

IMPACT ON PROJECT SUCCESS THROUGH HUMAN RESOURCE MANAGEMENT AND KNOWLEDGE MANAGEMENT: MEDIATION MODEL FROM COMPETENCY

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i> Received: 11 Dec 2019 Revised: 16 Mar 2019 Accepted: 24 May 2020 Available Online: 30 Jun 2020</p> <hr/> <p><i>Keywords:</i> Development perspective of HRM, lesson learned system of knowledge management, project management competency retention, project success</p> <hr/> <p><i>JEL Classification:</i> H21, O16</p>	<p>The impact of development perspective of human resource management and lesson learned system of knowledge management on project success with the mediation of project management competency retention is examined by collecting the data from the regular employees of telecommunication sector (PTCL, Ufone, Warid, Zong and Mobilink), GEPCO and Sui Northern Gas Pipeline limited of Gujranwala District of Punjab, Pakistan. For this purpose 380 questionnaires were distributed out of which 321 questionnaire were returned and the study gains an actual response rate of 84.4%. Some questionnaires were excluded because of missing values by using list-wise deletion method which includes particular statistical analysis and after that 310 complete questionnaires were selected for further proceeding. The relationship of Development Perspective of Human Resource Management, Lesson Learned System of Knowledge Management and Project Success with mediation of Project Management Competency Retention is examined by using the statistical techniques such as “Pearson’s Correlation”, “Descriptive Statistics” and “Factor Analysis”. The results confirmed that development perspective of human resource management and lesson learned system of knowledge management has insignificant positive relationship with project management competency retention and project success. There is no mediation of project management competency retention has been proved between development perspective of human resource management, lesson learned system of knowledge management and project success. A significant positive relationship has been proved between project management competency retention and project success. Finally the results suggested that it is crucial for the organizations to retain competency to achieve project success.</p>

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1. INTRODUCTION

Success of any organization can be measure from the success of their projects. Project success and the aspect that has impact on the success of the project have been described by numerous project management scholars. Project management scholars are still working to identify the managerial factors that have impact on the project success (Shenhar, Levy, O, & Davir, 1997). Same thing mentioned by Liu and Walker the topic of project success is studied by many scholars but it is remains the least agree upon (Liu & A, 1998). Although the topic of project success is considered as most frequently studied but only few researchers have seriously worked on it (Wateridge, 1998). The topic of project success found very interesting to different people due to different ideas which result in the disagreement that whether the project is successful or not (Liu A. , 2005).

Projects play an important role in implementation of strategies in the organizations so we can say that the success in projects represent the success of the business and create a long term positive image of the organization (Meshkendahl, 2010). At the beginning, Project was consider successful if it was completed within due time, term mentioned, budget allocated and expected quality is achieved but now the concept of knowledge in project management has shown that the project success is not only depend on these factors, it’s a complicated and multidimensional approach consisting of many attributes (Mir, F.A, & Pinnington, 2014). “Project success is defined as the degree to which project goals and expectations are met. It should be viewed from different perspectives of individuals and the goals related to a variety of elements, including technical, financial, education, social, and

professional issues. Project success is the goal, and the objectives of budget, schedule, and quality are the three normally accepted criteria to achieve the goal” (Elattar, 2009).

1.1 Background of the Study

For the success of a project it is important for the organization to retain its competent employees. Today winning and growing organizations are those which have high level of competencies. According to Burnett and Dutch competency play an important role in survival of the organization and by knowledge, experience and interest in work enable the managers to be successful in his/her job (Burnt & Dutsch, 2013). Bernard and Appolonius stated that organization retain competency when it provide monetary benefits, security, career and better environment to its employees (Bernard, Oyagi, Appolonius, & Kambu, 2014). A study conducted in Ghana Vodafone company and was founded that competency can be retain by organization when it satisfied their employees needs, provide career path and better working environment to its employees (Kwenin, Muathe, & Nzulwa, 2013). Retaining competent employees is very beneficial for the organization. Organization when retain its competent employees it enable it to fulfill its goals and objective and employer should have ability to retain its competent employees at least longer than its competitor. Organization should learn to retain its competent employees at different levels and it start at the time when employees are hired (Madiha et al., 2009). Knowledge management is considered as one of the most important factor for the success of a project and performance of organization (Alavi & Leidner, 1999), (Kotnour T. , 2000), (Nonaka & Takeuchi, 1995). Knowledge is an important source which is transferred to organization from the ability of its employees and it is an important source of get competitive advantage (Drucker, 1993), (Hoegl & Schulze, 2005) and it evolve from individual mind and it differ from individual to individual and cannot be easily shared (Nonaka I. , 1994). Lesson learned system is found very effective in project based companies and by opting this system we can maintain our performance even in case most of the employees left the organization (Caldas & Gibson, 2009). There are few reason that force project based organization to adopt lesson learned system most important is that it enable organization not to repeat the mistake that took place in the past projects, to make sure the thing that enable past project successful has adopted or not in the present project, to get competitive advantage and to ensure innovation in the present project as compared previous one (Paranagamage & Carrillo, 2012).

