Chapter No. 6

Findings, Suggestions, Recommendations And Conclusion
## INDEX

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Content</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Findings, Recommendations, Suggestions and Conclusion</td>
<td>322</td>
</tr>
<tr>
<td></td>
<td>6.1 Introduction</td>
<td>322</td>
</tr>
<tr>
<td></td>
<td>6.2 Overall findings from the data analysis</td>
<td>322</td>
</tr>
<tr>
<td></td>
<td>6.3 Findings for Objective 1</td>
<td>328</td>
</tr>
<tr>
<td></td>
<td>6.4 Findings for Objective 2</td>
<td>331</td>
</tr>
<tr>
<td></td>
<td>6.5 Findings for Objective 3</td>
<td>334</td>
</tr>
<tr>
<td></td>
<td>6.6 Findings for Objective 4</td>
<td>336</td>
</tr>
<tr>
<td></td>
<td>6.7 Findings for Objective 5</td>
<td>337</td>
</tr>
<tr>
<td></td>
<td>6.8 Findings for Hypotheses</td>
<td>338</td>
</tr>
<tr>
<td></td>
<td>6.8.1 Findings for Hypothesis 1</td>
<td>338</td>
</tr>
<tr>
<td></td>
<td>6.8.2 Findings for Hypothesis 2</td>
<td>339</td>
</tr>
<tr>
<td></td>
<td>6.8.3 Findings for Hypothesis 3</td>
<td>339</td>
</tr>
<tr>
<td></td>
<td>6.8.4 Findings for Hypothesis 4</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td>6.9 New Models proposed after the study</td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>6.10 Suggestions and Recommendations</td>
<td>345</td>
</tr>
<tr>
<td></td>
<td>6.10.1 Suggestions for the Government and Departments</td>
<td>345</td>
</tr>
<tr>
<td></td>
<td>6.10.2 Suggestions for Research Institutes</td>
<td>347</td>
</tr>
<tr>
<td></td>
<td>6.10.3 Suggestions for Research employees</td>
<td>349</td>
</tr>
<tr>
<td></td>
<td>6.11 Conclusion</td>
<td>350</td>
</tr>
</tbody>
</table>
### List of Figure

<table>
<thead>
<tr>
<th>Figure No.</th>
<th>Title of Figures</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Ken Blanchard’s passion model</td>
<td>331</td>
</tr>
<tr>
<td>6.2</td>
<td>Research Employee’s passion for Research – Model</td>
<td>342</td>
</tr>
<tr>
<td>6.3</td>
<td>Intra-dependent relationship model of career development of research employee</td>
<td>343</td>
</tr>
<tr>
<td>6.4</td>
<td>Dependency model for Research Institutes</td>
<td>344</td>
</tr>
</tbody>
</table>
Chapter 6
Findings, Suggestions and Conclusion

6.1 Introduction

This chapter deals with the finding and conclusion of this research study. The primary data has been analyzed and interpreted in the Chapter 5. The responses given by all the respondents have been codified numerically so that statistical calculations are worked out. Numerical data presentation helped in understanding the tendency of perceptions of respondents. There are many theories which have been established in the management books about career, career development and retention of employees. The details about all have been reviewed in the Chapter 2 in this study. However, after going through the data analysis, this study could find something different.

6.2 Overall detailed Findings from the Data Analysis

i. Government Funding: All the institutes are concerned about this aspect. Government funding is very much important for research institutes which are autonomous and depends on the government for full financial support. They submit their requirement / plan (Budget) to the government. They intend to create new research laboratories, facilities, equipments based on this funding. However, due to other policy issues, the government is not able to support such institutes fully as per their requirements. This resulted into non-creation of research facility or up-gradation of the same. Directly it effects on institutional programmes for career development and retention of research employees. This is the major issue faced by almost all research institutes.

ii. Bureaucratic Procedures of the Government: Another very important factor which is also affecting the developmental activities at research institutes is bureaucratic procedure and intervention of bureaucracy in the research institutes. Due to the bureaucratic procedures there is always
delay in procurement of research equipments and other important material required in the laboratory. This delay result into enormous delay in installation of research facilities and put into use. Sometimes research institutes have to postpone or cancel their plans. On many occasions, the Prime Ministers of India have reiterated this point again and again that fundamental research should be away from ‘Babus’ i.e. bureaucracy for healthy development. However, for some extent and to ensure checks and balances on these institutes, there is a need for some mechanism.

