated Expenditure	Books	65	15.37	55.08
	Research Journals	51	12.06	43.22
	Stationery	97	22.93	82.20

	Electronic gadgets like laptop/mobile/tablet	29	6.86	24.58
	Software	9	2.13	7.63
	e-journals	13	3.07	11.02
	Library Memberships	64	15.13	54.24
	Participation forms for workshops, conferences, seminars and symposium	95	22.46	80.51
Total		423	100	358.48

The data represented above in Table 4.170 can also be represented as shown below in Figure 4.57.

Figure 4.57: Percentage Distribution of Facilitated Expenditures



From the analysis of Table 4.168 and Table 4.170 along with Figure 4.57, it is evident that total 118 respondents have responded to the item, i.e., selected at least one of the eight options of facilitated expenditures. The vast majority of the responders i.e., 97 (82.20%) affirmed that the financial assistance provided under the JRF scheme has helped them in buying stationery. Also, a large number of responders i.e., 95 (80.51%) have expended on participation forms. For buying books, 65 (55.08%) respondents have used their fellowship amount. The provided financial assistance has also helped 64 (54.24%) respondents in getting library memberships. A fair number of responders (51, 43.22%) have used their fellowship funds to buy research journals. The expenditure on electronic gadget was carried by 29 (24.58%) of the responding participants, whereas 13 (11.02%) of the participants have spent on e-journals. The least number of respondents i.e., 9 (7.63%) have utilized the fellowship funds to buy some kind of software.

Forty-first i.e., the last item of the questionnaire was also a multiple-choice multiple answer item that deals with areas JRF scheme has helped them in. This type of item setting was adopted as the choices of bases were related to each other and a subject can opt for one or more of these choices. Sixteen options were provided to the respondents to choose from. These options were (1) Getting admission in PhD, (2) Creating professional contacts, (3) Getting special status, (4) Exemptions from entrance exams for PhD, (5) Achieving Financial stability, (6) Meeting household expenses, (7) Meeting personal expenses, (8) Meeting academic and research expenses, (9) Increasing your knowledge, (10) Increasing your research orientation, (11) Increasing your academic and research activity, (12) Increasing your number of publications, (13) Improving your research quality, (14) Enhancing your confidence, (15) Enhancing your self-dependency, (16) Enhancing your study sources. Data regarding this item was recorded in multiple columns, with one column per answer option. For the analysis of this item, 0 (Labelled as 'NO') was encoded for the absence of the response and 1 (Labelled as 'YES') for the presence of response for each option. Then, the new variable named JRF_Helped_In was created using Count Transformation. The frequency table of this new variable is represented as shown below in Table 4.171.

Table 4.171: Frequency Distribution of Areas JRF Helped In

Number of Options Selected	Total (Percent)
None	2 (1.67)
1	0 (0.00)
2	0 (0.00)
3	0 (0.00)
4	0 (0.00)
5	2 (1.67)
6	5 (4.17)
7	15 (12.50)
8	19 (15.83)
9	25 (20.83)
10	21 (17.50)
11	16 (13.33)
12	12 (10.00)
13	2 (1.67)
14	1 (0.83)

15	0 (0.00)
16	0 (0.00)
Total	120 (100)
Sum	1092

From the analysis of Table 4.171, we could see that out of 120 respondents 118 respondents have responded with at least one option, so only 2 respondents have left this item unanswered. The Sum Row of the table indicates the total number of responses given by all the respondents, that is 1092.

Option-wise tabulation of the responses is represented below in Table 4.173 along with the case processing summary as shown in Table 4.172.

Table 4.172: Case Processing Summary

	Valid Cases		Missing Cases		Total Cases	
	N	Percent	N	Percent	N	Percent
Areas JRF Helped In	118	98.33	2	1.67	120	100

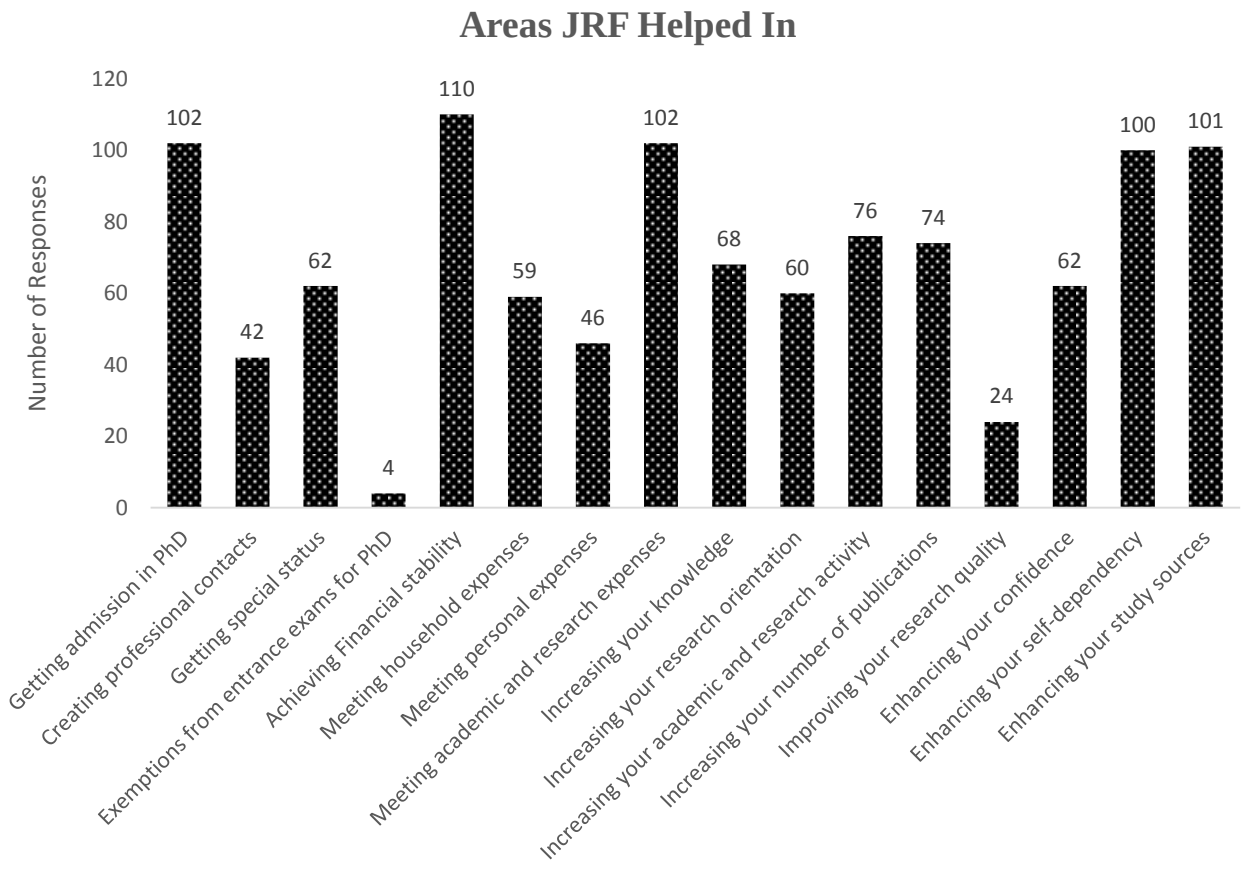
Table 4.173: Percentage Distribution of Areas JRF Helped In

		Responses		
		N	Percent	Percent of Cases
JRF_Helped_In	Getting admission in PhD	102	9.34	86.44
	Creating professional contacts	42	3.85	35.59
	Getting special status	62	5.68	52.54
	Exemptions from entrance exams for PhD	4	0.37	3.39
	Achieving Financial stability	110	10.07	93.22
	Meeting household expenses	59	5.40	50.00
	Meeting personal expenses	46	4.21	38.98
	Meeting academic and research expenses	102	9.34	86.44
	Increasing your knowledge	68	6.23	57.63
	Increasing your research orientation	60	5.49	50.85
	Increasing your academic and research activity	76	6.96	64.41
	Increasing your number of publications	74	6.78	62.71

	Improving your research quality	24	2.20	20.34
	Enhancing your confidence	62	5.68	52.54
	Enhancing your self-dependency	100	9.16	84.75
	Enhancing your study sources	101	9.25	85.59
Total		1092	100	925.42

The data represented above in Table 4.173 can also be represented as shown below in Figure 4.58.

Figure 4.58: Percentage Distribution of Areas JRF Helped In



From the analysis of Table 4.171 and Table 4.173 along with Figure 4.58, it is evident that total 118 respondents have responded to the item, i.e., selected at least one of the sixteen options of facilitated expenditures. The vast majority of the responders affirmed that the JRF scheme has helped them in achieving financial stability (110, 93.22%), getting admissions in PhD (102, 86.44%), meeting their academic and research expenses (102, 86.44%), enhancing their study sources (101, 85.59%) and self-dependency (100, 84.75%). Also, a majority of responders have acknowledged JRF scheme for increasing their research and academic activity (76, 64.41%), number of their

publications (74, 62.71%), knowledge (68, 57.63%), getting special status (62, 52.54%), boosting their confidence (62, 52.54%), and their research orientation (60, 50.85%). A fair number of participants have reported that JRF scheme has helped them in meeting household expenses (59, 50.00%), personal expenses (46, 38.92%) and in creating professional contacts (42, 35.59%). Relatively small number of participants stated the importance of JRF scheme in improving their research quality (24, 20.34%) and providing exemption from the entrance examinations for getting admission in PhD (4, 3.39%).

The exemption from the entrance examinations for getting admission in PhD is too low, as most of the participants have cleared JRF during their PhD. Also, it is not mandatory for all the institutions to exempt such candidates. However, it is desired to exempt such students as JRF examination is the standardized test and it could be regarded as the first attempt for PhD entrance written examination. But it might be due to the fact that JRF examination is not completely focused on the research aptitude only, that the institutions are not preferring such exemptions.

4.2 Analysis of Data Collected through Interview and Documents

4.2.1 Profiles of Interviewees

The qualitative data was collected through interview from 13 participants. The profiles of the interviewees are shown below in Table 4.174.

Table 4.174: Profiles of Interviewees

Participant ID	Age / Gender	Mode of Interview	Profession	JRF Qualified (Frequency)	Discipline
1	30 / M	Telephonic	Research Scholar	Yes (2)	Education
2	29 / F	Telephonic	Research Scholar	Yes (2)	Education
3	48 / M	Telephonic	Private Non-Teaching / Research Oriented	No	Psychology
4	34 / M	Telephonic	Ex. Assistant Professor (Ad-hoc) / Currently Educator in Private Sector	Yes (3)	English
5	27 / F	Face-to-Face	Research Scholar	Yes (2)	Sociology
6	32 / M	Face-to-Face	Assistant Professor	Yes (1)	Hindi
7	31 / M	Face-to-Face	Research Scholar	Yes (2)	Economics
8	49 / M	Face-to-Face	Principal in PG College	No	Sociology

9	56 / M	Face-to-Face	Head of Department and Dean	No	Political Science
10	51 / F	Face-to-Face	Head of Department	Yes (1)	Commerce
11	52 / M	Face-to-Face	(Not to be Disclosed)	No	Public Administration
12	36 / M	Telephonic	Assistant Professor	Yes (1)	Education
13	42 / F	Face-to-Face	Associate Professor	No	Management

4.2.2 Process of Coding and Analysis

Coding

The researcher, in this study, has opted for abductive coding process that drew on literature review and key concepts of critical realism; however, these codes were changed, eliminated, and supplemented with new codes during the process until every piece of text was coded (Gilgun, 2011). The researcher has started with the initial code structure comprising of 32 codes. However, over the course of coding process, the 32 codes were expanded, reflecting the flexibility in coding process. The number of codes were gradually reduced to 50 processed codes during the second coding cycle, as the researcher re-organized and combined these codes into a conceptual map informed by critical realism.

The researcher recoded the prominent codes into critical realism informed sub-categories of ‘structure’ and ‘agency’. Structures include relatively enduring (but temporary) features of the world that often precede and succeed our individual lives, but which human agency can reproduce or transform over time (Archer, 2010; Bhaskar, 1979). Agency, on the other hand, is shaped but not determined by the structures, can consciously or unconsciously shape those social structures (Bhaskar, 1979). Importantly, agencies include our individual values, meanings and ideas, these can also shape the world around us (Carter & New, 2004). The sub-categories were created with the names of ‘Structure’ and ‘Agency’ and the other existing processed codes were recoded into it in order to identify some notable possible structures and agencies at play. Also, all the codes were given the due importance, however, the most dominant codes were used as the initial point to identify demi-regularities.

Due to critical realistic ontology and epistemology, all explanations of the reality forwarded by researchers, theorists and scientists, are considered as fallible (Bhaskar, 1979). This ontological difference between the critical realism and interpretivism is especially useful for change-oriented study, in which subjects provide contrasting interpretations for a phenomenon and some of them have to be deemed more specific than others. For the same cause, participants can also be viewed as incapacitating to critical epistemology. But science theories should not be believed to be ever more reliable than experiential explanations – in particular, they are both inherently fallible and the experiences and interpretation of a phenomenon by observers can be in fact the most exact explanation of facts. Experiences and understandings of participants can question current science expertise and theory in qualitative critical realist study (Redman-MacLaren & Mills, 2015).

Data Analysis through Abduction

After the identification of demi-regularities through coding, the next step was to apply the process of abduction that is also known as theoretical redescription – where empirical data are redescribed on the basis of prior theories and knowledge and were contrasted with the results of survey conducted in the first phase of current research. Abduction was described as 'the inference or reasoning process', that implies that a specific event is interpreted from a collection of general ideas or concepts' (Danermark et al., 2002). Abduction increases the theoretical engagement level above thick description of the empirical entities, but with the agreement that the theory chosen at hand is fallible.

Data Analysis through Retroduction

The ultimate stage of critical realist analysis is retroduction that primarily lays emphasis on causal mechanisms and conditions. The goal of retroduction is to find the vital contextual conditions for a specific causal mechanism to be activated and to result in observed trends. Retroduction, as conceptualized in the experience of the social agents involved, shifts from the apparent phenomena of social existence to the basic connections that necessitate them. Retroduction is the key mode of inference in critical realism as an analytical process that passes from concrete to abstract and back to concrete again. 0

4.2.3 Extraction of Themes

The qualitative analysis in the present study led the researcher to the themes as mentioned in the following table:

Table 4.175: Extraction of Themes

Themes	Sub-themes	Categories	Processed Codes (or Clusters)
Contextual transition calls for amelioration of objectives	Research community: Comparison among the scenarios of 1980s and present	Contextual Changes	Attitude Towards PhD (1980s) Negligence of Research (1980s) Scope of PhD (1980s) Attitude Towards PhD (Present) Focus on Research (Present) Diversified Job Market (Present)
	Diversified Perceptions of Goals and Objectives of Junior Research Fellows	Goals and objectives of scheme	Objectives Intended Goals
Fragmented investments need reorganization? A mixed bag of responses		Inputs	Time Duration Funding Physical and Infrastructural Technical
Processes seek vigilance	Recruitment process seems to be unjust?	Process	Recruitment
	Irregular disbursement turns into a barrier		Disbursement
	Orientation needs reforms while transfer policy should be retained		Orientation Transfer
	Moral pressure and hyper sympathy distorting ethical processes		Assisting Department Transition Monitoring Resignation/Termination
Outputs meet the objective but not expectations?		Output	Providing Opportunity Time Duration Completion

		Retention Dropout Quality
Negative outcomes outweigh positive outcomes	Outcome	Personal: Knowledge Personal: Attitude Personal: Behaviour Institutional Level Community Level Societal Level
Personal impacts supersede subtle impacts on community and society	Impact	Personal: Knowledge Personal: Attitude Personal: Behaviour Personal: Condition Institutional Level Community Level Societal Level

4.2.4 Theme 1: Contextual transition calls for amelioration of objectives

4.2.4.1 Sub-Theme 1: Research community: Comparison among the scenarios of 1980s and present

The participants of the present study have acknowledged the shift in context of the academic research throughout the country, "*especially in last 30 years, our research community have gone through drastic change,*" stated participant 9. Participant 11 has had a similar experience, as he acknowledges the dearth of research especially in disciplines of humanities and social sciences. Also, he indicated the agencies of self-determination and intrinsic motivation as the driving factors of researchers in 1980s. They stated, *"…those were the days when there used to be few small groups of brilliant scholars who were really keen for research and that too because of their intrinsic motivation, else there was nothing especial about any external factor that could influence anyone to seek their career in research, and in social sciences, the probability was even lesser*." Indicating the lack of support on financial grounds, Participant 10 added, "*The financial amount that we used to get as fellows was too little*", and also suggested the social undermining, "*Even the friends and family do*

not like to encourage for PhD." The participants 9, 10, and 11 also shared the hardships in pursuance of their PhDs and told how the scarcity of resources and social support were the major setbacks during their PhD journey. Participant 11 hinted the reason for this attitude of social institutions towards the research as , "*….probably due to the comparatively observable developments in sciences, social research was discriminated*." Participant 9 also signaled that the scope after doing PhD at that time was too limited, "*The social doctorates were having the only choice of being an assistant professor or teach at any other level and were treated as other teachers who were teaching right after their graduation*."

Responding to the question regarding how they see the research scenario has evolved in these 35 to 40 years, Participant 10 stated that , "*There are a lot of changes that could be observed over this period. Today, a number of universities are present to offer PhD and the number of research scholars have almost tripled*." Participant 9 also adds, "*The viewpoint of society towards the social sciences, humanities, arts and liberal arts is altering significantly. Now if you are telling someone that you are a social scientist, you are seen as some important asset of the society*." Participant 11 asserted, "*The orientation of our society towards research and the diversification of the job market has created a number of opportunities. Today, a PhD holder can not only search their career in Academics, but the R&D sector and different institutions also opens vacancies for them*." The participant 10 has also advised the scholars "*to grab the opportunities of enhancing their entrepreneurial skills and move on to create jobs rather than doing* ." Participants 8 and 13 have also provided similar insights hinting about the incubation centers. However, all the participants have a single voice over the issue that still there is a huge scope in altering the perception of the society towards non-science disciplines.

Moreover, participant 5 has added a new thread to this discussion by asserting, "*It's not always due to personal choice that a person opts for higher studies and going for research. Sometimes, the social and peer pressure forces them to join the PhD, as there are no good jobs available after pursuing Masters in arts or social sciences. There are a number of unemployed youths who possess even MA degree but still struggling for getting a job. In this case, the person,*

opts for PhD, so that no one could claim that they are worthless." Interestingly, participant 7 has also affirmed the same and also indicated, "*I am pursuing the PhD for this very same reason. I have written some of the government job examinations whose results are not yet declared, and once the results are declared, I will soon drop the PhD.*" Participant 2 has also joined the government teaching job and has changed the mode of their PhD from regular to part-time. Participant 1 has also been selected in government teaching job, but they have not yet decided what to do next.

The Annual Report of UGC for 2018-19 mentions

"*The UGC was conducting a test for determining the eligibility for the award of Junior Research Fellowships (JRF) since 1984 in order to ensure greater comparability as well as higher degree of validity and reliability in the field of research. In order to maintain a uniform standard of teaching and research in the country, the Government of India, as per its New Education Policy, 1986 envisaged that "only those candidates who, besides fulfilling the minimum academic qualifications prescribed for the post of lecturer, have qualified in a comprehensive test to be specifically conducted for the purpose will be eligible for appointment as Lectures". The University Grants Commission held wide-ranging consultations on the issue of evolving the qualifying test for appointment as Assistant Professor / Lecturer with groups of academicians and educational administrators like State Education Secretaries. Accordingly, UGC combined it with the test for JRF already being conducted by it and conducted the first National Eligibility test for Junior Research Fellowship and Eligibility for Lectureship (UGC-NET) on 24th December 1989 in the subjects falling under Humanities including languages, Social Sciences and some science subjects. The Council of Scientific and Industrial Research (CSIR) conducted the Joint CSIR-UGC Test for JRF and Eligibility for Lectureship on 31st December 1989 for disciplines falling under the basic sciences. Since then, UGC-NET and Joint CSIR-UGC Test have been mostly conducted twice every year in the months of June/July and December."* (University Grants Commission, 2019, p. 2015)

Through this statement, the researcher analyzed that the JRF examination was initiated to maintain uniform standard of the research throughout the country. JRF examination until the merger was purely research-oriented but after the merger, the focus was shifted towards the teaching standards and appointment of Lecturers/Assistant Professors.

4.2.4.2 Sub-Theme 2: Diversified Perceptions of Objectives and Goals of Junior Research Fellowship

Objectives of the fellowship scheme under study, as identified by the participants, varies from 'Enhancing research participation' (12 participants) to 'Promoting reachability' (4 participants). In addition, 'Quality improvement of research' has also been perceived by 8 of the participants as one of the objectives of the JRF scheme., especially among the young social researchers. The goals of the fellowship scheme as told by the participants include 'facilitation of the services for research fellows' (10 participants), 'quality assurance of research output' (8 participants), 'providing opportunity to pursue PhD' (7 participants), 'capacity building for national research strength' (7 participants), and 'providing financial freedom to research fellows' (5 participants).

However, all of these objectives and goals are not intended. Participant 9 illustrated, " *Quality improvement has been seen as one of the objectives of the scheme by many of the us, still it has not been mentioned anywhere. The only objective mentioned in every document regarding JRF talks about providing opportunity to qualified candidates to pursue PhD*." But they also add, "*However, we could assume it to be an indirect objective as monitoring has also been one of the aspects included in the process*." On asking for clarification between enhancement of research participation and promoting reachability, Participant 10 responded "*Research participation could be seen as the involvement of research scholar in various research activities, whereas reachability accounts for affordability, whether any scholar coming from any background is able to complete the research or not*."

Participant 11 has thrown some light on the validity of the objective. He argued , "*The scenario , as mentioned previously, at the time of introduction of the scheme was such that it demanded for actions that could lead to the increase in number of researchers and the research*

products. The objective of the scheme tackled that in a placid manner. Now, the increase in research output that could be observed shall be dedicated to the scheme to some extent." However, he adds, "*But now the time has come to revisit and restructure the scheme as there are a number of redundant researches going on at PhD level*." Also, he indicated, "*That's the reason, we have to now shift our focus from quantity to quality. And for that, the first step is to ameliorate such schemes*." However, participant 10 argued, "*Of course there should be necessary focus on the quality! But looking for quality only could lead to serious negative impacts on the research community. It would lead to the extinction of creativity. There should be a necessary balance between the two*."

On re-analyzing the same excerpt from the Annual Report of UGC for 2018-19

> "*The UGC was conducting a test for determining the eligibility for the award of Junior Research Fellowships (JRF) since 1984 in order to ensure greater comparability as well as higher degree of validity and reliability in the field of research. In order to maintain a uniform standard of teaching and research in the country, the Government of India, as per its New Education Policy, 1986 envisaged that "only those candidates who, besides fulfilling the minimum academic qualifications prescribed for the post of lecturer, have qualified in a comprehensive test to be specifically conducted for the purpose will be eligible for appointment as Lectures".* (University Grants Commission, 2019, p. 2015)

The claim of initiation of JRF examination to ensure higher degree of reliability and validity in research contrasts the responses received from the research participants, and also do not comply with UGC's own stated objective of JRF of "providing opportunities to NET/JRF qualified candidates "to undertake advanced studies and research leading to M.Phil./Ph.D. Degrees in Humanities and Social Sciences including Languages and Sciences" (University Grants Commission, n.d.-d). This stated objective seems too vague as there is no mention on how it would provide opportunities. If it is assumed that preference would be given to JRF qualified candidates, then it might be required to revisit on how and on what grounds it establishes reliability and validity of the examination and whether it evaluates the research aptitude and orientation of the candidate or not.

Secondly, it must also be made necessary to qualify JRF if it is meant to maintain a uniform standard of research

4.2.5 Theme 2: Fragmented Investments need Reorganization? Mixed Bag of Responses

Majority of the participants in the present study believed that the inputs of UGC in the scheme under study are not streamlined and needs to be reorganized. All the participants equivocally acknowledged the sufficiency of the time period for which the fellowship is being provided. Moreover, majority of the candidates have mentioned that due to the abolition of the M.Phil. in New Education Policy, the time period for the fellowship should be shorten by a year or two. In response to this statement, Participants 4 has opposed, "*There is no need to shorten the time, as now the candidates would be directly coming to PhD and most of them would take some time in learning the basic concepts of research which you know consumes a lot of time*." Participant 6 has also added this, "*If scholars are going to get reduced time period, then quality of their research might be compromised. It is better to not alter the duration. Also, leave for some internship programmes or other skill enhancing courses should be permissible during the fellowship period*." Participant 7 stated, "*In western countries, there is a culture of part-time PhDs and they take a lot of breaks during their PhDs. PhD there is not only an award but a life experience, and every participant should have right to opt for what and how they want to conduct their research. The typical time taken by them to complete their PhD lasts from 8 to 10 years. Then why are we in a hurry to produce speedy PhDs. We should think over it as it is responsible for degeneration of our research quality*."

On the questions regarding funding, the majority of the respondents believed that enough funds are being provided to the participants and the number of participants registered under the scheme is also sufficient. Participant 13 asserted, "*The number of fellows is fair enough and should not be increased as it will then lead to detoriation of the prestige of scheme. It should remain somewhat competitive in nature*." Participant 4 has also added, "*We should seek for the funding opportunities first instead of deciding on expansion of the scheme*." On this line, the researcher has inquired about some alternative sources that could be identified to generate more funds for the sustainability and expansion of the scheme. Participant 7 believed, "*The PPP model would be best*

for this purpose." Also, Participant 4 has asked for the enhancement of budgetary allocation in research and higher education." Participant 8 led this discussion to a new height, adding "*There should be a model developed for the involvement of industry and social organizations to come forward and fund the research for the sake of rapid developments in the respective sectors*." He also adds, "*Obviously, they (industries and social organizations) won't come forward until some initiatives are taken by the government. The government should provide some rebates to such initiatives, or the PhD program could also be provided along with the compulsory internship opportunities.*" Participant 11 has however argued, "*Making such internship programmes mandatory in PhDs would shift the nature of researches being conducted. It would make the basic researches highly vulnerable. However, we could think over integrating such aspects without making them obligatory for the researchers*." However, none of the participants were able to identify a comprehensive working model to overcome this dilemma.

