

Mitigation strategies for challenges in HRM in practice: A survey

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I.GROUP MEMBERS PARTICIPATION

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ABSTRACT

The context of our Research report deals with challenges in HRM. The mitigation strategies that are used to reduce challenges in HRM. At what extent these reported research findings are implemented by industrial practitioners to mitigate the challenges. Web-based survey using questionnaire data collection tool we obtained qualitative data which helps to present percentage scale in terms of challenges in HRM for which the industrial practitioners use wrong strategy other than the results from research findings. The conclusion is that the survey helped us to understand over 68% of the challenges in HRM, wrong mitigation strategy used instead of mitigation strategy that should be used for better results for the challenges in HRM by industrial practitioners.

Author Keywords

Human resource management; challenges observed in HRM; survey; mitigation strategies for challenges observed in HRM.

II. INTRODUCTION

Human Resource Management in terms of the state of knowledge is one of the crucial and scientifically related term in both software product and service development firms[1]. There are different functionalities of HRM like staffing, performance management, employee relations, training and development, workplace health and safety and compensation and benefits [4]. More HR practice in turn lead to better organizational performance[2]. These mentioned HRM functions have challenges that are observed we used four articles that support that there are challenges pertain to the HRM. Four articles are selected which depicts about the possible research gap in the HRM.

The research gap existence in the HRM is most common and between the research finding and the research practitioners idea about using the correct mitigation strategy to reduce the challenge in HRM[2]. This interests us in conducting the research which gives the justification for need of research to reduce the corresponding existing gap. The importance and need for solving the problem is very high until and unless the industrial practitioners are unable to grasp about the mitigation strategy they are following for the corresponding challenge is wrong and need to be improvised by reducing the gap between research finding for solving the challenge and the one which is followed. So, the author's summary about the problem that is used as the base for research is, The HRM is important for Software organization. There are challenges in HRM. The industrial practitioners follow wrong mitigation strategy to solve the problem. The research problem is at what scale the organization follow wrong strategy to solve the problem in terms of percentage.

The main aim of the research or the key objective is to know at what percentage scale the industrial practitioners follow wrong mitigation strategy to solve challenges in HRM instead of correct strategy that needs to be followed obtained from research findings. For these we choose three research questions first to know he challenges present second to know the corresponding mitigation strategy used by industrial practitioners. Third to know deduce the data at what scale there is wrong implementation of the strategy. The units of analysis are software professionals.

The research method for first two questions we used web-based survey and for the third once to obtain result we used grounded theory by choosing two variables and using the constant comparative method that is under the grounded theory research design helped us to compare the results. To obtain the percent of challenges in software industry for which wrong implementation of mitigation strategy is done.

Contribution of the research help the industrial practitioner to understand that for more than 50 % of the challenges in the HRM that usually occur in the software firm's the industrial practitioners use wrong mitigation strategy. This help them to grasp and change the ideology where there is a need to change the strategy for better organization performance. This also help the researcher's to find more feasible mitigation strategies for new

challenges arrive and the industrial practitioners change their version in adopting new strategies.

Further the sections are divided as follows the section 2 consists of Research Methodology. Section 3 consists of Research Operation. Section 4 consists of Web-based Questionnaire results and analysis. Section 5 consists of Data analysis and interpretation. Section 6 consists of Discussion. Section 7 consists of Conclusion.

III. BACKGROUND AND MOTIVATION

In order to motivate the authors thought process was in 3 dimension way that is how important is the HRM in the organizations.

HRM is an crucial and significant in the organization firms[2]. HRM is the best possible use of staff for better organization performance [4]. HRM is important in economic growth of country and in organizational context it helps the individual to acquire the general and common abilities and sharpen them for better organizational performance[1]. The second dimension deals with whether there are challenges existing in the HRM. There are challenges in via culture, the culture in the sense organizational culture, cultural diversity et cetra [5]. There are both problems in written and spoken communication with respect to work culture and cultural difference in organization due to different time zones different way of problem solving. 80.3% of individual say they need to change their spoken communication. 60.7 % say they need to change the written communication [5].