Project managers record their output and efforts during the projects to be used in future when required. Project based organization has taken a wise step by adopting a lesson learned system but the advantage of learning has not yet taken in a proper manners (Paranagamage & Carrillo, 2012). Lesson learned has enabled manages to take use of it at the time of need but it is also necessary to check the reliability with the passage of time. Project based organization need to have a system which convey the lesson learned to the employees at the time when they are working on the project and even it is crucial for every project based organization to have a proper lesson leaned system and lesson capturing system because it would not be problem for them when employees leave the organization as the organization are not fully dependent on individual employees (Senaratne & Malewana, 2011). Many organizations in the field of construction found lesson learned system very useful for management of knowledge (Caldas & Gibson, 2009). Organization that has better management of knowledge can perform in a better way and gain strength in competitive advantage (Riege, 2007). Successful organization know the importance of knowledge management and know the gravity of importance of knowledge management to enhance performance of the organization (Teece & Pisano, 1997) and one of the important source for the survival of organization and it is necessary for the organization to take full benefit of knowledge (Dul, Canan, & Ceylan, 2011).

HRD is a function that not only deals with the improvement of organizations but also the improvement of the individuals (Fenwick & Bierema, 2008). Individual development should be considered as the important part of the HRD and a special attention should be given for the improvement of the performance of individuals (Kuchinke, 2010). HRD/HRM has ability to provide an environment for cooperation among the employees and build trust and common culture in the organization (Collins & Smith, 2006). HRD practitioner should be supportive and open to talk to employees and provide them coaching to increase knowledge productivity and social interaction between the employees within the organization to enhance their innovative behavior (Swart, 2012). Organizations use human resource technique to build a suitable attitude in the organization to enhance the knowledge and capabilities of the employees to increase the productivity and performance (Bates & Chen, 2004). It is a basic process of the human resource management to enable learning in the organization for the employees for the better productivity of the organization (Gubbins & Garavan, 2006).

2. DEVELOPMENT OF HYPOTHESES

Section below is consists of hypotheses formulation that supported literature as discussed above. This form provides for an analogy between practical and theoretical reasoning.

2.1 Developmental perspectives of HRM and PMCR

In most of the organization projects are short-term process so projects managers do not get a proper career path in this line as once the project completes, projects managers will no longer remain with that organization. So projects managers remain at certain position for short period of time as compared to the line manager. So, it is crucial to provide a career path to the projects manager which should be according to their qualification and experience and comparable with the line organizations. Most of the well reputed organizations have not adopted this structure. Whereas, most of the studies has mention that providing career opportunity help the organization to retain their employees and it has a significant positive impact on the retention of the employees (El-Sabaa, 2001). When organization promote their internal employees on the basis of their performance then this thing enhance performance of the employees and employees remain with the organization and it has been supported by numerous studies that promoting employees on the basis of performance has negative relation with turnover (Guthrie, 2001). When organization provides career opportunity to their employees then it would indirectly put negative impact on their intention to leave organization (Allen & Shore, 2003). According to Laser, providing a proper training to employees is also a significant to tools to eliminate the issue of turnover. Formal training to employees has a positive impact on the retention of the employees and it also enhances the competency of the employees (Laser, 1980). Providing job related training to employees have positive impact on the retention of the employees. Development perspective and training opportunities to employees have negative impact on turnover intention of the projects managers and when they remain with the organization and deals with different projects and learn from their past experience ultimately their competencies enhance which results in high performance and when these managers with such competencies promoted to top managements then goals of the organization will be achieved easily (Zollo & Winter, 2002). HRD put significant impact on the performance of the employees and increase their level of commitment and knowledge (Indradevi, 2010).

The purpose of creation and enforcement of HRD program is to enhance the ability of the employees for getting desire outcomes (Indradevi, 2010). According to Bell and Kozlowski the competency of the employees enhance when they consider HRD beneficial and organization encourage them to participate in learning process (Bell & Kozlowski, 2008). All branches of HRD help organization to increase the competency of the employees and enable them to learn new knowledge and skills which ultimately increase the performance of the organization (Noe, Tews, & Dachner, 2010).

Hypothesis 1: “There is a significant Positive relationship between Development Perspective of Human Resource Management and Project Management Competency Retention”.

2.2 Development Perspective of HRM and Project Success

Human resource plays an important role for the success of an organization. An environment should be created where the element of a project are manage with perfection to achieve project success (Kerzner H. , 1987). Many organizations have moved from conventional to project management but still human resource plays an important role for the success of both conventional and project based organizations. Mostly the human resource management processes are for permanent organization where employees have fixed position and not for project based organization where project managers have no any specific position (Packendorff, 2002). In permanent organizations employees training are arranged in a formal way whereas, in project based organization project manger take more responsibility and have less time for the completion of the project so they work more to complete the project in time. These circumstances have forced to create new strategy of human resource development for the project based organizations. It has created a new way of recruiting employees for short term basis for specific project and career development as well. HRD put significant impact on the performance of the employee sand increase their level of commitment and knowledge (Hutchings, Zhu, & Cooper, 2009). Performance of the employees increase and they work more to achieve objectives of the organizations when the support and incentive by the organization are equal or greater than the output of the employee, (Masterson & Stamper, 2003) and this support and incentives increase the level of commitment of the employees and employees contribute more in the organization. Adequate human resource management facilitates employees to participate and perform the operations of the organization effectively and efficiently to achieve the goals and objectives of the organization (Susan, 2012). Human resource management consists of guideline, training and process that have impact on the attitude, behavior and outcome of the employees. Human resource management is considered as the most important and beneficial asset of the organization.

