

Effect of Formal Mentoring on the Subjective Measures of Performance in IT Industry in India.

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This study is a part of the PhD. work titled 'Mentoring as a tool of performance of management in an Industry'. This study focuses on the effect of formal mentoring programs on the performance of an individual in an organization in comparison to its effect on the performance of a non-mentored individual. The performance measures considered are subjective measure of salary increment & promotion and other career benefits. The research results indicated that protégés were more satisfied with the career outcomes than non mentored employees. The findings may be considered by Human Resource Department when deciding on various developmental interventions to be introduced in an organization.

Keyword: Subjective measures of performance, Mentoring and performance

1.1 Introduction

The concept of mentoring is an ancient one. It started as a concept of a fatherly figure that protected and guided you to a more professional relationship in current times. The earliest reference to the concept of mentoring can be traced to Homer's *The Odyssey*. King Odysseus, King of Ithaca, before embarking on a long journey to fight the battle of Troy entrusted his friend Mentor with the duty to prepare his son Telemachus as future king (traditionally dated 1193 BC-1183 BC). The job of Mentor was to oversee Odysseus' estate and to train and prepare Telemachus for adulthood. The interest in mentoring in modern times had been aroused because of the baby boomers nearing retirement. Studies in mentoring have not been restricted to any specific field it has used for development of students, leaders and professional progress. The construct began with a dyadic relationship moving to a concept of multiple mentors. The concept of mentor has also evolved from the traditional senior person to include a peer mentoring the protégé on some issues to an immediate supervisor to long distance mentoring relationship with a mentor with the advent of technology. In addition the mentor may be from within organization or even outside.

Research studies have indicated various benefits of mentoring accrued to the employees and organization. Mentoring has helped in increasing job satisfaction, reducing actual turnover of employees and intentions to leave to name a few. Various factor like gender, age and socioeconomic background of the protégé, work involvement etc all affect the mentoring relationship. Mentoring

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has been found to benefit women in organization to progress and break the glass ceiling. The functions of the mentor in a mentoring relationship are to provide support to the protégé in terms of coaching, protection, sponsorship to visibility in order to aid the career progress of the protégé. In short the mentor provides career and psychosocial support. Many factors determine the success of the mentoring program. Factors like characteristics of protégé, characteristics of mentor, duration of the mentoring program all have been found to affect the success of the program. Mentoring has positive as well as negative effects. It is this counterproductive effect that needs to be taken care of by the organization while designing the mentoring program.

1.2 Literature review

The traditional idea of mentoring relationships that is most frequently studied by researchers was first defined by Levinson et al. (1978, 1996) who methodically studied men as they progressed through life as adults. Levinson et al. was able to conclude that mentor played a very important role in a young adult man's life as he matured into an adult trying to achieve his goals (1978). Kram's work followed later where she studied the functions and phases of relationships; she stressed a lot on the importance of mentoring. Kram's (1985) early research on "mentoring dyads" concluded that individuals may receive support and be dependent on not one but many developmental relationships which she termed a set or "constellation" that include a traditional mentoring relationship as well as other unconventional mentoring relationships like peer relationships. According to her, individuals have "multiple people" in their career span. Kathy Kram states that an individual while progressing vertically in an organization, may also make lateral entry into a different organization when he changes his job wherein he comes across multiple mentors who guide him at different time periods hence, the concept of developmental networks. The protégé may have a formal mentor and additional mentors who may be informal mentors during the same period of time mentoring him on other functions. Kram suggested that "individuals at times have more than one mentor and that not all of the mentors will be from within the organization". This stand was also supported by other researchers, which they termed as "Network Mentoring". Kram (1983) described two dimensions of mentoring "1) Developmental functions and 2) Psychosocial functions". Developmental/ Career functions include all the support needed for the career progress/ advancement and upward mobility of the protégé. These functions included "nominating the protégé for projects, career mobility in terms of lateral moves, and promotions (sponsorship); providing work to increase visibility to organizational decision makers, providing feedback, future opportunities, sharing ideas, and suggesting strategies to complete work objectives (coaching); reducing unnecessary risks that might threaten the protégé's reputation (protection)", Noe (1988). Rigsby et al., (1998) mentions that "the psychosocial function aids employees to develop a connect with the organization and a feeling of self-assurance and competence in the job". Psychosocial functions principally referred to activities needed to balance work and social/family life. Psychosocial functions "enhance the protégé's sense of competence, identity, and work-role effectiveness". The third functional area of role modeling was added to the concept of mentoring by Scandura & Ragins (1993). In some researches this is considered distinct from psychosocial support.