There are challenges in Training and performance development in the software firm [6]. There are challenges that occur due to improper people management [7]. Also there are challenge in the higher authority pressure these are observed and analyzed in our literature review as well [8]. The third dimension deal with the existence of research gap in the field of HRM. There is a lot of gap between the research finding for mitigation strategy and the ones in implementation in industries [1].

Another author support that there is a large gap between research finding and the industrial practitioners in the area of staffing [12]. The background research suggest that there are challenges in HRM and also the research gap in HRM which motivates us to find the percent scale of challenges for which there is wrong mitigation strategy implemented. Our finding and corresponding results show that 68% of the total challenges implement wrong mitigation strategy these results strengthen our research.

IV. RESEARCH METHODOLOGY

A. Research objective:

The main objective behind conducting the research is HRM, which is important in software Industry. There are challenges faced in HRM. We observed four most common challenges that is Challenge in creating Work culture

Collaboration, People Management, Challenges in recruitment and training, Administrative Pressures and local geographical issues[5][6][7][8]. These most common challenges can be reduced by following correct mitigation strategy. The correct mitigation strategy for each of the challenge are demonstrated and proposed in research articles and the results for corresponding implementation of challenge in real world and the results are much better than the results obtained from following old mitigation strategy to reduce the challenge. Our main motive is to compare whether the mitigation strategy applied for these four challenges in research papers are same as that are industrial practice. Further provide the comparative results obtained.

B. Research Questions:

RQ1: Are there any challenges observed while managing the human resources in software industry?

RQ2: What are the mitigation strategies that are used in industrial practice by software professionals in order to reduce the challenge?

RQ3: Are the mitigation strategy implemented by software practitioners are these same as strategy proposed by research practitioners?

C. Research Method:

Based on the research questions above stated for RQ1 and RQ2 the web-based survey is observed to be better research method. The motivation behind using survey as our research method as web-based survey help in reducing the time spent on the survey by the participants[3]. The software professionals don't easily answer the survey until as they have a tight schedule. The selection of the survey as our research method is it can be easily reached to our connections throughout the world by just sending an electronic link of the survey [9].

The other research methods like interviews is not used as they require interaction between the interviewer and also the participant which is difficult task as our sampling involve software professionals from 4 different countries what we observed is the option is clearly impossible to conduct the interview. Focus group involve grouping of people then our connections to software professionals inside the software firms some cases are more than 1 grouping them is possible but reaching them is impossible to conduct face to-face meeting to discuss about the research topic is impossible, so this method is also not applicable. Although we believe that the experiment research method would have been used as an alternative to the web-based survey for collecting data from RQ1 and RQ2. RQ1 and RQ2 need the responses from the participants as the HRM involve human loop so we consider survey is the best suited once.

For the RQ3 we believe the experiment is the other research method that can also will help in taking two variables and investigate which we believe will give better

results as well. One variable is mitigation strategy for challenges in HRM from research practitioner's perspective. Second variable is mitigation strategy for challenges in HRM from industrial practitioner's experiences that is response from the software professionals. These two variables can be investigated and compared for similarity and dissimilarity and further results can be presented for area challenges where there is need for improvement. The case study cannot be used in this case as case studies usually have only one variable to be considered but we require two variables to compare.

But here we directly used the grounded theory design and by utilizing constant comparative method the collected and analyzed simultaneously.

D. The units of analysis:

After choosing the research method we require the units of analysis that is participants we used the connections among our friends and family to check for software professionals and all of the professionals are humble and kind enough to respond to our survey and encourage us by sending the responses. All the professionals are from Software firms. As our research need responses and experiences about the challenges faced in product development firms and the software service oriented firms we took the sample of participants from both the firms. The total number of participants involved in web-based survey are 6 out of 10 participants actually answered the survey and these 6 participants' answers are complete as well. The incomplete survey are left behind to reduce the threats to validity.

E. Data Collection Method:

After selecting the sample the response's that are given for the electronic sent link that is web-based survey which comprise of questionnaire of 11 questions. The data that is obtained is stored through response forms and stored in Google drive.

F. Data Analysis method:

For RQ1 and RQ2 we used the web based survey for sending the questionnaire to the participants. The obtained responses are stored in the Google drive via response forms and for easy classification of question 5, 6, 7 which can be viewed through the reference [9].