Many of the respondents have hinted about the infrastructure and physical resource planning, most of the participants have listed a number of issues that need attention from the regulators. In the words of participant 4, "*There is no point of providing fellowships if you cannot provide facilities for better research*." Participant 5 also stated, "*In our library, there are a few magazines and curriculum-oriented books available, that too in a limited number. How could a researcher carry a good research without proper literature available to him?*" Participant 7 has mentioned about the conditions of the laboratories available at their department, "*In our department, there is a laboratory available, and we have access to online journals also, but those journals are limited in number and do not cover the majority of portion related to our discipline. Most of the available journals are related to science and technology*." Participant 5 have illustrated on the issue and addressed, "*The UGC has tried in every sense to provide the facilities, but the allocation of budget from the government is too less to reform the facilities in a single day. Also, we could see the majority of the universities are undergoing financial pressure. But yes, ideally all the facilities should be provided at the earliest*." Participant 11 apprised, "*However, there is no direct relationship between the infrastructure and physical facilities provided at any university with the fellowship scheme directly,*

but yes they are inter-connected, and we have to improve the whole academic scenario and for that UGC needs to rollout major reforms at a greater pace."

Also, the participants have indicated towards the technical illiteracy in academia, and the need to provide technical trainings and skills to the fellows. Participant 5 discerned, "*We are not provided with the technical skills required for conducting the research in a proper way during our coursework. It is theoretical. But the today's academia demands for various technical skills that could not be provided through only coursework. Due to this, we don't even know to conduct analysis and about data management*." Participant 4 has also suggested, "*There is a need to provide all the scholars whether fellows or not, with the skills regarding technical writing and they should be provided. We should learn these aspects from the Western University. Many of us often complain about making comparison with the West, and also praise their works. Whereas only a few of the Indian researchers in the non-science background have managed to secure their places at International stage. The reason behind this is not that we are inferior to them in any manner, but the way they are being educated about writing and promoting the research. Many of the renowned universities do provide writing classes to the scholars over there. Then why can't we provide the same?*" Participant 8 indicated, "*M.Phil. was not just a bridge programme, but a ladder of success for many of the scholars, especially those who come from the non- technical and rural backgrounds. They got a chance to be aware with the processes and techniques involved in the research process and could do their Ph.D. smoothly. But with the abolition of M.Phil., we have created a new problem for us. Now the scholars won't be able to grasp the proper knowledge about methods and technical skills prior to their Ph.D. coursework. However, this barrier could be broken through the introduction of rigorous and comprehensive coursework*."

The analysis of annual reports published by University Grants Commission (University Grants Commission, 2017, 2018, 2019) shows that expenditures of INR 638.81 crore, INR 950.75 crores, INR 740 crores had been incurred by the UGC in the years 2016-17, 2017-18, and 2018-19 respectively. However, it should also be noted that these expenditures include the fellowship awarded to 1500 JRF qualified candidates in pure sciences that were selected through CSIR-UGC

NET examination. Also, these reports suggested that approximately 23614, 29686 and 24850 scholars were pursuing M.Phil./Ph.D. under JRF in the respective years. Moreover, the documents also highlighted that 3578 (0.99%) and 3640 (1.02%), 3822 (0.85%), 3972 (0.69%) have qualified for JRF in UGC NET/JRF examination conducted in July 2016, January 2017, November 2017, and July 2018, respectively.

4.2.6 Theme 3: Processes Seek Vigilance

4.2.6.1 Sub-Theme 1: Recruitment process seems to be unjust?

On inquiring about recruitment process involved in the JRF scheme, Participant 5 stated, "*Recruitment process seems to be just unjust towards the non-JRFs.*" She indicated towards the second round of selection that is being carried out by the institutions and universities through written examination and interview. In her opinion, "*The non-JRF scholars are neglected during the entrance process in case of availability of JRF fellows. It doesn't matter whether they are capable or not, if they have not qualified JRF, they do not stand in the competition*." Diversifying the issues in words of participant 2, "*There have been a number of changes in the pattern during the period when I have qualified JRF to the present time. I think that the previous pattern of my time was better. The level of that paper was good, and the third paper was application based and lengthy*." Also, she added another aspect, "*The candidates without JRF are also having a good record, skills and competencies, but they are not getting admissions in good universities, whereas, if an applicant is JRF, they get a weightage of 5 or 7 marks and they get selected. That should not be the case*." Participant 1 has indicated towards a spectrum of concerns towards selection process, "*The people are being selected on just their intelligence level……..It would be beneficial to test the research aptitude of the candidate along with their intelligence.*" On poking him about how to measure research aptitude, he replied, "*The interview panel should be formed, or their research output should be measured beforehand. The evaluation of their research during their masters' dissertation and their research papers should be the base.*" He also adds, "*The students of science background are easily cracking the JRF examination and PhD entrance. On the other hand, dedicated students of the disciplines who are publishing papers, they understand the research concepts very well, but if they are lagging a bit*

on the subject knowledge, they are unable to crack." Participant 7 has also acknowledged the discrimination, "*Being a non-JRF at that time, I do not stand a chance to get admission in any good university. They consider the non-JRFs only if they are extraordinarily brilliant or have some research background and experience in hand*." Participant 4 states , "*The pattern of the JRF examination is not designed in such a way that it could assess the research capabilities of the examinees. The research-orientation can be measured through the interviews and unfortunately, some of the institutions do not identify this fact*." Participant 6 stated, "*The process and selection criteria should not be questioned, as the level at which this process is carried out is too high. However, we cannot neglect the fact that the reliability of the examination for measuring research competencies of the candidates is still not established*."

On inquiring on this line with the senior faculty members and administrators, participant 10 informed, "*Without any doubt, it is true that we prefer the candidates with JRF qualification for the PhD vacancies. And there are certain reasons behind it. First of all, the JRF candidates are having a confirmed source of financial income and it makes them focused towards the research. Also, the examination is being conducted for this purpose only, to provide them the opportunity……. the greater the number of JRFs in a department, higher the reputation of the department*." Participant 9 asserted, "*There certainly is a reason behind such ideology. The possible reason, according to me is that the JRF qualified candidates have qualified a highly competitive and standardized test , and thus should be given the preference*." However, participant 11 has denied these ideas and states, "*There should be no discrimination among the candidates on such basis and especially when the test has not been evaluated yet for whether it intends to measure the traits required for the research career or not. Here, the UGC has blundered by incorporating UGC NET examination with the JRF examination. Both the tests seek to measure different competencies and should be conducted separately*."

It was also found during the informal communications, that there is a serious conflict among the scholars and fellows over whether the fellows should re-appear for the JRF after qualifying for it once. Few of the scholars agreed while others were disagreed. A general perception among the

scholars and fellows is that by re-appearing for JRF more than once, it is the wastage of JRF positions that could have been, in other cases be allotted to other candidates who needed them. Also, a few of them have not applied for JRF in later attempts, however, they count it as JRF qualification, if they have crossed the cut-off determined for the JRF in that session. On the line of this inquiry, the researcher asked the participants that how many times they have qualified the JRF examination and whether they have been applying for JRF in each attempt or not. The researcher found that out of eight JRF qualified participants, 6 have applied for JRF while registration and qualified for JRF more than once.

4.2.6.2 Sub-Theme 2: Irregular disbursement turns into barrier

In the words of Participant 4, "*The irregular disbursement turns into the barrier*." While the process of disbursal is universal, however, there are slight inconsistencies varying from institution to institution. As participant 2 illustrated, "*I don't have any problem if my fellowship is provided at time or for some reason if it is delayed. But some fellows do depend on the fellowship amount, so they have to face problems when it is not provided on time. Because the disbursement is irregular. Secondly, during the coursework period, we are not provided with the fellowship. Then after the completion of the coursework, the fellowship amount of this period is granted collectively*." Participant 7 has also faced a similar experience and stated, "*In our department, the officials are too lazy and in most of the months, they forget to apply or are not being able to apply for the continuation and due to this reason, we receive the fund late only*." However, participants 6 and 13 were viewing it as the result of workload and pressure on the non-teaching staff. Participant 13 argued, "*The non-teaching staff has to work on different issues and the availability of the staff is inadequate, in such case, the irregularity in disbursement is quite normal. And if we would like to remove these irregularities, we have to recruit more staff*." Participant 12 has mentioned , "*The process of verification and forwarding through the different authorities slows up the process. The process should be innovated in some manner. One possible way is to make the process of forwarding continuation certificate online, in a way as it has been made for the certificates that are being issued by the Tehsils*." Explaining the process, he added, "*There should be a dedicated portal for applying for the continuation certificate by the candidate, which would be forwarded to the account of Head*

of Department of their respective department and HODs forward it after checking the details from there and after this, the fellow would be receiving the funds. The verification process by the university should not be mandatory. In this way, the time consumption of the time in current process could be shortened."

4.2.6.3 Sub-Theme 3: Orientation needs reforms while transfer policy should be retained

The orientation process of the scheme, where the participants get to become familiar with the processes and various components of the scheme, is seen by the participants as ineffective . The main source of information regarding the scheme is found to be the respective department and the non-teaching staff in the departments. Then, the notices and documents of UGC regarding the scheme came at second position in orienting the fellows towards the scheme. However, the majority of participants have admitted that they have never tried to get themselves oriented towards the scheme. They seek for any information regarding the scheme only when it is required. In words of Participant 1, "*I do not know much about the guidelines, but according to my experience, we have to take classes in the absence of teacher*." Participant 2 has also denied, "*Yes, I have read them (guidelines), but I can't recall……. I have not gone through the guidelines deeply and thoroughly.*" Describing about the scenario, participant 7 stated, " *It is not the fault of UGC as it publishes the documents regarding the processes and other aspects. However, we as the beneficiaries are not going through them and are hindering our own orientation towards the scheme*." Participant 9 stated, "*In some cases, the proper information about some of the related processes are not mentioned even on the website or documents of the UGC, and UGC should make sure that it updates all the information available. In such cases, the fellows have to depend upon the department for further information regarding the processes.*" Participant 11 suggested, "*UGC has the dedicated website for each of its scheme, but those websites are not updated regularly. It should make sure to update that particular site regularly with the information, and it should also describe all the possible details of related processes at that website. It feels to be a cumbersome task for UGC, but it would help in orienting the fellows in a proper manner towards the scheme.*" Interestingly, it was also found that a few of the scholars who have done their PhDs do not even know what is JRF, what it provides and what it is used for. As informed by participant 3, "*Junior*

Research fellowship is a step for doing governmental research. A scholar does first Junior Research Fellowship, then Senior Research Fellowship and finally do their PhD and/or lectureship." On asking him that what he exactly means from JRF and why it is provided, he replied, "I do not have any idea about that. From JRF, I mean……. It is similar to M.Phil."

While questioning about transfer policy of the scheme, the participants have all indicated towards only one problem that only single chance of transfer was not sufficient. However, now when the M. Phil. has been abolished, that single chance of transfer should not abolished, as in some circumstances, the fellow may have to take transfer. Participant 5 has shared her direct experience, "*I have done M.Phil. from one university and then transferred to other university for PhD. However, now I have to reside in other city where I am conducting my ethnography, and have co-supervisor allotted over here. But now I can't transfer my fellowship account due to consumption of the only chance that I got. Due to this, I have to visit my parent university once in every 3 months for filing fellowship and get it forwarded. Due to this, my study suffers, as after revisiting the field, I have to re-orient myself again and it takes almost 10 days to get back on the track. Unfortunately, in December, I have missed a major event of the community that I have to attend and observe. So, this rigid policy affects my work negatively*." However, participant 9 has defended the policy and told, "*If the UGC is giving leniency in this regard, then the fellows are going to jump from one university to another university, which in their view is better than their current university. It will not only increase the workload of departments in respect to documentation, as well as it will promote the vacating of PhD seats in many departments. So, the limit has to be there, and it should have to be minimal*."

4.2.6.4 Sub-Theme 4: Moral pressure and hyper sympathy distorting ethical processes

The processes regarding disposal of responsibilities as asked by the department, transition, monitoring and termination are viewed by the respondents positively. However, a new concern was discovered regarding these processes. The faculty members admitted that due to their leniency and sympathy, sometimes, the processes do not follow the path that they meant to follow. For instance, participant 4 admitted that during his tenure of assistant professor, some of the fellows were not sincerely doing their research, but thinking about their future, he has not taken any strict action

against them. In words of participant 9, "*I often come across the research which are not either conducted properly and timely or they hint that the fellow has not acquired sufficient proficiency in the area, but still, we have to pass them during the SRF presentation, or final presentation. It is not that anyone forces me to do so, but still, I feel a kind of moral obligation to pass the work*." Participant 12 also shares a same line of thought, "*Personally, I could say that there are some good fellows and some not so good ones. The good ones are very rare. Majority of them are not sincere and punctual, which are the most required qualities of a good research scholar. We have the authority to put stay on their fellowship, on the basis of continuous monitoring, but we are not doing so, as there is an emotional bonding or attachment formed during the period. We also don't want to ruin anyone's future, and thus, in spite of having the power, we still do not do so. And if we become somewhat strict, then most of the fellows would not be able to complete their research*." Also, participant 1 shared an indirect experience, "*One of my acquaintance is pursuing Ph.D. in Hindi. She is a JRF fellow and visits her department once in a month to mark her presence and filling attendance. She is accumulating funds for her marriage. The problem is not the reason of saving or saving itself, but that she is not conducting research properly*."

4.2.7 Theme 4: Outputs meet the objective but not expectations

The responses received by the participants hinted towards the objective accomplishment, as Participant 1 stated, "*The funding provided removes the mental pressure and provides financial support……. With the help of JRF, all the academic and daily expenses are met along with a degree and thus we can focus on our research*." Participant 2 also shared her experience on asking how JRF helped her, " *The first thing, the financial aid, I was not teaching anywhere else, and was not having any other source of income. I was taking money from home. My sister was providing financial help for my studies. So, during the research, there are many types of expenses. From my experience, I recently presented a paper , its registration form only was worth INR 2000. Likewise, I have recently published a paper which was pay to publish and costed around INR 2500. Similarly, when attending any workshops. Without fellowship, we must meet such expenses without any tension, neither we need anyone for these expenses. We also don't have to think over that we have to take xerox copies, or have to buy books, or like we went to one of the workshops in Garhwal, so the travelling*

expenses……. We do get the fare, but actual expenses exceed the reimbursements, so these things also cover up. So, it helps us a lot." Participant 5 discerned, "*Without JRF, it was almost impossible to secure admission in PhD programme of such a reputed university. Before I got admitted here, I have attempted for 3 more universities but was rejected due to lack of JRF qualification..... Without the financial help that I got through this scheme it would have been almost impossible to conduct such a time-consuming research*." Participant 4 remembered his tenure as a PhD candidate and exclaimed, "*I owe to the scheme. Our economic status was not good at the time I have enrolled in PhD. Without getting the assistance through JRF, it might have been impossible for me to finish my PhD……. But today, we see that a number of fellows also drop their research and go for job. But I have focus over the research, and it was my determination that after completing my PhD only, I would go for searching job opportunities.*" Participant 9 informed, "*It is not about whether the scholar is availing JRF or not, it is up to his own attitude and perspective how he or she sees the research. All the scholars are not equipotential, so the quality of research also depends on one's intellectual level. However, it is assumed that JRF should conduct a better research. But it is not possible that the research they conduct could be objectively evaluated in terms of quality*." Participant 11 emphasized, "*The outputs of the scheme are pretty positive as they meet the laid objective of the scheme and facilitates the research opportunities for the fellows, but it is human nature that our expectation level is dynamic in nature and it continuously ascends and meeting that expectation level is impossible. It does not mean that it is a negative attribute, it should be seen positively, as improvement regarding anything needs this increase in expectation level*."

The data regarding the research output during 1980s was not retrievable. However, the researcher has tried to analyze the difference between the national research output of 1996 and 2019 as represented below in Table 4.176.

Table 4.176: National Research Output in 1996 and 2019

Discipline	H-Index	Citations Per	1996		2019	
			Documents	Research	Documents	Research

	Document		Cited	Uncited	Output in terms of % of the world	Cited	Uncited	Output in terms of % of the world
All Subject Areas	624	9.74	17390	4059	1.8	41947	145067	5.72
Arts and Humanities	131	8.81	105	40	0.44	278	1481	1.35
Business, Management and Accounting	143	5.31	134	114	1.01	1671	10900	12.41
Economics, Econometrics and Finance	122	6.81	68	13	0.65	645	1968	4.62
Multidisciplinary	213	11.67	449	164	4.31	677	2234	4.57
Psychology	90	9.79	49	5	0.21	238	768	1.24
Social Sciences	141	4.97	339	137	0.71	1394	7195	2.78

Source: (*SJR - India*, n.d.)

From the analysis of data represented in Table 4.176, it is evident that we have been continuously increasing the research output. However, majority of the produced documents are still uncited and the H-index in these various disciplines are also quite low as compared to overall H-index that indicates towards the need of quality upliftment of the research output.

4.2.8 Theme 5: Negative outcomes outweigh positive outcomes

The responses received from the participants during the interview have affirmed the positive outcomes. However, the unintended negative outcomes of the scheme are more dominant that arose due to ineffective processes of the scheme. Also, the respondents are more actively able to observe the effects on personal and community level but are not able to identify the outcomes at institutional or societal level.

Participant 1 indicated, "*While preparing for the NET-JRF examination, we learn and command various topics of our subject.*" He also mentioned about removal of mental pressure and a financial support that helps in focusing on research and sustenance of academic interest. He also mentioned, "*In disposing some responsibilities and academic discussion and discourse helps us to remain aware about such things as we have to perform such things in future*." He also acknowledged the effect of scheme on institutions, "*It helps in improving the rank of the institution*." He also added, "*If a scholar gets funds, then he can access greater number of resources and time duration of the*

research increases due to financial support and thus improves the research quality. In the absence of these funds, the scholars want to finish the work as soon as possible. Due to funding, the frustration level among fellows decrease and they can perform better in comparison to non-JRF scholars who have to finish their work at the earliest due to lack of financial stability, as financial stability is a universal problem, and this will adversely affect the quality of their research." He also mentioned, "*The fellows get a better chance of attending various seminars, workshops and conferences, which are very important for research scholars. There is a huge difference between simple reading and listening to the great researchers and experts. They directly boost your knowledge and connectivity also increases. The extroverts, in comparison to introverts, get better opportunity of establishing network through these academic platforms.*"

Participant 2 has acknowledged that she has opted for PhD after qualifying for JRF, "*During my M.Ed., I have listened that it is very good to be a JRF for doing PhD. So, I have tried and qualified for JRF, and only after cracking JRF, I have decided to do my PhD.*" She also added, "*Personally speaking, when we take the classes, I think it really helps us in enhancing our content knowledge, but the duty which we have to perform during the internship programme of the B.Ed. students, that is not fruitful for us. I think it is much more time consuming, the time which we could devote to our research. It is best to take classes, it helps us a lot as we have to do that in future. We learn how to teach, how to tackle students and other such things.*" However, she denied any other effect of fellowship at higher levels, "*No, I do not think that institutions or our community get any benefit through fellowship. Our supervisors, deans, HODs have no business in this regard. Our supervisors just want us to do our research work and achieve personal growth. Apart from this, they do not have any relationship with fellowship*." Similarly, other research scholars have also acknowledged the effect of JRF scheme on their personal knowledge and attitude but denied of any concrete effect on their institution and society. However, participant 7 acknowledged the effect on community, "*The JRF not only benefits us, but due to the effects it has on our mind and work, it indirectly affects the research community, as they are the consumers of the knowledge that we are producing at PhD level.*"

On contrary, participants 4, 12 and 13 have indicated towards the outcomes at institutional levels. In words of participant 12, "*Not only, the fellows but their institutions also get benefitted from the scheme. The presence of fellows those are independent of the problems and able to devote their time and energy towards research in the department form a vibrant peer group and their achievement level increases, benefitting the institute due to increase in number of publications and also quality of research products to some extent.*" "*Society as a whole gets benefitted from the services and products that are based upon these research outputs of the fellows*," explained participant 12, indicating towards the effect of scheme on society.

On asking about how they see intended and unintended outcomes of the scheme at different levels, the researcher got most of the responses in favor of unintended outcomes. In the words of participant 11, "*Unfortunately, the ill-effects of the scheme are prevailing over the positive effects of the scheme and they overshadow the intended effects generated by the scheme*." On request to elaborate, he continued, "*See, there are two types of unintended outcomes of the scheme in play, the positive ones and the negative ones. The positive ones are, for instance, quality enhancement, development of research attitude, academic and research collaboration and networking, whereas, negative ones include malpractices, and overrepresentation to some extent. Now, if these positive effects are taking place, although unintentional, but still leads to the development. On the other hand, the negative effects, even if present at microscopic level tend to affect the whole system adversely. And presently, we can observe the abundance of these negative unintentional effects. However, they are not much highlighted by the community*."

While inquiring about the unintentional effects, the participant 4 illustrated, "*The effect on quality of research is under question, and we can observe that it is bidirectionally affected by the scheme. However, determining the direction is quite dubious. In some of the cases, it might get affected positively while in others, negatively*." Participant 5 has also asserted, "*The fellowship affects the research output positively, but sometimes, it may distort the thinking of the fellows*." She continued with sharing some indirect experience, "*I have a senior scholar who is also a JRF in my department of parent university and she often asks us to publish more and more by paying to the*

publishers, she also does the same thing, as there is no such guideline of publishing in any given set of journals." Most of the remaining respondents agreed on the domination of unintended negative outcomes observed by them, mostly regarding personal attitude and behaviour over the positive unintended outcomes regarding personal knowledge.

4.2.9 Theme 6: Personal impacts supersede subtle impacts on community and society

The participants of the present study have acknowledged the impacts of the JRF scheme on the researcher and his attributes, but no significant direct impact on the community or society is observed. However, they acknowledged that through the impacts of the scheme on individual researcher, it sustains the community or society perpetually. In words of participant 6, "*On the direct observation level, the scheme tends to provide benefit only to the individual researchers but the indirect impacts on the community and society should not be overlooked*." Justifying his statement, he adds, "*See, the scheme is benefitting the individual by providing them financial independence, reachability of resources and research positions, these all sum up to positively boost up the level of research and academic performance of the fellows. The performance does not get directly affected by the scheme, but due to the modification in emotional and behavioral aspects of the individual. And due to this boosting of performance, the research productivity and output generated is up taken and thus affecting the community. Similarly, when worked upon these outputs, the society also gets benefitted*." Participant 8 also reflected a same stand, "*There is no direct impact of fellowship on society, but with the fellowship provided, the fellows get affected and this also creates a sustained change in their attitude which reflects in their academic practices, thus improving the overall scenario.*"

4.3 Programme Theories

An explicit theory or model of how an intervention leads to a collection of particular outcomes through a sequence of intermediate effects is known as a programme theory. The theory should provide a description of how the program's actions lead to the outcomes, rather than simply a list of activities accompanied by the outcomes, with no explanation of how they are connected other than a mysterious arrow. A program theory is made up of two parts: a change theory and an action

theory. The ability to systematically check the quality of a theory in terms of plausibility, consistency with proof, and usefulness is one of the advantages of articulating program theory.

A logic model is a diagram that shows how a program theory works. A logic model can be drawn in a variety of ways, but they can be categorized into four types: Pipelines, result chains, realist matrices, and narratives. Pipeline models perpetuate an oversimplified view of the program and often omit explanations of how actions lead to the desired outcomes. Logic models in the form of outcome chains, which depict the action and its effects as a series of outcomes, are typically more accurate. Realist matrices stress the importance of recognizing and reflecting on relationships and linkages as well as the building blocks in logic models. Narrative examples of program theory tell a tale about how the intervention works or about the participants' experiences as they go through it.

In the present section, the researcher has described the programme theories of the scheme under study i.e., Junior Research Fellowship in Humanities and Social Sciences through theories of change, theories of action, logic model in the form of realist matrices and/or causal mechanisms using Context-Mechanism-Outcome Configurations (CMOCs) as forwarded by (Pawson & Tilley, 1997).

4.3.1 Programme Theory 1: Understanding Why the JRF Scheme was Implemented

Intended Theory of change: The underlying theory of change as suggested by the data collected implies that the scheme was implemented for developing research culture among the society and increase the research output of the country through increasing the rate of enrolments in higher research-oriented programmes like M.Phil. and Ph.D. The other objectives of the scheme were to standardize the recruitment process of research scholars and to make the research outputs standardized and comparable.

Intended Theory of action: The scheme intended to achieve these objectives through conducting single examination at the national level for the recruitment that was proposed to lead to standardized recruitment process. For enhancing the standard of research outputs and its comparability, UGC has

intervened through a monitoring system. And to lure the participants and increase their retention, it has components of financial assistance, house rent allowance and contingency funds.

Logic Model: For this intended theory, the logic model can be drawn as shown below:

Table 4.177: A Realist Matrix Logic Model of the JRF Scheme

Context	Mechanism	Outcome
Postgraduates having financial support	Financial assistance	Retention of the fellows
Postgraduates not having financial support	Standardized recruitment process	Comparability and standardization of research scholars
	Research monitoring	Comparability and standardization of research output
	Financial assistance	Increased enrolment
	Standardized recruitment process	Comparability and standardization of research scholars
	Research monitoring	Comparability and standardization of research output

CMOC 1: Why JRF scheme was implemented

Context: The responses received from the participants during interview suggested that the low demand of PhD, lack of financial and social support, lack of standardization and comparability of research scholars and their output were identified as different contexts prior to the introduction of the JRF scheme.