Hypothesis 2: “There is a significant Positive relationship between Development Perspective of Human Resource Management and Project Success”.

2.3 Lessons learned systems of KM and PMCR

Providing learning and knowledge sharing opportunities helps in retaining competency in the organization for a long period of time. Developing a culture of knowledge sharing in the organizations is one of the important factors of retaining competency and reducing turnover. Those organizations that enhance knowledge sharing culture are able to retain their employees (Smith & Oczkowski, 2011). According to Grant, those organizations that foster learning and knowledge sharing are more able to retain competency and get competitive advantage (Grant, 1996). When the projects complete project managers are transfer to different departments without keeping the lesson learned by them but no doubt the lesson learned by them during the project enhance their competency which remains with the organization for successful completion of the future projects (Disterer, 2002). When managers share lesson learned by them during the execution of the projects with each other their ability to deal with projects enhance and by this they would be able to deal with future project more effectively and efficiently (Newell & Edelman, 2008).

Lesson learned is the process of knowledge creation based on the information collected from the previous project and stored which is then used at the start of the new project in a new way. It is a process of converting the individual knowledge into the organizational knowledge (Nonaka I. , 1994). Lesson learned is used to enhance the competency by sharing the past experience of project managers which is then used for the execution of new projects to get desired outcome (Zollo & Winter, 2002). The creation of proper storage of lesson learned system used to retain the competency of the project managers. Lesson learned is considered as a key factor for retaining project management competency. Adoption of knowledge management strategies add value to the organization outputs and this strategy has been extensively adopted by many organization and it has enhanced the performance of adopted organizations reported by numerous scholars (Gholami & Asli, 2013) but (Tseng, 2014) lesson learned system are seen very useful in project based organization. According to (Paranagamage & Carrillo, 2012) there are few reason that force project based organization to adopt lesson learned system most important is that it enable organization not to repeat the mistake that took place in the past projects, to make sure the thing that enable past project successful has adopted or not in the present project, to get competitive advantage and to ensure innovation in the present project as compared previous one.

Hypothesis 3: “There is a significant Positive relationship between Lesson Learned System of Knowledge Management and Project Management Competency Retention”.

2.4 Lesson learned System of KM and Project Success

Knowledge plays an important role in getting competitive advantage, adopting innovation and success of projects. Some argue that the innovations in an organization are mainly depending on the knowledge and competency of its employees. It is important to have an effective management for storage, utilization and sharing of knowledge (Egbu, 2000). Knowledge transfer have seen very fruitful for those organization which are connected with each other (Darr & Argote, 1995) like groups (Baum & Ingram, 1998) and franchise (Powell & Koput, 1996) and these organization share knowledge more effectively as compared to the independent organizations. Knowledge sharing is one of the factors which help the organization in gaining a competitive advantage (Argote & Beckman, 1990). Goals and objective of the organization can be achieved in a matchless way when the learning in the organization is on regular basis, (Cyert & March, 1963) knowledge management is considered as one of the most important factor for the success of a project and performance of organization. Knowledge is an important source which is transferred to organization from the ability of its employees and it is an important source of get competitive advantage (Drucker, 1993). Methods of knowledge management should be followed at the start of the project and at the end of the project all the lesson learned from that project should be collected (Owen & Burstein, 2005). Value of the organization increases when knowledge is shared and distributed among the employees (Choi, Kim, & C.M, 2006). Knowledge will be useless when it is not utilized effectively and efficiently (Yusof & Bakar, 2012). Knowledge management is an important issue for getting competitive advantage for long-term (Alavi & Leidner, 1999).

The implementation of knowledge management strategy in the organization enables organization with value and quality of performance (Spender & Grant, 1996). There are numerous researches has been done to find out the impact of knowledge management on the success of a project (Suraj & Ajiferuke, 2013) and (Tseng, 2014) knowledge management is an important process in enhancing the performance of the organization. Knowledge gain in term of response from the customers help the organization to increase the performance of the project and it helps in creating a good relationship with customer that ultimately enhances performance of the projects and satisfaction of the customer (Abdullateef & Mokhtar, 2010). From the past decade knowledge formation in the organization has become the important element of empirical and theoretical studies (Becerra-Fernandez, 2001). Knowledge formation is the method to evaluate the lesson delivered by the employees and to link and save it with organizational knowledge system (Nonaka & Toyama, 2000). Recently number of organization are adopting knowledge for the successful outcome of

their projects and in the recent years (Metaxiotis & Ergazakis, 2005) number of studies has been conducted on the importance of knowledge management. (Goh, 2002) support knowledge management as an important branch and suggested to implement knowledge management in the public organization for the improvement of operations in public sector and it is possible when official want it to be implemented as in the process of knowledge management, knowledge is shared among different organization which would be proved beneficial for the involved organizations and it is possible only when the authorities show their consent in this matter.