iii. More than 58% of research employees felt that they are concerned about research work. Research employees think that research work is more important. They like to continue their research activities all the time. Mode (2) and Mean (2.30) support this.

iv. Majority of the research employees (more than 82%) expressed that job satisfaction is more important. They feel satisfied in their research work. Continuous research work gives them job satisfaction. They have preference to research work and job satisfaction over monetary benefits.

v. Research employees in the autonomous research institutes in India get reasonable less salary or monetary benefits compared to the salary of research employees working in NASA or NRAO. NASA scientists receive their pay through 15 grade levels to account for differences in education and experience. Each grade contains 10 steps, representing increases within each grade. Although grade levels start at GS-1, scientists with bachelor’s degrees and no experience enter at GS-7, with basic compensation ranging from $33,979 to $44,176 annually. Holders of doctorate degrees with no experience enter at GS-11, with salaries ranging from $50,287 to $65,371. The highest GS-15 level boasts pay that goes from $99,628 to $129,517. As against this, Fresh Scientist in India get monthly salary from Rs. 25000-35000 (Average annual salary Rs. 1

3,60,000/- in $ 6000) and experienced Indian Scientist get monthly salary of Rs. 38000 – 90000/- (Annual salary of Rs. 12,00,000/- in $20000) which is very less than the NASA Scientist. However, they are satisfied with their job and research work in their institutes. But it is also true that Research Employees are getting very less salary compared to other equally talented employees working in corporate or IT sector.

vi. 80% of research employees strongly felt that their career development depends on the research work that they carry out in the research institutes. They try to enhance their research activities to the next level. They try to explore new things to support or advance their research work. It is highlighted that research work is necessary for career development rather career development depends of research work.

vii. Though research employees prefer job security in the research institute but they are not pressing for it openly. They feel that their research work automatically gives them job security. There is already shortage of talented people in this field. Moreover, these people are self motivated and passionate about their research work. Hence, research institutes give them the job security. This is one of the reasons for research employees to leave research institutes. Every employee would like to settle in their life including social, family and working life. They always want to join such a research institute which provides them the job security. But their selection is absolutely on the merit basis.

viii. Research Employees strongly feel that research work is necessary for their career development. But not agreeing completely that research work depends on the job security. They are more focused on the research work rather than job security. During one interview with a senior scientist it is revealed that sometimes job security may lead to mediocrity. This will hamper the research work of the organization. However, the institutional policies try to take care of such issues.

ix. One important finding in this study is that research employees want state-
of-art research facilities for their research activities. They prefer research facilities over the welfare facilities. Of course about 30% research employees feel that both research facilities and welfare facilities are needed. Research Institutes need to provide state-of-art research facilities. They need to provide advanced laboratory equipments, advanced computers with high computing powers, advanced laptops, Wi Fi network in the campus, etc.

x. There is a very strong relationship between state-of-art research facilities and career development of research employees. Absence of research facility affects career development of research employees. The data revealed (90% of research employees) that if state-of-art research facilities are not provided, research employees try to leave the job and join other research organizations that provide the same.

xi. Having very good research facilities, state-of-art technology is not useful unless its exposure is given to research employees. About 75% research employees expressed that exposure to research facilities is more important than monetary benefits. One important finding is coming frequently that research employees prefer research facilities, its exposure, research work rather than simply monetary benefits.

xii. Money plays a role in motivating the employees but is not only the motivating factor. Along with money, other factors also play a major role in motivating the employees. These factors are directly related with the recognition.² Non-monetary recognition to research work of research employees satisfies them and they feel motivated. More than 50% research employees feel that non-monetary recognition to their research work is

more important than monetary allowance.

xiii. Research Institutes cannot provide monetary benefits more than what is approved. However, they can provide different kind of welfare facilities to research employees. These kind of facilities help career development and retention of research employees. The details of welfare facilities provided by few research institutes are given in Chapter 5 of this research study. About 80% research employees expressed that provision of welfare facilities may help in retention of research employees. This indicates that Research Institutes need to provide welfare facilities even though they are not insisting. This will also motivate research employees.