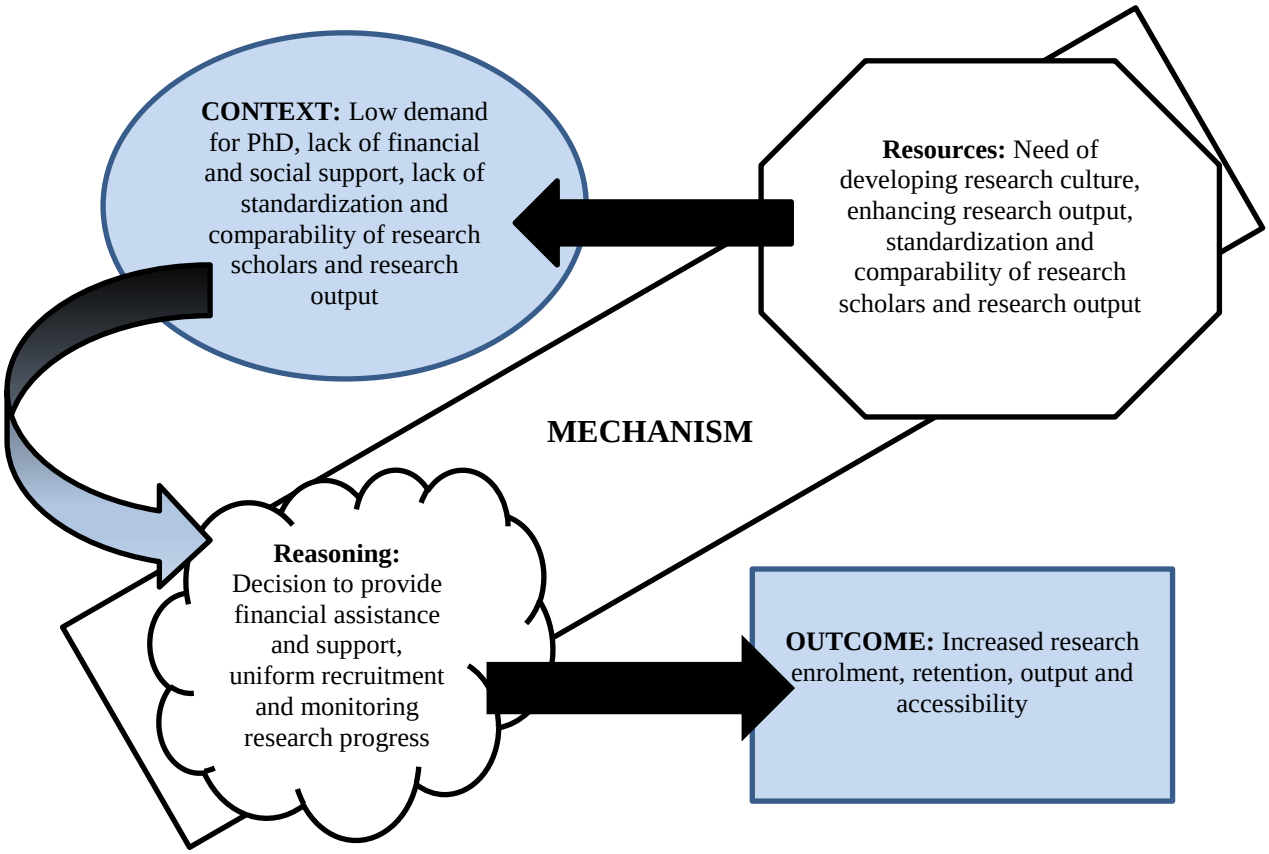
Mechanism: The responses received from the participants during interview and document analysis suggested that the need for development of research culture and enhancement of research output, non-standardized recruitment process of research scholars, non-standardized and lack of comparability of research output were the major resources. Presence of these resources in the aforementioned context, forced the decision to provide financial assistance and extended support to research scholars to facilitate their enrolment as well as retention. Also, the process for selection of

these fellows was standardized through conducting a nationwide examination. Also, it was decided to monitor the research progress of the fellows.

Outcome: Based upon the discussed mechanism, it would have been decided to introduce a nation-wide scheme for the upliftment of research production and development of research culture. And based upon the three contexts, the three components of the scheme were included: financial assistance, uniform recruitment process and research monitoring. This enhanced the research enrolment, retention, output and accessibility.

This CMOC can also be illustrated as shown below in Figure 4.59.

Figure 4.59: CMOC: Understanding why the JRF scheme was implemented



However, this theory seems to be flawed. If the UGC was intending to focus on standardization and comparability of the research scholars, then it would have mandated that no candidate would be selected for the higher research-oriented programmes of M.Phil. and Ph.D. without qualifying for JRF (or NET). Also, the selection process is not purely dependent upon the UGC NET/JRF examination, as it states that for availing the fellowship, it is mandatory to be enrolled in any UGC recognized institutions under M.Phil. or Ph.D. programme and for being

selected into these programmes, one need to sit for interview conducted by the respective department. The conducted interview opens up the scope of subjectivity and the process could not be stated as objectively standardized. Moreover, during the monitoring also, it has been stated by the UGC that the progress would be monitored by the research supervisor of the particular fellow, and thus the objectivity vanishes from this process too. Thus, it could be stated that the aim of scheme is too vague and complex and lacks plausibility. The only plausible aim of the scheme remains with the vision of facilitating enrolment in and retention during the M.Phil. or Ph.D. programmes. And this enhanced enrolment and retention leads to increased research output.

The observed aim of fellowship scheme is thus found to be increasing national research output. For achieving this aim of the scheme, the objective stated by the UGC in (University Grants Commission, n.d.-d) is "to provide opportunities to NET-JRF qualified candidates to undertake advanced studies and research leading to M.Phil./Ph.D. Degrees in Humanities and Social Sciences."

4.3.2 Programme Theory 2: Understanding Contextual Transition: The Two Scenarios

We have seen why the JRF scheme was implemented in the above section. Now, we would see how the situation of the academic research has been changed and why does it call for changes in objective.

Theory of Change: Due to the intervention brought in by the JRF scheme along with other schemes, has significantly boosted the research output as discussed previously. However, this intervention has modified the context under which the scheme has been working. At present, as we have seen there are abundant amount of produced knowledge but most of them is uncited. Uncited production of research could be due to various factors, like low accessibility to the products, improper dissemination planning, or the lack of quality required for uptake. For such situation, increasing further output makes no sense, unless its quality is enhanced, and it is being disseminated in such a way so that it could be synthesized and utilized. Also, there is an increased rate of unemployment and underemployment for the PhD holders that causes divergence in researcher's mind, and they are not focused on the research due to the lack of employment assurance.

Theory of Action: The JRF scheme provides ample time duration and financial assistance to complete the M.Phil. and PhD courses. Due to these interventions, the enrolment of the research scholars has raised. However, it also requires the dedication for research on the part of participants. In the absence of this dedication, the research scholars often choose to enroll themselves in M.Phil. or PhD programmes, but they are focusing on the preparation for various jobs and examinations or honing their skills required for the employment. And once they are offered employment, they drop their research, increasing the dropout rates or change their mode of PhD from regular to part-time as hinted by the analysis of item 17 of the questionnaire.

Logic Model: For this theory, the logic model describing the scenario can be presented as shown below in Table 4.178.

Table 4.178: A Realist Matrix Logic Model Regarding Contextual Transition

Context	Mechanism	Outcome
Higher probability of getting employment due to lesser competition	Opting for PhD	Increased enrolment and retention
Social Pressure of being unemployed	Opting for PhD	Increased enrolment
Diversified Job Market and Excessive competition	Dropout or change in mode of PhD	Dropout or change in mode

CMOC 2(a): Scenario at the time of scheme implementation

Context: As informed by the participants during interview, there was no financial support for the research scholars to pursue their PhD. But the probability of being employed after PhD at that time was higher than the present time.

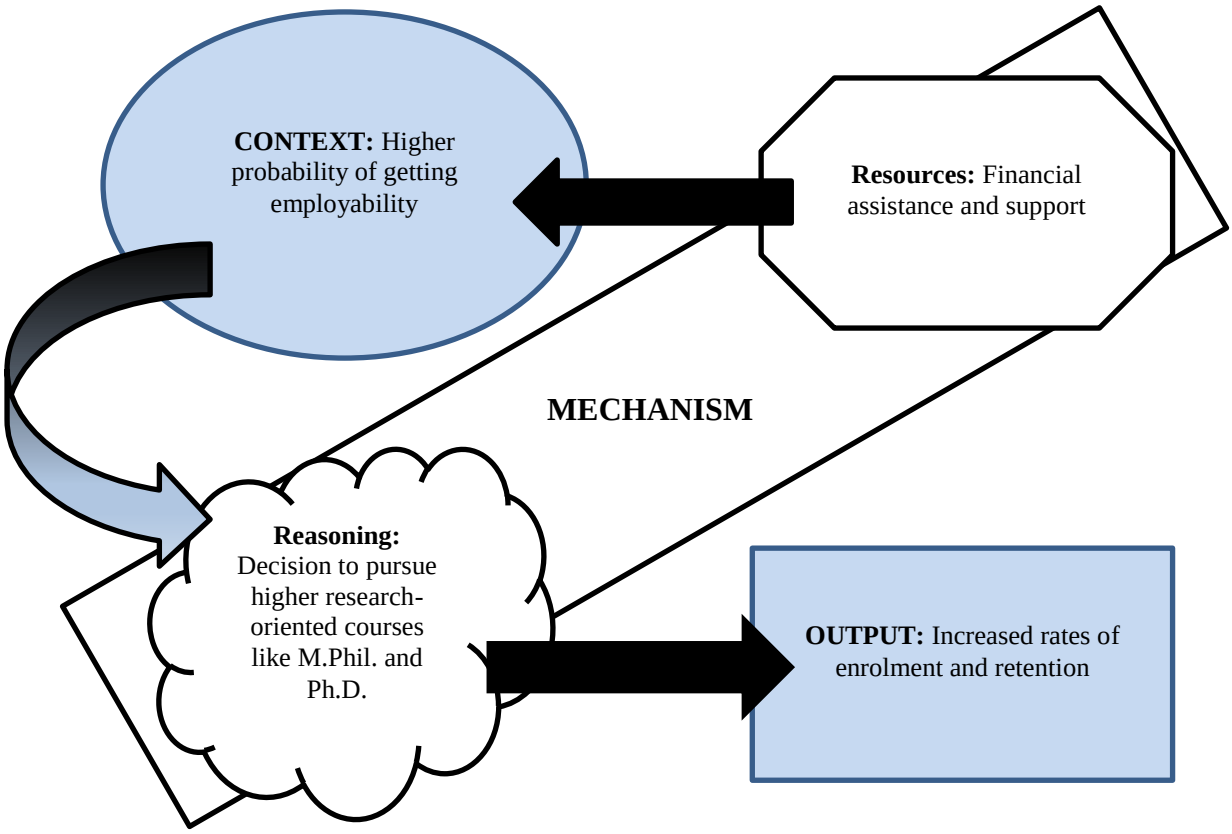
Mechanism: The responses received from the participants during interview suggested that the financial assistance provided under the scheme, although not enough, was sufficient to support the fellows to complete their research. This financial assistance and higher probability of being

employed has influenced the decisions of fellows to enroll into PhD programmes and conduct research.

Outcome: Based upon this mechanism, the enrolment and retention rate of the fellows has increased, which in turn has affected the research output positively over the period.

CMOC 2(a) can also be illustrated as shown below in Figure 4.60.

Figure 4.60: CMOC 2(a):Scenario at the Time of Scheme Implementation



CMOC 2(b): Scenario at the present time

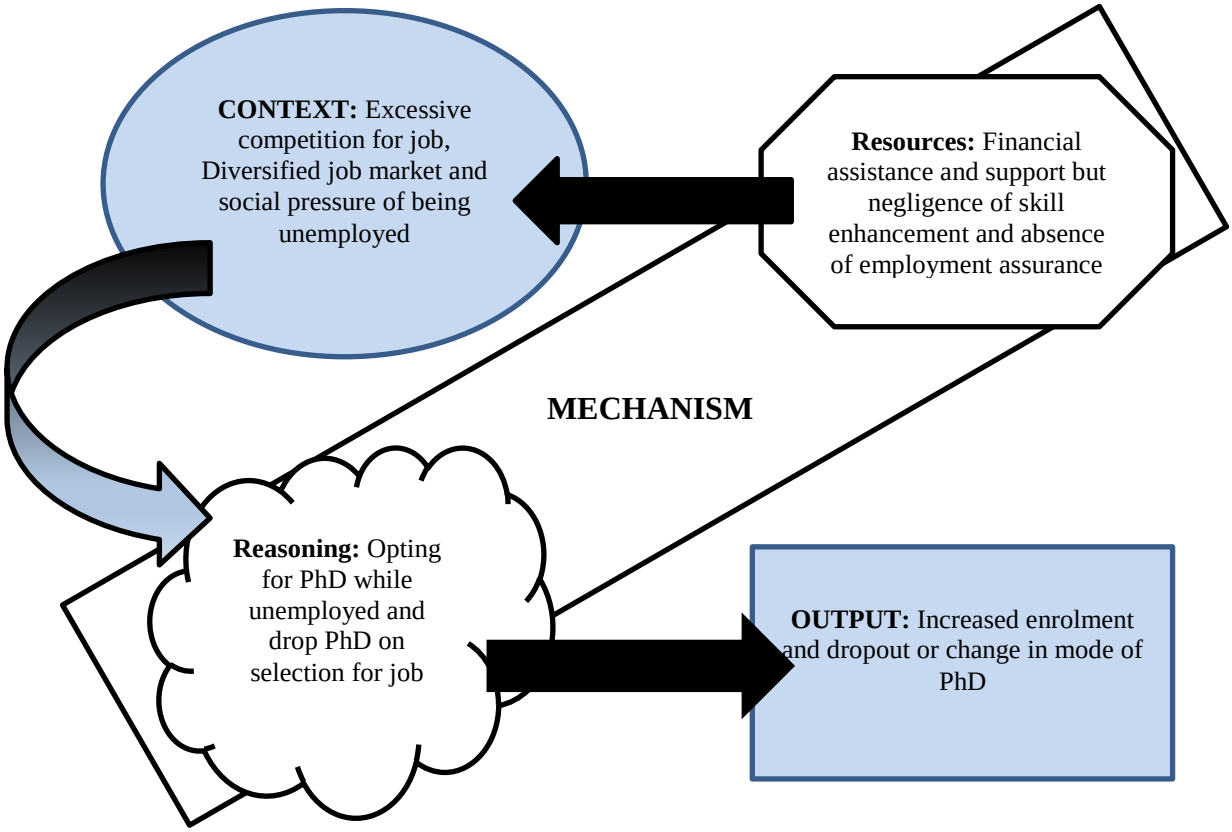
Context: As informed by the participants during interview, today, there is an excessive competition for the jobs and social pressure of being unemployed. Also, the jobs are quite diversified and requires skill enhancements. The major focus of the recruiters is on the quality of the work not the quantity.

Mechanism: The responses received through interview indicate towards lack of focus on skill enhancement, that in addition to the aforementioned context directs the participants on opting for PhD while they are unemployed and focusing on their skill enhancements and preparation for recruitment examination, and in majority of cases they drop their PhD.

Outcome: Based upon this mechanism, the enrolment rate of the fellows has increased, although the retention seems to be a problem as higher rates of dropout or change in the mode of PhD from regular to part-time has been observed.

CMOC 2(b) can also be illustrated as shown below in Figure 4.61.

Figure 4.61: CMOC 2(b):Scenario at the Present Time



4.3.3 Programme Theory 3: Understanding the Quality of Research Output

Theory of Change: Due to the involvement of financial assistance and ample time duration, the scheme intends to affect the research output positively not only in terms of number of publications and other forms of research outputs but also in terms of quality of the research. However, it has been noticed that this mechanism has been triggered for those fellows only those who were already intrinsically motivated before the conditioning and for some of the other fellows without intrinsic motivation. But for majority of the fellows, this mechanism has not been triggered, due to the contextual change.

Theory of Action: The availability of financial support and ample time duration in presence of contextual change and lack of focus on skill enhancement component in the scheme facilitated in change in priority. Due to this, majority of fellows are not putting their efforts in enhancing research-oriented skills. Due to lack of these research-oriented skills like technical writing, plagiarism, referencing, and others lead to drop in research aptitude and research attitude of the fellows. Also, inadequate infrastructural facilities like library, proper catalogues of research journals and books, laboratories and access to e-journals and technical facilities like workshops regarding usage of e-journals, content writing, workshops on plagiarism related issues, introduction to vivid range of methodologies, data analysis, publishing etc. also facilitates this drop. This drop in research aptitude and attitude of the fellows adversely affects the quality of research output.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.179.

Table 4.179: A Realist Matrix Logic Model Regarding Quality of Research Output

Context	Mechanism	Outcome
Contextual change	Drop in research attitude and aptitude of the fellows	Decreased research quality
Inadequate infrastructural and technical inputs	Drop in research attitude and aptitude of the fellows	Decreased research quality

CMOC 3: Lack of prime research output

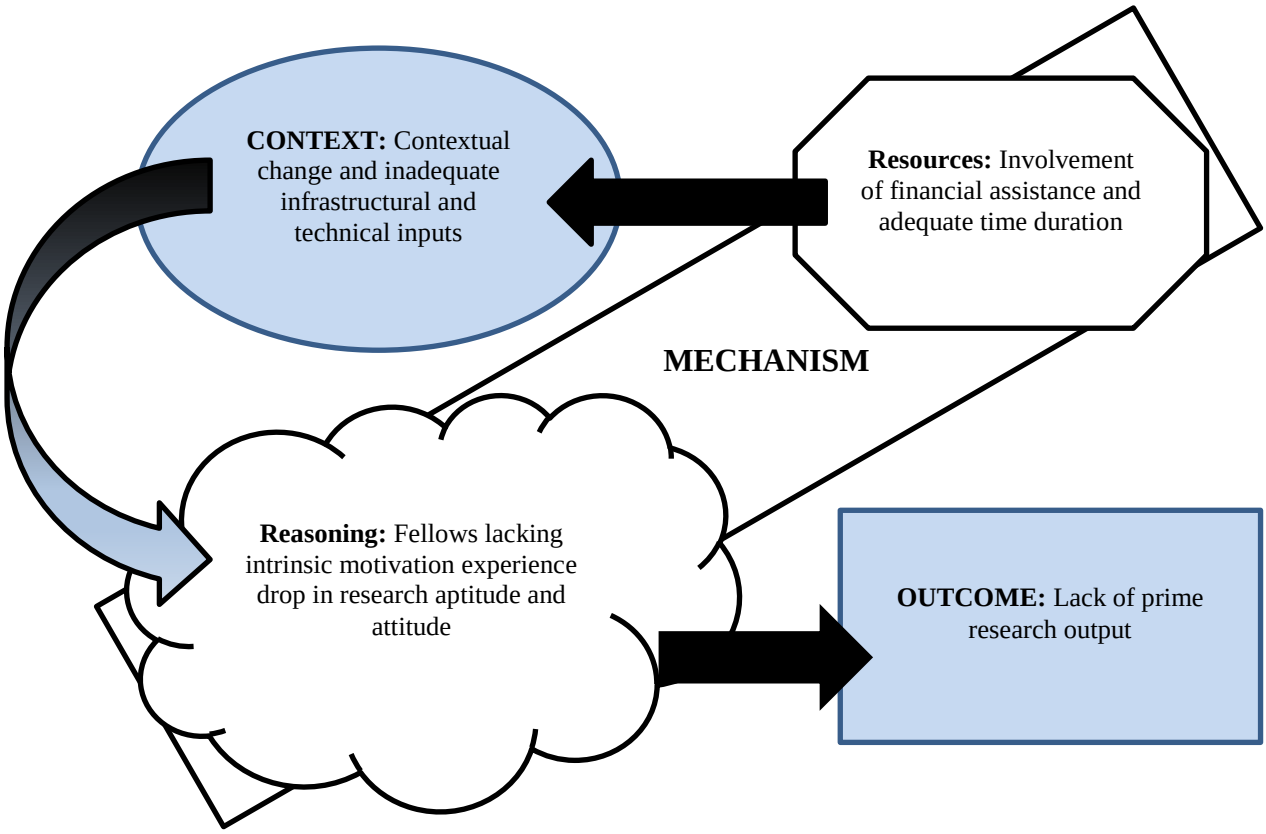
Context: As per the collected data, inadequate infrastructural and technical inputs and the contextual shift in research community were identified as the context for the present mechanism.

Mechanism: Due to the involvement of financial assistance and sufficient time duration, the context triggers the mechanism for the participants with lack of intrinsic motivation and their research attitude as well as aptitude gets adversely affected.

Outcome: On the basis of this mechanism, lack of prime research output could be observed.

CMOC 3 can also be illustrated as shown below in Figure 4.62.

Figure 4.62: CMOC 3:Lack of prime research output



4.3.4 Programme Theory 4: Irregular Probability Distribution of Selection and Excessive Competition

Theory of Change: The scheme intends to offer multiple chances of competing for JRF award, as in some disciplines, the seats for Ph.D. are too small, that majority of the JRF qualified candidates could not attain admission in Ph.D. in stipulated time. In such cases, individual can apply and compete for JRF in different sessions.

Theory of Action: Due to insecurity of admission among the participants, they tend to apply for the JRF award consecutively for multiple times and get qualified. Their qualification adversely affects the probability of selection of other candidates, and they get deprived, who could probably have received that award, thus creating irregular distribution of chances and excessive competition.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.180.

Table 4.180: A Realist Matrix Logic Model Regarding Quality of Research Output

Context	Mechanism	Outcome
Insecurity among candidates and Formula Based Allocation of Award	Offering multiple chances to appear for JRF examination and qualification of JRF for multiple times	Irregular distribution and excessive competition

CMOC 4: Irregular Probability Distribution of Selection and Excessive Competition

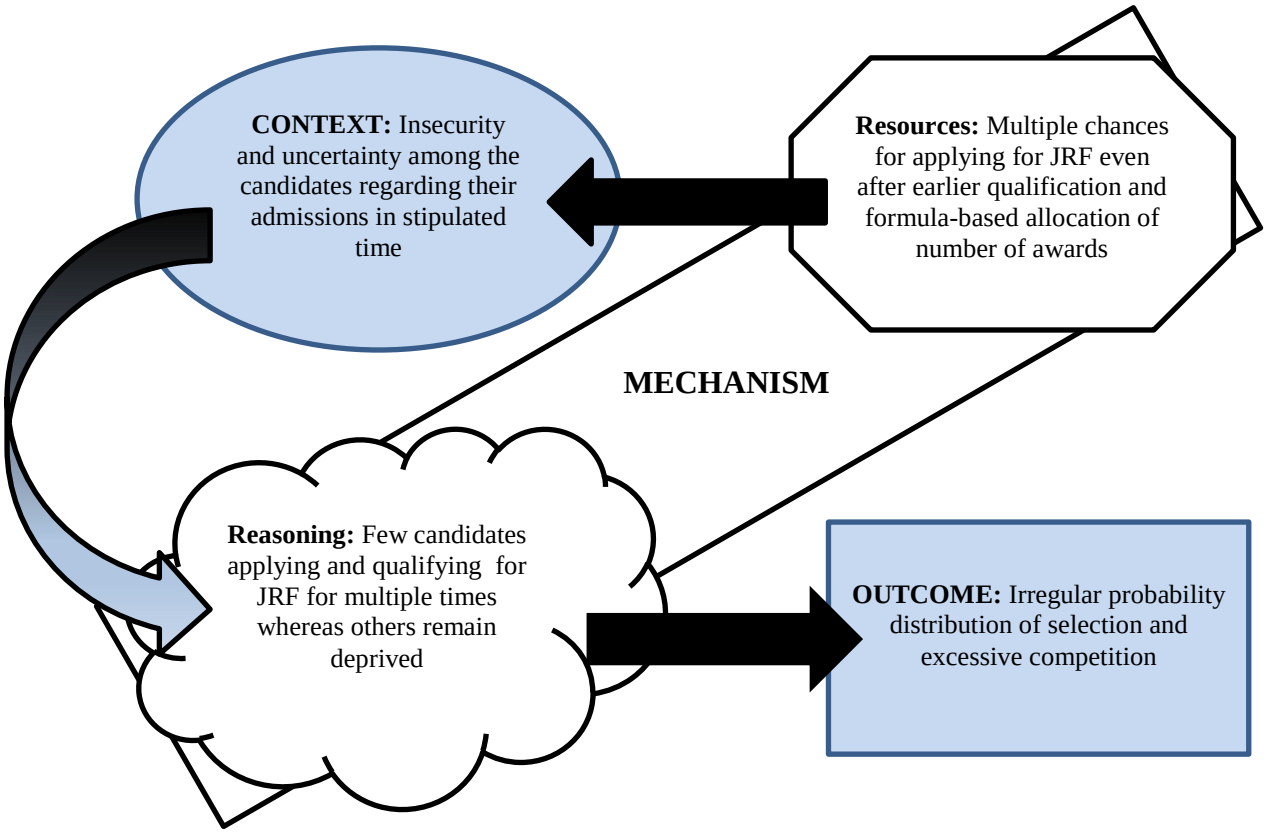
Context: The contexts for the present mechanism was identified to be the insecurity and uncertainty among the candidates regarding their admissions in stipulated time and the formula-based allocation of awards.

Mechanism: Due to the multiple chances provided to the candidates for applying for JRF even after they have cleared for JRF in the past, in the given context triggers the mechanism of few candidates applying and qualifying for JRF multiple times whereas others remain deprived.

Outcome: On the basis of this mechanism, irregular probability distribution of getting selected for the award and excessive competition could be observed.

CMOC 4 can also be illustrated as shown below in Figure 4.63.

Figure 4.63: CMOC 4: Irregular Probability Distribution of Selection and Excessive Competition



4.3.5 Programme Theory 5: Less Effective Selection of Candidates

Theory of Change: The scheme at the time of implementation in 1984 tends to evaluate the participants on the basis of logical ability, critical thinking, comprehension, and research aptitude. The test combines of objective as well as subjective type of questions. Where subjective type questions tend to measure the deeper level of understanding in aspirants.

Theory of Action: In 1989, when combined with the NET, the test was modified and added few more variables like teaching aptitude and knowledge of subject matter. For teaching and conducting research, the level of knowledge required differs. Also, with the time, the test was modified and presently, the examination is based upon only objective type questions. It facilitated few participants to crack JRF through regular practice and solving previous year examination papers. However, there is a shift in pattern of the examination in recent sessions, as it now includes the questions based upon understanding level than just memory level, but still it is asserted by the participants that it could be easily cracked through regular practice and without conceptual knowledge. The measure of scientific temperament and attitude of the participant is now measured through mainly the interview conducted for the admissions in Ph.D. However, these interviews are also not standardized and depends upon

the level of institution where the applicant is applying for Ph.D. admission. Due to these instances, the participant with research orientation and not having proficient aptitude for teaching might struggle in clearing JRF. And this would not be good for the academic community. We have to decide whether we require expert researcher or a generalist who can conduct research and teach as well.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.181.

Table 4.181: A Realist Matrix Logic Model Regarding Selection of Candidates

Context	Mechanism	Outcome
Difference in objectives of NET and JRF examination	Single examination for measuring both teaching and research aptitude and the objective nature of examination facilitates the less skilled researchers with some teaching aptitude to qualify for the JRF examination while purely research oriented candidate might have problem in clearing for JRF.	Less effective selection of candidates

CMOC 5: Less Effective Selection of Candidates

Context

The context for the present mechanism was identified to be single objective examination for measuring both teaching and research aptitude and the objective nature of examination.