Learning is a crucial for getting competitive edge. Today in this competitive environment every organization wants success in their projects and wants to achieve high progress which is possible only with the effective knowledge management system (Grant, 1996). Learning has impact on the performance of the organization specially in adopting new technology and in progress of new product and it is adopted to combine employees and to make them smart, innovators a better decision maker (Patton, 2001). Learning is crucial and beneficial for the newness of the project in the project based organization as learning improve skill of the employees and enable organization to present their project in a better form (Sammorra & Biggiero, 2008) their performance enhance and learning enable them to move with the market. According to (Paranagamage & Carrillo, 2012) there are few reason that force project based organization to adopt lesson learned system most important is that it enable organization not to repeat the mistake that took place in the past projects, to make sure the thing that enable past project successful has adopted or not in the present project, to get competitive advantage and to ensure innovation in the present project as compared previous one. When there is no any proper system for managing knowledge and lesson learned system it will result in improper delivery of the project which leads to the dissatisfaction of the customer and it is very harmful for the image of the organization in the competitive environment (Desouza & Paquette, 2011) and (Devenport & Prusak, 1998) knowledge management has gain a lot attention of the management scholar and it has been consider as the most important factor for the success of the project based organization as well as gaining the strength in competitive advantage.

Hypothesis 4: “There is a significant Positive relationship between Lesson Learned System of Knowledge Management and Project Success”.

2.5 Project Management Competence Retention and project success

Retaining competent employees is very beneficial for the organization, organization when retain its competent employees it enable it to fulfill its goals and objective and employer should have ability to retain its competent employees at least longer than its competitor. Organization required competency for competitive advantage and employees need career and competency and skill development opportunity (Prince & Van Eijs, 2005). Providing competency development chances to employee are beneficial for both organization and employees and doing so organization gain competitive advantage whereas employee gain a chance to enhance their competencies. Organization fails to retain competency when organization do not provide career opportunity to its employees and organization face negative output from their employees (Taylor & Audia, 1996). Organization fail to retain competency as the project managers faces time pressure, stress and conflict, such environment result in loss of competency (Turner & Keegan, 2008). Many organizations fail to retain their project managers (Holzle, 2010). The success of a project is mainly dependent on the capabilities of a manager, including his/her knowledge and proficiency (Crawford L. , 2007) the skills and capabilities required by a manager varies from project to project (Muller & Turner, 2007) therefore a manger should be capable of dealing with different situations effectively and efficiently. The main task of project managers is to use their competency to collaborate with members and perform task according to the project management schedule and within a specific time.

To perform the task a project manager should have a competency to fulfill the work efficiently and effectively (Crawford L. , 2000). Project managers are required to combine their entire competence to collaborate and communicate with team members to perform the given task and to get desire results. Organizations deals with project and number of projects are being failed therefore (Bredillet & Tywoniak, 2015) organizations need competency for quick results which results in increase in the demand of project managers (Crawford L. , 2005). Fast growing organizations demand competent project managers for sensitive issue who not only deals with projects but also collaborate and communicate to resolve unethical issues. Hence, researches has presented a series of competency retained by project managers (El-Sabaa, 2001) and (Crawford L. , 2005). Project manager should posses a high level competency to achieve success and avoid failure (Napier & Keil, 2009). Project management competency is to figure out business operation and know-how of skills and understanding of business surroundings (Suikki & Tromstedt, 2006). For better performance it is crucial to find out competency of every member and tie them to single aim to achieve high performance (Maznevski, 1994). Research reveals that it is fruitful for the organization to attain collective competency (Ruuska & Teigland, 2009). Competency play a vital role for the success of a project (Jha & Iyer, 2007).

Hypothesis 5: “There is a significant Positive relationship between Project Management Competency Retention and Project Success”.

2.6 Development Perspective of HRM and Project Success with mediation of PMCR

Most of the studies have mention that providing career opportunity help the organization to retain their employees and it has a significant positive impact on the retention of the employees. When organization promote their internal employees on the basis of their performance then this thing enhance performance of the employees and employees remain with the organization and it has been supported by numerous studies that promoting employees on the basis of performance has negative relation with turnover (Guthrie, 2001). When organization provides career opportunity to their employees then it would indirectly put negative impact on their intention to leave organization (Allen & Bryant, 2010). In the same way when organizations provide promotion chances to their employees it also put negative impact on their intention to leave organization (Phillips, 1998). Providing a proper career path to project managers helps the management to retain project managers in the organization (Bredin & Soderlund, 2013). Providing a proper training to employees is also a significant to tools to eliminate the issue of turnover. Formal training to employees has a positive impact on the retention of the employees and it also enhances the competency of the employees (Laser, 1980). (Huselid, 1995) also supported that providing job related training to employees have positive impact on the retention of the employees. When organization provides learning chances to enhance the competency of the employees it also put negative impact on their intention of turnover (Ng & Butts, 2009).

