

# Project plan for degree projects

## PA 2537: RESEARCH METHODOLOGY IN SOFTWARE ENGINEERING

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Thesis	Tentative title	Challenges in Human Resource Management :Project Oriented Software Product Development &software Services Firm
	Classification	Project Management, Software Quality Management.
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### Introduction

According to Adi Godrej, “All corporate strengths are dependent on people.” The most effective way of achieving of organizational goals can be performed by use of people in HRM. In the area of Software engineering Human Resource Management is central to productivity and software quality. HRM is also about project oriented software development Human Resource Management includes the processes required to make most effective use of the people who involved with the project [PMBOK]. In order to say particularly about the area in Software Engineering all major process that involves in HRM are Organizational planning, staff acquisition and Team development[R2]. Human resource management deals with the tools and techniques for team development, inputs to team development and Human resource practices Software development companies [R4][R1]. In these companies it belongs to a particular part of software development which is project oriented, in the project teams there are different kinds of people involved in technical department, project management depart and administrative department. These departments make up Human resources which drives whole project until its completion. The HRM is important area of expertise in Software engineering, It plays a crucial role in taking the technology driven projects in IT industry to the great success [R3][PMBOK]. HRM also create competitive edge for the organization, the way HRM practices and policies take shape also affects the employee’s experiences of work and employment relationship [R1]. Hence effective Human

Resource Management is the highest priority and very crucial. Human Resource Management is of strategic importance in every organization [R1].

Recent years there is a degrading significance in Human Resource Management in software development firms worldwide. Which results in creating so many issues and challenges in the realm of Human Resource Management in Software development firms. Based on the systematic Literature review what others had done in this area is mainly about challenges in centralized versus Decentralized human factors, Training issues, adapt to cultural sensitivity, Redundant IT team structures, communication challenges and employee turnover.

Our current knowledge deals with various inefficient implementation of HRM in retention, recruitment, training, discrimination and diversity, payroll, employee values. The knowledge gap in our current knowledge is mainly observed in the IT HRM practices versus HRM configurations.

The main purpose of this project is there are several challenges daunting in the field of HRM implementation. To find the challenges that are faced by HRM in project oriented development and in order to identify mitigation strategies that are proposed in the form of guidelines by industrial practitioners for better HRM implementation.

## **Aim and objectives**

The main aim of this project is: “This master thesis aims to gather challenges and their solutions in Human Resource Management and will look into ways by which we can magnify the light on areas which worsens the whole wellbeing of HRM in project oriented software development firms (Software Product and Software Services /IT firm).”

The corresponding objectives that are associated with aim to reach the final goal is:

- To identify challenges that are faced by HRM in project oriented software development companies”.( **Identify Challenges in Literature**)
- To mitigate the strategies that are proposed for the identified challenges by HRM in project oriented software development companies.( **Identify Mitigation strategies in Literature**)
- Exploring the guidelines that are being implemented by Industrial practitioners in the realm of HRM in Software Industries.

## **Research questions**

The following research questions are framed based on the objectives determined earlier.

1. What are the challenges that are faced by HRM in project oriented software development companies?
2. What are the mitigation strategies that are proposed for the identified challenges by HRM in project oriented software development companies?
3. What are the guidelines followed by industrial practitioners to improve the practice of HRM in present IT industry?

## **Method**

For research question RQ1 and RQ2 we use the Systematic Literature review for our research method in deducing what are all the challenges present in HRM then later mitigation strategies that were proposed in the research papers. The research question RQ3 will be based on survey based questionnaire (data collection tool) to obtain qualitative data [R5]. The other research methods are not chosen because in action research involves both researcher and participants in conducting research and also its results are both qualitative and quantitative. The

Experiment method is not involved because it is process of investigation using test controlled by yourself but our research is not only dependent on researcher but also participants. The case study are not used as it involves the in depth exploration of one single situation so it's is not useful in our study. We use open ended question because "open-ended" question in which person responding to it is free to answer in any manner he or she chooses.