Mechanism

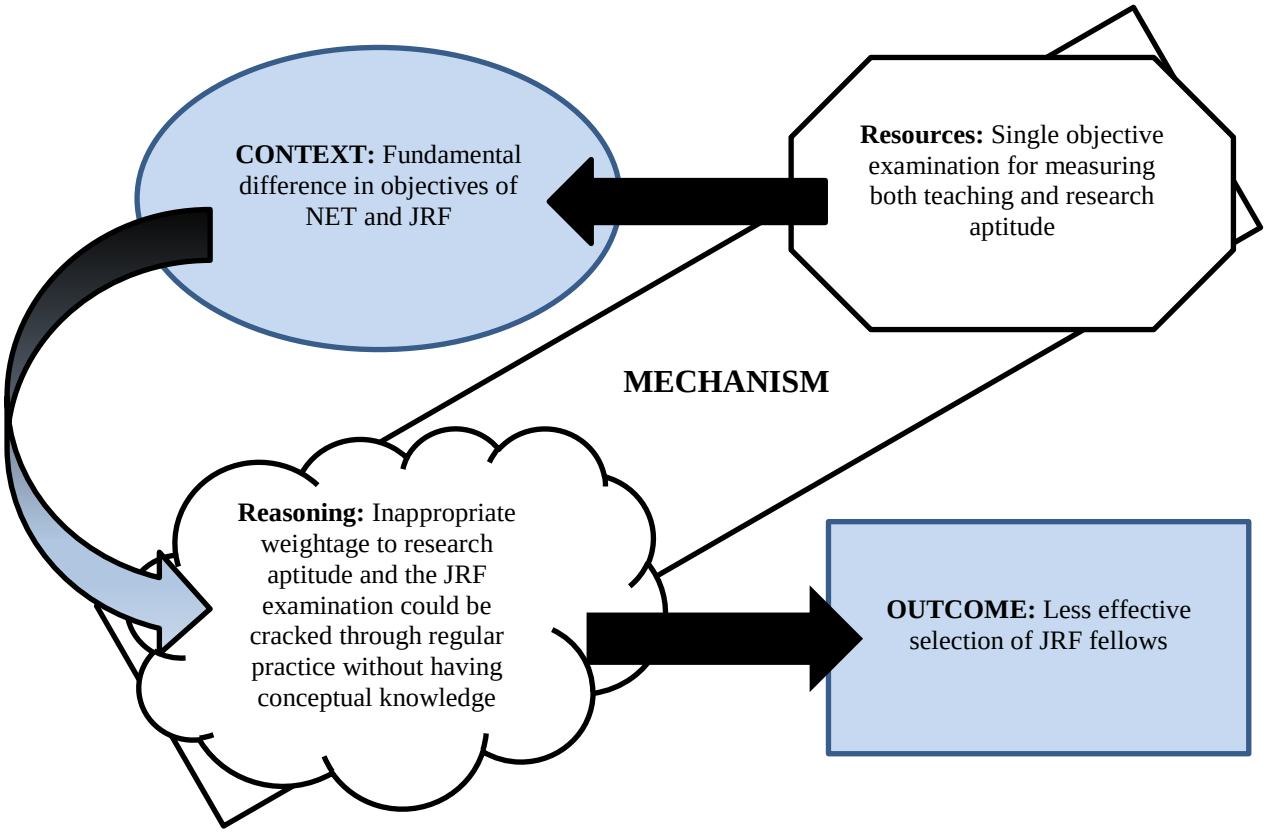
Due to the fundamental differences between the objectives of NET and JRF examination, in the given context triggers in the mechanism of inappropriate weightage to research aptitude and the JRF examination could be cracked through regular practice without having conceptual knowledge.

Outcome

On the basis of this mechanism, the selection of fellows becomes less effective.

CMOC 5 can also be illustrated as shown below in Figure 4.64.

Figure 4.64: CMOC 5: Less Effective Selection of Fellows



4.3.6 Programme Theory 6: Irregular Disbursement of Funds

Theory of Change: The scheme had introduced Direct Benefit Transfer (DBT) to facilitate the funding flow and timely disbursal of funds directly to the account of the fellows. Every three months, the fellows have to fill up the continuation form and get it forwarded through supervisor, head of department at departmental level and then it moves to the university level, and after clearance from there, the remuneration gets transferred directly into the bank account of beneficiaries. The timely disbursement would help in motivating the fellows and letting them to continue their work without any financial hindrance.

Theory of Action: In practice, the process of forwarding through different chairs, the process is still time taking and as mentioned by the participants, due to excessive workload at different levels, the process gets delayed, and the funds are unable to be regularly disbursed. This irregularity in

disbursement becomes the problem for the fellows with financial instability and lack of funds at hand. Their research work gets delayed and due to time consumed during approval of fund becomes non-productive period and thus limiting the scope of their research and lead to missed opportunities of participation in research-oriented events and/or detoriation of their research quality.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.182.

Table 4.182: A Realist Matrix Logic Model Regarding Irregular Disbursement of Funds

Context	Mechanism	Outcome
Financial Instability and lack of funds at hand	Irregular disbursement seems to delay the research and due to time period of waiting for funds becomes non-productive, thus affecting the scope and quality of research and missed opportunities of participation in research-oriented events	Research detoriation and limiting scope of research

CMOC 6: Irregular Disbursement of Funds

Context

The context for the present mechanism was identified to be financial instability and lack of funds at hand, in the presence of which the present mechanism triggers.

Mechanism

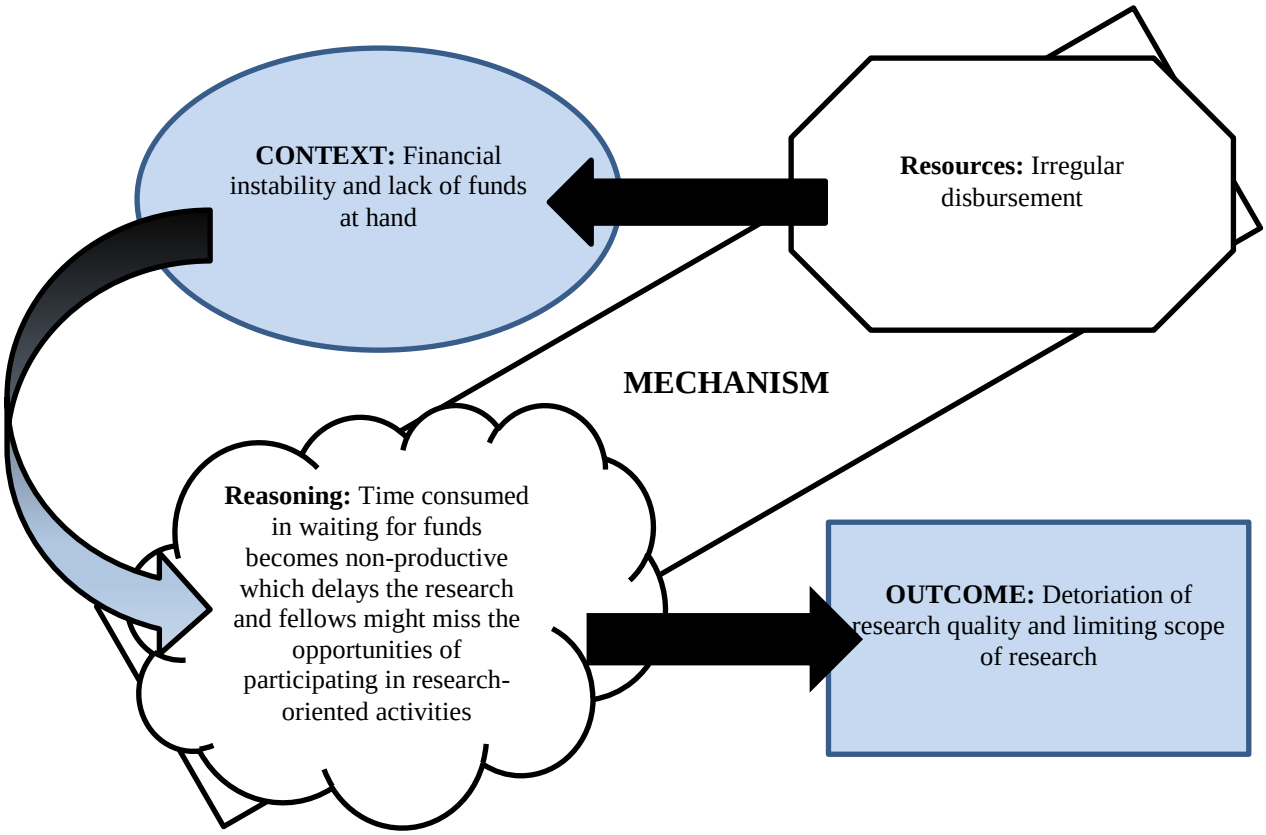
Due to irregular disbursal of the funds, the fellows have to wait for the reception of funds to continue their work which elapses a good amount of time duration of their PhD. Due to this irrelevant unproductive time consumption, the research work often gets delayed and quite frequently, the fellows have to miss the opportunities of enhancing their skills through participation in research-oriented events.

Outcome

On the basis of this mechanism, the scientific productivity of fellows gets affected, the quality of research might get deteriorate and limits the scope of their research.

CMOC 6 can also be illustrated as shown below in Figure 4.65.

Figure 4.65: CMOC 6: Irregular Disbursement of Funds



4.3.7 Programme Theory 7: Orientation with the Scheme

Theory of Change: The scheme has no proper single window assistance for the fellows to get aware about the responsibilities, facilities and processes regarding the fellowship. There must be a single website dedicated for informing and grievance redressal of the fellows. It would enhance the orientation level with the scheme among the participating fellows.

Theory of Action: In practice, the fellows have to depend upon secondary information regarding the scheme that might be incomplete or misguiding. Regarding the information gathering about the scheme, the majority of the responding participants have asserted that they rely on peers and institutions for information. However, majority of the information is available on the various concerned official websites, but due to lack of technical skills and browsing competence, the

participants face problem in reaching the reliable source of information. A few of the fellows also showed lack of curiosity for gaining information regarding the scheme.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.183.

Table 4.183: A Realist Matrix Logic Model Regarding Orientation with the Scheme

Context	Mechanism	Outcome
Lack of curiosity, dependence on institution and peers, absence of technical skills and browsing competence	Lack of proper single window assistance leads to inappropriate or inadequate information regarding different aspects of the scheme	Low orientation with the scheme among fellows

CMOC 7: Orientation with the Scheme

Context

The context for the present mechanism was identified to be the lack of curiosity among fellows, dependence on institution and peers, absence of technical skills and browsing competence, in the presence of which the present mechanism triggers.

Mechanism

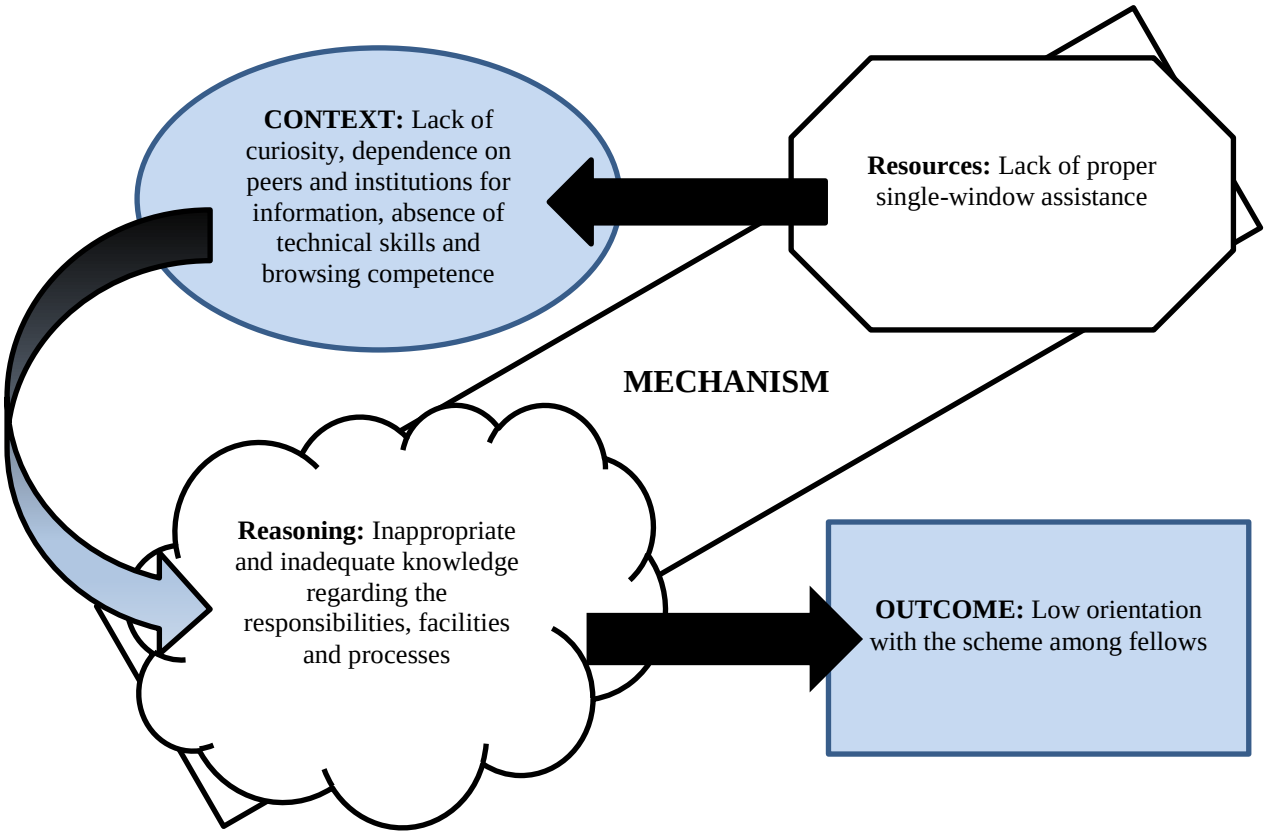
Due to lack of proper information source at single platform, the fellows have to depend upon other sources that may not be reliable and provide misleading or incomplete information. This incomplete or misleading information might, in turn, affects the working efficiency of the fellows.

Outcome

On the basis of this mechanism, the orientation level among the fellows is quite low and that might affect their productivity.

CMOC 7 can also be illustrated as shown below in Figure 4.66.

Figure 4.66: CMOC 7: Orientation with the Scheme



4.3.8 Programme Theory 8: Transfer of Research Institution

Theory of Change: The scheme had introduced Direct Benefit Transfer (DBT) to facilitate the funding flow and timely disbursal of funds directly to the account of the fellows. Every three months, the fellows have to fill up the continuation form and get it forwarded through supervisor, head of department at departmental level and then it moves to the university level, and after clearance from there, the remuneration gets transferred directly into the bank account of beneficiaries. The timely disbursement would help in motivating the fellows and letting them to continue their work without any financial hindrance.

Theory of Action: In practice, the process of forwarding through different chairs, the process is still time taking and as mentioned by the participants, due to excessive workload at different levels, the process gets delayed, and the funds are unable to be regularly disbursed. This irregularity in disbursement becomes the problem for the fellows with financial instability and lack of funds at hand. Their research work gets delayed and due to time consumed during approval of fund becomes

non-productive period and thus limiting the scope of their research and lead to missed opportunities of participation in research-oriented events and/or detoriation of their research quality.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.184.

Table 4.184: A Realist Matrix Logic Model Regarding Transfer of Research Institution

Context	Mechanism	Outcome
Provisions of opting co-supervisors or transfer of supervisor during research or distant location for study	Due to only single opportunity of transferring research institution that is mostly exhausted currently during the transition from M.Phil. to Ph.D., the fellow might have to relocate and has to visit parent institution at least once every three months for filing continuation form	Unnecessary exhaustion, distraction and financial wastage

CMOC 8: Transfer of Research Institution

Context

The context for the present mechanism was identified to be financial instability and lack of funds at hand, in the presence of which the present mechanism triggers.

Mechanism

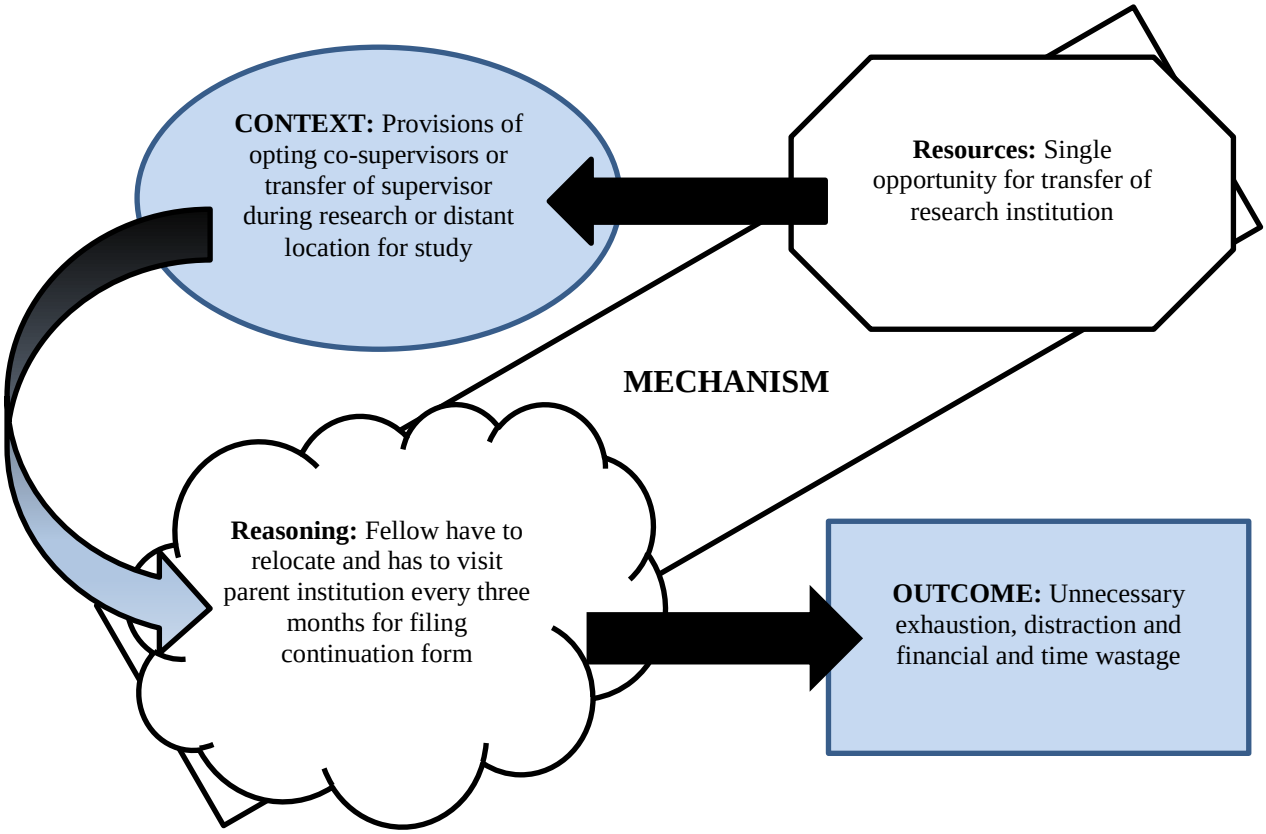
Due to irregular disbursal of the funds, the fellows have to wait for the reception of funds to continue their work which elapses a good amount of time duration of their PhD. Due to this irrelevant unproductive time consumption, the research work often gets delayed and quite frequently, the fellows have to miss the opportunities of enhancing their skills through participation in research-oriented events.

Outcome

On the basis of this mechanism, unnecessary deviation, exhaustion and financial wastage are the direct outcomes. As the result of these, the scientific productivity of fellows might get affected adversely, the quality of research might get deteriorated and limits the scope of their research.

CMOC 8 can also be illustrated as shown below in Figure 4.67.

Figure 4.67: CMOC 8: Transfer of Research Institution



4.3.9 Programme Theory 9: Process of Monitoring and Evaluation

Theory of Change: The scheme had introduced consistent internal monitoring and evaluation by the supervisors and external monitoring and evaluation through SRF upgradation viva voce and final presentation of the research work and defense of thesis. In case the progress is not satisfactory, the fellowship might be cancelled. It demands honest and ethical process to be followed on parts of supervisor and evaluators.

Theory of Action: But in practice, due to moral pressure on supervisors and evaluators and due to hyper sympathy, they rarely take disciplinary action or forwards negative report. It distorts the process and affects the quality of research output received through the scheme.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.185.

Table 4.185: A Realist Matrix Logic Model Regarding Process of Monitoring and Evaluation

Context	Mechanism	Outcome
Untimely or improper research or negative attitude and behavior of fellows towards research	Due to moral pressure and hyper sympathy, supervisors are obliged to forward continuation, mark the research progress as satisfactory and evaluators have to mark the research progress as satisfactory, thesis as valuable and researcher as proficient	Distortion of ethical processes of monitoring and evaluation

CMOC 9: Process of Monitoring and Evaluation

Context

The present mechanism triggers in the presence of untimely or improper research or negative behavior and attitude of the fellows towards research.

Mechanism

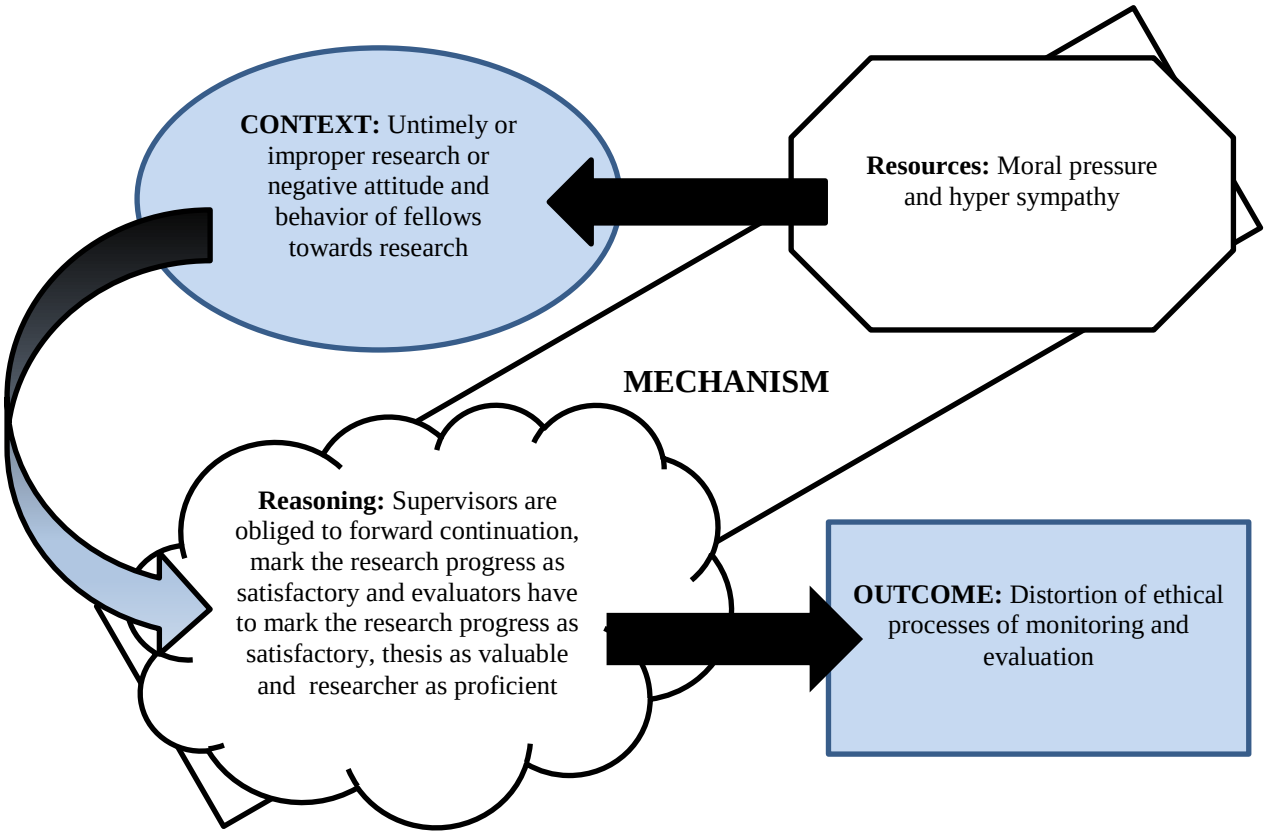
Due to moral pressure and hyper sympathy the evaluators and supervisors are alike obliged to forward the research progress as satisfactory or forward the continuation. They have to mention theses as valuable piece of knowledge and researcher as proficient, whether it is the case or not.

Outcome

On the basis of this mechanism, the ethical process of monitoring and evaluation gets distorted.

CMOC 9 can also be illustrated as shown below in Figure 4.68.

Figure 4.68: CMOC 9: Process of Monitoring and Evaluation



4.3.10 Programme Theory 10: Enhanced Enrolment, Retention and Research Duration

Theory of Change: The scheme provides financial assistance to the fellows so that they do not face any challenges in completing their research and the research scope and quality do not suffer. The financial remuneration helps them to bear their academic, research as well as personal expenses. It also helps them in buying required books, journal subscription and participation forms for various research events like seminar, workshops and other courses.

Theory of Action: This financial assistance not only affects the enrolment and retention of the fellows, but also affects the research duration as due to this aid, the fellow is able to devote more time on their research and get prime results. However, for some of the fellows that belong to economically weaker section of the society and those who face some financial stability, the scheme becomes a source of their income and they instead of expending the aid on their research and academic expenses, utilize the funds in other ways. For these fellows too, the research duration increases as they are able to draw funds for the duration of their Ph.D. only.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.186.

Table 4.186: A Realist Matrix Logic Model Regarding Enhanced Enrolment, Retention and Research Duration

Context	Mechanism	Outcome
Financial Instability and fellows from economically weaker sections of the society	Due to the involved financial remuneration, the fellows enroll, persist and research for longer duration	Enhanced enrolment, retention, and research duration
Fellows from other sections of the society	Due to financial remuneration, the fellows get opportunity to participate in various academic and research related events and opportunity to work on their skills	

CMOC 10: Enhanced enrolment, retention and research duration

Context

The context for the present mechanism was identified to be financial instability and lack of funds at hand, in the presence of which the present mechanism triggers.