Development perspective and training opportunities to employees have negative impact on turnover intention of the projects managers and when they remain with the organization and deals with different projects and learn from their past experience ultimately their competencies enhance which results in high performance and when these managers with such competencies promoted to top managements then goals of the organization will be achieved easily (Zollo & Winter, 2002). Organization required competency for competitive advantage and employees need career and competency and skill development opportunity. Providing competency development chances to employee are beneficial for both organization and employees and doing so organization gain competitive advantage whereas employee gain a chance to enhance their competencies (Prince & Van Eijs, 2005). Organization fails to retain competency when organization do not provide career opportunity to its employees and organization face negative output from their employees (Taylor & Audia, 1996). Organization fail to retain competency as the project managers faces time pressure, stress and conflict, such environment result in loss of competency (Turner & Huemann, 2008). Many organizations fail to retain their project managers (Holzle, 2010). Project manager face stress and time and work burden which positively linked with quitting the job (Aitken & Crawford, 2007) and that the time when they seek for the support of the organization (Allen & Bryant, 2010) and (Cao & Hirschi, 2014).

Hypothesis 6: “There is a mediating impact of Project Management Competency Retention between Development Perspective of Human Resource Management and Project Success”.

2.7 Lesson Learned System of KM and Project Success with mediation of PMCR

Knowledge sharing is one of the factors which help the organization in gaining a competitive advantage (Argote & Beckman, 1990). Goals and objective of the organization can be achieved in a matchless way when the learning in the organization is on regular basis, (Cyert & March, 1963) knowledge management is considered as one of the most important factor for the success of a project and performance of organization. Knowledge is an important source which is transferred to organization from the ability of its employees and it is an important source of get competitive advantage (Drucker, 1993). Methods of knowledge management should be followed at the start of the project and at the end of the project all the lesson learned from that project should be collected (Owen & Burstein, 2005). Value of the organization increases when knowledge is shared and distributed among the employees (Choi, Kim, & C.M, 2006). Knowledge will be useless when it is not utilized effectively and efficiently (Yusof & Bakar, 2012). Adoption of knowledge management strategies add value to the organization outputs and this strategy has been extensively adopted by many organizations and it has enhanced the performance of adopted organizations reported by numerous scholars (Tseng, 2014). Learning is crucial and beneficial for the newness of the project in the project based organization as learning improve skill of the employees and enable organization to present their project in a better form (Sammarra & Biggiero, 2008) their performance enhance and learning enable them to move with the market (Brady & Davies, 2004).

To perform the task a project manager should have a competency to fulfill the work efficiently and effectively (Crawford L. , 2000). Project managers are required to combine their entire competence to collaborate and communicate with team members to perform the given task and to get desire results. Organizations deals with project and number of projects are being failed therefore (Bredillet & Tywoniak, 2015); (Crawford L. , 2005) organizations need competency for quick results which results in increase in the demand of project managers. Project manager should posses a high level competency to achieve success and avoid failure (Napier & Keil, 2009). Project

management competency is to figure out business operation and know-how of skills and understanding of business surroundings (Suikki & Tromstedt, 2006). For better performance it is crucial to find out competency of every member and tie them to single aim to achieve high performance (Ruuska & Teigland, 2009). Competency plays a vital role for the success of a project (Jha & Iyer, 2007).

Hypothesis 7: “There is a mediating impact of Project Management Competency Retention between Development Perspective of Human Resource Management and Project Success”.

3. METHODS

Sample, Data collection methods, instrument, sample description and statistical techniques have discussed in this section.

3.1 Sample and Data collection method

For the collection of data 380 questionnaires were distributed in telecommunication sector (PTCL, Ufone, Warid, Zong and Mobilink), GEPCO and Sui Northern Gas Pipeline limited of Gujranwala District of Punjab, Pakistan out of which 321 questionnaire were returned and the study gain an actual response rate of 84.4%. This high response rate is owing to the adoption of personal administered questionnaire technique. Some questionnaires were excluded because of missing values by using list-wise deletion method which includes particular statistical analysis and after that 310 complete questionnaires were selected for further proceeding. In current study non-probability sampling is use because there is lesser amount of concern with generalization. It is generally concern to feel the situations and circumstances.

3.2 Instrument

The type of scale that is used for questionnaire as an instrument is “Five Point Likert Scale” with commentators such as 1st Strongly disagree, 2nd Disagree, 3rd Neutral, 4th Agree and 5th is Strongly disagree. Respondents respond to the point at which they satisfied with items. The questionnaire items are initially assembled in English.

3.3 Sample Description

Demographic sample descriptions of respondent of targeted sectors are as follows:

Table 1. Gender description of participants

	Frequency	Percent
Male	179	57.7
Female	131	42.3
Total	310	100.0

The above table shows:

- The frequency of male participant is 179 out 310 and their percentage is 57.7%.
- The frequency of female participant is 131 out of 310 and their percentage in 42.3 %.