xiv. The most facility liked by almost all research employees is of flexible working hours. Research activities are 24X7 ongoing processes. Research Institutes work on all days 24X7 basis. It allows research employees to carry out research work at any point of time. It is observed that some research employees work upto late hours in the night. They require rest and sleep so they get up late in the morning. Unlike other services, it should not be made mandatory for them to come in time like other non-research employees. This will get de-motivated and it will affect their research work and thereby their career development. Employee satisfaction is more important in the research institutes because satisfied employees can do hard work in their research laboratory. Almost 92% research employees felt that flexible working hours satisfies them.

xv. It is interesting to see the data about institutional policies. Research employees do not want to comment openly about institutional policies about career development. They feel that the policy of institute’s priority about research facility is obvious rather than simply on the career development. Research employees understand that updating, up-grading research facilities indirectly help career development of research employees. They also find that institutional policies support career development and retention of research employees.
xvi. So far we have seen that research employees give importance to research work, job satisfaction, state-of-art research facilities, etc. But for paying more money to research employees to attract them in the research institutes, they (about 70%) have strongly agreed. This indicated that though they do not give importance to monetary benefits for themselves directly, they feel that there is a need for more money to research employees if research institute wants to attract them.

xvii. Periodic arrangements of Training and Development programmes are very much essential for research employees. Through this kind of programmes they get opportunities to enhance their knowledge, skill and information about their research work. Frequency of such arrangements needs to be increased in research institutes as it not only helps motivation of research employees but also in career development and retention of research employees.

xviii. It is found that majority of research employees (more than 70%) feel one of the most reasons why research employees leave research organizations is absence of better research facilities. It is very much essential for every research institute to have best state-of-art research facilities. Research Institutes which are unable to provide such facilities find themselves in ‘brain-drain’ situation. Sometimes they find lack of policy and procedure to provide advanced equipments, laptops to research employees which affect their retention programmes.

xix. About 56% of research employees feel that aspiration to go abroad for research is also one of the reasons why research employees leave research institutes. This is because the research institutes are not able to provide better research facilities within their research institutes. Research employees need best state of art research facility, its exposure, healthy working conditions, simplified procedures, etc. so that can enjoy their research work. In the absence of such things, research employees may make their mindset to go abroad for doing research.
xx. Research employees (53%) expressed that if facilities like campus accommodation, health cover, etc. are not provided still research employees leave research institutes. It is to be noted that now a days facilities like Housing and Medical are not luxurious but they have become need of time. Unless you make provision of such facilities, experienced and skilled research employees do not join and existing research employees try to find their job in other research institutes which are able to provide them. Institutes like NCRA, IUCAA, partially IITM are able to provide campus accommodation and medical coverage to research employees and it is found that the rate of research employee turnover is less.

xxi. In India, particularly the government policies and attitude towards fundamental of pure research was not notable. Due to this, it can be seen that no much of funding is being provided to research institutes. Even today funding of only 0.89% of the GDP is given to total research and development activities in the country. It is far less funding compared to many other developed countries like America, China, Japan, Korea, etc. There is a need to change this policy by linking the research work for the national development. 60% of research employees feel that research work should be linked to the national development so that research employees and their research work get national recognition.

xxii. Surprisingly, the reason for research employees leave for getting more money elsewhere is not acceptable to majority of research employees. They are either neutral or tending to agree or disagree. One hand they mention that they are more concerned about research work, job satisfaction, etc. but the other hand they are not able to opine firmly about this particular statement. This indicates that Research Employees may leave for getting better money.

6.3 Findings for Objective 1

i. Research Institutes provide or offer many facilities that are designed
with the aim to attract more research employees in their research institute. These programmes are different than the monetary benefits which they have to follow the government norms and procedure. However, every research institute is having autonomy to design other facilities including few monetary for attracting the talent. Such facilities include state of art research facility, flexible working hours, campus housing-accommodation, good medical facilities, update allowance, book grants, etc.

ii. It is observed that there are various factors attracting careers in research institutes. Majority of research employees came in research institutes are having common factors like academic interest, inspired by other researchers and passion to do research for the country. About 31.0% of respondents expressed that they have chosen research career because of their academic research.