Mechanism

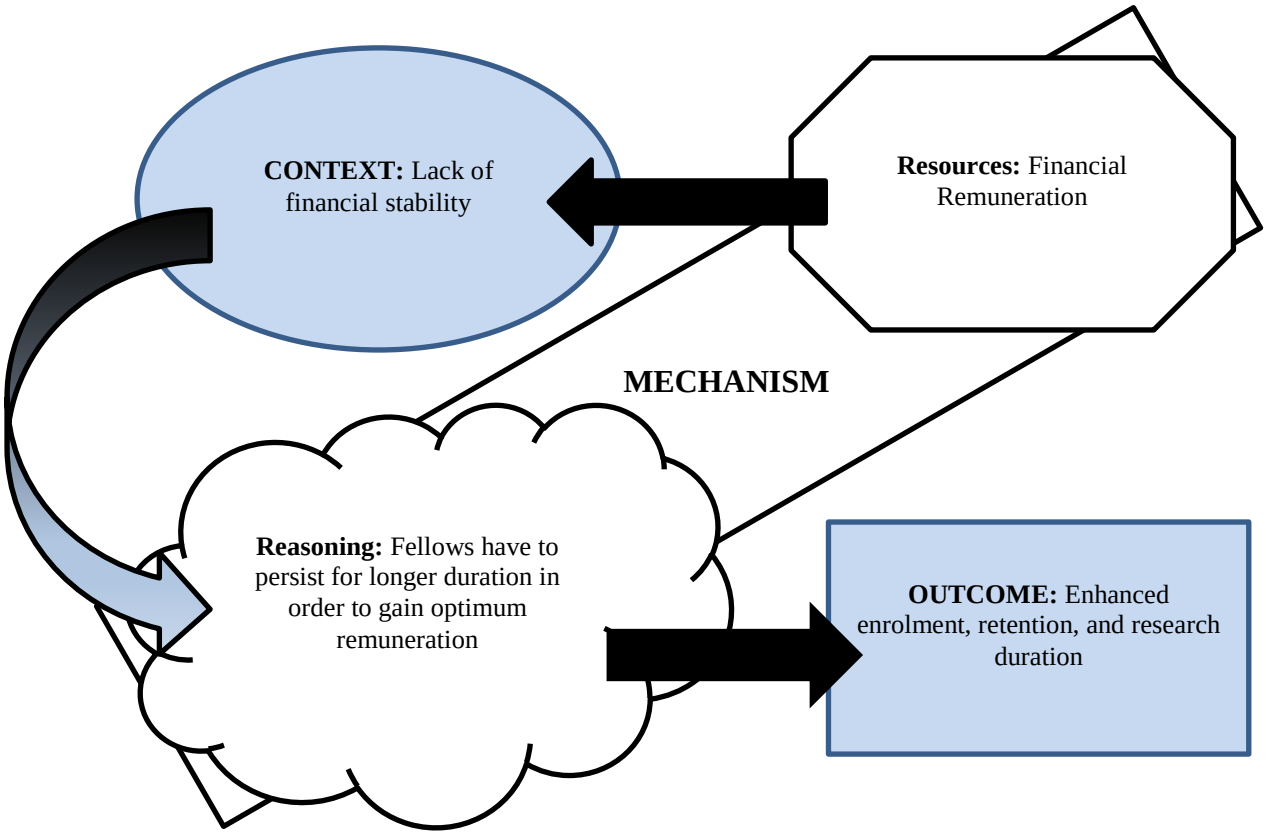
Due to financial remuneration at stake, some of the fellows that are looking for stable and constant financial income seems to persist in the Ph.D. programme after enrolling and that too for increased period so that they can attain optimum remuneration that they could get. In other cases, the fellows try to explore and participate in as many research and academic events helpful in enhancing their research expertise and in such cases, the research also becomes more complicated and time consuming.

Outcome

On the basis of this mechanism, enhanced enrolment, retention and research duration could be observed.

CMOC 10 can also be illustrated as shown below in Figure 4.69.

Figure 4.69: CMOC 10: Enhanced Enrolment, Retention and Research Duration



4.3.11 Programme Theory 11: Predatory Publication

Theory of Change: In Ph.D. programmes, there is a requisite of publishing two research papers related to research topic selected for thesis. One of these papers must be presented or published during the period of first two years of Ph.D. i.e., during JRF. The other paper has to be published or presented during the remaining tenure of Ph.D.

Theory of Action: However, in the absence of concrete publishing guidelines and the financial remuneration received by the fellows and in the presence of strict time-stint, the fellows move on to publish in predatory journals or journals offering the pay-to-publish services that are fast and far more convenient for the fellows as getting published in authentic peer-reviewed journal is a tough nut to crack for the fellows in their initial years of Ph.D.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.187.

Table 4.187: A Realist Matrix Logic Model Regarding Predatory Publication

Context	Mechanism	Outcome
Requisite of publishing research papers within stipulated time	Due to the involved financial remuneration, the inefficiency of fellows in publishing and absence of research progress within stipulated time motivates fellows to publish in journals offering pay-to-publish services	Enhanced predatory publication

CMOC 11: Predatory Publication

Context

The context for the present mechanism was identified to be requisite of publishing research papers within stipulated time, in the presence of which the present mechanism triggers.

Mechanism

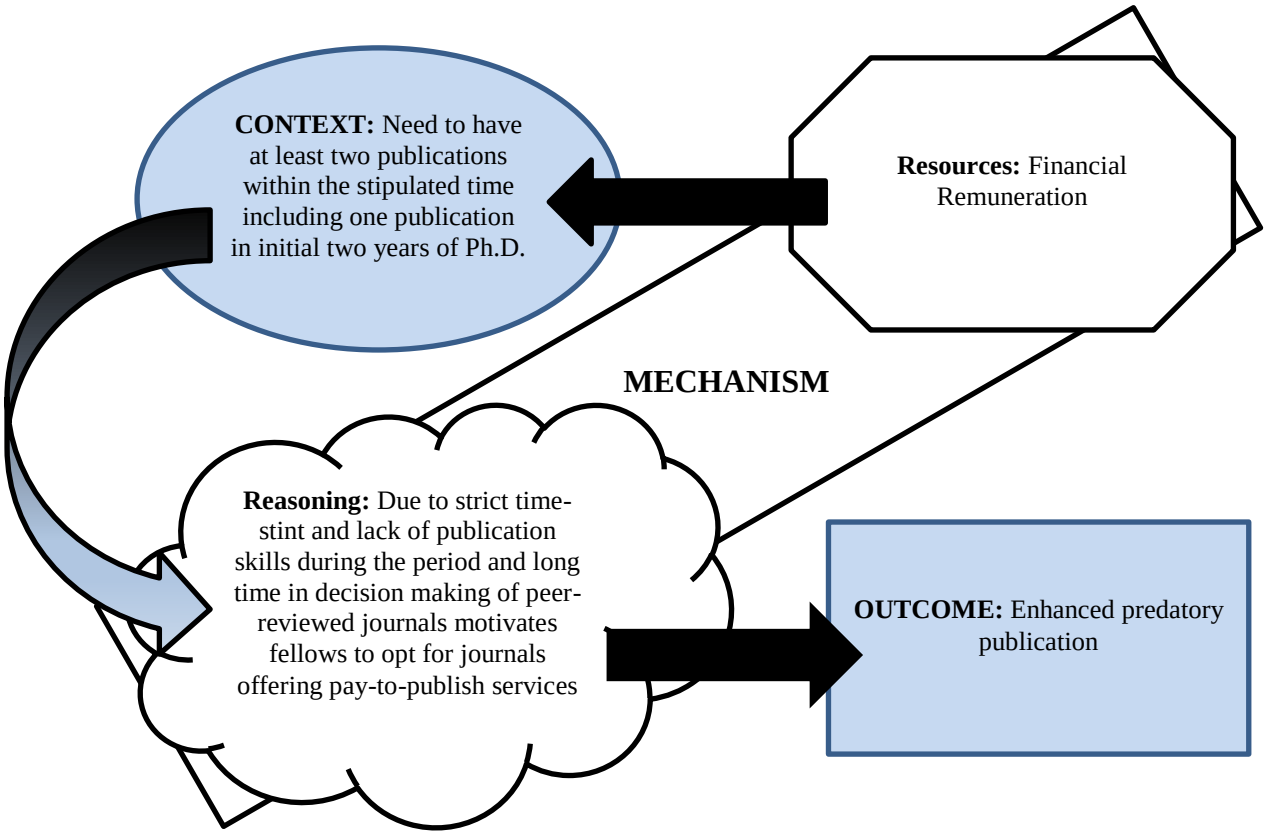
Due to financial remuneration at stake, the fellows look for easy options for publishing as in the initial two years of the Ph.D., the fellows do not have any findings at hand and are not having adequate publishing skills to be able to publish in peer-reviewed journals and the time duration taken by such publishing houses in making decision of acceptance or rejection of the research paper is immense. So, the fellows are left with the option of choosing for the journals offering pay-to-publish services and are not offering peer review, thus boosting up the publication duration.

Outcome

On the basis of this mechanism, increased publication in predatory journals could be observed.

CMOC 11 can also be illustrated as shown below in Figure 4.70.

Figure 4.70: CMOC 11: Predatory Publication



4.3.12 Programme Theory 12: Outcomes at Personal Level

At personal level, there are different outcomes of the scheme, viz., increased knowledge, intensified participation in research activities, academic networking, and raised research duration that leads to augmented research quality. But these outcomes are present in only certain cases where the required context and resources are met. The researcher has presented these theories in the following sub-sections.

4.3.12.1 Programme Theory 12(a): Increase in Knowledge

Theory of Action: As the scheme is largely acknowledged and sought-after fellowship scheme, it lures a heap of applications. Also, due to increasing unemployment and underemployment, the examination becomes more competitive in nature. In this case, the participant needs to serious about pursuing higher education and research career, to be highly motivated and execute planning. In case of such participant, they command over the subject, teaching aptitude, and research aptitude and methodology. This need in turn, increases the knowledge of the fellows, as the fellows are those who

have achieved top positions in the particular discipline. This increased knowledge builds up a base for the fellows on the basis of which the further knowledge attainment and creation becomes easier for the fellows.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.188.

Table 4.188: A Realist Matrix Logic Model Regarding Increase in Knowledge

Context	Mechanism	Outcome
Seriousness about pursuing higher education and research career and high level of motivation and planning	Due to large number of applicants, highly competitive environment and nature of examination, the aspirant has to command over the subject knowledge, teaching aptitude and research aptitude and methodology	Increase in knowledge

CMOC 12(a): Increase in Knowledge

Context

The context for the present mechanism was identified to be seriousness about pursuing higher education and research career and high level of motivation and planning.

Mechanism

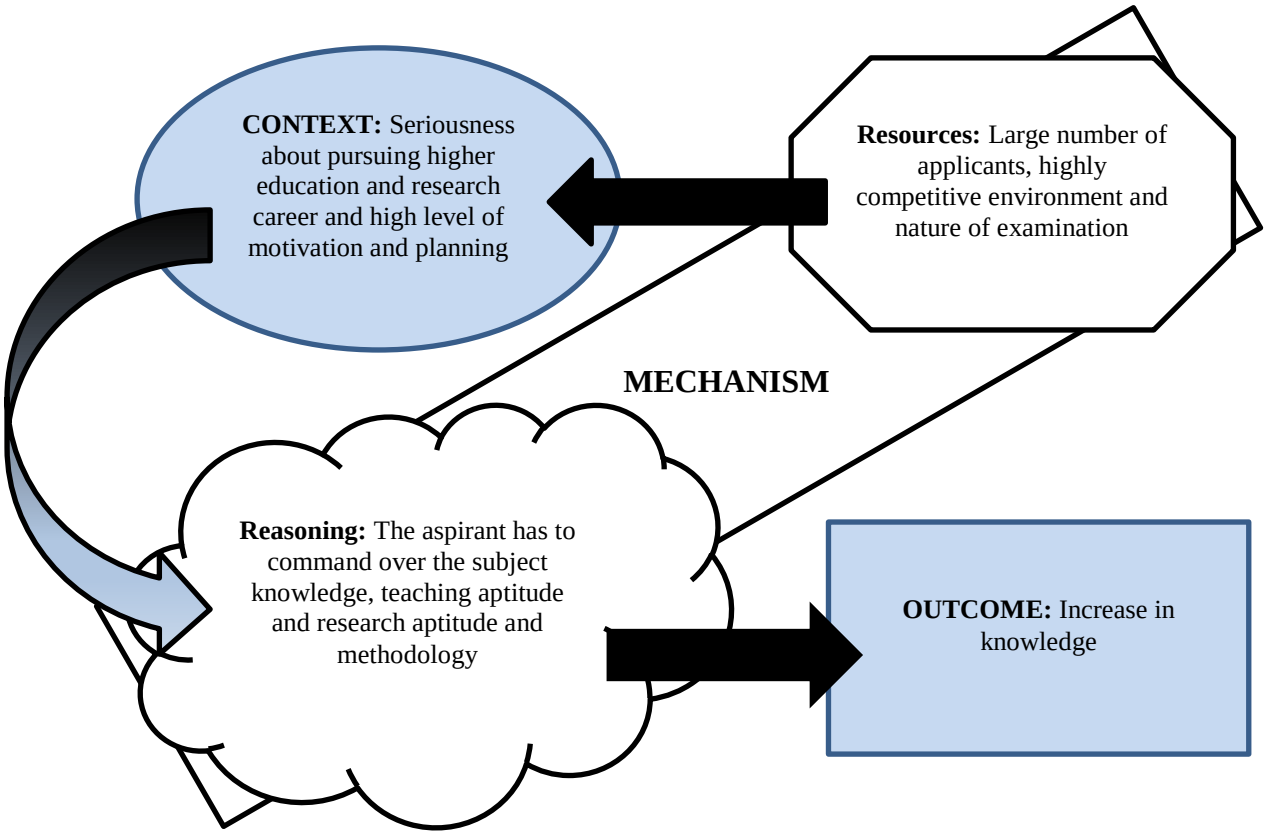
Due to large number of applicants, highly competitive environment and nature of examination, the aspirant has to command over the subject knowledge, teaching aptitude and research aptitude and methodology in order to attain the top position in JRF examination and get eligible for the award.

Outcome

On the basis of this mechanism, increase in knowledge of the fellows could be observed.

CMOC 12(a) can also be illustrated as shown below in Figure 4.71.

Figure 4.71: CMOC 12(a): Increase in Knowledge



4.3.12.2 Programme Theory 12(b): Increased Participation in Research Activities

Theory of Change: The scheme provides financial assistance to the fellows so that they do not face any challenges in bearing their academic, research as well as personal expenses. It also helps them in buying participation forms for various research events like seminar, workshops and other courses. Thus, increasing the participation in research activities for the fellows.

Theory of Action: This financial assistance, however, is not always used by the fellows for the same purposes. The fellows that have interest in such activities and if they get timely intimation about the event, then only, they participate in such events and get benefitted.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.189.

Table 4.189: A Realist Matrix Logic Model Regarding Increased Participation in Research Activities

Context	Mechanism	Outcome

Personal interest, orientation towards research and timely intimation	Financial assistance facilitates the participation in such research-oriented activities for the fellows	Increased participation in research activities

CMOC 12(b): Increased Participation in Research Activities

Context

The context for the present mechanism was identified to be the personal interest of the fellow, their orientation towards the research and timely intimation of the events, in the presence of which the present mechanism triggers.

Mechanism

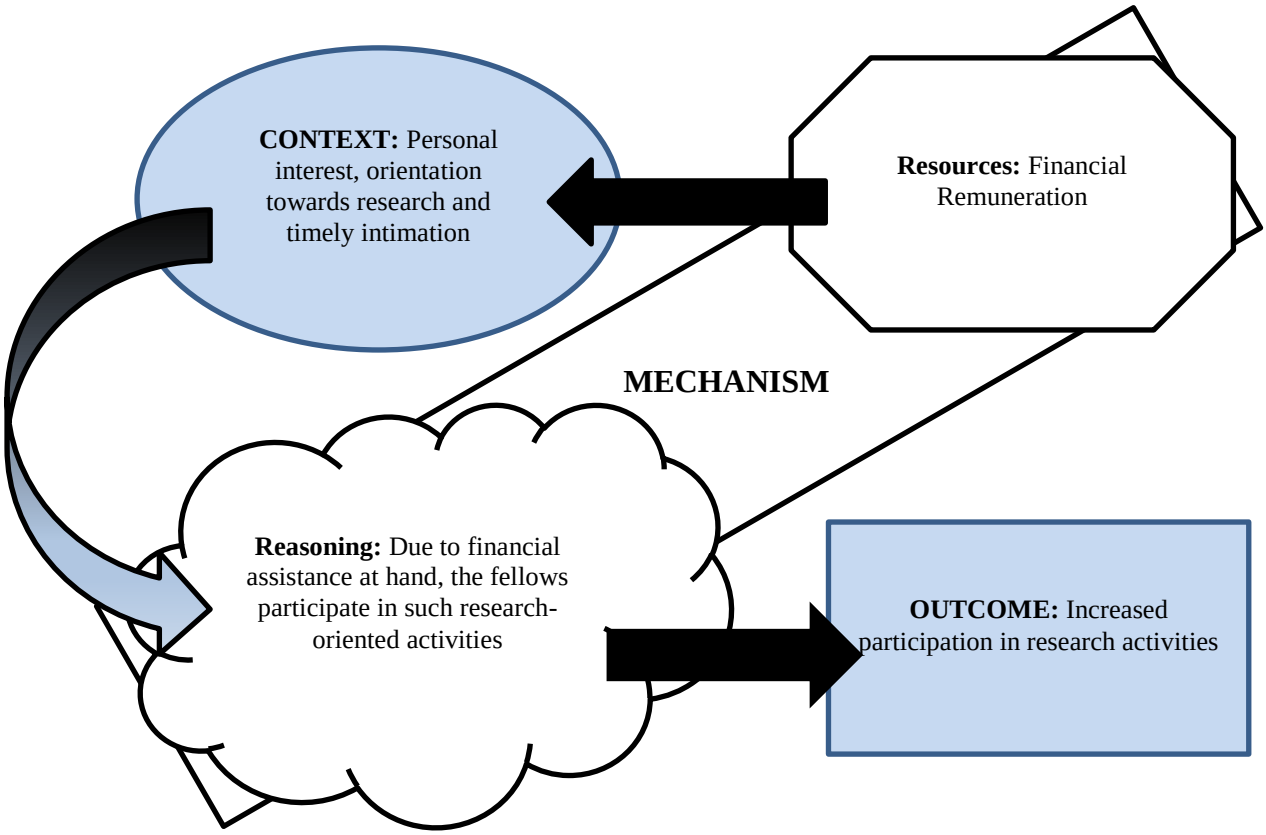
Due to financial remuneration at hand, in the presence of above context, the fellows participate in such research-oriented activities and events.

Outcome

On the basis of this mechanism, increase in participation of fellows in such research-oriented activities could be observed.

CMOC 12(b) can also be illustrated as shown below in Figure 4.72.

Figure 4.72: CMOC 12(b): Increased Participation in Research Activities



4.3.12.3 Programme Theory 12(c): Academic Networking and Increase in Knowledge

Theory of Change: The scheme provides financial assistance to the fellows so that they do not face any challenges in bearing their academic, research as well as personal expenses. It also helps them in buying participation forms for various research events like seminar, workshops and other courses. Thus, increasing the participation in research activities for the fellows. This increase in participation in such activities lead to building personal relationships with experienced researchers in the domain of interest. Also, the participation in such activities leads to increase in personal knowledge of the fellows.

Theory of Action: This financial assistance, however, is not always used by the fellows for the same purposes. The fellows that have interest in such activities and if they get timely intimation about the event, then only, they participate in such events and get benefitted. In case, the fellows participate in such events do not directly entails to building personal relationships and increase in knowledge. It requires extrovert personality, communication skills, research interest and active participation on part of the fellows.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.190.

Table 4.190: A Realist Matrix Logic Model Regarding Academic Networking and Increase in Knowledge

Context	Mechanism	Outcome
Extrovert Personality, Research Interest, Active Participation, Communication Skills	Increased participation in research activities and events leads to opportunity to build personal relations with the leading researchers and to get aware of the recent trends and developments in the domain of interest	Academic networking and increased knowledge

CMOC 12(c): Academic Networking and Increase in Knowledge

Context

The context for the present mechanism was identified to be the extrovert personality, research interest, active participation, and communication skills, in the presence of which the present mechanism triggers.

Mechanism

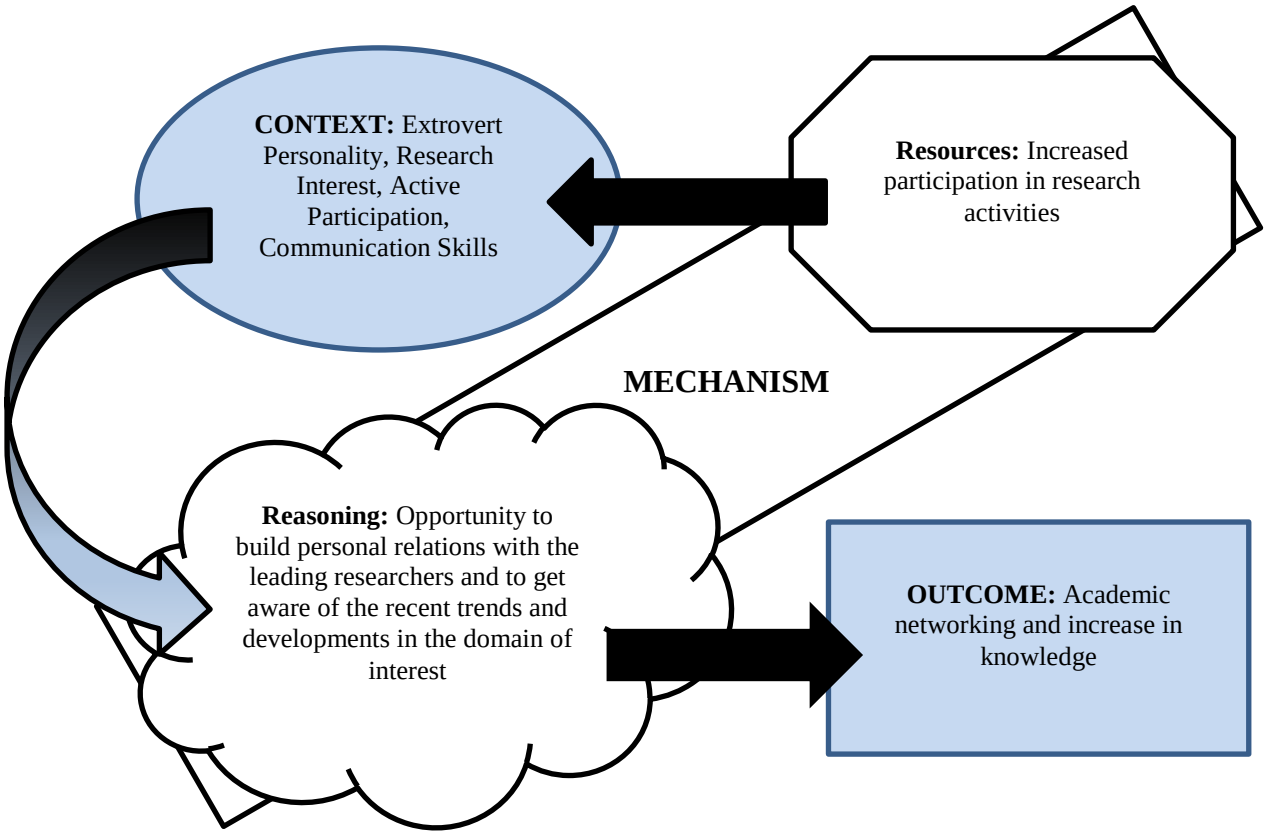
Due to increased participation in research activities and events, the fellows get an opportunity to build personal relations and that might lead to collaboration with the leading researchers, and they also get to be aware about the recent trends and developments in the domain of their interest.

Outcome

On the basis of this mechanism, academic networking and boost in knowledge are the outcomes of this mechanism.

CMOC 12(c) can also be illustrated as shown below in Figure 4.73.

Figure 4.73: CMOC 12(c): Academic Networking and Increase in Knowledge



4.3.12.4 Programme Theory 12(d): Increase in Research Duration

Theory of Action: The scheme provides financial assistance to the fellows. It relieves the fellows from any psychological stress regarding financial freedom and stability. In cases where, the fellows are having higher level of motivation and positive attitude or orientation towards research, they try to learn, explore and gain expertise in research area and furthers the scope and scale of research. But it needs extended efforts and the time duration of the research increases.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.191: A Realist Matrix Logic Model Regarding Increase in Research Duration.

Table 4.191: A Realist Matrix Logic Model Regarding Increase in Research Duration

Context	Mechanism	Outcome
Higher level of motivation and positive orientation towards research	The fellows try to learn, explore and gain expertise in the research area and furthers the scope of their research	Increase in research duration

CMOC 12(d): Increase in Research Duration

Context

The context for the present mechanism was identified to be the high motivation level of the fellows and their orientation towards research, in the presence of which the present mechanism triggers.

Mechanism

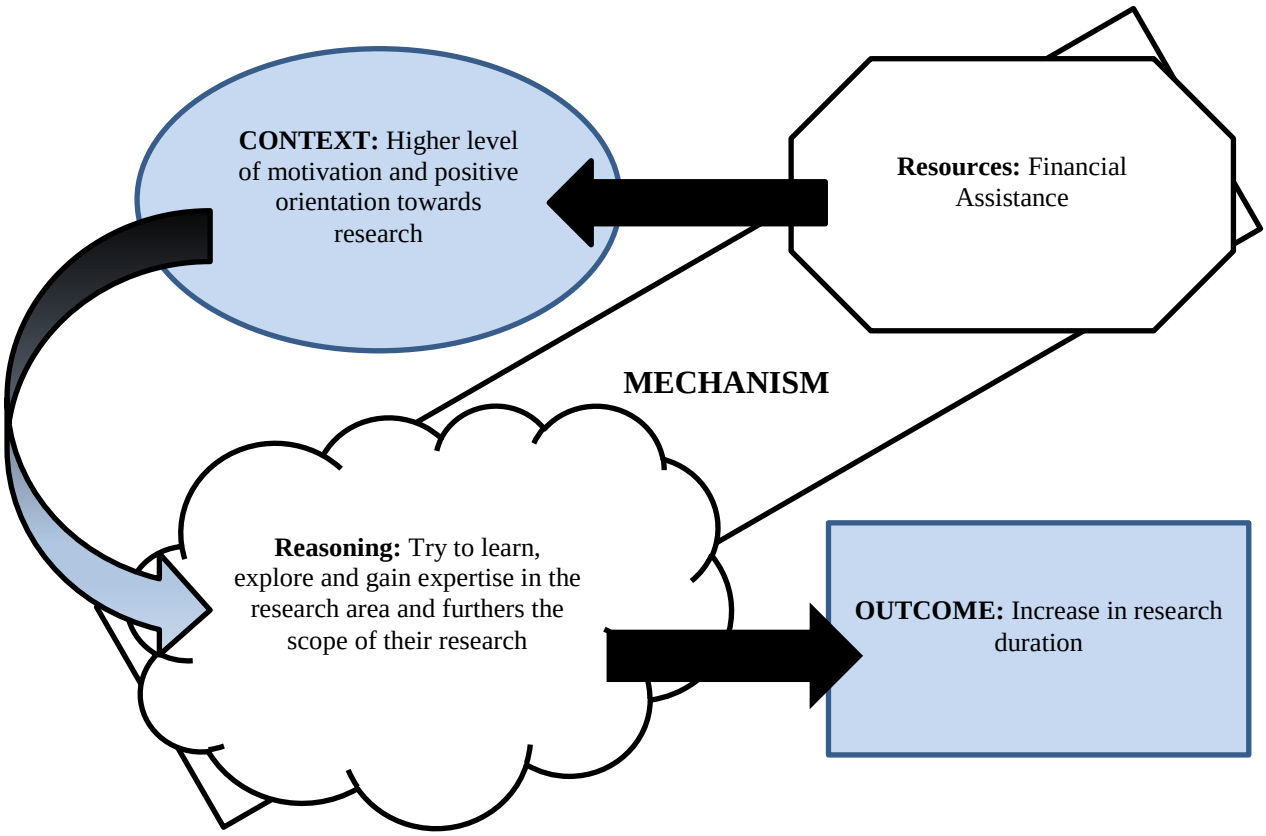
Due to financial assistance, in the presence of high motivation level and positive orientation towards research among fellows leads to learning, exploration, and expertise gaining in research area and furthering of the scope of research.