Table 2. Age description of participants

Age	Frequency	Percent
20 or less	17	5.5
21-24	71	22.9
25-29	86	27.7
30-39	71	22.9
40-49	48	15.5
50-59	17	5.5
Total	310	100.0

The above table shows:

- The frequency of participant aged 20 or less is 17 out of 310 and their percentage is 5.5%
- The frequency of participant aged 21-24 is 71 out of 310 and their percentage is 22.9%.
- The frequency of participant aged 25-29 is 86 out of 310 and their percentage is 27.7%.
- The frequency of participant aged 30-39 is 71 out of 310 and their percentage is 22.9%.
- The frequency of participant aged 40-49 is 48 out of 310 and their percentage is 15.5%.
- The frequency of participant aged 50-59 is 17 out of 310 and their percentage is 5.5%.

Table 3. Marital status description of the participant

Marital Status	Frequency	Percent
Married	139	44.8
Single	171	55.2
Total	310	100.0

The above table shows:

- The frequency of married participant is 139 out of 310 and their percentage is 44.8%.
- The frequency of single participant is 171 out of 310 and their percentage is 55.2%.

Table 4. Sector description of the participant

Sector	Frequency	Percent
Public	139	45
Private	169	55
Total	308	100.0

- The frequency of public sector participant is 139 out of 308 and their percentage is 45%.
- The frequency of private sector participant is 169 out of 308 and their percentage is 55%.

Table 5. Qualification of the participant

Qualification	Frequency	Percent
Matriculation	2	.6
Intermediate	21	6.8
Graduation	162	52.3
Post-Graduation	125	40.3
Total	310	100.0

- The frequency of participant having matric qualification is 2 out of 310 and their percentage is 0.6%.
- The frequency of participant having intermediate qualification is 21 out of 310 and their percentage is 6.8%.
- The frequency of graduate participant is 162 out of 310 and their percentage is 52.3%.
- The frequency of post-graduate participant is 125 out of 310 and their percentage is 40.3%.

Table 6. Job tenure description of the participant

Job Tenure	Frequency	Percent
Less than one year	36	11.6
1-2 years	45	14.5
3-4 years	73	23.5
5-6 years	33	10.6
7-10 years	87	28.1
More than 10 years	36	11.6
Total	310	100.0

- The frequency of the participant having less than one year job tenure in the specific organization is 36 and their percentage is 11.6%.
- The frequency of the participant having 1-2 years job tenure in the specific organization is 45 and their percentage is 14.5%.
- The frequency of the participant having 3-4 years job tenure in the specific organization is 73 and their percentage is 23.5%.
- The frequency of the participant having 5-6 years job tenure in the specific organization is 33 and their percentage is 10.6%.
- The frequency of the participant having 7-10 years job tenure in the specific organization is 87 and their percentage is 28.1%.
- The frequency of the participant having more than 10 years job tenure in the specific organization is 36 and their percentage is 11.6%.

4. STATISTICAL TECHNIQUES

The relationship of Development Perspective of Human Resource Management, Lesson Learned System of Knowledge Management and Project Success with mediation of Project Management Competency Retention is examined by using the statistical techniques such as “Pearson’s Correlation”, “Descriptive Statistics”, “Factor Analysis” and Structural Equation Modeling (SEM).

4.1 Results

4.1.1 Correlation of variables

In the present study SPSS is used to impute the data. Table 7 shows the correlation values of the development perspective of human resource management, lesson learned system of knowledge management, project management competency retention and project success.

Table 7. Correlation of variables

		PMCR	PS	DPHRM	LLSKM
PMCR	Correlation	1	-.140*	-.114*	-.110
	Significance		.014	.046	.054
PS	Pearson Correlation	-.140*	1	-.007	.062
	Significance	.014		.897	.279
DPHRM	Pearson Correlation	-.114*	-.007	1	.584**
	Significance	.046	.897		.000
LLSKM	Pearson Correlation	-.110	.062	.584**	1
	Significance	.054	.279	.000	

*. Significant at 5%, **.Significant at 1%

In case of project management competency retention and project success the value Sig. (2-tailed) is less than .05 which shows that there is statistical significant correlation between project management competency retention and project success. Hence we can conclude that the project management competency retention has significant impact on project success. In case of development perspective of human resource management and project success the value Sig. (2-tailed) is greater than .05 which means that there is no statistical significant correlation between development perspective of human resource management and project success. Hence we can conclude that development perspective of human resource management has no significant impact on project success. In case of lesson learned system of knowledge management and project success the value Sig. (2-tailed) is greater than .05 which means that there is no statistical significant correlation between lesson learned system of knowledge management and project success. Hence we can conclude that lesson learned system of knowledge management has no significant impact on project success.

4.1.2 Reliability

To check the consistency of responses or feedbacks from the respondents “Reliability Analysis” is performed. To investigate the reliability of the survey “Cronbach’s Alpha” is measured as shown in table 8. The range that is acceptable for Cronbach’ alpha is .70 or greater (Bryman & Bell, 2003).

Table 8. Reliability statistic

Cronbach’s Alpha
.742

4.1.3 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis test is required to confirm the adequacy of the conceptual model. Confirmatory analysis test is applied on all the variables separately to confirm that the all the values (DF= Degree of Freedom; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; CFI= Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index) are within acceptable ranges. In this study AMOS 21 is used to run the confirmatory analysis test.