iii. It is also found that there is more than one factor responsible for careers in the research institutes. The study found that only one respondent out of 142 indicated that more money attracts career in research institute. While all of them have responded that strong academic interest along with passion to do research for the country are main factors which attract careers in the research institutes. More than 17% respondents have also mentioned that they are inspired by other researchers.

iv. The study reveals that to attract careers in the research institutes, factors like necessity for strong academic interest, inspiration of other researchers and passion to do research for the country are very much essential.

v. It is found that the female research employees also feel that strong academic interest, passion to do research and inspiration by other researchers are the main factors influencing careers choice in the research institutes.
vi. About 69% respondents mentioned that to attract more careers in the research institutes, research employees need to be paid more monetary benefits.

vii. Research Employee’s Passion at Work Model:

Research Employees have expressed that they have passion to do research for the country. As mentioned by (By Drea Zigarmi, Dobie Houson, David Witt and Jim Diehl) in the Ken Blanchard Company\(^3\) in the following figure 6.3.1 that Further research allowed, The Ken Blanchard Companies to create a model of how Employee Work Passion is formed, a definition of what Employee Work Passion is, and a core set of factors that must be present in the organizational and job environment in order for Employee Work Passion to be optimized.

Harmonious passion: According to self-determination theory, some activities or pursuits are inherently enjoyable and interesting called intrinsic motivation. Other activities or pursuits may not be inherently enjoyable and interesting but, over time, become entrenched within the identity of individuals.\(^4\)

Similarly, research employees have passion to do research work for the country. They are more concerned about research work, job satisfaction, research facility, flexible working hours, recognition to their research work, etc. They are not prioritizing their goals with the money or monetary benefits.

---


4 Vallerand R. J. and Houlfort N (2203) Emerging perceptions on Values in Organisation – Passion at work towards a new conceptualisation (Page 175-204).
6.4 Findings for Objective 2

i. The existing Human Resource practices followed in the research institutes are inadequate to cope up the new challenges and circumstances like ‘brain-drain’. Research Institutes do not show interest in their attitude to change for the new era of research. In the name of government policies, which are true in some sense, research institute do not use their autonomy given for healthy research in the institute.

ii. The study found that Career Development of research employees
depends on their research work. So it is derived from the study that it is essential for any research employee to get research facilities to carry out their research which will lead to their career development.

iii. Research Institute should also create reputation about their research institute by producing more research work which is genuine and the whole world take note of it. Research Institute should have experienced faculty members in the institute to inspire other employees. Research Institute should also help research employees to get other facilities nearby their institute.

iv. It is observed that Research Institutes find it difficult to provide state-of-art research facilities due to unavailability of sufficient funds and procedural delay. It is revealed that the research institutes pay more attention to develop research facilities than career development of research employees. This creates difficulty in attracting and getting research employees. Also this has been one of the reasons for research employees to leave the research institute. Absence of state of research facilities and non-exposure to such facilities may result in research employees leaving the research institute.

v. It can be seen from the National Budget only 0.89% of total funding is provided for Scientific and Technological development, which is far less from the countries like America, China, Germany, etc. India has spent only 0.89% of her GNP on R&D during 2005-06 as compared to 0.70% in 1995-96 and the situation is not different till 2011.

vi. It is found after the study that Job Security is very much needed for research employee as their research work depends on job security. If the job security is not provided the research employees leave the institute and join somewhere else.

\[\text{http://www.nstmis-dst.org/rndstatistics%202007-2008/1.pdf}\]
vii. Research Institutes which are not providing housing and Medical facilities to research employees face difficulties to retain research employees in their research institutes. Research Employees have to devote their maximum time in their research work and hence they prefer housing facilities nearby their institutes. Medical facilities for themselves and for their families are equally important. Some research institutes do not provide Housing facilities. This results in non-joining of new employees in research institutes. If campus accommodation is provided then research employees concentrate more on research work.

viii. More than 80% respondents felt that Provision of welfare facilities help retention of research employees in the research Institutes. Research Institutes have to provide recreation facilities, sports activities, etc. for entertainment so that research employees get some change and they get motivated.