Outcome

On the basis of this mechanism, increased research duration could be observed as the outcome of present mechanism.

CMOC 12(d) can also be illustrated as shown below in Figure 4.74.

Figure 4.74: CMOC 12(d): Increase in Research Duration



4.3.12.5 Programme Theory 12(e): Enhanced Research Quality

Theory of Action: We have seen how the scheme enhances the research duration, personal knowledge of fellows regarding research area and research methodology. Due to these, in the presence of right guidance and focus on researcher's development, the fellows get to improve their research decisions, conducts and reporting. These improvements ultimately lead to the enhanced research quality.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.192.

Table 4.192: A Realist Matrix Logic Model Regarding Enhanced Research Quality

Context	Mechanism	Outcome
Right guidance and focus on researcher's development	Enhanced research duration, increase in knowledge of research domain and methodology leads to improvement in research decisions, conducts and reporting by the fellows	Enhanced Research Quality

CMOC 12(e): Enhanced Research Quality

Context

The context for the present mechanism was identified to be the right guidance and focus on fellow's development, in the presence of which the present mechanism triggers.

Mechanism

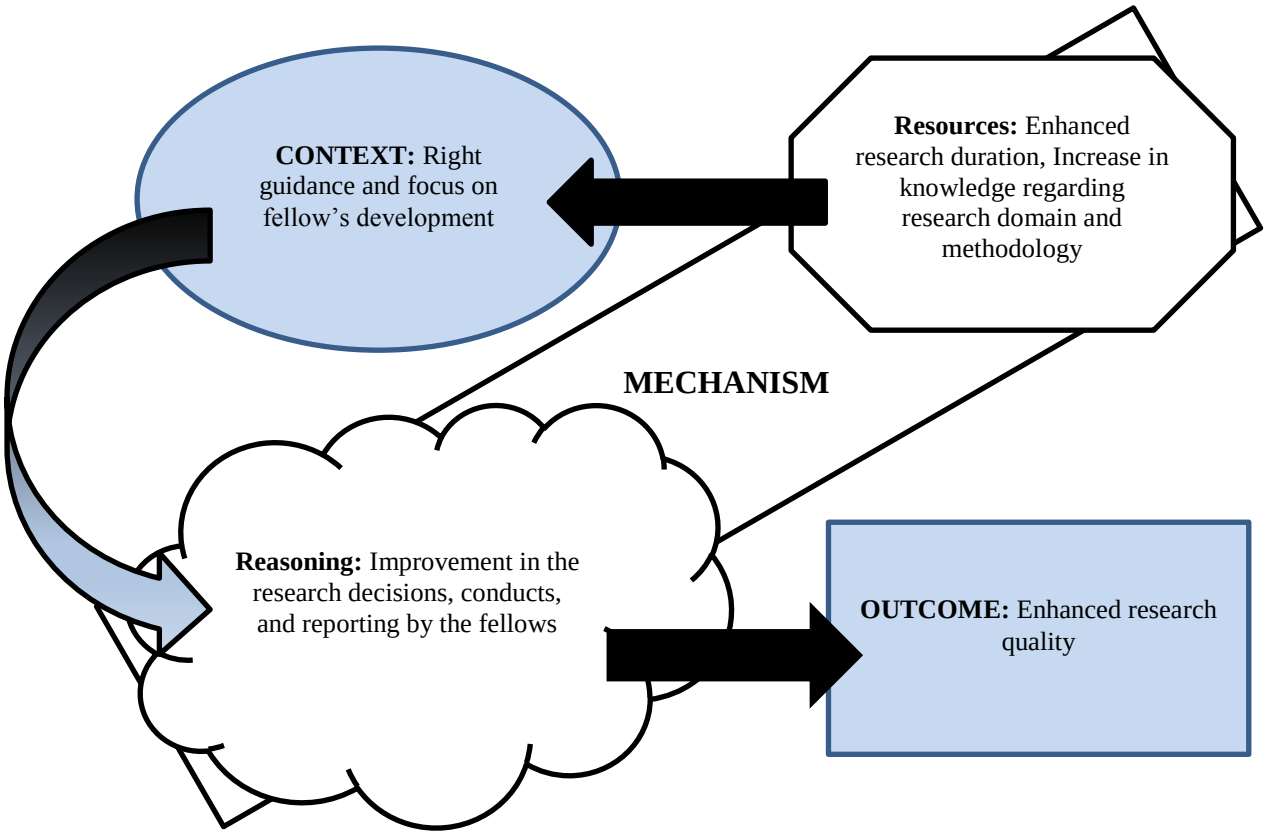
Due to enhanced research duration, increase in knowledge regarding research domain and research methodology in the presence of aforementioned context leads to improvement in the research decisions, conducts and reporting by the fellows.

Outcome

On the basis of this mechanism, enhanced research quality could be observed as the outcome of present mechanism.

CMOC 12(e) can also be illustrated as shown below in Figure 4.75.

Figure 4.75: CMOC 12(e): Enhanced Research Quality



4.3.13 Programme Theory 13: Outcomes at Institutional Level

Theory of Change: Due to enhanced research participation, research output, research quality and opportunities of collaboration leads to increase in scores at various assessments and evaluations conducted by different agencies. It ultimately leads to improvement in institutional rankings and recognition.

Theory of Action: However, the enhanced research participation, research output, research quality, and opportunities of collaboration are all not readily available through the scheme only. It also depends upon the adequacy of infrastructure, strength, quality and activities of faculty members, and other measured parameters. If the institution is sailing safely over these aspects, then only the theory of change discussed above is applicable.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.193.

Table 4.193: A Realist Matrix Logic Model Regarding Outcomes at Institutional Level

Context	Mechanism	Outcome
Adequacy of infrastructure, strength, quality and activities of faculty members, and great performance in other measured parameters	Enhanced research participation, research output, research quality and opportunities of collaboration leads to increase in scores at various assessments and evaluations conducted by different agencies	Improvement in institutional rankings and recognition

CMOC 13: Outcomes at Institutional Level

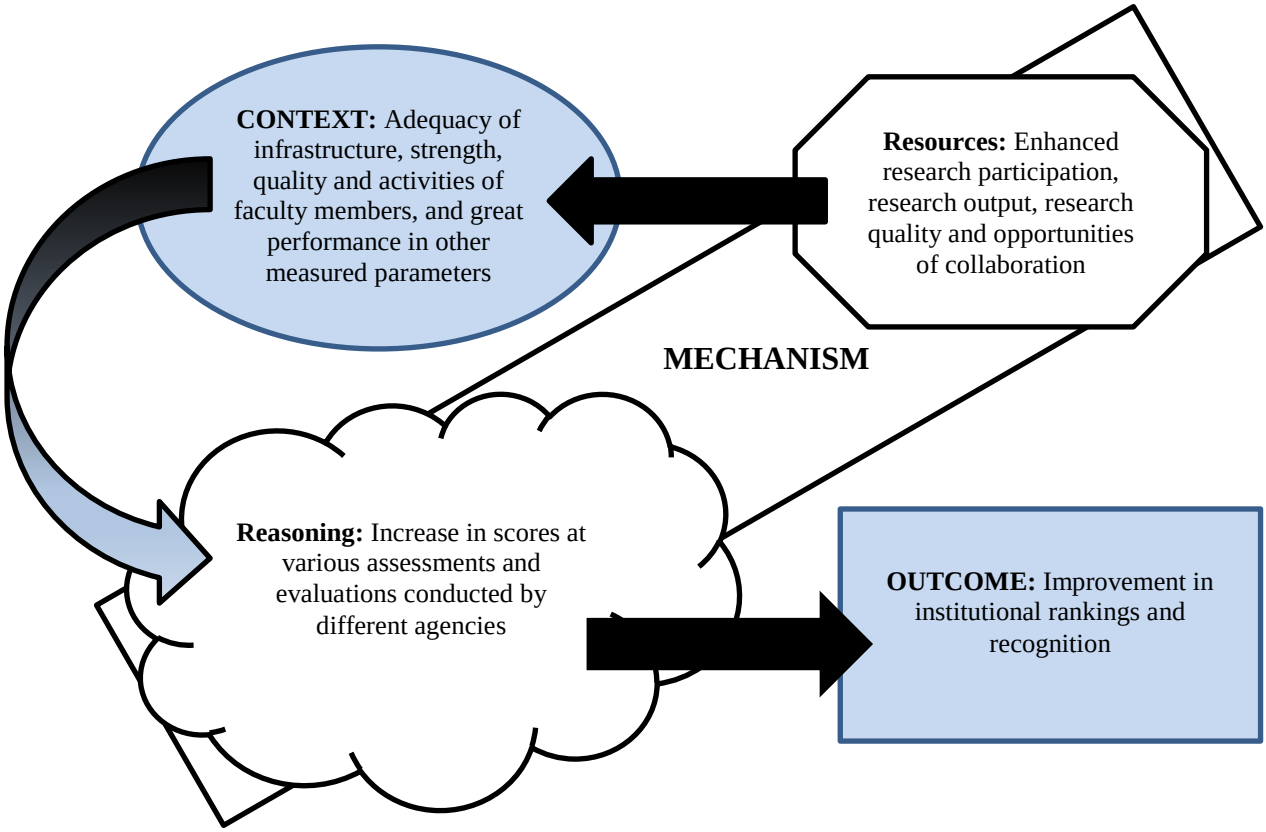
Context: Adequacy of infrastructure, strength, quality and activities of faculty members, and great performance in other measured parameters were identified as the context for the present mechanism.

Mechanism: Due to the enhanced research participation, research output, research quality and opportunities of collaboration, the increase in scores at various assessments and evaluations conducted by different agencies could be observed.

Outcome: On the basis of this mechanism, improvement in institutional rankings and recognition could be recognized as the outcomes of the present mechanism.

CMOC 13 can also be illustrated as shown below in Figure 4.76.

Figure 4.76: CMOC 13:Outcomes at Institutional Level



4.3.14 Programme Theory 14: Outcomes at Community Level

At community level, there are two different outcomes of the scheme, viz., formation of vibrant research community and utilization-driven research outputs. But these outcomes are present in only certain cases where the required context and resources are met. The researcher has presented these theories in the following sub-sections.

4.3.14.1 Programme Theory 14(a): Formation of Vibrant Research Community

Theory of Change: Due to financial remuneration provided by the scheme, the fellows become free from any financial and psychological barriers that leads to orientation towards research, increased motivation level and increased research participation and opportunities to collaborate and networking. And as a result, a highly competitive yet vibrant research community develops.

Theory of Action: However, orientation towards research, increased motivation level and opportunity to collaborate depends upon several other factors as discussed beforehand. Thus, it is not mandatory that the above theory of action applies in all cases. It depends upon the adequacy of

research facilities and infrastructure, quality of faculty members and guidance provided by them, personality of fellows, timely notification of research events and opportunities of collaboration and communication skills of fellows.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.194.

Table 4.194: A Realist Matrix Logic Model Regarding Outcomes at Community Level

Context	Mechanism	Outcome
Adequacy of research facilities and infrastructure, quality of faculty members and guidance provided by them, personality of fellows, timely notification of research events and creation of opportunities for collaboration and communication skills of fellows	Financial remuneration provided through the scheme removes financial and psychological barriers and leads to significant increase in orientation towards research, motivation level and collaboration	Formation of Vibrant Research Community

CMOC 14(a): Formation of Vibrant Research Community

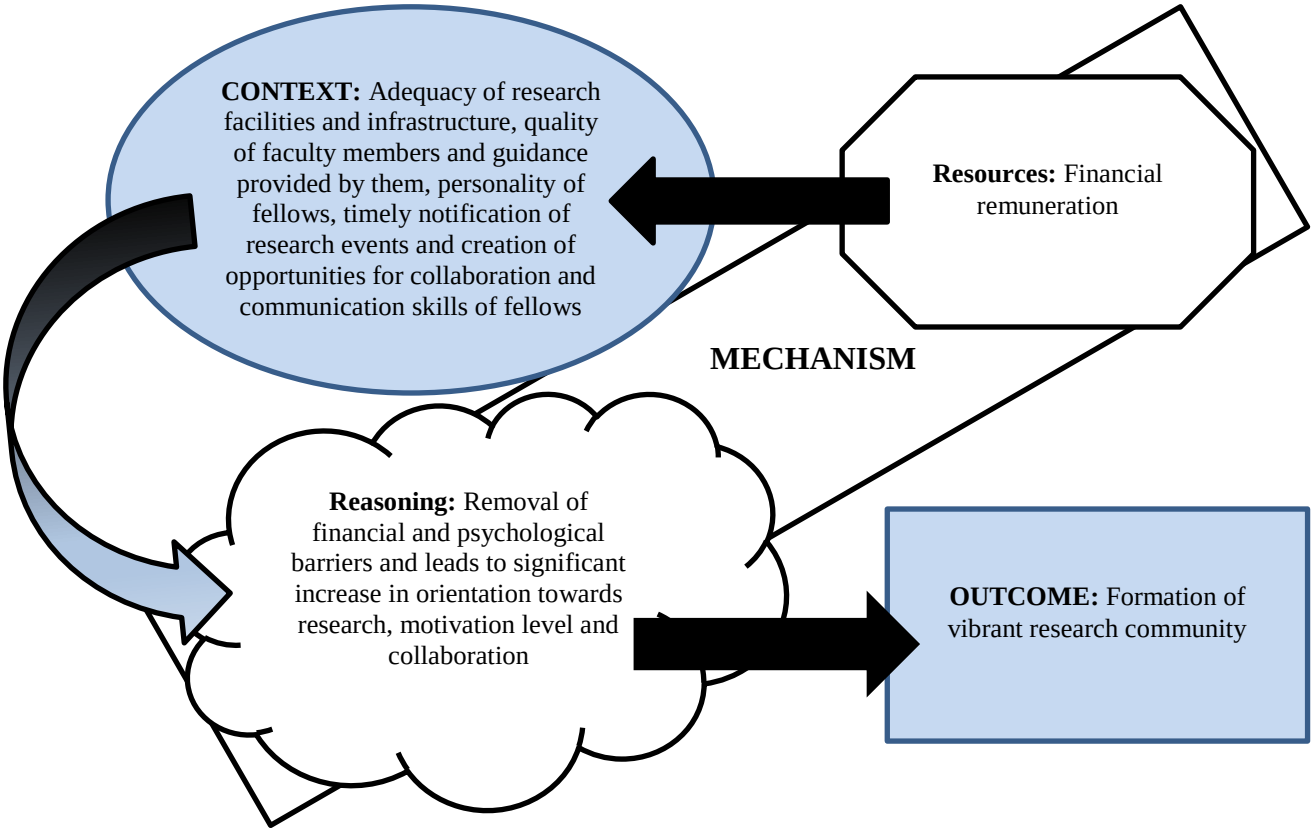
Context: Adequacy of research facilities and infrastructure, quality of faculty members and guidance provided by them, personality of fellows, timely notification of research events and creation of opportunities for collaboration and communication skills of fellows were identified as the context for the present mechanism.

Mechanism: Due to the financial remuneration provided through the scheme removes the financial and psychological barriers and the orientation of fellows towards research, their motivation level and collaboration increases significantly in the presence of above context.

Outcome: On the basis of this mechanism, improvement in institutional rankings and recognition could be recognized as the outcomes of the present mechanism.

CMOC 14(a) can also be illustrated as shown below in Figure 4.77.

Figure 4.77: CMOC 14(a):Formation of Vibrant Research Community



4.3.14.2 Programme Theory 14(b): Utilization-Focused Research Output

Theory of Change: Due to financial remuneration provided by the scheme, the fellows become free from any financial and psychological barriers. In the presence of opportunities to undertake research of their interest, awareness of and concern for development and current issues, and appropriate collaboration with respective agencies and authorities, the fellows are able to conduct innovative research at broader level and utilization-driven research outputs are generated.

Theory of Action: However, as mentioned by the interview participants, there are majority of instances where the fellows are not able to choose the research topic according to their interest and a number of times due to lack of their competency in identifying the recent development and issues, the majority of the fellows are dependent upon the supervisor's choice of area and expertise in which they might not be efficient enough and it leads to uncited research most of the time.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.195.

Table 4.195: A Realist Matrix Logic Model Regarding Utilization-Focused Research Output

Context	Mechanism	Outcome
Opportunity to undertake research of their interest, awareness of and concern for development and current issues, and appropriate collaboration	Financial assistance allows fellows to conduct innovative research at broader scale	Utilization-focused research output

CMOC 14(b): Utilization-Focused Research Output

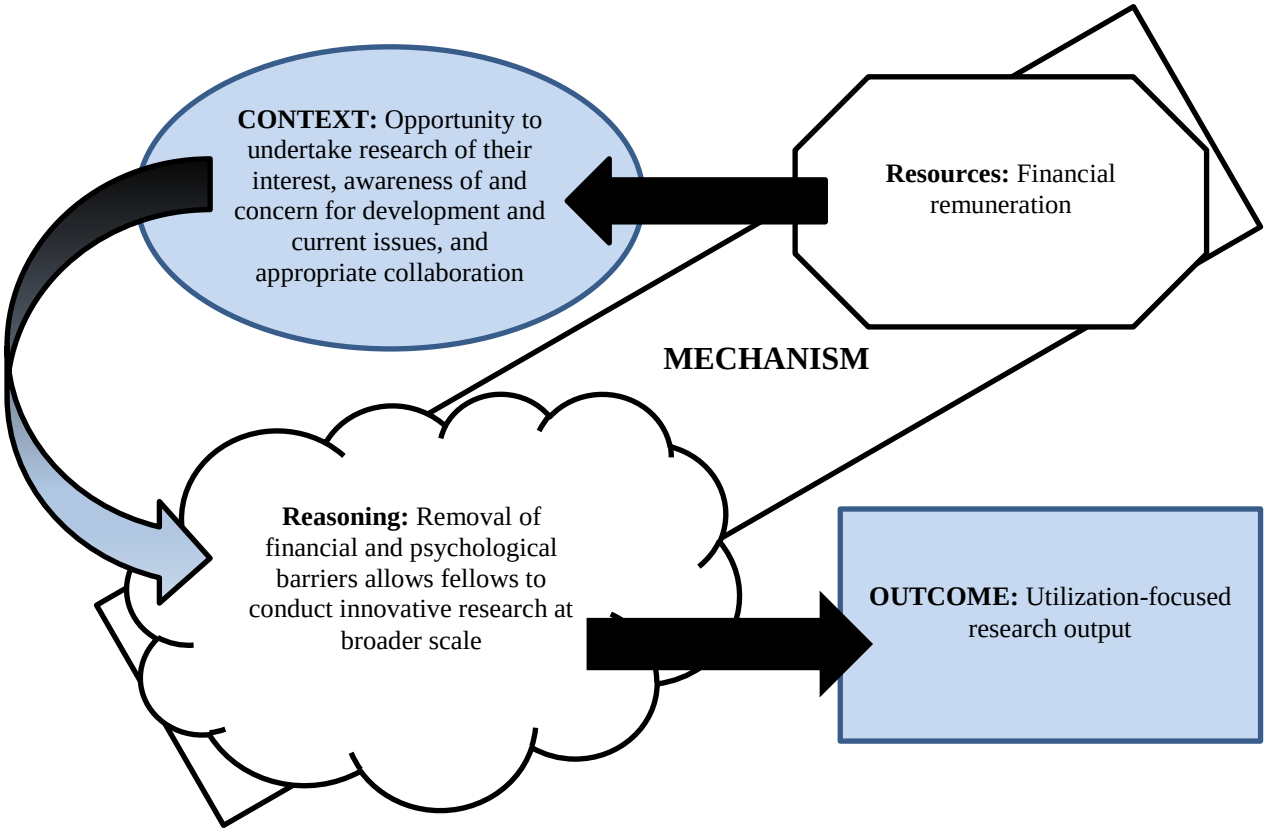
Context: Opportunity to undertake research of their interest, awareness of and concern for development and current issues, and appropriate collaboration were identified as the context for the present mechanism.

Mechanism: Financial remuneration provided through the scheme removes the financial and psychological barriers and allows fellows to conduct innovative research at broader scale in the presence of above context.

Outcome: On the basis of this mechanism, research output that is focused upon utilization and is ready for the uptake by the respective agencies could be recognized as the outcomes of the present mechanism.

CMOC 14(b) can also be illustrated as shown below in Figure 4.78.

Figure 4.78: CMOC 14(b):Utilization-Focused Research Output



4.3.15 Programme Theory 15: Outcomes at Societal Level

Theory of Change: The utilization-focused research outputs in the presence of proper dissemination facilitates the development of products, services and policies based upon the evidences. It leads to development of social structure, lifestyle or any other area related to the study.

Theory of Action: However, in practice, there are a quite small number of such studies that are both utilization-focused and are properly disseminated through proper channels. Majority of studies are conducted just for the sake of fulfilling the requirements for getting the Ph.D. award.

Logic Model: The logic model for the present programme theory can be illustrated through Table 4.196.

Table 4.196: A Realist Matrix Logic Model Regarding Outcomes at Societal Level

Context	Mechanism	Outcome

Dissemination of the research findings through proper channels	Based upon the findings of utilization-focused research, the products, services and policies are developed	Development of social structure and lifestyle

CMOC 15: Outcomes at Societal Level

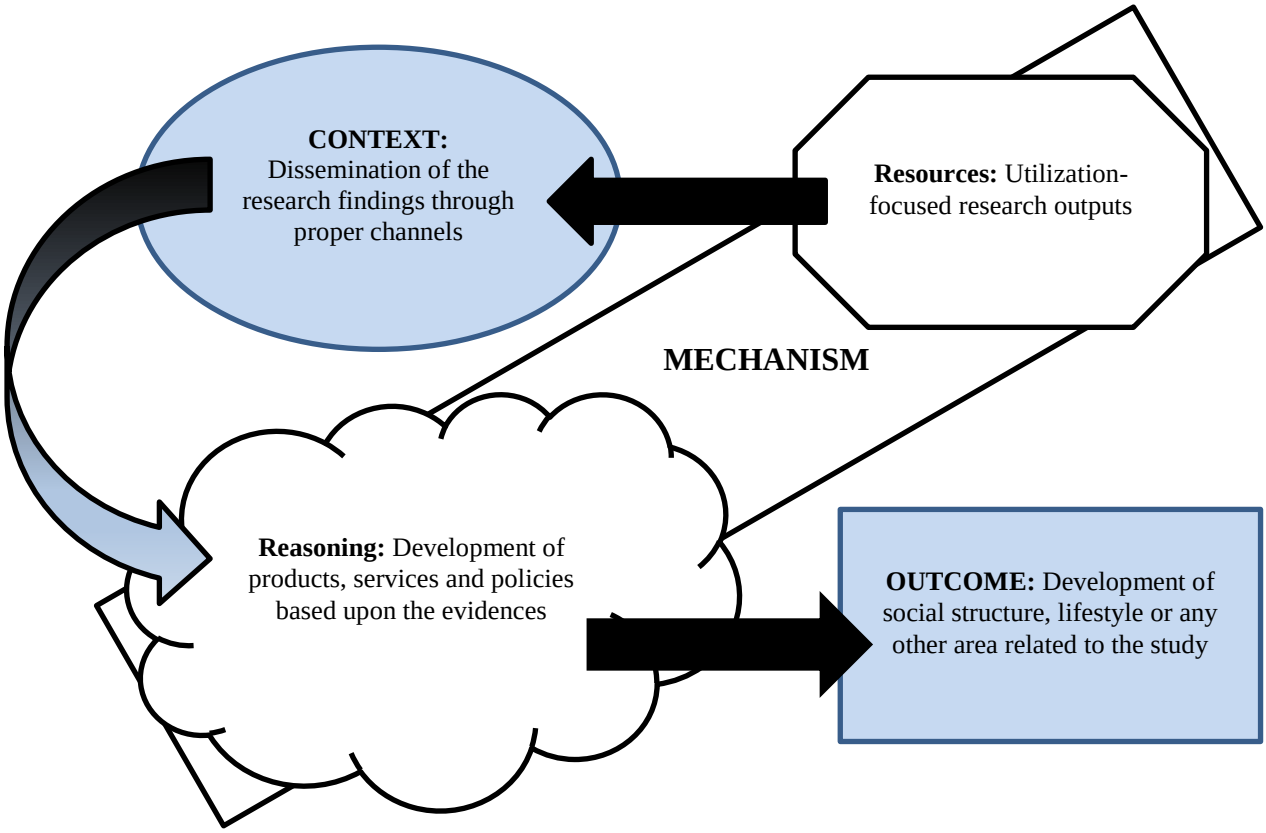
Context: Dissemination of the research findings through proper channels was identified as the context for the present mechanism.

Mechanism: Utilization-focused research outputs facilitates the development of products, services and policies based upon the evidences in the presence of above context.

Outcome: On the basis of this mechanism, development of social structure, lifestyle or any other area related to the study could be recognized as the outcomes of the present mechanism.

CMOC 15 can also be illustrated as shown below in Figure 4.79.

Figure 4.79: CMOC 15:Outcomes at Societal Level



4.4 Summary of the Findings

The quantitative analysis of the data gathered through survey method suggested that the sample of 240 respondents consisted of 165 (68.75%) males and 75 (31.25%) females. Out of these, 82 males and 38 females were non-JRFs whereas 83 males and 37 females were JRFs. Also, 99 (41.25%) of the respondents were from the rural background as compared to 141 (58.75%) respondents that were from the urban background, suggesting the proper reachability of the scheme. Moreover, 92 (38.33%) of the respondents were married, 147 (61.25%) of the respondents were unmarried, and 1 (0.42%) of the respondent belongs to other marital status. All of the 240 respondents do belong to the disciplines of humanities and social sciences.