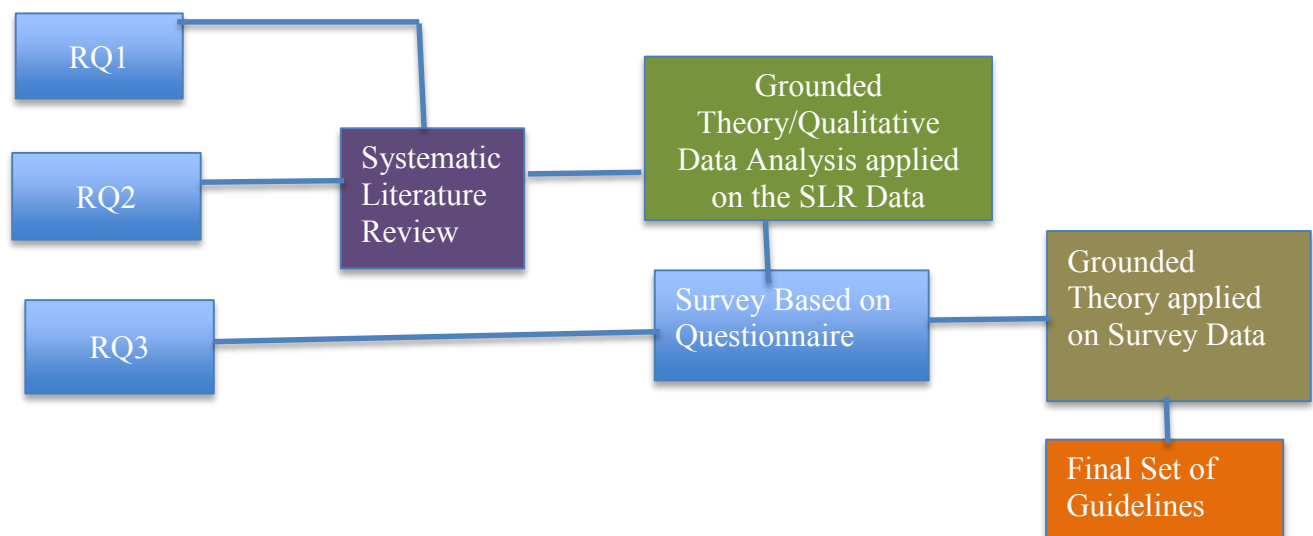
In survey based **Data collection** tool questionnaire for RQ3 which have advantage as it's cost effective and easy to compile data from standardized answer. Questionnaire with proper sequence that is more general to more specific help participants to logically understand the flow. As everybody in the industry are literate it is easy to use computerized questionnaire where the questions are presented on computer help to reach lot of people and can be easily filled as it doesn't take much time.

**For qualitative sampling** for RQ3 we use purposive sampling as it helps in selecting group participants according to preselected criteria based on particular research question. The sample size we is not a fixed one which is advantages because we cannot consider all the sample population who face challenges the sample size in our experiment is basically determined on the basis when new data no longer gives additional information about challenges in HRM .We perceive threats to interpretation validity and theory validity are the threats that our research study prone to. The risk and mitigation methods are described in the following sections.

**The qualitative research design** We apply Grounded theory for RQ1 also, we apply GT for RQ1 RQ2 and RQ3 as well. We perform comparative analysis for the codes that were derived in RQ2 and RQ3 Grounded theory helps in Understanding new knowledge interesting to participants point of view that is whether he follow the guidelines as per standard.

**Data analysis** is made is based on constant comparative method in which we construct the themes based on the raw data we receive from the SLR then precise the data based on the challenges common. Use this precise data for conceptual coding (mitigation of challenges) and then later refine the conceptual coding based on considering all possible categories of theory validity criteria met to make analytical categories (whether guideline use in industry is apt) the priority can be understood by using survey based on questionnaire for RQ3 which help in searching core category on tally with researcher guidelines and use of industry practice guidelines of HRM in software industry. Which lead to the identification and prove the core theory that the use the guidelines defined and provided for HRM is always unchangeable.