ix. Due to government policies and bureaucratic procedure, the research institutes find difficulties in organizing more conferences and seminars where research employees can share their knowledge and research work. This kind of non-monetary recognition results in motivation and job satisfaction of research employees.

x. Research employees felt that institute policies which required support for career development needs to be redesigned. They are to be given contingency grants more to buy extra devices which are not allowed in the prescribed procedure. This will help them to do speedy research work.

xi. Research Institutes are not organizing Training and Developments programmes frequently because they feel that it takes lot of time of research employees. However, research employees felt that it is essential to have training and development programmes frequently for them to understand new techniques in research so that they can adapt
and also which will help them for their career development.

xii. About 93% respondents felt that flexible working hours satisfy them. This is one of the best human resource practice followed in all research institutes that they allow flexible working hours.

xiii. About 58% respondents felt that research work should be linked to the national development so that there is a social relationship between research employees and the society in all.

6.5 Findings for Objective 3

i. The secondary data obtained from the research institutes revealed that research employees are paid monthly benefits as per the government rules as these institutes are the autonomous bodies under various departments of the Government of India and they have to follow the government procedure for salary. They cannot increase arbitrarily. The details about monetary and non-monetary aspects have been described in Chapter 5 under Data Analysis for Objective 3.

ii. However, they have certain privileges for providing financial assistance such as Book Grant, Update Allowance, and Performance Related Incentive Scheme (PRIS).

iii. Research Employees are deputed to various seminars, conferences to demonstrate their research work and get recognition. Due to financial constraints research institute are not able to send research employees more often to outside India even sharing their research with international community.

iv. 21.83% respondents disagreed and 36.62% respondents disagreed for giving importance to salary more than research work. More than 57% respondents felt that research work is more important than salary.
About 33% respondents were neutral. Only about 10% were in the agreement for giving importance to salary. Research employees in the autonomous research institutes in India get reasonable less salary or monetary benefits compared to the salary of research employees working in NASA or NRAO. NASA scientists receive their pay through 15 grade levels to account for differences in education and experience. Each grade contains 10 steps, representing increases within each grade. Although grade levels start at GS-1, scientists with bachelor’s degrees and no experience enter at GS-7, with basic compensation ranging from $33,979 to $44,176 annually. Holders of doctorate degrees with no experience enter at GS-11, with salaries ranging from $50,287 to $65,371. The highest GS-15 level boasts pay that goes from $99,628 to $129,517. As against this, Fresh Scientist in India get monthly salary from Rs. 25000-35000 (Average annual salary Rs. 3,60,000/- in $ 6000) and experienced Indian Scientist get monthly salary of Rs. 38000 – 90000/- (Annual salary of Rs. 12,00,000/- in $20000) which is very less than the NASA Scientist. However, they are satisfied with their job and research work in their institutes. But it is also true that Research Employees are getting very less salary compared to other equally talented employees working in corporate or IT sector.

v. Research Employees like Prof. J. V. Narlikar, Prof. GovindSwarup, Prof. P. C. Ray and many more have worked without any ambition of name and fame but with a passion to do research for the country and the world as whole.

vi. In the study, it is found that Research Employees are more concerned about their research work. They feel that research work is more important than salary. They are satisfied with the salary paid to them and they never compare their work with the money aspect. However, 

the study also indicated that fewer research employees felt that salary part is also equally important along with research work. The research employees working in such research institutes are paid lesser salary than those people working in other private organizations but having similar education. This gives a scope to evaluate that research employee needs to be paid more for their research work which is important not only from the national point of view but also from an international one.

vii. 25.35% respondents strongly disagreed and 57.75% disagreed for the statement that monetary benefits are more important than job satisfaction.

viii. The study revealed that research employees give importance to job satisfaction more than monetary allowances. Their research work gives them more satisfaction than monetary benefits. They continue in their research area and try to discover new things and also share their knowledge with across the scientific community. This kind of their work gives more satisfaction. They feel happy if their research work gets recognition.

ix. About 51% respondents felt that non-monetary recognition to their research work is more important than monetary allowances.