5) The Challenges that software professional from any field face due to the HRM in the firm

6) The observed challenges from the mentioned multiple-choice options are the same as answered in open-ended question about challenges faced by HRM.

7) Suggested mitigation strategy for reducing the above-mentioned challenges for above selected. Helped us to know the challenges in HRM from software professional perspective and the questionnaire the three fields are given as required important fields that must be filled so the responses are given by participants. Data is

transferred into excel sheet and the tabular representation about the Challenges from software professionals and their corresponding mitigation strategy is noted and another column comprise of the mitigation strategy proposed by the research practitioner. For RQ3 the data that is collected using the grounded theory we believe the Grounded theory helps in proposing the new mitigation strategy in a new way instead of telling that it effects the product development market shares business growth and downfall of the firm by just telling the grief process experienced by the individual if the resource management is not given importance enables them to follow new strategy to solve the HRM challenges [10]. So we believe this grounded theory helps us in analysis of data. Using the above data as base in order to propose a new way of solving the challenge to propose the new strategy we used the grounded theory that helps in constant comparative method to simultaneously compare and analysis of data collected can be done so we used this research design.

V. RESEARCH OPERATION

The research operation is carried out for about 1 month and during this period our team members as we are a team of two had divided the work. Our topic is about the challenges of Human Resource Management in Software product and service oriented firms. The work distribution is based on designing the questionnaire for our survey and the survey is that is presented in this paper is web-based survey [11]. The questionnaire that are prepared by one of the team member and while contacting for connections among friends and corresponding colleague's about their family friends related to software firms. The web-based survey must reach the software firms, as that is our area of research study to know the challenges of HRM in the software firms. The connections helped us to reach a few of the software firms that are both product oriented and also service oriented which helped us to understand the challenges of HRM in both the sector of service. These contacts helped to select software professionals at various level in the software organization.

A. Structure of the survey:

The survey is comprised of total 11 questions and also an introduction video to understand basically about what is the HRM. The survey can be accessed from here [9]. The survey comprise of both open-ended question and close-ended question. Initially while research proposal thought of including only close-ended questions but to know complete background and to reduce the time in filling the form we preferred close-ended question also. Generally the questions can be posed in two types one is open ended questions that help a lot in research as the answers given by the participants are elaborate and no pressure on selecting particular option or choice box even though they have some other suggestion or challenge faced other than mentioned as our research study require both current

challenges and also new challenges in HRM we used the open-ended question. The close ended question involve selection of option or scaling from 1-10 about the topic which help in easy classify of the collected data and reduce the time to fill the web based survey. This is important as not all of the software professionals are interested in answering long survey.

B. Participants

The participants selected are from the connections to our friends and colleagues who respectively working in the software organizational firms. Totally about 10 participants have responded to the questionnaire. Their corresponding classification based on product and service firms.

The below figure show complete details of the participants and the location of the respective company.

Name of company	Type of company	Country of response	Participants from company
Tech Mahindra	Service	India	1
Tata consulting service	service	India	1
Microsoft	Product	USA	1
Infosys	Service	London	2
IBM	product	USA	1

C. Quality assurance

We made sure that the survey that is sent electronic link to the survey is sent to them and also cross-checked whether the mail is reached correctly. All the selected participants are from software background. A pilot study is conducted whether to understand if there is an error in the questionnaire or there is any difficult in answering some sections under questionnaire, which helped in modify the web based survey. Complicated questions and double-barreled questions are removed for the participants to easily understand. All the participants are from software organizations so the answers given are valid. The questionnaires are related to the importance of HRM and also the challenges of HRM, which the participants come across day-to-day life while facing the HRM. Also to improvise the quality assurance the incomplete questionnaire are neglected and further answers that are vague and irrelevance are given less importance, only complete responses that are given to the questionnaire are taken into consideration.

VI. WEB BASED QUESTIONNAIRE RESULTS AND ANALYSIS

Conducting survey in challenges in the Human Resource Management performs the basis for the research operation that is carried out. Based on the responses obtained from the survey there are some interesting results are noticed. This section provides the interesting results obtained from surveys that are filled by software professionals from different organizational firms.

The responses were collected from the software professional's and the below is the brief analysis for each and every question.