1.3 Gaps in Research

The aim of this research is to study the implications of formal mentoring on performance within the software development industry. The industry of choice has been Information Technology as this is an industry where technological changes are very rapid, every year there are many new developments happening and it makes it essential for the employees to up-skill themselves regularly. Secondly, there are hardly any studies linking mentoring to job performance, it is essential to study the same. There is also a lack of literature in Indian context. Most of the studies have been conducted in different countries. Studying mentoring in the Indian context will give us a better understanding of how subjective measures of job performance is affected when mentored.

1.4 Rationale

The significance of the study is in the examination of the relationship between formal mentoring and the effects on job performance. As it has been widely acknowledged that there is abundance of manpower but there is dearth of skilled manpower, organizations are increasingly looking towards formal mentoring as one of the strategies of developing human resource.

1.5 Question Raised

Looking at the discussion above following sequences of questions come to the fore:

1. Is there a relationship between formal mentoring and job performance?

1.6 Research Objectives

The purpose of this study was to understand the effect of mentoring on job performance of the individuals in an organization. How does mentoring affect the subjective measures of job performance? The study addressed the following research objectives:

1. To compare the job performance outcomes of mentored individuals to non-mentored individuals in corporate in terms of:
 - a. Subjective measures of career satisfaction of mentored and non mentored employees

1.7 Operational Definitions

Mentoring

Mentoring is offering of wise and reliable advice, information, guidance by a person who has more and useful skills, expertise and experience in a related field for the growth of another individual, both, personally and professionally.

Mentor

For the purpose of this research mentor has been defined as an individual with at least three years of related experience in the organization and capable of providing trust worthy advice to his protégé.

Protégé /Mentee

Protégé is an individual who has recently joined the organization and requires guidance to perform his job successfully.

Job Performance/Performance

Job performance is the ability of the individual to complete his work successfully as per the standards set by the organization.

1.8 Methodology

1.8.1. Type of Study

The type of study chosen for this research is quantitative. Here the study is trying to determine the relationship between mentoring and job performance amongst IT professional.

1.8.2 Type of Research Design

The research is a descriptive study to understand if there exists a relationship between the two variables of mentoring and job performance (subjective measures in this research paper). We are trying to describe the relationship between the variables. Data was collected from two groups, mentored employees and non mentored employees. There was no pre-test administered. It was purely based on the recollection of the interviewee. Both, pre and post ratings have been collected after the phenomenon of mentoring has occurred. The hypothesized cause and effect have both occurred and are studied in retrospective effect. It is an attempt to identify cause and effect relationship after they have occurred.

1.9 Sampling Plan

1.9.1 Population

Information Technology industry was selected for the study. Information technology comprises designing, developing, implementing and management of computer based information system. It includes software and hardware. The reasons for choosing Information technology are many. First, IT companies are human intensive; there is a great stress on developing these resources in order to have a competitive advantage and mentoring has in the past been confirmed as a tool of professional development. Second, the contribution of IT and ITES together to GDP has increased dramatically. This would indicate that new joiners would need to be trained to deliver which would be possible only if there is knowledge transfer from the more experienced persons to the newcomers in order to improve job performance.

1.9.2 Sampling Frame

75 Indian IT companies allowed the researcher to collect data from their employees. 46 organizations had mentoring program and 29 organizations did not have mentoring program.