6.6 Findings for Objective 4

i. The study could find that tough not significantly but there is a slight difference in thinking of male and female research employees about career development and retention in the research institutes. However, in cases of importance of research work more than monetary benefits, the female research employees are more focused on research work and male research employees are neutral.

ii. For all other statements, the central tendency of the data shows almost
closer to each other. This indicates that both male and female research employees are of the same opinion about many of the inputs of the questionnaire.

iii. This study found that on the statement whether salary is more important than research work, female employees have significant difference and gave their importance to research work while male employees are tending towards neutral. Mode values support this. This indicates that compared to female employees male employees are tending towards money oriented approach or wants to be neutral.

6.7 Findings for Objective 5

i. 50.70% respondents felt that if the job security is not provided then research employees leave the Institutes. While 24% are neutral to this. 25.30% felt that for doing research work there is no need for job security. It is found after the study that Job Security is very much needed for research employee as their research work depends on job security. If the job security is not provided the research employees leave the institute and join somewhere else.

ii. The interview with senior research employees also revealed that some time job security may lead into mediocrity and this is a notable outcome of the study.

iii. About 69% respondents felt that research employees leave research institutes because they get better research facilities elsewhere and most of the time it is outside India. It is necessary to create state-of-art research facilities for helping research employees’ retention and to avoid brain-drain.

iv. Research employees need to concentrate on their research work which is continuous process. Even they have family, they spend more time on their research activities. But as a human being they also get disturbed if
there is any intervention because of family problems. Having housing facility near to research place and medical facility to their dependents help retaining such talented manpower in the institutes.

v. About 54% respondents felt that if facilities like housing and medical are not provided, they leave the organizations. Of course, about 30% are neutral for this.

vi. It is also found that research employees aspire to go abroad for doing research work. This is also one of the reasons for research employees leaving the organization.

vii. One of the most significant outcome of this study is that research employees are in dual mindset on leaving the job for better money. 36% respondents felt that research employee leave the institute for better monetary benefits, 41% are neutral and about 24% respondents do not agree for this.

6.8 Findings for Hypotheses

6.8.1 Findings for Hypothesis 1

i. Hypothesis testing proved that Research Employees are more concerned about their research work and give importance to research work more than salary kind of benefits. The hypothesis one is ‘Research Employees feel that salary is more important than research work’ and the hypothesis is rejected. This means that research employees rather feel research work is more important than salary kind of benefits.

ii. As described earlier, research employees concentrate on their research work. They get job satisfaction out of their research work. It is also found that their career development depends of the research work of research employee him/herself.
iii. More than 58% of research employees felt that they are concerned about research work. Research employees think that research work is more important. They like to continue their research activities all the time.

6.8.2 Findings for Hypothesis 2

i. Research Employees feel that career development depends on research work and the more research work they do it results in their career growth.

ii. 80% of research employees strongly felt that their career development depends on the research work that they carry out in the research institutes. They try to enhance their research activities to the next level. They try to explore new things to support or advance their research work. It is highlighted that research work is necessary for career development rather career development depends of research work.

iii. The hypothesis two is that ‘Career Development does not depend on research work’ which is rejected. This means that research employees feel that their career development depends of their research work.

6.8.3 Findings for Hypothesis 3

i. Research Employees strongly felt that Absence of research facility affects the career development and retention and they need better state-of-art research facilities to carry out research work. The hypothesis three is ‘Absence of research facilities does not affect career development and retention of research employees’ which is rejected.
ii. There is a very strong relationship between state-of-art research facilities and career development of research employees. Absence of research facility affects career development of research employees. The data revealed (90% of research employees) that if state-of-art research facilities are not provided, research employees try to leave the job and join other research organizations that provide the same.

iii. Having very good research facilities, state-of-art technology is not useful unless its exposure is given to research employees. About 75% research employees expressed that exposure to research facilities is more important than monetary benefits. One important finding is coming frequently that research employees prefer research facilities, its exposure, research work rather than simply monetary benefits.