4.2 Development Perspective of Human Resource Management

The questionnaire contains 10 items on development perspective of human resource management to investigate that up to what extent the employees of the targeted sectors are satisfied with the development perspective of human

resource management in retaining the competency. After applying confirmatory factor analysis test only those items were retained which has factor loadings $> .30$.

Table 9. Confirmatory factor analysis of Development perspective of HRM

Statistics	Fit Indices	Acceptable Threshold value	Values
	CMIN/DF	1-5	2
Absolute Fit	GFI	$>.90$.993
	RMR	$<.05$.017
	RMSEA	Less or equal to .08	.057
Incremental Fit	CFI	Greater or equal to .95	.996

DF= Degree of Freedom; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; CFI= Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index.

4.3 Lesson Learned System of Knowledge Management

The questionnaire contains 7 items on lesson learned system of knowledge management to investigate that whether the targeted sectors have an effective lesson learned system or not and its impact on competency retention. After applying confirmatory factor analysis test only those items were retained which has factor loadings $> .30$.

Table 10. Confirmatory factor analysis of learned system of knowledge management

Statistics	Fit Indices	Acceptable Threshold value	Values
Absolute Fit	GFI	$>.90$	1.00
	RMR	$<.05$.000
	RMSEA	Less or equal to .08	.453
Incremental Fit	CFI	Greater or equal to .95	1.00

DF= Degree of Freedom; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; CFI= Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index.

4.4 Project Management Competency Retention

The questionnaire contains 5 items on project management competency retention to investigate that whether the targeted sectors are able to retain their competency in project management or not. After applying confirmatory factor analysis test only those items were retained which has factor loadings $> .30$.

Table 11. Confirmatory factors analysis of Project Management Competency Retention

Statistics	Fit Indices	Acceptable Threshold value	Values
	CMIN/DF	1-5	13.621
Absolute Fit	GFI	$>.90$.957
	RMR	$<.05$.062
	RMSEA	Less or equal to .08	.202
Incremental Fit	CFI	Greater or equal to .95	.958

DF= Degree of Freedom; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; CFI= Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index.

4.5 Project Success

The questionnaire contains 9 items on project success to investigate that whether the employees of the targeted sectors are well about the project management to achieve project success or not. After applying confirmatory factor analysis test only those items were retained which has factor loadings $> .30$.

Table 12. Confirmatory factors analysis of Project Success

Statistics	Fit Indices	Acceptable Threshold value	Values
	CMIN/DF	1-5	1.628
Absolute Fit	GFI	>.90	.984
	RMR	<.05	.030
	RMSEA	Less or equal to .08	.045
Incremental Fit	CFI	Greater or equal to .95	.991

DF= Degree of Freedom; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; CFI= Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index.

4.6 Structural Equation Modeling (SEM)

In this study path analysis has been shown by using structural equation modeling (SEM) through AMOS 21. Figure 5 shows the model which represents the relationship among the development perspective of human resource, lesson learned system of knowledge management, project management competency retention and project success which was further measured through standard estimate to find whether there is a statistical significant relationship exist between them or not and the results has been shown in table 13.

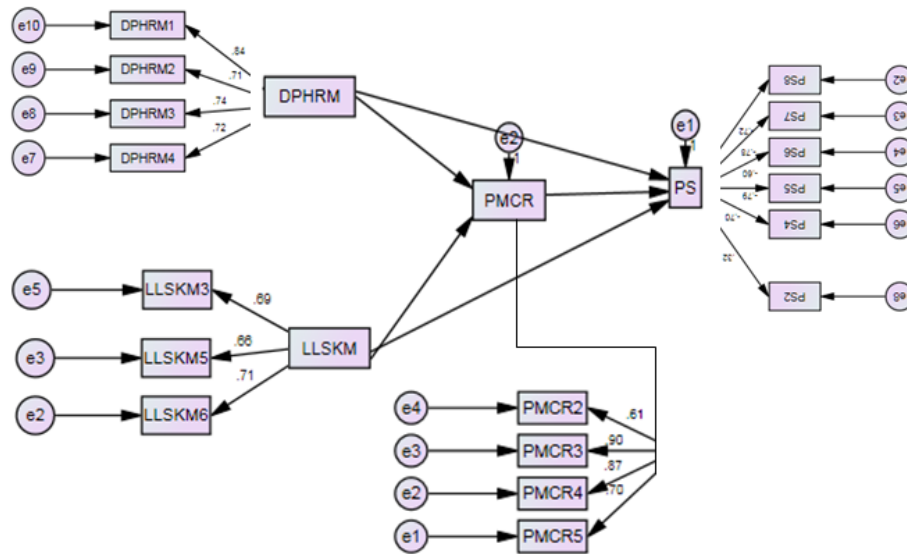


Fig. 5. Structural Analysis of Path Model

Table 13. Standardized Estimate of Path Analysis

			Estimate	S.E.	C.R.	P
PMCR	<---	DPHRM	-.079	.073	-1.081	.280
PMCR	<---	LLSKM	-.078	.082	-.949	.343
PS	<---	PMCR	-.097	.040	-2.441	.015
PS	<---	DPHRM	-.056	.051	-1.099	.272
PS	<---	LLSKM	.075	.057	1.313	.189

DPHRM=development perspective of human resource management; LLSKM=lesson learned system of knowledge management; PMCR=project management competency retention; PS=project success.