1.9.3 Sampling Design

List of IT firms was compiled from the internet and NASSCOM. The Human Resource department was contacted to find out if the organizations had formal mentoring program. Professional network of people were utilized to expand the list of organization. Companies were then contacted through telephone and e-mail. Companies that granted permission were then contacted and the researcher then spoke to the human resource department managers to find out if the organisation supported formal mentoring programs, those of them who had a mentoring program in place were then requested to intimate the team leaders to get their team members to participate in the survey. Companies with formal mentoring programs of more than 3 years were than selected. This was done to ensure that the program was being run successfully. Some companies had non-functional phone numbers or invalid email id and hence could not be contacted. Permission was sought from human resource managers or heads of departments. They in turn sought permission from the head offices. Protégés and non mentored employees were software engineers with varied years of experience The researcher then met the team leaders at the work places or their residences or conversed with them over the telephone to brief them about the survey and explain the objectives behind the entire exercise. The links were then mailed to the team leaders or printed copies of the copies were handed over to them. In some cases links were sent to the personal mail-ids of the members as the security systems did not allow the employees to access any outside links. In case the companies did not support the program of formal mentoring, links of questionnaire for the non-mentored employees were sent. Any duplicate response was removed. Some organizations declined as they considered the information of their mentoring program to be confidential material and it was against their organisational policies to allow external agencies to conduct surveys on their premises. Other IT organisation not supporting mentoring programs were also contacted for data of non mentored employees. 75 organisations across the country allowed the researcher to conduct the study, questionnaires were made available online to maintain privacy. At times links were sent to personal ids if the links were not accessible due to firewalls. The questionnaires were also distributed to employees through their team leaders where the link could not be opened due to security firewalls. The sample size was 300 employees. The study examined two sets of employees i.e. study the job performance of 150 employees who are being mentored as against the 150 non-mentored employees. The table summarises the research methodology ((Insert table 1.1 about here)).

1.9.4 Sample Units

- mentored employee
- non-mentored employee

1.10 Methods of Study

1.10.1 Questionnaires

Questionnaires were used to collect data from the sample as the protégé questionnaire was a modified version of Mentoring Function scale for protégés (Noe, 1988). Data was collected using questionnaire method. The first questionnaire was administered among the employees (protégé) of these organizations. It was a self-administered questionnaire. The protégé participants were already

enrolled in the formal mentoring program offered by the organization that they worked for. The first part of questionnaire for mentored and non mentored employee contained questions on general information and demographics like age, gender, tenure in the organization, designation and educational qualification. Measures that were used for job performances were a) objective and b) subjective. Objective measures included salary increment and promotions. Subjective measures included employee satisfaction with salary, promotions, recognition and other benefits (this is discussed in the current research paper). These were measured through self reported questionnaires on a 5 point Likert scale with (0) to a very slight extent and (4) to a very large extent. Subjective measures were the satisfaction perception of the employee with respect to increment in salary, promotions received, recognition received and benefits received respectively. The second data collection method involved administration of questionnaire to non-mentored individuals. The organizations selected were ones where mentoring (informal/formal) was absent. The questionnaire tried to study the subjective measures of job performance. Data was collected from organisation from 12 cities across the country. Respondents were hailed from cities of Mumbai, Pune, Chennai, Bangalore, Mysore, Ernakulam, Bhubaneswar, Hyderabad, Delhi, Noida and Gurgaon, Belur etc.

1.10.2 Reliability Testing

Reliability testing of the data was carried out for the data collected. The Cronbach alpha value for mentored employee's data with 58 items was 0.904. The Cronbach alpha value for non-mentored employee's data with 11 items was 0.759.

1.10.3 Data Analysis

Data was analyzed with a view to determine the positive effect of mentoring on job performance. Hypothesis testing was carried out to see the relationship between mentoring and job performance. Rejection of null hypothesis was the statistical significance at the $p < 0.5$ level of probability

1.10.4 Hypothesis

Hypothesis testing was done on 2 datasets to check whether the mentoring program helped to enhance job performance

Hypotheses testing for subjective measures of job performance.

Proposition 1: Satisfaction in terms of promotion perceived by protégé is higher than non-mentored employees.

Proposition 2: Satisfaction in terms of salary increment perceived by protégé is higher than non-mentored employees.

Proposition 3: Satisfaction in terms of corporate recognition perceived by protégé is higher than non-mentored employees.

Proposition 4: Satisfaction in terms of corporate benefits perceived by protégé is higher than non-mentored employees.

The subjective terms measure the satisfaction perceived by mentored and non mentored employees in terms promotions, salary increments, recognition and benefits received by the mentored and the non mentored employees. The hypothesis testing seeks to understand whether the satisfaction levels perceived by the two groups are at the same level or the mentored employees perceive a higher level of satisfaction. If the perception of the mentored employee turns out to be higher, then this result may lead to improvement of related outcomes like retention of employee, better task performance, better contextual performance, greater motivation to perform etc.