6.8.4 Findings for Hypothesis 4

i. Research Employees feel that non-monetary recognition to their research work results in employee satisfaction. The hypothesis four is ‘Non-monetary recognition to research work satisfies research employees’. This hypotheses is accepted.

ii. About Recognition⁷, individuals are oftentimes motivated through recognition. When their accomplishments are recognized by others, they feel encouraged. It’s important for a research institutes or leader to make sure that recognition is distinguished from competition. With recognition it's important to avoid comparing one employee's achievements to those of others, as might occur

---

iii. Notwithstanding that money is the most important motivational factor and so are the plans, using money incentives, bonus and the wages linked with productivity etc. are designed in order that the employees may be motivated to work more efficiently, yet there are some other motivational factors that can bring positive results in the personal development of the employees as well as in the organizational environment. (K.A. Fareed - Fareed Siddiqui)

### 6.9 New models proposed after the study

After analyzing the data and going through the findings, researcher would like to propose new models that have converged after the study. There are three models

i. **Model of Research Employee’s Passion for Research**: This model describes about passion of research employees to do research work for the country without too much concerned about money or monetary benefits.

ii. **Intra-dependent Model of career development and retention of research employees**: This model illustrates factors which are required or rather essential for career development and retention of research employees in the research institutes.

iii. **Dependency Model of Research Institutes**: This model keeps informed about how much dependency of any research institute is on the government for funding and overall development.
6.9.1.1 From the study, a new Model of Research Employee’s Passion for Research is converged as shown below in Figure 6.2.

Figure 6.2: Research Employee’s passion for Research – Model
6.9.1.2 Figure 6.3 shows the Intra-dependent relationship model for career development and retention of research employee. The details are already described above.

Figure 6.3: Intra-dependent relationship model of career development of research employee
6.9.1.3 Figure 6.4 shows the Intra-dependent relationship model for research institutes on government funding and thereby career development and retention of research employee. The details are already described above.

Figure 6.4 Dependency model for Research Institutes
6.10 Suggestions and Recommendations:

6.10.1 Suggestions for the Government and Departments:

i. Need to increase overall funding in annual budget and making money available to the autonomous institutes. Presently the Government of India is spending only 0.89% of the total GDP on Research and Development (R&D) activities in the country. This funding is far less and inadequate compared to other countries like China, Japan, Korea, United Kingdom, America, etc. There was already discussion and the Prime Minister of India had mentioned in his speech in the 97th Indian Science Congress that there is need to increase the R&D budget up to 2% of the GDP. The Government has to think it very seriously about this and they should increase this budget. The overall 2% increase, though it is not sufficient, but will provide good amount of support to this sector.

ii. The increased budget money will boost the R&D sector and will help in creating more research institutions, research facilities and technological laboratories in the country. This study has revealed that advanced research facilities help in career development and retention of research employees and thereby overall development of research institutes.

iii. The government funding is essential for constructing new buildings with new and modern designs, advanced testing centers, communication labs, testing labs, etc. which will help research employees to take up careers in such institutes.

iv. The government funding is required to provide financial support for buying advanced laptops, up-to-date electronic gadgets, speedy internet facility, making Wi Fi campus, etc. Now days these requirements are kind of basic and no more luxuries. In absence of these, research institutes will find difficult to attract new talented research employees.
v. The Government funding is equally important for construction of housing complex inside or near to the research institute. Campus accommodation facility is very much essential and important for research employees. This helps them to devote more time on their research activities as they do not have to commute from any other place.

vi. The government funding is also important for creating welfare facilities in research institutes. This also is the factor helps in retention of research employees in research institute. Creating recreational facilities help research employees keep themselves physically and mentally fit for continuous research process.

vii. The government funding is also need for making provisions for deputation of research employees to national or international workshops and conferences.

viii. The government funding is required for organizing national or international meetings, conferences or workshops. Both the above points are very much essential

ix. To strengthen the R&D activities, the government had given autonomy so that authorities in research institutes can smoothly carry out their day-to-day operations without any hurdles. However, it has been indicated by all research institutions that there is increased intervention of bureaucracy in the research institutes. The government should try to avoid direct or indirect unnecessary interventions in such autonomous research institutes. However, they can keep some council to monitor activities of such research institutes. Bureaucratic procedures are very stringent and some Bureaucrats may not understand importance of requirements of research institutes, so they cause delay in sending sanctions. This result in delay in procurements of research equipments, other materials, etc. thereby causing delay in overall research activities. It is also indicated that this kind of intervention de-motivate even the authorities of research institute and they lose their interest in pursuing the matter with the government.
6.10.2 Suggestions for Research Institutes

i. Research Institutes should focus on creating and developing state-of-art research facilities so that they can attract more research employees. After creations of such facilities, research institutes should give exposure to all its research employees.