The range of the respondents in terms of the (probable) year of thesis submission was found to be 31 years ranging from 1993 to 2024. Based upon these years only, the sub-grouping of the samples was done creating 5 sub-groups of respondents consisting of (1) 2024, (2) 2021-2023, (3) 2020, (4) 2012-2019, and (5) 2011 and before. The sub-groups 1 and 3 were similar since it consist of single year. Also , the subgroups 2, 4 and 5 were found to be homogeneous since there was no significant difference in mean and median years of thesis submission by JRF and non-JRF participants of these subgroups.

The average time taken by JRFs to submit their thesis was found significantly greater than that by the non-JRFs. The claim is supported by the results of the t-test $t(138) = -2.47$, $p = .015$ and Mann-Whitney U Test $U = 1853.50$, $p = .012$. The mean lengths of PhD in cases of JRFs and non-JRFs were found to be ($M = 4.00$ years, $SD = 0.52$) and ($M = 3.79$ years, $SD = 0.51$) respectively. Whereas the median lengths were found to be 4 years and 3.75 years, respectively. The differences between these lengths are not much great to reach any concrete conclusion but are significant enough to suggest benefits of being a JRF regarding the availability of the resources due to which the length of the PhD increases.

Amid the scarce but sufficient representation from the Institutions of National Importance (INI), strong association between the JRF qualification and type of PhD institution was found to be significant. The Pearson's Chi-Square Test suggested a high level of association, $X^2(3, N = 240) =$

14.48, p = .002. Most of the participants were either research scholars or the employees in higher education sector (62.50% and 23.75% respectively). Only a small proportion of the participating members were from research-oriented backgrounds, other discipline-oriented backgrounds and other non-academic and non-discipline-oriented background (3.33%, 5% and 5.42% respectively).

On the other hand, the quantitative analysis suggested that there is no significant difference in the number of participations by the respondents in research-oriented events. Both t-test $t(238) = -0.51$, p = .607 and Mann-Whitney U Test $U = 7070.50$, p = .809 were unable to detect the presence of any significant difference. However, during the interview, the participants asserted that there are few differences due to the availability of the funds with JRFs. But these differences were not reflecting in the survey results. It might be due to the fact that the participants in the survey and lying in the non-JRFs subgroup were mostly from the academia and therefore they might have made up for the differences. Similarly, there were no differences found between the two groups in terms of national and international visits during the PhDs $t(238) = -0.25$, p = .800 and $t(161.77) = -1.60$, p = .111 which might be due to the small number of affirmative responses (71 and 12).

On looking for differences within the two groups in terms of the number of publications as first author and number of publications as other authors, no statistically significant differences were found. Moreover, the differences and associations in terms of the number of citations and awards received could not be tracked as the respondents were not able to track their citations and also due to the very small number of affirmative responses received.

Item related to change in mode of PhD showed that there is a significant association between the JRF qualification and the change in mode of PhD as chi square test results $X^2(1, N = 240) = 5.19$, p = .023 hinted the same. This association signifies that JRF holders are more often moving towards the job during their PhDs as compared to non-JRFs. Moreover , the results of t-tests have shown that there is no significant difference in perceived mean self-ratings of their theses by the two groups in terms of contribution in their respective fields, innovations, and readiness for utilization, $t(138) = -0.14$, p = .888, $t(138) = -0.15$, p = .878, and $t(138) = 0.43$, p = .670.

Also, more than half of the respondents, independent of the group to which they belong, have affirmed that they are doing or have done their PhDs to gain social identity and to increase their employability, followed by the chances of getting promotion. The minimum responses were received regarding enhancing collective knowledge base and personal knowledge. It is quite interesting and indicates that the pursuance of PhD is mostly based upon the extrinsic motivation rather than the intrinsic motivation. This extrinsic motivation is susceptible to change during their career and thus it is not the ideal reason for the pursuance of a research career.

When coming to the choice of profession, the survey results suggested that the majority of the respondents like to opt for the career in academics and a fewer proportion of the respondents are seeking after the career in writing and research sectors. This is a problem for the research community of the nation as most of the aspirants which ought to be looking for research sectors are looking forward at the academia as the best career choice. The weighted ranks of the responses indicated that full-time researcher is the least sought-after major career choices for research scholars.

When it comes to the monitoring of the research by the apex institution of University Grants Commission, majority of the respondents (50.42%) believe that the monitoring is not done by the standards laid down for the same purpose. Also, 15.42% of the respondents do not even know about the UGC monitoring, which is not a good sign and imposed that the knowledge about different aspects of conducting research and other related concerns are not properly disseminated among the community members. Also, half of the respondents do not agree that the NET/JRF examination is research oriented. With recent developments in the pattern of the examination and due to the merging of the two different examinations viz., NET and JRF, the significant representation of the research aptitude testing has significantly replaced by the teaching and general awareness component, which aims towards selecting the candidates with better general knowledge over the candidates with specialized knowledge .

It was also noticed that the respondents believed that the scheme must look out for increasing accessibility to research and adhere to research quality through proper monitoring, but they think that the scheme should not aim towards increasing the number of fellows, as it might decay the quality of

research products produced under the scheme. While telling about what benefits should be included in the fellowship scheme, the respondents agreed to include financial assistance, house rent allowances, medical facilities and preference for jobs. However, the preference for jobs was suggested by mostly JRFs and this response was found to be biased on the basis of chi-square, t-test and Mann-Whitney 'U' test results $X^2(4, N = 240) = 11.80$, $p = .019$, $t(238) = 2.73$, $p = .007$, $U = 5842.50$, $p = .007$. Overall, on the question of whether the scheme fulfills its pre-defined objectives or not, the majority of the respondents responded in affirmation. However, the responses of the responders were highly associated with their JRF qualification as demonstrated by the Chi-Square test result $X^2(4, N = 240) = 15.92$, $p = .003$. Although, there was no statistically significant difference between the perception of the two groups as suggested by the t-test and Manny-Whitney Wilcoxon test results, $t(233.79) = 1.54$, $p = .125$, $U = 6522.50$, $p = .176$. Also, there is a slightly affirmative response on whether the objective of the scheme is enough and complete.

Moreover, 42.92% of the received responses in contrast to 57.08% responses like to recommend changes in the objective of the scheme. However, only 49 responses were received that really recommended the changes. The most recommended change was quality assurance and internship suggested by 16 respondents each followed by inclusion (10 responses), research education (4 responses) and teaching skill enhancement (3 responses). Although the received recommendations are not proper recommendations for change in objectives but are more related to additional components that should be incorporated into the present scheme structure. The selection process of the JRF fellows has been seen positively by the respondents as 52.92% of the respondents agreed in contrast to 41.25% of the negative responses.

In response to the question that what should be bases of the selection of the fellows, the majority of the respondents (98.75%) believed that objective examination must continue followed by subjective examination (27.08%), interview (23.33%), group discussion (17.08%), and merit (3.33%). But during the interview it was found that most of the respondents believed that there must be at least two step selection process that consists of objective examination along with either subjective examination or interview. However, it could be argued that in the present scenario also

there are two steps involved as the candidate along with qualifying in the objective examination has to secure admission in the PhD or M.Phil. programme which requires them to sit for interview. But it should be noted that this interview has been conducted by the institutions and it is not standardized at the national level and some sort of discrepancies may arise due to this reason.

On the question of how much the financial assistance should be changed, the two groups have equivocally (51.67%) demanded for slight increase in the assistance. However, the researcher believes that there should not be any change in the financial renumeration provided to the fellows as the amount has been decided on the basis of the median national per capita income and it is sufficient to carry out research at the doctoral level.

The results of the survey method also indicated that most of the respondents have qualified for JRF during their PhDs (50.00%) or between their postgraduation and PhD (26.67%). Also, the fellows do not like the working of funding disbursal mechanism as 74 out of 120 respondents responded that they are not in agreement, at least to some extent with the statement that funds are disbursed at regular intervals in contrast to 27 respondents who agree to at least some extent. However, majority of them (65.52%) still believe that direct benefit transfer is better than the institutional disbursement mechanism. So, the problem is due to some discrepancies and latency in disbursal processes and not with the mechanism itself. The qualitative analysis also suggested the same problem.

The responses also showed that there are only 24.37% of the fellows who are involved in any research ongoing in their department other than their theses as compared to 75.63% of the responding fellows who are not involved in any such researches whereas 63.03% of the fellows were involved in teaching activities going on in their department in contrast to 36.97% of the fellows who are not engaged in such activities. Both these involvements are necessary from the perspective of development of the fellows and are suggested by the scheme.

The responses by the participants also highlighted that majority of the fellows utilize their financial assistance in purchasing stationery (82.20%), participation forms (80.51%) of various

research events, books (55.08%) and library memberships (54.24%). The other areas of expenditure include research journals (43.22%), electronic gadgets (24.58%), e-journals (11.02%) and software (7.63%).The expenditure on research journals , e-journals and software seems to be less than required. During the interview, the participants have also mentioned that majority of the fellows don't want to spend much of their fellowship on their research. Instead, they like to spend it for their personal expenses and also like to save them to invest them in some other areas other than their research.

Also, a great majority of the responses suggested that the JRF scheme is helpful in achieving financial stability (93.22%), in getting admissions into PhD programmes (86.44%), meeting academic and research expenses (86.44%), enhancing sources for study (85.59%) and enhancing their self-dependency (84.75%). A fair number of responses also suggested that JRF helps in increasing academic and research activities (64.41%), increasing the number of publications (62.71%), increasing personal knowledge (57.63%), in getting special status (52.54%), enhancing their confidence (52.54%), in increasing research orientation (50.85%), and surprisingly, in meeting their household expenditures (50%). Other areas where JRF scheme has helped its beneficiaries are in meeting their personal expenses (38.98%), in creation of professional and academic contacts (35.59%), in improving their research quality (20.34%) and disappointingly, only 3.39% of the responses have got exemptions from entrance exams for PhD, in spite of the fact that UFC has urged universities and institutions to exempt the JRF qualified candidates from such examinations held at the university level.

Chapter 5

Conclusion, Implications and Suggestions

Chapter 5 : Conclusion, Implications and Suggestions

In this chapter, we will discuss about the comprehensive programme theory regarding Junior Research Fellowship (JRF) scheme. Also, we would see how the results of the present study are beneficial for understanding the theory regarding the scheme and how it provides the ground for further evaluative studies. The outline of the present chapter is as following:

5.1 Comprehensive Programme Theory

5.2 Conclusion

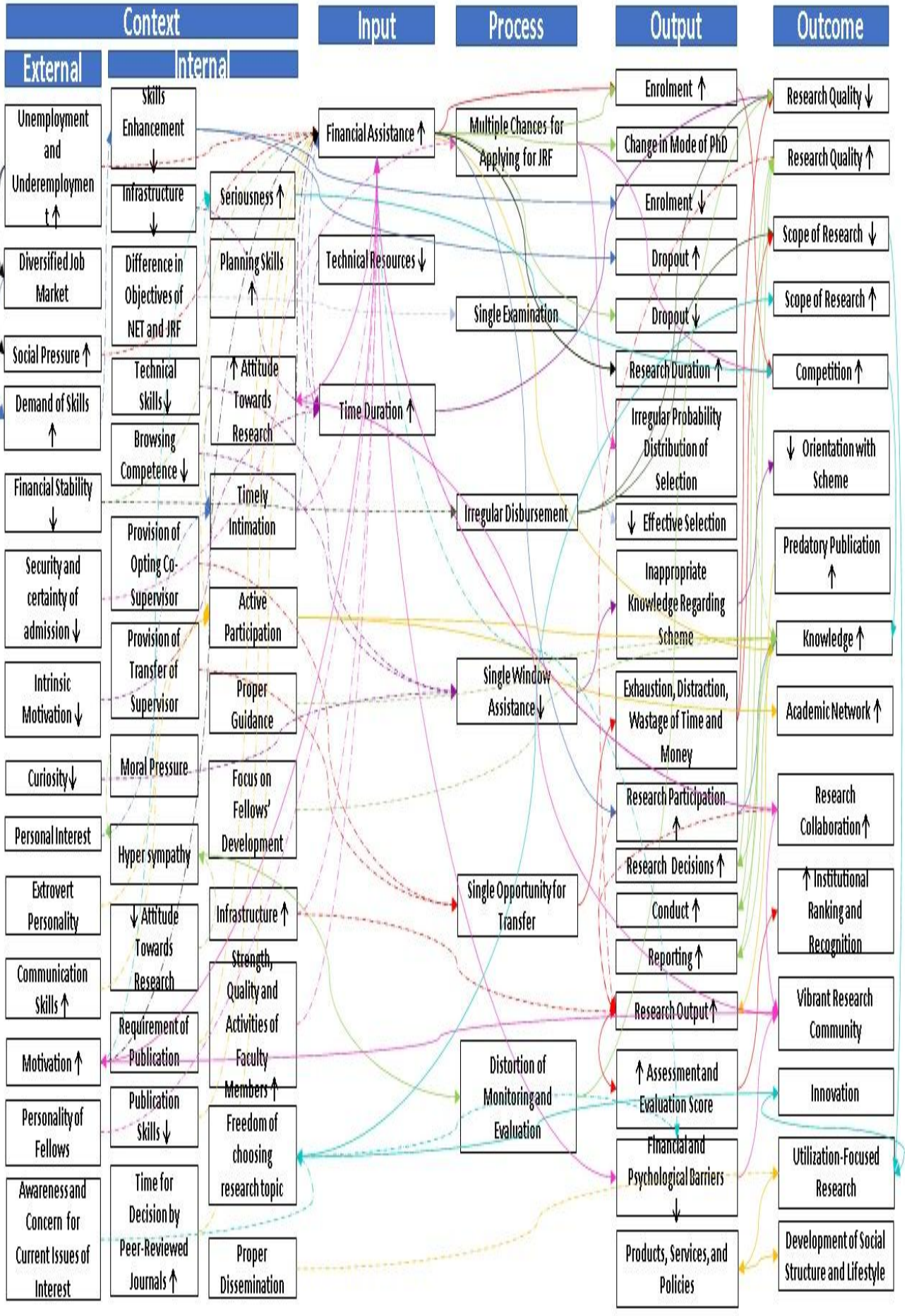
5.3 Implications of the Study

5.4 Suggestions for Further Research

5.4 Dissemination Strategy

5.1 Comprehensive Programme Theory

Figure 5.1: Comprehensive Programme Theory



There has been uprising in the unemployment and underemployment rate of the nation in past three decades and India's unemployment rate rose sharply to 7.11 percent in 2020 from 5.27 percent in 2019, as mentioned in a report published by Centre of Economic Data and Analysis (CEDA) based on the ILOSTAT database of International Labour Organization (S. S. Ray, 2021). Due to this, the job market of the nation has diversified, and more skills are asked for by the employers. It has also given rise to increase in social pressure on the fellows of getting jobs. Due to a large number of unemployed, in presence of the social pressure by the friends and relatives of yet not being employed, youth having postgraduation degree seek for admissions in PhDs to get even higher qualification. These candidates do not look PhD as a stair to research community and fellowship as prestigious assistance, rather PhD to show others that they are not unemployed and fellowships as mere source of income. It has also increased the competitive nature of PhDs and fellowships, especially where the merit comes into play. Although merit is not directly privileged but still in a corner, it plays a vital role in making decisions and predicting about the candidate.

This unemployment and diversification of the job market also gives rise to demand of skilled workforce. But during the PhDs, the skill development has been neglected for a long period of time and many voices have been raised against these. Although on papers, there have been improvement in skill development at doctoral level programmes, but these reforms have not been stringent enough to bring out development in the area. Due to this overlooking of the skill enhancement leads to decreased enrolment and increased dropout.

Not all of the fellows are equally privileged, and they also come from varied socio-economic backgrounds. Many of them do not enough funds at hand to pursue their research flawlessly without the financial assistance provided to them through the fellowship scheme. However, the majority of the fellows perceive the irregularities in fund disbursal mechanism as a major barrier. It not only hinders the research progress, but also delimits the study and its quality may also get affected. Due to this financial instability, the majority of the fellows may utilize the funds in other areas that are not related to their research and might exceed the minimum period to complete their doctoral research so as to get maximum financial assistance through the scheme. The availability of financial assistance

as one of the components of the fellowship scheme has contributed towards the increased enrolment, decreased dropouts, and enhancement of research duration. Although this enhancement in research duration not always gives positive results in terms of research quality as it may have been seen that the funds are not utilized for the research related works.

Lack of security and certainty of admission into the PhD programme in the presence of multiple chances for the candidates to sit for JRF examination in spite of the fact that they have already qualified for the same earlier gives rise to excessive and unnecessary competition and irregular probability distribution for the selection of candidates. Moreover, due to the lack of intrinsic motivation and negative attitude towards research by the fellows, the increased duration of the scheme leads to detoriation of quality of research outputs. Also, the single examination for both NET and JRF qualification in presence of the fundamental differences between the objectives of the two examinations leads to less effective selections of the candidates.

Lack of one of the major components of the scheme i.e., single-window assistance and lack of curiosity, technical skills and browsing competency of the fellows leads to inappropriate knowledge about the scheme. And in absence of this appropriate knowledge, the orientation with the scheme among the fellows decreases. The financial assistance in presence of the personal interest of the fellows and timely intimation to them about the research-oriented events facilitates their participation in such events, which in turn, increases the knowledge level of the fellows. Active participation in such research-oriented events, in presence of the positive attitude towards research leads to increase in personal knowledge of the fellows. Whereas, in presence of extrovert personality and better communication skills it also leads to enhancement of academic networking. Also, due to the increased knowledge, the improvements could be observed in fellows' research decisions, their conduct and their reporting styles.

The financial assistance provided through the JRF scheme helps the fellows in overcoming their financial and psychological barriers and thus leads to freedom of choosing research topic as per their interest, that might be more challenging but innovative. This freedom of choosing topic in presence of awareness and concern for current issues of public and national interest among the

fellows leads to increased scope of research and innovation which in turn leads to utilization-focused researches.

It was also observed that lack of infrastructure at the university and college levels and the lack of technical resources leads to increase in time duration of research and detoriation of research quality. Moreover, the single opportunity of transfer during the whole fellowship duration, in the presence of provisions of opting co-supervisors and provisions of transfer of supervisors leads to unnecessary exhaustion, distraction and wastage of time and money, which in turn limits the scope of research and degrades the quality.

When talking about monitoring and evaluation, the negative attitude of fellows towards research, moral pressure and obligation on supervisors to qualify the researches of the fellows and hyper sympathy of supervisors towards their researchers and moral pressure and obligation on external evaluators leads to the distortion of the monitoring and evaluation that in turn leads to detoriation of research quality.

On the other hand, the financial assistance provided to the fellows in presence of the requirement of publication for the award of PhD or M.Phil., lack of publication skills among the fellows and extended time taken by the peer-reviewed journals in making their decisions leads to the increase in predatory publication or pay-to-publish culture. It hinders proper dissemination. While in cases, when the proper dissemination is done by the fellows, it leads to utilization focused research and helps in designing better products, services and policies, that in turn leads to development of social structure and lifestyle of the general public.

In a perfect world condition, the awareness and concern for current issues of national and international interest within the fellows, given they are provided with adequate freedom of choosing their research topic and in presence of motivation and seriousness among the fellows might lead to increased scope of research that in turn leads to utilization focused research, and thus innovative practices could be achieved. However, there are problems at the level of opting research topic and the fellows have to often go for the research areas where they are not much comfortable but are

advised by their respective supervisors and thus, the drop in motivation and seriousness leads to adverse results.

5.2 Conclusion

The present study shows that there are no proper signs of effect of the scheme on quality or amount of research output, however, it is perceived by the research and academic community that the scheme facilitates in enhancing research participation. Also, there was a little sign of effect of fellowship on the career choice and orientation towards research. The monitoring of the research work conducted by the fellows needs to be carried out in some standardized manner. It was also found that the scheme achieves its pre-defined objective, however, due to contextual shift, need of amelioration in the objective is suggested. It was observed that most of the stakeholders are lacking basic knowledge about the scheme due to inadequate orientation and irregular diffusion of the information regarding the scheme. Moreover, certain activities regarding skill enhancement, providing hands-on-experience regarding various aspects of research also needs to be incorporated, so as to enhance research aptitude as well as attitude among the fellows. Morality and hyper sympathy seem to be the major barriers in the effective implementation of the scheme. The disbursal mechanism of the scheme needs to be simplified to some extent to avoid irregularities in fund disbursements. Moreover, it was also found that the fellows were engaged in teaching activities in their respective departments, but the research engagement is quite low.

The results of the present study also highlighted that the effects of the scheme are widely focused on the individual participants rather than the community or society. However, the scheme has impacted positively the facilitation of research participation. Also, as the scheme is complex in nature, it involves many agencies that adversely affects the scheme and deviates the outcomes from those intended.

5.3 Implications of the Study

Findings of this study have important implications regarding the Junior Research Fellowship (JRF) scheme. The study provides a better understanding of the scheme and the underlying mechanisms. The methods and procedures might help in development of future evaluative studies

and provides a comprehensive framework to conduct evaluation of the fellowship schemes. The results of the study would be beneficial for the stakeholders to develop insights regarding the scheme, for researchers to conduct detailed confirmatory studies regarding the identified mechanisms, and the involved agencies in planning the direction of their investigations for further development of the scheme.

5.4 Suggestions for Further Research

Reviews indicate that no research is comprehensive in itself. More work always needs to be carried out to clear some doubts, more remain unclear. More answers obtained to various questions more questions get raised. The evaluation of a fellowship scheme has its own area with unclear boundaries. The evaluation could be carried out with different objectives, orientations, and using different methods and methodologies to answer a range of varying questions regarding the scheme. This study was delimited to a small sample size and consisted of the participants available in Uttar Pradesh and Delhi only. Future research could be conducted on a larger sample or extended locale. The mechanisms that have been identified in the present study can also be confirmed or refuted through the future evaluative studies. Inclusion of higher-level administrators and those working in the related bureaux and departments of UGC would unfurl more evidences and could lead to some new mechanisms. Moreover, the future researchers could use Critical Path Method and Program Evaluation and Review Techniques for estimating the duration of the fellowship, especially now when the M.Phil. programme has been completely abolished. Also, the examination pattern could be evaluated using Abel Method or any other related technique. Future researchers could also employ the game theory, system theory and decision theory to evaluate the aspects of the fellowship scheme under study. The present study touches only the surface of the issues, and a more detailed and concise study is needed.

5.5 Dissemination Strategy

University Grants Commission through its document entitled ‘Good Academic Research Practices’ reflected upon the utility of dissemination by stating that the aim of dissemination is to educate the broader population about the research activity's results in order for them to become part

of the science knowledge base for other scientists to reproduce, evaluate, question, refute, and expand upon. Frequently, study results are of concern to others, including professionals, policymakers, and the general public. Pursuing suitable channels and presenting content at an audience-appropriate level of comprehension and format becomes critical requirements for ensuring that the study meets the appropriate audience in the correct format at the appropriate time.

The findings of the present study, in accordance with the rules of the university, would be archived in the form of hard-copy dissertation in departmental and central library of the department and university, respectively. The soft copy of the dissertation would also be sent to INFLIBNET centre for uploading on Shodhganga – A Reservoir of Indian Theses. A series of research papers would be published in the peer-reviewed journals matching the area and scope of the research, preferably open-access journals. Also, the findings would be shared with all the participants of the research in the form of presentation for enhancing comprehensibility. The findings will also be shared with University Grants Commission (UGC) which is the primary regulator of the scheme. Last, but not the least, the findings would also be shared with the general public through a dedicated blog.

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Appendices

APPENDICES

Appendix 1: Questionnaire for Evaluation of Junior Research Fellowship

Thank you for agreeing to participate in this survey. My name is Adbhut Pratap Singh. I am conducting this survey to evaluate the effect of the Junior Research Fellowship scheme in Humanities and Social Sciences. The purpose of this survey is to understand about various aspects of the Junior Research Fellowship scheme in Social Sciences and Humanities, which is being provided by the University Grants Commission. If you have any doubt while filling up the questionnaire or any other query, you can contact me at adbhut24x7@gmail.com.

It is important that you answer all the questions honestly based on your experience and perspective as a fellow in the Junior Research Fellowship scheme, but you are not obliged to give every answer. I also want to assure you that any information given by you would be marked as code and the response received will be kept strictly confidential.

इस सर्वेक्षण में भाग लेने के लिए सहमत होने के लिए धन्यवाद। मेरा नाम अदभुत प्रताप सिंह है। मैं मानविकी और सामाजिक विज्ञान में जूनियर रिसर्च फेलोशिप योजना के प्रभाव का मूल्यांकन करने के लिए यह सर्वेक्षण कर रहा हूं। इस सर्वेक्षण का उद्देश्य विज्ञान और मानविकी में विश्वविद्यालय अनुदान आयोग द्वारा प्रदान की जाने वाली सामाजिक जूनियर रिसर्च फेलोशिप योजना के विभिन्न पहलुओं के बारे में बेहतर समझने में मदद करना है। यदि आपको प्रश्नावली के किसी प्रश्न को भरते समय कोई संदेह या इससे संबंधित कोई अन्य प्रश्न हो तो आप मुझसे adbhut24x7@gmail.com पर संपर्क कर सकते हैं।

यह महत्वपूर्ण है कि आप जूनियर रिसर्च फेलोशिप योजना में एक शोध छात्र के रूप में अपने अनुभव और परिप्रेक्ष्य के आधार पर सभी प्रश्नों का उत्तर दें, लेकिन आप हर उत्तर देने के लिए बाध्य नहीं हैं। मैं आपको यह भी आश्वस्त करना चाहता हूं कि आपके द्वारा दी गई किसी भी जानकारी को कोड के रूप में चिह्नित किया जाएगा और प्राप्त प्रतिक्रिया पूर्णतः गोपनीय रखी जाएगी।

Section 1 (खंड 1)

1. Please specify your gender.

   कृपया अपना लिंग बताएं।

   Male (पुरुष) ☐ Female (महिला) ☐ Others (अन्य) ☐

2. You belong to which region?

   आप किस क्षेत्र से संबंधित हैं?

   Urban (शहरी) ☐ Rural (ग्रामीण) ☐

3. Please specify your marital status.

   कृपया अपनी वैवाहिक स्थिति निर्दिष्ट करें।

   Unmarried (अविवाहित) ☐ Married (विवाहित) ☐ Others (अन्य) ☐

4. Does UGC provide Junior Research Fellowship in your research area?
   क्या यूजीसी आपके शोध क्षेत्र में जूनियर रिसर्च फेलोशिप प्रदान करता है?

   Yes (हाँ) ☐ No (नहीं) ☐

Section 2 (खंड 2)

5. (Probable) year of thesis submission. *
(संभावित) थीसिस प्रस्तुत करने का वर्ष। *

……

* Write 2024 if you are in your first year of PhD, 2023 if you are in your second year of PhD, 2022 if you are in your third year of PhD, 2021, if you are in your fourth or more year of PhD and you are not going to submit your thesis in 2020.