1.11 Assumptions

The study should be viewed in terms of some assumptions and limitations. The population sampled was organizations based in India that had formal mentoring programs in place. The sample was limited to only 75 companies from among the many Indian IT organizations. Assumptions included:

- (i) Persons with similar understanding about the organization would complete the survey.
- (ii) The respondents have answered the questions truly, correctly and objectively.
- (iii) The sample is representative of the population.

1.12 Limitations

The study utilized a self-report survey, from protégée and a separate evaluation about the protégé from the mentor which could be a cause for bias. Another limitation of this study was that the many questionnaires in the survey were distributed and responses gathered using the internet and team leaders. In some organizations due to firewall security questionnaires were handed over to the team leaders who further distributed them to the employees. Due to this there could be a fear in the minds of the protégés to give favorable response about the mentoring as the team leaders were requesting them to respond to the questionnaire. Ideally it would have been beneficial to go through the appraisal form in order to design the mentor questionnaire. This would have given a better insight about the parameters that are judged during appraisal. Use of internet was considered due to the researcher's limited resources and the cost savings of gathering data about large populations. Another limitation was that not all organizations were keen to share the information as they considered this as proprietary information. This research does not consider the role of other non personal interventions like training and its effect on job performance. This may add an element of bias while measuring job performance especially in the case of non mentored employees.

1.13 Data Analysis

1.13.1 Hypotheses Testing

Before analyzing the questionnaire responses by protégés and non-mentored employees, it was decided to check both set of data to see if employees have been selected from the same population in a random fashion. The statistical tests on demographics are supported as below.

i) *Kolmogorov-Smirnov test for normality:*

To test H₀: Protégés' and non-mentored employees' age follow the normal distribution

Against H1: Protégés' and non-mentored employees' age do not follow the normal distribution

Conclusion: Since p-value reported by test is $0.01 < 0.05$, hence we can conclude that both set of employees may not follow the normal distribution. From the above test it is observed that at $\alpha = 0.05$ the p value is less than the 0.05. Hence the null hypothesis is rejected that means the two set of data do not follow a normal distribution.

- ii) The Shapiro-Wilk values for protégé and non mentored employees also indicated that $p=0$, this was done as the sample size was less than 3000. Even here the $p < 0.05$ the null hypothesis stands rejected. Hence the same conclusion.

iii) F-test:

To test H0: Population variances for age of protégés and non-mentored employees are equal

Against H1: Population variances for age of protégés' and non-mentored employees are not equal

Conclusion: The value of p is 0.609 at $df=149$. Since p-value is > 0.05 , accept H0. Hence population variances are equal. At $\alpha=0.05$ the null hypothesis is accepted. That means there is enough evidence to say that population variances are equal at 95% confidence level.

iv) Two sample t-test (assuming equal variances):

To test H0: Protégé and non-mentored employees belong to the same population based on age

Against H1: Protégé and non-mentored employees belong to different populations based on age

Conclusion: We take the t value of 1.7071 and df is 298. Since p-value (0.089) is $\alpha=0.05$ at $\alpha = 0.05$ we accept H0. Hence both set of employees may belong to same population based on age at 95% confidence level. When the data was tested for normality, it was found that data did not follow normal distribution. Hence we follow non parametric tests for testing data.

v) Mann-Whitney test:

To test H0: Protégé and non-mentored employees belong to the same population based on age

Against H1: Protégé and non-mentored employees belong to different populations based on age

Conclusion: The p value is 0.052 at $\alpha = 0.05$. Since p-value is > 0.05 , accept H0. Hence both set of employees may belong to same population based on age. The below mentioned data was analyzed using standard two –sample t test.

1.13.2 Hypotheses testing was done for subjective measure of performance.

- 1) To test H0: Protégé and non-mentored employees belong to the same population based on service against H1: Protégé and non-mentored employees belong to different populations based on service

Conclusion: The value of t is -1.11 at $df = 289$. The p value is 0.2679 at $\alpha=0.05$. Since p-value is > 0.05 , accept H0. Hence both set of employees may belong to same population based on service at 95% confidence level.

- 2) To test H0: Protégé and non-mentored employees belong to the same population based on educational qualification against H1: Protégé and non-mentored employees belong to different populations based on educational qualification

Conclusion: The value of p is 0.014 at $df = 298$ and $t = 2.4698$. Since p-value is < 0.05 , at $\alpha = 0.05$ reject H_0 . Hence both set of employees may not belong to same population based on educational qualification.