The figure showing the research methods based on which data collection is done and also where the research design are implemented for our research study are given below:



## Expected outcomes

The expected outcomes of the research are expected to be in the form of list describing the usage level of academic HRM in employee recruitment and employee training.

1. We identify the problems/challenges in State of Art(Literature).
2. We then present the mitigation strategies/solutions to the identified problems/challenges observed in State of Art.
3. We also present guidelines that were proposed by the Industrial practitioners for effectively implementing practice of HRM in project success in IT industry.

## Time and activity plan

The time plan for our activity throughout the course plan is as follow:

Work done by: MEGHANA for particular event: 1; KARTHEEK for particular event: 2

- 20150219: Start selecting Keywords and search string on the selected research study.(1)
- 20150221: Search studies based on selected search string and keywords.(1)
- 20150223: Understand and emphasize on selected studies.(2)
- 20150225: Start Writing the Systematic literature review.(2)
- 20150227: Discuss the written literature review by conducting a group discussion(1)(2)
- 20150228: Remove duplicates finalize SLR by conducting the group meeting.(1)(2)
- 20150301: Submission of final Systematic literature Review.(2)
- 20150302: Group meeting to discuss Research Proposal (area of study, context, methods to be used, identify the contributions apply grounded theory on SLR(1)(2)
- 20150303: Intensive participation in the field setting for questionnaires(1)
- 20150304: Gaining access to select participants member for study.(2)
- 20150306: providing the questionnaire forms to the respective participants(1)
- 20150313: Collecting and analyzing of data obtained from questionnaires.(1)
- 20150316: Synthesis and interpretation of the meanings of field data chosen, and also criteria suitable for qualitative data analysis apply grounded theory on survey data. (2)
- 20150318: Analyzing the field data(use constant comparison method) and do Final Documentation.(1)
- 20150319: Writing the research proposal final submission. (2)

## Risk management

- **Vast literature Topic:** Based on the Conducted Literature Review, we found that there are vast challenges that are prone in Human Resource Management. The chance of proposing research is very low to increase the chance we confined our topic to only list the challenges for the first RQ1 and consider the criteria for mitigating challenges in HRM and list them out in RQ2. Based on the mitigating guidelines for reduce in challenges to understand whether it's in industrial practice or not helped to narrow our scope.
- **Time Constraint:** This research proposal is for the research methodology and during our experiment we choose only to find whether the guidelines in industrial practice are same as that of researcher point of view. The time constraint impact to reduce it we

used one week of the month to evaluate and analyze the result by choosing only small sample of participants.

- **Sample selection:** we have to be very careful in selecting the employee for the survey of questionnaire as it helps in finding whether the guidelines that are in industry practices are same to the researcher point of view on proposed guidelines in mitigating the challenges in HRM.

The identification of risks and its likelihood, impact, avoidance and mitigation strategies.

Risk	Likelihood	Impact	Avoidance	Mitigation
Interpretation validity	It occur due to not capturing correct interpretation of what guideline for what challenge being researched.	Depend on one's own meaning of interpretation instead of actual considering of viewpoint of what data received.	In order to avoid the interpretation validity open ended question are to be posed for elaborate answers.	Interpretation and communication skills to be improved questionnaire should not be confusing. Member checking can be implemented.
Descriptive Validity	It occurs when unable to record the data as it is told or collected.	It might result in false conclusion over the end results the value may change.	It should be recorded and noted accurately and completely the recorded once should not be shorter form of what is proposed.	In order to reduce the descriptive validity necessary to keep full record of data even raw data during our study.
Theory Validity	The initial specific theory that he believe the data will support should not be varied then it results in theory validity.	It impacts the entire study and ruin the list and the industry do not rely on the false proofed tables for product quality.	We made ensure that we didn't force the data to match the particular theory not ignore the data that doesn't suit the theory.	Each and every detail of the data that has been received should be presented even if it doesn't support initial theory.

## References

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