Q1.The role of participants in the software organization.

Role of participants in the organizational firm	Percent
Designer architect	10
Tester	17
Analyst	3
Programmer	15
HR manager	45

Q2.Interest in human resource management aspects: Excellent.

All the software professionals who filled up the form have shown complete interest in Human resource management and its corresponding challenges perspective. As the challenges in Human resource management is the area of study in the research report, 100 % participants showing interest in the field support or motivates us in choosing the research study.

Q3. At what scale importance is given by organizational software firms towards Human Resource management.

The question posed in the survey is what is the scale of importance toward the Human resource management is given by software firms. The HRM is the most common terminology that is used in software firms and the software professionals generally know the field of area as they come across it in their regular day-to-day life. The scale is given on an average of Scale-“6”.

This shows that the survey is reached to right industrial sector. The scale represents the participants are very much capable in taking this survey, as it's a known field of interest for them.

Q4.Interaction between the HRM and designing and developing end product.

50 % of the organization participants say that their firm gives importance toward the HRM and also completely believe the HRM is mainstream that drive the system in reaching their target goals this shows that there is both importance and organization support toward HRM. 17 % say that there the HR Manager is always involved in providing the resources for completion of project and resolve the disputes that arrive among the staff but the company doesn't provide resources or skilled HRM workers to uplift the performance scale. This shows that there is importance but no support from organization. 26% say that the organization only think about the end product and HRM which they believe will help in reaching the target but it is not the only particular field that helps in product design completion. This show that the HRM is not that important field to be considered but it is present and investment is done in the HRM by every software firm. 7% say that they don't know if there is interaction between the HRM and software product development.

Q5.The Challenges that software professional from any field face due to the HRM in the firm.

The question posed is an open-ended question and we observed some challenges that are faced because of improper HRM in the organizational firm. 40 % of the professionals say that they are not matched with the purpose, right people for right purpose format is not carried out. 10 % say that the differences and disputes are not that resolved as expected and internal differences retain between staff. 12 % say that the wok done and the corresponding paychecks given are not up to the mark. 18 % say that the staff carrier development is not equally given to all the people. 15 % say that expert advices in terms of training options for staff performance upraise is not up to the mark. 5 % say that safety needs are not looked into while working in the firm.

Q6.The observed challenges from the mentioned multiple-choice options are they same as answered in open-ended question about challenges faced by HRM.

50 % say that the main challenges in HRM is observed while balancing the cultural differences inside the organizational firms at same branch or at different geographical location working together. 16 % say that the people management is difficult in terms of reducing the differences and providing peaceful environment. 24 % say that there are lots of recruitment and training challenges that are faced inside their organization and staff performance every year is effected due to the training section for the recruited staff. 10 % say that there is influence challenge over the HRM by higher officials of the organization in staff retention and also carrier development of staff, which majorly work through contacts

and recommendations.

This data helped us to classify the challenges that are answered in the open-ended questions. The open-ended question previously posed helped participants to clearly mention their view on what are the challenges faced by the HRM. Later the current question helped us to simply the data as the participants selected the multiple check box and to specify their challenge they are asked to cross check whether the challenge they mentioned in open-ended question does belong to one or more than one in the check box options present and most of the participants out of 09099 only one person selected other and mentioned business management as the new option other than one present in the check box.

Thus we can related the challenges based on the results as follow.

Challenges answered in open-ended question	Challenges selected in close ended question	Number of people gave same option for corresponding challenge.
Work pay check imbalance	Create Work culture collaboration	7
Unresolved differences and disputes	People management	5
Right people for right work imbalance	Recruitment and staff retention	4
In equality in carrier development	Administrative pressures	3
Unusual training and careless about staff performance	Training and staff performance	2
Safety needs and personality development	People management	1

Q7.Suggested mitigation strategy for reducing the above-mentioned challenges for above selected.

The question interlinked with the above selected options for the option selected above for four different challenges the common mitigation strategy after analysis is written as follows.