ii. Research Institute should plan arrangements to make housing facility inside or near to their research laboratory. This facility helps research employees to spend more time on their research activities. This is required particularly in cases where research institutes are having their research labs away from city.

iii. Research Institutes should provide well equipped laboratory having advanced equipments, updated library and digital library, electronic gadgets, to research employees so that they find it easy during their working time. These things are essential requirements to carry out their research. This will motivate research employees and also help in career development and retention.

iv. The research institute should provide healthy working conditions in the institute. They should try to provide ventilated and illuminated separate office rooms and labs for every research employee.

v. The research institute should provide welfare facilities like canteen serving healthy food, recreation, health cover – medical facility, etc. The study found that provision of welfare facilities may help retention of research employees.

vi. The most important for every research institutes is to provide job security. It is found that research work depends on job security and career development depends on research work. Hence job security is also essential for career development. If job security is not provided research
employees leave such organizations. Therefore, to retain research employees in research institutes, job security should be provided.

vii. At the same time, research institute should ensure through a system or mechanism that job security does not lead to mediocrity.

viii. Research Institutes should organize various kinds of useful training and development programmes from time to time. These programmes motivate research employees. Also these programmes will help research employees to enhance their knowledge and skill.

ix. As described earlier, recognition to research work is very much important. It is not necessary that such recognition is monetary. Even non-monetary recognitions satisfy research employees. Research Institute should define prescribed procedure for such kind of activity in such a way that no research employee is missed out and everybody gets a chance to present his research.

x. Organization of workshops, seminars, schools, etc. is important for research employee to share their research work with other researchers. This activity helps them to understand their topic of research better and if there is any improvement is required they can do it in time. Research Institute should organize such programmes frequently and motivate and encourage research employees.

xi. Research Institutes should retain well talented and experienced research employees to guide new research employees so that there is a chance of attracting new employees in the institutes.

xii. Research Institutes should try to depute their research employees to national or international conferences officially by making provisions of funds. Research employees participating in such conferences get chance to share their research at international level and also get benefit of other researchers.
xiii. Research Institute should effectively design their career development and retention programmes and review them periodically. Well notified promotion norms with skill and knowledge based criteria, well targeted career path, opportunities to grow within the organization, etc. are to be defined in the open policy document. This will help attracting new talent in the institutes.

xiv. The concerned of the government departments is utilization of money in improper way. Research Institute should ensure that they use their money judiciously and for the proper cause for which they have got the funds. The autonomy given should not be misused.

xv. Research Institute should organize public talks and share their information, research work with general public so that they are aware of its activities and get cooperation.

6.10.3 Suggestions for research employees:

i. The government tries to support as much as possible to the research organizations for their R&D activities. The autonomy given is for research and development activities for the benefit of the country and the whole community. They have to understand these circumstances and not leave such research organizations.

ii. If job security is provided, research employees should ensure that there is no mediocrity. They should continue their research work with the same zeal and enthusiasm.

iii. Research employees should not misuse the facilities provided for their personal purpose as they have to understand that it has been provided using tax payers money.
6.11 Conclusions:

This chapter is the fruitful outcome of this study. We came to know the detailed findings based on analysis of data which was statistically worked out in Chapter 5 for all the questions answered by research employees and successfully testing of hypotheses. Based on the suggestions, researcher tried to make few recommendations to the Government of India related to funding and avoiding intervention of too much of bureaucracy. Suggestions have been also given to the research institutes for overall development and creation of facilities as well as to research employees to be judicious while using resources. Following are the main points for conclusions:

i. Government need to provide adequate funding to research institute and also avoid too much micro management by involving bureaucratic procedures as most of the bureaucrats do not understand the functioning of research institutes.

ii. Research Employees need state of art research facilities and its exposure, campus housing facility, medical facility, so that they concentrate on their research work which is essential for their career development and retention.

iii. Job security, flexible working hours, provision of welfare facility, training and development programmes are to be improved for career development and retention of research employees.

iv. Importantly, the study revealed that research employees are more concerned about their research work than monetary benefits. They have passion to carry out research for the country.

v. New three models (given at Sr. No. 6.9 above) have been converged after this study.