* 2024 लिखें यदि आप पीएचडी के अपने पहले वर्ष में हैं, 2023 यदि आप पीएचडी के अपने दूसरे वर्ष में हैं, 2022 यदि आप पीएचडी के अपने तीसरे वर्ष 2021 में हैं, यदि आप पीएचडी के अपने चौथे या अधिक वर्ष में हैं और आप 2020 में अपनी थीसिस जमा करने नहीं जा रहे हैं ।

6. How many years you have taken to complete your research thesis?*
अपने शोध थीसिस को पूरा करने में आपको कितने साल लगे?*

* Mark only if you have submitted your thesis before 2020 or planning to submit in 2020, otherwise leave this item.
If you have taken 1 month or more over 2 years, mark 2.25 years.
If you have taken either less than 2.00 years or more than 5.00 years, please specify in multiples of 0.25
* केवल तभी चिह्नित करें जब आप अपनी थीसिस 2020 से पहले प्रस्तुत कर चुके हो या 2020 में प्रस्तुत करने की योजना बनाई हो, अन्यथा इस आइटम को छोड़ दें।
यदि आपने 2 साल के उपरांत 1 महीने या उससे अधिक समय लिया है तो आप 2.25 वर्ष चिह्नित करें।
यदि 2.00 वर्ष से कम या 5.00 वर्ष से अधिक समय लिया है तो कृपया 0.25 के गुणकों में निर्दिष्ट करें।

- ☐ 2.00 years (2.00 वर्ष)
- ☐ 2.25 years (2.25 वर्ष)
- ☐ 2.50 years (2.50 वर्ष)
- ☐ 2.75 years (2.75 वर्ष)
- ☐ 3.00 years (3.00 वर्ष)
- ☐ 3.25 years (3.25 वर्ष)
- ☐ 3.50 years (3.50 वर्ष)
- ☐ 3.75 years (3.75 वर्ष)
- ☐ 4.00 years (4.00 वर्ष)
- ☐ 4.25 years (4.25 वर्ष)
- ☐ 4.50 years (4.50 वर्ष)
- ☐ 4.75 years (4.75 वर्ष)
- ☐ 5.00 years (5.00 वर्ष)
- ☐ ……

7. From which type of university/institute, you have done your postgraduation?
किस प्रकार के विश्वविद्यालय / संस्थान से आपने अपना स्नातकोत्तर किया है?

- ☐ Institute of National Importance (राष्ट्रीय महत्व की संस्था)
- ☐ Central University (केंद्रीय विश्वविद्यालय)

- ☐ State University (राज्य विश्वविद्यालय)
- ☐ Private University (निजी विश्वविद्यालय)
- ☐ Deemed-To-Be-University (मानित विश्वविद्यालय)
- ☐ Government Aided College (शासकीय सहायता प्राप्त महाविद्यालय)
- ☐ Private College (निजी कॉलेज)
- ☐ Open University (मुक्त विश्वविद्यालय)

8. From which type of university/institute, you are pursuing/pursued your Ph.D.?
किस प्रकार के विश्वविद्यालय / संस्थान से आपने अपना पीएचडी किया है/कर रहे हैं?

- ☐ Institute of National Importance (राष्ट्रीय महत्व की संस्था)
- ☐ Central University (केंद्रीय विश्वविद्यालय)
- ☐ State University (राज्य विश्वविद्यालय)
- ☐ Private University (निजी विश्वविद्यालय)
- ☐ Deemed-To-Be-University (मानित विश्वविद्यालय)
- ☐ Government Aided College (शासकीय सहायता प्राप्त महाविद्यालय)
- ☐ Open University (मुक्त विश्वविद्यालय)

9. What is the nature of your current occupation?
आपका वर्तमान व्यवसाय की प्रकृति क्या है?

- ☐ Academic (Higher Education) शैक्षणिक (उच्च शिक्षा)
- ☐ Research-Oriented शोध उन्मुख
- ☐ Other Discipline Oriented अन्य विषय क्षेत्र उन्मुख
- ☐ Other Non-Academic Non-Discipline Oriented अन्य गैर-शैक्षणिक गैर-विषय क्षेत्र उन्मुख
- ☐ Research Scholar शोध विद्यार्थी

10. How many conferences/workshops/seminars/symposiums have you attended in total?
आपने कुल कितने सम्मेलनों / कार्यशालाओं / सेमिनारों / संगोष्ठियों में भाग लिया है? …….

11. State the number of academic/research visits lasting a minimum of three days to another city within the country during your PhD.
पीएच.डी. के दौरान देश के भीतर किसी अन्य शहर में न्यूनतम तीन दिन तक चलने वाली अपनी शैक्षिक / अनुसंधान यात्राओं की संख्या बताएं।

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ …….

12. State the number of academic/research visits lasting a minimum of three days to another country during your PhD.
    पीएच.डी. के दौरान दूसरे देश में न्यूनतम तीन दिन तक चलने वाली अपनी शैक्षिक / शोध यात्राओं की संख्या बताएं।

    ☐ 0
    ☐ 1
    ☐ 2
    ☐ 3
    ☐ 4
    ☐ 5
    ☐ 6
    ☐ 7
    ☐ 8
    ☐ 9
    ☐ 10
    ☐ ……..

13. State the number of your publications (published books, research papers and review articles) as first author.
    पहले लेखक के रूप में अपने प्रकाशनों (प्रकाशित पुस्तकें, शोध पत्र और समीक्षा लेख) की संख्या बताएं।

    ☐ 0 to 4
    ☐ 5 to 9
    ☐ 10 to 14
    ☐ 15 to 19
    ☐ 20 to 24
    ☐ 25 to 29
    ☐ 30 to 34
    ☐ 35 to 39
    ☐ 40 to 44
    ☐ 45 to 49
    ☐ 50 to 55
    ☐ 56 to 59
    ☐ 60 to 64
    ☐ 65 to 69
    ☐ ……

14. State the number of your publications (published books, research papers and review articles) as other author.
    अन्य लेखक के रूप में अपने प्रकाशनों (प्रकाशित पुस्तकें, शोध पत्र और समीक्षा लेख) की संख्या बताएं।

    ☐ 0 to 4
    ☐ 5 to 9
    ☐ 10 to 14
    ☐ 15 to 19
    ☐ 20 to 24
    ☐ 25 to 29
    ☐ 30 to 34
    ☐ 35 to 39
    ☐ 40 to 44
    ☐ 45 to 49
    ☐ 50 to 55
    ☐ 56 to 59
    ☐ 60 to 64
    ☐ 65 to 69
    ☐ ……

15. How many citations have you got in total for your research works?

आपके शोध कार्यों के लिए आपको कुल कितने उद्धरण मिले हैं?

- ☐ 0 to 9
- ☐ 10 to 19
- ☐ 20 to 29
- ☐ 30 to 39
- ☐ 40 to 49
- ☐ 50 to 59
- ☐ 60 to 69
- ☐ 70 to 79
- ☐ 80 to 89
- ☐ 90 to 99
- ☐ …….

16. Have you received any awards for your research?
क्या आपको अपने शोध के लिए कोई पुरस्कार मिला है?

Yes (हाँ) ☐ No (नहीं) ☐

17. Have you ever changed the mode of your Ph.D. from regular to non-regular?
क्या आपने कभी अपने पीएच.डी. के प्रकार को नियमित से गैर-नियमित में बदला है?

Yes (हाँ) ☐ No (नहीं) ☐

18. Rate your thesis on the basis of contribution in the respective field.
संबंधित क्षेत्र में योगदान के आधार पर अपनी थीसिस को रेट करें।

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9

19. Rate your thesis on the basis of innovation.
नवाचार के आधार पर अपनी थीसिस को रेट करें।

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9

20. Rate your thesis on the basis of readiness for utilization.
उपयोग के लिए तत्परता के आधार पर अपनी थीसिस को रेट करें।

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

☐ 5
☐ 6
☐ 7
☐ 8
☐ 9

21. Why are/were you doing Ph.D.?
आप पीएचडी क्यों कर रहे हैं/ थे?

(Check all that apply) (लागू होने वाले सभी को चिह्नित करें)

☐ For enhancing personal knowledge (अपना ज्ञान बढ़ाने के लिए)
☐ For enhancing the chances of employability (रोजगार की संभावना बढ़ाने के लिए)
☐ For enhancing the existing collective knowledge base
(मौजूदा ज्ञानकोष में कुछ नया योगदान करने के लिए)
☐ For facilitating future promotions (भविष्य में पदोन्नति की सुविधा के लिए)
☐ For enhancing social identity (सामाजिक सम्मान पाने के लिए)
☐

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……

22. You are doing/have done Ph.D. to become
आप पीएचडी कर रहे हैं / कर रहे थे

(Check all that apply) (लागू होने वाले सभी को चिह्नित करें)

☐ Full-time researcher (पूर्णकालिक शोधकर्ता बनने हेतु)
☐ Part-time researcher (अंशकालिक शोधकर्ता बनने हेतु)
☐ Full-time academician (पूर्णकालिक शिक्षाविद बनने हेतु)
☐ Part-time academician (अंशकालिक शिक्षाविद बनने हेतु)
☐ Author/Editor (लेखक / संपादक बनने हेतु)
☐

……

……

23. Rank (1 to 6)* the professions listed in order of your preference
अपनी वरीयता के क्रम में सूचीबद्ध व्यवसायों को रैंक (1 से 6)* करें

Full time researcher (पूर्णकालिक शोधकर्ता बनने के लिए) ☐
Part time researcher (अंशकालिक शोधकर्ता बनने के लिए) ☐
Full time academician (पूर्णकालिक शिक्षाविद बनने के लिए) ☐
Part time academician (अंशकालिक शिक्षाविद बनने के लिए) ☐
Author/Editor (लेखक / संपादक बनने के लिए) ☐
Others (अन्य) ☐

* Place most preferable choice on top and the least preferable choice at bottom
* सबसे बेहतर विकल्प को शीर्ष पर रखें और सबसे कम पसंदीदा विकल्प को सबसे निचले स्थान पर रखें ।
To rank the listed items, drag and drop each item.

सूचीबद्ध वस्तुओं को रैंक करने के लिए, प्रत्येक आइटम को खींचें और छोड़ें।

24. Is/Was your research periodically monitored as stated by UGC?
क्या आपके शोध की समय-समय पर निगरानी यूजीसी द्वारा बताए गए रूप में की जाती है/थी?

Yes (हाँ) ☐ No (नहीं) ☐

Do not know about UGC monitoring (UGC मॉनिटरिंग के बारे में नहीं जानते) ☐

Section 3 (खंड 3)

25. The pattern of the UGC NET/JRF examination is research oriented.
UGC NET / JRF परीक्षा का पैटर्न अनुसंधान-उन्मुख है।

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
I (मैं)	☐	☐	☐	☐	☐

26. Objectives of a fellowship scheme should include:
किसी फेलोशिप योजना के उद्देश्यों में शामिल होना चाहिए:

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
Preference for accessibility to advanced studies and research (उन्नत अध्ययन और अनुसंधान तक पहुंच के लिए वरीयता)	☐	☐	☐	☐	☐
Increasing the number of participants (प्रतिभागियों की संख्या में वृद्धि)	☐	☐	☐	☐	☐
Quality assurance of research products (अनुसंधान उत्पादों की गुणवत्ता का आश्वासन)	☐	☐	☐	☐	☐

27. Benefits of a fellowship scheme should include:
फेलोशिप योजना के लाभों में शामिल होना चाहिए:

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)

Financial assistance (वित्तीय सहायता)	☐	☐	☐	☐	☐
House Rent Allowance (मकान किराया भत्ता)	☐	☐	☐	☐	☐
Medical Facilities (चिकित्सा सुविधाएं)	☐	☐	☐	☐	☐
Preference in job (नौकरी में वरीयता)	☐	☐	☐	☐	☐

28. The JRF scheme achieves its pre-defined objectives.
जेआरएफ योजना अपने पूर्व-निर्धारित उद्देश्यों को प्राप्त करती है।

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
I (मैं)	☐	☐	☐	☐	☐

29. The objective of the fellowship scheme is "To provide opportunities to qualified candidates to undertake advanced studies and research".
फेलोशिप योजना का उद्देश्य "उन्नत अध्ययन और अनुसंधान करने के लिए योग्य उम्मीदवारों को अवसर प्रदान करना" है।

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
The objective is enough and complete (उद्देश्य पर्याप्त और पूर्ण है)	☐	☐	☐	☐	☐

30. Do you want any change to be made in objective stated above in statement 29?
क्या आप चाहते हैं कि कथन 29 में उपर्युक्त उद्देश्य में कोई बदलाव किया जाए?

*If checking 'YES', then mention the recommended change in brief.
यदि 'YES' को चिह्नित कर रहे हैं, तो संक्षिप्त में अनुशंसित परिवर्तन का उल्लेख करें।

Yes (हाँ) ☐ No (नहीं) ☐

……

……..

31. The selection process of the Junior Research Fellowship is the standard one.
जूनियर रिसर्च फैलोशिप की चयन प्रक्रिया एक मानक प्रक्रिया है।

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
I (मैं)	☐	☐	☐	☐	☐

32. Junior Research Fellowship should be provided on the following basis (bases): (Check all that apply)
जूनियर रिसर्च फेलोशिप निम्नलिखित आधार पर प्रदान की जानी चाहिए:

(Check all that apply) (लागू होने वाले सभी को चिह्नित करें)

☐ Objective Examination (वस्तुनिष्ठ परीक्षा)
☐ Subjective Examination (व्यक्तिपरक परीक्षा)
☐ Merit (मेरिट)
☐ Interview (साक्षात्कार)
☐ Group Discussion (समूह-चर्चा)
☐ ……

33. Financial assistance provided under the Junior Research Fellowship scheme should be:
जूनियर रिसर्च फेलोशिप प्रोग्राम के तहत दी जाने वाली वित्तीय सहायता में:

(Check all that apply) (लागू होने वाले सभी को चिह्नित करें)

☐ Substantially increased (काफी वृद्धि की जानी चाहिए)
☐ Slightly increased (थोड़ी वृद्धि किया जाना चाहिए)
☐ Not be changed (कोई परिवर्तन नहीं किया जाना चाहिए)
☐ Slightly decreased (थोड़ा कम किया जाना चाहिए)
☐ Substantially decreased (काफी कम किया जाना चाहिए)

34. Are you availing or have ever availed JRF?
क्या आपने कभी जेआरएफ का लाभ उठाया या लाभ उठा रहे हैं?

Yes (हाँ) ☐ No (नहीं) ☐

Section 4 (खंड 4)

35. When have you qualified for JRF?
आपने जेआरएफ परीक्षा कब उत्तीर्ण की?

☐ During PG (पीजी के दौरान)
☐ Between PG and M.Phil. (पीजी और एम.फिल के बीच)
☐ During M.Phil. (एम.फिल के दौरान)
☐ Between PG and Ph.D (पीजी और पीएचडी के बीच)
☐ Between M.Phil and Ph.D (एम.फिल और पीएचडी के बीच)

☐ During Ph.D. (पीएचडी के दौरान)

36. "The funds are disbursed at regular intervals/specified time."
"निधियों को नियमित अंतराल / निर्दिष्ट समय पर वितरित किया जाता है।"

	Strongly Agree (पूरी तरह से सहमत हूँ)	Somewhat Agree (थोडा सहमत हूँ)	Cannot say (कह नहीं सकते)	Somewhat Disagree (थोडा असहमत हूँ)	Strongly disagree (पूरी तरह से असहमत हूँ)
With this statement, I am (मैं इस कथन के साथ)	☐	☐	☐	☐	☐

37. Direct Benefit Transfer is better than disbursement through institution.
प्रत्यक्ष लाभ अंतरण संस्था द्वारा संवितरण से बेहतर है।

☐ Yes (हाँ)
☐ No (नहीं)
☐ Cannot say (कह नहीं सकते)

38. During the Ph.D., were you involved in any research conducted at your department other than your thesis?
पीएचडी के दौरान, क्या आप अपने शोध के अलावा अपने विभाग में किए गए किसी अन्य शोध में शामिल थे?

* Exclude all the papers and articles related to your thesis.
*अपनी थीसिस से संबंधित सभी शोध पत्रों और लेखों को छोड़ दें।

Yes (हाँ) ☐ No (नहीं) ☐

39. During your Ph.D., were you engaged in any other activity as stated by JRF?
अपने पीएचडी के दौरान, क्या आप जेआरएफ द्वारा बताई गई किसी अन्य गतिविधि में लगे थे?

Yes (हाँ) ☐ No (नहीं) ☐

40. The financial assistance provided through fellowship helped you in buying:
फेलोशिप के माध्यम से प्रदान की गई वित्तीय सहायता ने आपकी मदद की:

☐ Books (किताबें खरीदने में)
☐ Research journals (शोध पत्रिकाओं को खरीदने में)
☐ Stationery (स्टेशनरी खरीदने में)
☐ Electronic gadgets like laptop/mobile/tablet (लैपटॉप / मोबाइल / टैबलेट जैसे इलेक्ट्रॉनिक उपकरणों को खरीदने में)
☐ Softwares (सॉफ्टवेयर्स खरीदने में)
☐ e-journals (ई-जर्नल्स खरीदने में)
☐ Library Memberships (लाइब्रेरी सदस्यता खरीदने में)

☐ Participation forms for workshops, conferences, seminars and symposium (कार्यशालाओं, सम्मेलनों, सेमिनारों और संगोष्ठी के लिए प्रपत्र खरीदने में)

☐ Others, please specify (अन्य, कृपया निर्दिष्ट करें)

……..……

……

41. According to your personal experiences, the JRF scheme has helped you in:
आपके व्यक्तिगत अनुभवों के अनुसार, जेआरएफ योजना ने आपकी मदद की है:

☐ Getting admission in PhD (पीएचडी प्रवेश प्राप्त करने में)

☐ Creating professional contacts (व्यावसायिक संपर्कों का निर्माण करने में)

☐ Getting special status (विशेष दर्जा प्राप्त करने में)

☐ Exemptions from entrance exams for PhD (पीएचडी प्रवेश परीक्षा से छूट प्राप्त करने में)

☐ Achieving Financial stability (वित्तीय स्थिरता प्राप्त करने में)

☐ Meeting household expenses (घरेलू खर्च उठाने में)

☐ Meeting personal expenses (व्यक्तिगत खर्च उठाने में)

☐ Meeting academic and research expenses (शैक्षणिक व्यय उठाने में)

☐ Increasing your knowledge (आपके ज्ञान की वृद्धि में)

☐ Increasing your research orientation (आपकी अनुसंधान अभिविन्यास की वृद्धि में)

☐ Increasing your academic and research activity (आपकी शैक्षणिक गतिविधियों की वृद्धि में)

☐ Increasing your number of publications (आपकी प्रकाशनों की संख्या की वृद्धि में)

☐ Improving your research quality (आपकी अनुसंधान की गुणवत्ता में सुधार करने में)

☐ Enhancing your confidence (आपका आत्मविश्वास बढ़ाने में)

☐ Enhancing your self-dependency (आपकी आत्म निर्भरता बढ़ाने में)

☐ Enhancing your study sources (आपके अध्ययन स्रोतों को बढ़ाने में)

Appendix 2: Letter Seeking Consent for Data Collection and Information (Pilot Study)

CONSENT TO VOLUNTARILY PARTICIPATE IN A PILOT STUDY

Title of the Study: Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation

Student Researcher: Adbhut Pratap Singh, M.Phil. Scholar, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow

Faculty Advisor: Dr. Vivek Nath Tripathi, Assistant Professor, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow

This document begins the consent process in the participation of this research. Below is all the information that you will need to know in order to make an informed decision about whether to participate. Please read every section carefully. At the end of the document, if you agree to participate, please put your signature in the designated space.

Purpose of the Study: As a researcher you might have come to know about Junior Research Fellowship (JRF) scheme that has been implemented by the University Grants Commission (UGC) in various disciplines. The present study deals with the scheme provided in the disciplines in which NTA conducts UGC-NET/JRF examination on behalf of UGC. The study aims at evaluating the scheme by defining its performance through various possible aspects. The study also focuses on finding the areas where any improvement is needed.

Your Role: As a participant, you have to simply answer the questions that have been asked in the questionnaire only once. The items presented here are of different nature and are jumbled. Please read the questions carefully before answering. For enhancing your understanding of the questions, the necessary directions or suggestions are also provided wherever needed. The survey will take about 20 minutes.

Reasonably Foreseeable Risks or Discomforts: Some questions in the present questionnaire may be very personal like how you spent your financial assistance. You can skip any questions you don't

want to answer or stop the survey entirely. Online data may be hacked or intercepted: This is a risk you experience anytime you provide information online. The researcher would be using secured, and password protected Microsoft account to store the data and would access the account from a single system only. The researcher will also logout of the accounts every time after the use. However, the researcher assures but not guarantee the elimination of all the potential risks. There is a chance that the data could be accessed by some unauthorized individual. But you don't need to worry as there are no items in the questionnaire that confirms your personal identity.

Confidentiality of the Records: The records including informed consent form identifying the participant (you) will be kept confidential until completion of the research. After completion of the research, all the original records will be destroyed.

Contact in case of any Query or Concern: In case of any query or concern, you can contact either of the two investigators during office hours.

Faculty Investigator: Dr. Vivek Nath Tripathi, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow-226025, Email: viveknathtripathi@gmail.com

Student Investigator: Adbhut Pratap Singh, 7/414, Sector-7, Vikas Nagar, Lucknow-226022, Email: adbhut24x7@gmail.com, Phone: +91-78444874920

Voluntary Participation: Participation in the present study is voluntary and refusal to participate will involve no penalty and the participant may discontinue participation at any time. Your data won't be shared or used for any other future research studies.

Funding Source: The study is partially funded by University Grants Commission through non-NET fellowship.

Agreement to Participate: If you meet the eligibility criteria below and would like to participate in this study sign at the designated space provided below.

- I am pursuing/pursued Ph.D. in the discipline in which UGC provides Junior Research Fellowship (JRF) through UGC-NET/JRF examination.

Signature: …….

Name: ……...

Date:…….……

Appendix 3: Letter Seeking Permission for Data Collection and Information

Prof./Dr. …….

Department of ……....

……...……University

……

Date:

Respected Sir

I am a research scholar pursuing M.Phil. in Education under the supervision of Dr. Vivek Nath Tripathi, Assistant Professor, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow.

I am studying about various aspects of the Junior Research Fellowship in Humanities and Social Sciences provided by the University Grants Commission. The prospective respondents for my study are the research scholars who have completed their coursework along with the faculty members who are doing/have completed their Ph.D.in the disciplines of humanities and social sciences. I request you to kindly grant me the permission to collect data from your department for the duration of one week. Only your kind co-operation can make this study a success.

I kindly request you to also provide information on the proforma attached with this letter.

I would be grateful in anticipation of your assistance.

Your sincerely

Adbhut Pratap Singh

Forwarded By:

Dr. Vivek Nath Tripathi
Research Supervisor
Assistant Professor
Department of Education
Babasaheb Bhimrao Ambedkar University

Permission

Mr. Adbhut Pratap Singh, M.Phil. Scholar at Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow, is permitted to collect data from the research scholars and faculty members at Department of ……..., …… University, ……. The period for collecting data i.e. ……. is suitable to us.

Prof./Dr.……
Department of ……..
…… University
……..

Information

Kindly provide the following details of your department:

Year	Number of Scholars Enrolled		Number of Scholars Dropped Out or Changed the University		Number of PhDs Awarded	Number of Research Supervisors in the Department
	JRFs	Non-JRFs				
2015						Professor: Associate Professor: Assistant Professor:
2016						Professor: Associate Professor: Assistant Professor:
2017						Professor: Associate Professor: Assistant Professor:
2018						Professor: Associate Professor: Assistant Professor:
2019						Professor: Associate Professor: Assistant Professor:

Appendix 4: Letter Seeking Consent for Data Collection and Information

CONSENT TO VOLUNTARILY PARTICIPATE IN AN INTERVIEW

Title of the Study: Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation

Student Researcher: Adbhut Pratap Singh, M.Phil. Scholar, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow

Faculty Advisor: Dr. Vivek Nath Tripathi, Assistant Professor, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow

This document begins the consent process in the participation of this research. Below is all the information that you will need to know in order to make an informed decision about whether to participate. Please read every section carefully. At the end of the document, if you agree to participate, please put your signature in the designated space.

Purpose of the Study: As a researcher you might have come to know about Junior Research Fellowship (JRF) scheme that has been implemented by the University Grants Commission (UGC) in various disciplines. The present study deals with the scheme provided in the disciplines in which NTA conducts UGC-NET/JRF examination on behalf of UGC. The study aims at evaluating the scheme by defining its performance through various possible aspects. The study also focuses on finding the areas where any improvement is needed.

Your Role: As a participant, you have to simply answer the questions that will be asked during the interview. You can also share your experiences or stories regarding the scheme. There is no absolute truth or reality, but the ones perceived by individuals. So be honest and share what you have observed or experienced. The time duration of the interview would depend upon the depth achieved during the interview.

Reasonably Foreseeable Risks or Discomforts: Some questions during the interview may be very personal. You can skip any questions you don't want to answer or stop the interview entirely.

Confidentiality of the Records: The records including informed consent form identifying the participant (you) will be kept confidential until completion of the research. After completion of the research, all the original records will be destroyed.

Contact in case of any Query or Concern: In case of any query or concern, you can contact either of the two investigators during office hours.

Faculty Investigator: Dr. Vivek Nath Tripathi, Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow-226025, Email: viveknathtripathi@gmail.com

Student Investigator: Adbhut Pratap Singh, 7/414, Sector-7, Vikas Nagar, Lucknow-226022, Email: adbhut24x7@gmail.com, Phone: +91-78444874920

Voluntary Participation: Participation in the present study is voluntary and refusal to participate will involve no penalty and the participant may discontinue participation at any time. Your data won't be shared or used for any other future research studies.

Funding Source: The study is partially funded by University Grants Commission through non-NET fellowship.

Agreement to Participate: If you meet the eligibility criteria below and would like to participate in this study sign at the designated space provided below.

- I am working in the disciplinary area in which UGC provides Junior Research Fellowship (JRF) through UGC-NET/JRF examination.
- Whether you would like the interviewer to record your interview?

  Yes (हाँ) ☐ No (नहीं) ☐

Signature: …….

Name: ……...

Date: ……..……

Appendix 5: Plagiarism Report

Document Details

Title of the Study: Junior Research Fellowship in Humanities and Social Sciences: An Exploratory Evaluation

Submitted On: 2021-08-05 06:53:00

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Words: 76263

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