- 3) To test H_0 : Protégé and non-mentored employees belong to the same population based on gender against H_1 : Protégé and non-mentored employees belong to different populations based on gender

Conclusion: The value of p is 0.613 at $df = 298$ and $t = 0.558$. Since p-value is > 0.05 , at $\alpha = 0.05$ accept H_0 . Hence both set of employees may belong to same population based on gender.

1.13.3 Testing of hypothesis for subjective measures of protégés' and non-mentored employees' questionnaire responses Statistical tests comparing subjective measures of performance are given below.

- 1) To test H_0 : Satisfaction in terms of promotion perceived by protégé and non-mentored employees is at the same level against H_1 : Protégés perceive higher satisfaction in terms of promotion than non-mentored employees

Conclusion: The value of p is 0 at $df = 298$ and $t = 5.2487$. Since p-value is < 0.05 , at $\alpha = 0.05$ reject H_0 . Protégés may perceive higher satisfaction in terms of promotion than non-mentored employees.

- 2) To test H_0 : Satisfaction in terms of salary increment perceived by protégé and non-mentored employees is at same level against H_1 : Protégés perceive higher satisfaction in terms of salary increment than non-mentored employees

Conclusion: The value of p is 0.004 at $df = 298$ and $t = 2.6622$. Since p-value is < 0.05 , reject H_0 . Protégés may perceive higher satisfaction in terms of salary increment than non-mentored employees.

- 3) To test H_0 : Satisfaction in terms of corporate recognition perceived by protégé and non-mentored employees is at same level against H_1 : Protégés perceive higher satisfaction in terms of corporate recognition than non-mentored employees

Conclusion: The value of p is 0 at $df = 298$ and $t = 5.439$. Since p-value is < 0.05 , reject H_0 . Protégés may perceive higher satisfaction in terms of corporate recognition than non-mentored employees.

- 4) To test H_0 : Satisfaction in terms of corporate benefits perceived by protégé and non-mentored employees is at same level against H_1 : Protégés perceive higher satisfaction in terms of corporate benefits than non-mentored employees

Conclusion: The value of p is 0 at $df = 298$ and $t = 5.4081$. Since p-value is < 0.05 , reject H_0 . Protégés may perceive higher satisfaction in terms of corporate benefits than non-mentored employees.

The results of the study indicated that the protégés perceived a higher level of satisfaction with promotions, salary increment, corporate recognition and corporate benefits than non mentored employees.

1.13.1 Subjective measures of job performance of protégés and non mentored employees (responses collected from the two groups)

Mentored employees or protégés and non mentored employees

1. Satisfaction measures: Promotion, Salary Increment, Recognition and Benefits

When questioned on the perceived satisfaction level in terms of promotion. Maximum number of protégés agreed that they were satisfied to some extent (Insert fig. 1.1 about here). The above figure also illustrates that the non mentored employees appear to be satisfied to some extent in terms of promotions.

In terms of perceived satisfaction levels in terms of salary increment, maximum protégés felt satisfied to some extent followed by small extent (Insert fig. 1.2 about here). The figure also illustrates that the non mentored employees are satisfied to a small extent in terms of salary increment.

The above figure illustrates the satisfaction level in terms of recognition awarded by the management in an organization. Protégés were satisfied to some extent in terms of recognition given by the management in the organisation (Insert fig. 1.3 about here). The figure indicates that the non mentored employees are satisfied to a small extent and an equal number appears to be satisfied to some extent.

In terms of benefits given by the management in the organization, the protégés were satisfied to some extent (Insert fig. 1.4 about here). The above figure indicates that the non mentored employees are satisfied to a small extent in terms of benefits given by the management in an organization.

When the figures of non mentored employees are compared to the figures of protégés it is observed that the mentored employees appear to be satisfied to a greater extent in terms of benefits and salary increments. Overall the higher number of protégés' appears to be satisfied than non-mentored. That may mean that mentoring appears to influence the perception of employees regarding their satisfaction levels.

8.4 Conclusions

The results of the study indicated that protégés perceived a higher level of satisfaction with promotions and salary increment than non mentored employees. This may in turn lead to improvement of related outcomes like retention of employee, better task performance, better contextual performance, greater motivation to perform etc. Further research may be conducted to understand the mediating effect of other developmental interactions on the relationship of mentoring and performance.