Challenge observed by HRM software firm	Mitigation strategy suggested for the corresponding challenge that is observed by HRM	Percent of people answered.
Cultural Differences	Provide the norms on way of interaction and style of work between different cultural people.	48
People management	Give good safety measures and hope of carrier development is given to all the staff	16
Recruitment and training challenges	Recruit only the star people and people with good grades in academics.	20
Higher official pressure and recommendations influence on HRM.	Give full authority for the HRM in taking final decisions call.	10

Q8.Suggested mitigation strategy influence in reducing the challenge.

Actual scale of people supported towards the challenge	The people who supported the above mentioned mitigation strategy reduced the challenge
50	25
16	14
24	10
10	10

Q9. Most highly difficult challenges that must be given high importance in the 21st century.

The answers are observed to be deduced by the participants from both the close-ended and open -ended question commonly which one should be given highest preference 70 % of the people supported their own challenge as the tough once that is to be given highest preference. 20 % of the participants support on the recruitment and training challenges. 10 % support on carrier development and also work done and corresponding paychecks, if not balanced will effect the standards of organization.

Q10. The level of adaptation for the new mitigation strategy that is implemented for a particular challenge.

Most of the participants gave an average scale- “2” for adopting the new strategy.

Q11. Amount of time in transform from old to new mitigation strategy that will usually take.

60 % of the participant’s mentioned about 6 months for complete implementation effect to take place. 40 % suggested others and above 12 months.

VII. DATA ANALYSIS AND INTERPRETATION

Based on the collected data and the observed finding we answer the research question as follows.

RQ1: Are there any challenges observed while managing the human resources in software industry?

Motivation: 60 % of the people believe that HRM is important and the support should be given by the software firms. Yes, the data collected shows that there are challenges in the HRM. 70% of the software professionals believe the in the presence of challenges in HRM. Every individual from different fields like tester analyst designer programmer believe there are challenges and the corresponding challenges are mentioned by them from their experience. The data obtained from question 6, the particular above described table helped us to understand the existing challenges.

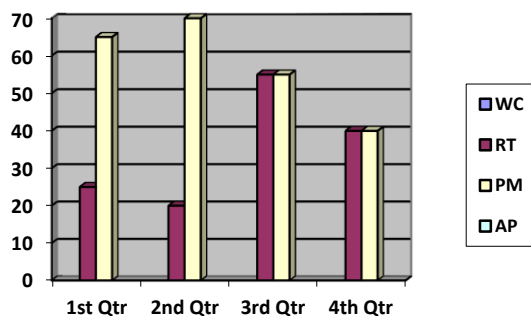
RQ2: What are the mitigation strategies that are used in industrial practice by software professionals in order to reduce the challenge?

Motivation: 80 % of the people provide the mitigation strategy for the challenges which they generally observe in the HRM. The challenges we observed from the literature review are generalized and simplified into 4 categories which help in matching the observed challenges and challenges mentioned by practitioners. 48% believe most of the challenge occur due to imbalance in work culture creation. 16 % believe in people management. 20 % believe in recruitment and training. 10 % believe in the administrative pressure. Mitigation strategy that are mentioned by the practitioners only two of them are same as that of the mitigation strategy that re mentioned in research article. The table for the mitigation strategy proposed by the software professionals in software firms are described in Question 7 results. The other two strategies creating work culture and recruitment and training for reducing challenge are different. These proposed strategy by the professionals occupy 68 % for solving the challenges observed in software industry.

RQ3: Are the mitigation strategy implemented by software practitioners are they same as strategy proposed by research practitioners?

Motivation: Two out of 4 mitigation strategy proposed are same. But the remaining two occupy most of the space in terms of challenges faced in HRM. For the work culture environment researchers believe for product development companies they are located at different locations around globe so not only behavioral norms which help in reducing the cultural differences but also based on local government policies and keeping caste, sex in mind the people need to be given training to behave at different locations this criteria is more applicable in software firms that provide services. For better training and recruitment purposes More number of HR managers need to be recruited for making justice to every aspect can be possible with better skilled HR Mangers with highest authority than any anyone else in terms of resource allocation and work distribution among people. Bar diagram showing the change in implementation of new strategy proposed by the researcher with respect to the old strategy used by the industrial practitioner.

The work culture –WC, Recruitment and training- RT
People management-PM, administrative pressures- AP



Interest shown by software Professionals to use the new mitigation strategy: From the research 77 % of the of the results show the new strategy will help in reducing the challenge. The software professionals for scale of 5 all of them averaged a scale of 3 minimum in following the new strategy the scale could be much higher like 4 or 4.5 if the time taken to implement in real practice is reduced.

VIII. DISCUSSION

Results: The survey showed that the HRM is considered in most of the organizations. The software professionals believe that reduce in the challenges in HRM will benefit the organization. 100 % participants shown their interest in the HRM and its challenges. Many organization imbibe in software professionals that what they use to compensate the challenge is correct once. But the results showed only two out of most generalized mitigation strategy for challenges are same. By using the new strategy the challenges can be reduced by large extent for the remaining two challenges, which occupy major part.

A. Importance of HRM in product development.

A lot of importance is given by the software professional. Even though higher authority of the firm like CEO, CFO and board of directors invest a lot in the HRM field there are challenges observed. The observed challenges are not due to lack of investment but due to following wrong policy or strategy in reduction of these challenges. Care should be taken in every phase of the software development life cycle in reviewing the strategy and implementing new strategy that is observed from our research basis and see the change in reduction of the challenge. The software professionals are demanding the correct way of solving the issues that arrive internal to the firm which can be solved by starting to adopt to the new strategy

B. Implementation advantages for new strategy.

The implementation of new strategy help the practitioners to see and understand whether the old strategy is more efficient or the new one is beneficent to be implemented to reduce the challenge. This help the organization in structuring at every aspect of software service and product development based on the new results that arise.

Contribution of the Research: By conducting the research survey we observed not all the mitigation strategies for reducing the challenges in HRM are same. The survey help in understand that 68 % of the total challenges in HRM the wrong mitigation strategy is implemented. The industrial practitioners need to improve the policy and follow the new strategy to reduce the challenge in HRM deduced from the research. The research help in software practitioners to demand for implementation of the new strategies for change. Compared to the previous knowledge where the researcher's say that there are so and so challenges in the HRM but very less research is undertaken in showing in which area of generalized challenge there is major drawback in following wrong compensation strategy.

C. Threats to validity

The internal and external threats are discussed below.

As there are large number of challenges the generalization of challenges is necessary for our research to reduce the research scope.

The survey is conducted in span of 10 days so only few respondents have participated these participants are from large software organizational firms. The theory validity might occur if the incomplete survey are considered and own answers to support the research might happen instead of actual results. The authors make sure to reduce the theory validity.

The survey comprise of both open-ended and close ended deducing the results and analyzing the open-ended question was difficult for authors. The interpretation

validity might go wrong in this case as the authors might misinterpreted the open-ended question.

D. Limitation of the Study

There are a few limitations to the authors research study the survey is the research method used but the experimentation research method might have been used also. The research performed shown that there is necessary steps to be taken to take the research results to the industrial practitioners so that they will understand the mistake they are doing in choosing wrong strategy but it is difficult task to take the research report to them. The author limited the study to only few software professionals the study scope and refinement would have been much better if the time constraint is more. The connections and contacts to the company would have been used more to increase the data collection to strengthen it.

IX. SUMMARY AND CONCLUSION

a) Summary

Challenges of Human resource management in software industry is the area of research of this paper. In order to find the challenges in the HRM and the corresponding mitigation strategy used in HRM we conducted the survey. It was a web-based survey where software professionals are the subjects. The results conducted were using the grounded theory and the constant comparative method in grounded theory. The threats to validity are also discussed.

b) Conclusion

We came to know that the mitigation strategy that are in industrial practice for 68 % of the challenges in HRM are wrong and also the corresponding much better mitigation strategy for reduce in the challenges in HRM are provided. The conclusion is that all the software professionals have idea about the importance of HRM. The participants also shown large extent of interest in reducing the challenges in HRM and there is a constant feedback taken to know for the new challenges and the corresponding strategy for reduction.

c) Future Research

Large area of challenges 68 % of the challenges in HRM wrong mitigation strategy is implemented. The future research can be made in a way to make this research articles reach to the industrial practitioners and help them to understand the new strategy by conducting survey and observations of implemented new strategy over a period of time and let the firms and software professionals know the improvement in implementing the new strategies.

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