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Table 1.1 Summary Table of Research Methodology

Research Type	Quantitative
Research Design	Descriptive
Tool	Questionnaire
Population	IT firms in India
Sampling Frame	75 Indian IT Companies
Sample Design	Purposive for IT firms
Selection of Respondent	Self selected
Sampling Unit	Size:
Mentee/Protégé	150
Non mentored employee	150
Data Analysis	Statistical using SPSS 14, Star 5
Results	Compiled as statistics

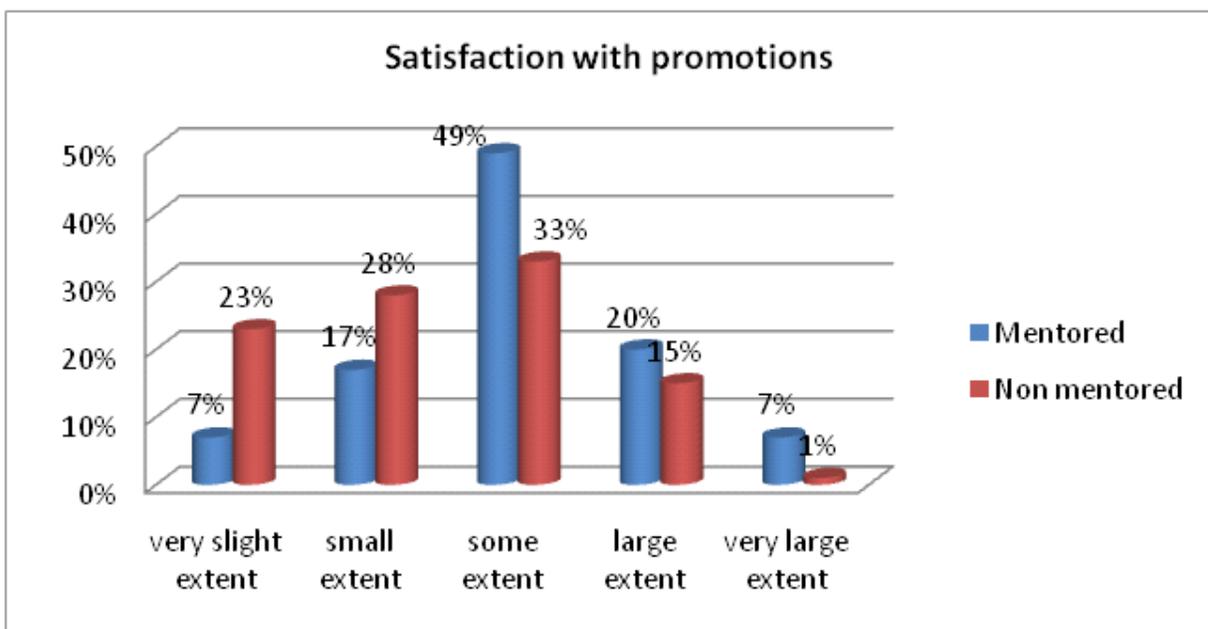


Figure 1.1 Perceived Satisfaction with promotions



Figure 1.2 Comparison of respondent's satisfaction with salary increment

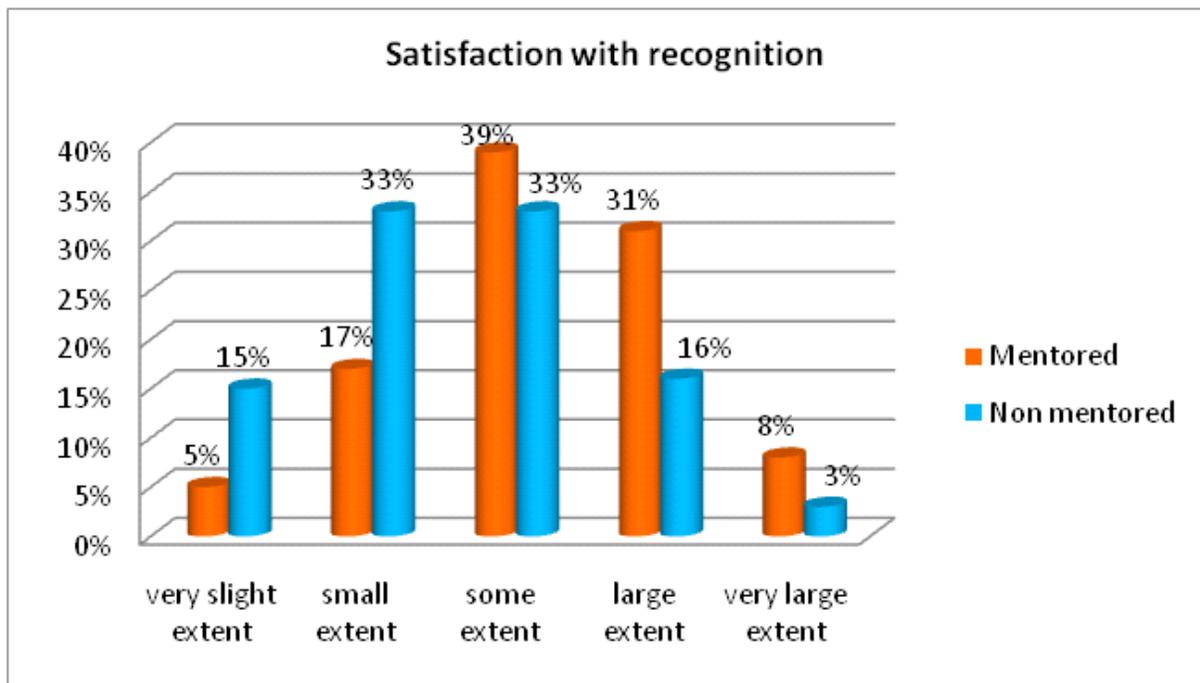


Figure 1.3 Comparison of respondents' satisfaction with recognition

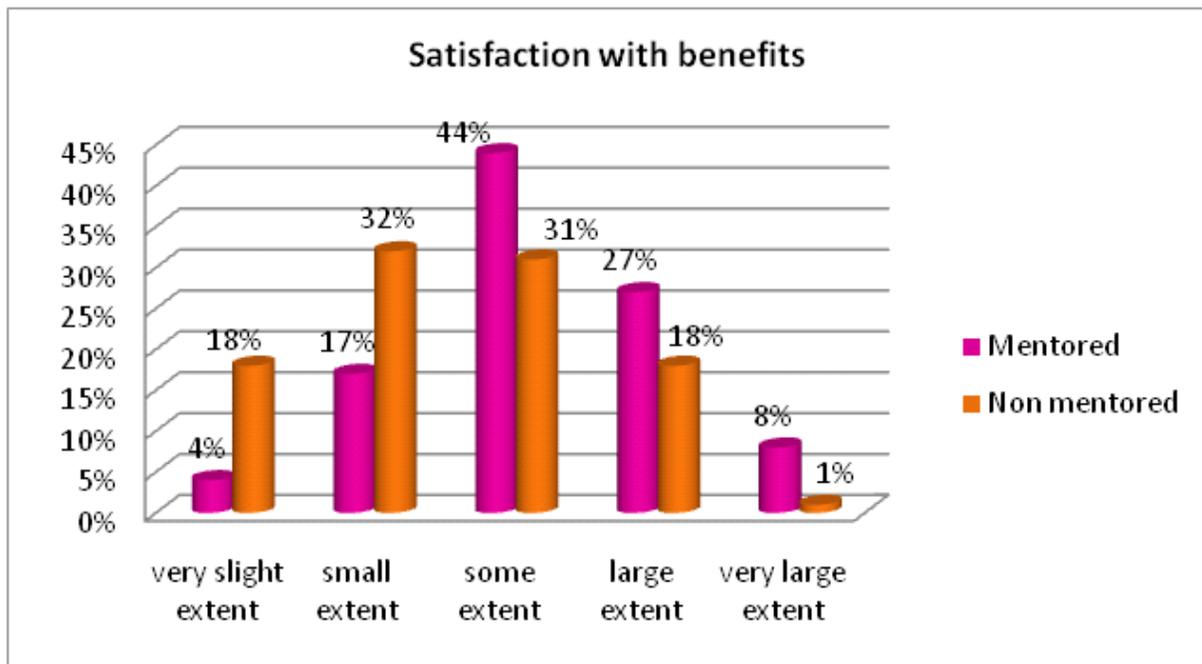


Figure 1.4 Comparison of respondents' satisfaction with benefits