5. DISCUSSION

This section debates on the results offered in the preceding chapter. Initially, a recap of the outcomes and arguments are presented. Hypothetical and practical implications of the results are discussed. The chapter ends at outline further research directions and conclusion.

Hypothesis 1: “There is a significant Positive relationship between Development Perspective of Human Resource Management and Project Management Competency Retention”.

An insignificant positive relationship between development perspective of human resource management and project management competency retention has been proved in this study. As this research has been conducted in Pakistan, most of the organization in Pakistan are failed to retain competency due to its poor HR system. A study conducted in Ghana Vodafone company founded that competency can be retain by organization when it satisfied their employees needs, provide career path and better working environment to its employees (Kwenin, Muathe, & Nzulwa, 2013). On the other hand it does not solely depend on HR system to retain competency, even if the organization provides better training to its employees, that enhance their skills and abilities then there may be a chance that it creates more and better opportunity for them in the market (Smith & Oczkowski, 2011). Therefore, the results did not support the researcher’s hypothesis that there is a significant positive relationship between development perspective of human resource management and project management competency retention.

Hypothesis 2: “There is a significant Positive relationship between Development Perspective of Human Resource Management and Project Success”.

An insignificant positive relationship between development perspective of human resource management and project success has been proved in this study. As this research has been conducted in Pakistan, most of the organization in Pakistan are failed to retain their project managers for a long period due to its poor HR system. On the other hand, As compared to the line managers, project managers usually do not have long term future perspectives on a certain position in an organization due to the time bound nature of the project for which their services are hired by an organization which, by its very nature, itself is not a permanent entity (El-Sabaa, 2001). Therefore, the results did not support the researcher’s hypothesis that there is a significant positive relationship between development perspective of human resource management and project success.

Hypothesis 3: “There is a significant Positive relationship between Lesson Learned System of Knowledge Management and Project Management Competency Retention”.

An insignificant positive relationship between lesson learned system of knowledge management and project management competency retention has been proved in this study. Most of the organizations relocate their project managers without retaining lesson learned in previous project to be used in the future projects but the competency enhanced during the project remain in the organization (Disterer, 2002). As this research has been conducted in Pakistan, most of the organization in Pakistan are failed to retain competency because when the employees get a better opportunity they leave the organization and competency attach with them also go with them. Therefore, the results did not support the researcher’s hypothesis that there is a significant positive relationship between lesson learned system of knowledge management and project management competency retention.

Hypothesis 4: “There is a significant Positive relationship between Lesson Learned System of Knowledge Management and Project Success”.

An insignificant positive relationship between lesson learned system of knowledge management and project success has been proved in this study. Employees of the organization might not share their knowledge with others in the organization. It may be possible that resentment and competition between the departments stop employees from sharing their knowledge with each other (Ashforth & Maell, 1989). Knowledge sharing is the process by which one department of the company is distressed from other (Argoti & Beckman, 1990); (Levitt & March, 1988) e.g. one department gain experience from other department and start to work more efficiently from that department from which it gain experience. Therefore, the results did not support the researcher’s hypothesis that there is a significant positive relationship between lesson learned system of knowledge management and project success.

Hypothesis 5: “There is a significant Positive relationship between Project Management Competency Retention and Project Success”.

Results as shown in table 13 indicate that there is significant positive relationship between project management competency retention and project success ($P < .05$). The results supported the researcher’s hypothesis that there is a significant positive relationship between project management competency retention and project success.

Hypothesis 6: “There is a mediating impact of Project Management Competency Retention between Development Perspective of Human Resource Management and Project Success”.

In this study researcher hypothesized mediating impact of project management competency retention between development perspective of human resource management and project success but the results reveals an insignificant

relationship of development perspective of human resource management with project management competency retention and project success. Therefore no mediation was proved. So the researcher's hypothesis was not supported.

Hypothesis 7: "There is a mediating impact of Project Management Competency Retention between Lesson Learned System of Knowledge Management and Project Success".

In this study researcher hypothesized mediating impact of project management competency retention between lesson learned system of knowledge management and project success but the results reveals an insignificant relationship of lesson learned system of knowledge management with project management competency retention and project success. Therefore no mediation was proved. So the researcher's hypothesis was not supported.

5.1 Practical Implication

Recent research has considerable practical implications. Organizations should on the basis of evidence try to adopt strategies which help organizations to achieve success in the projects. A significant positive relationship has been found in project management competency retention and project success. Organizations should eliminate those factors which fail the organization to retain competency. Organization should understand that every employee has some desire which should be satisfied for retaining the employees in the organization and to increase the productivity of the employees. One can do so (Hayes, Rose-Quirie, & Allinson, 2000) by observing the duties and responsibilities of the managers at workplace by questioning them about their competency need to perform their work effectively and/or by adopting techniques like interviewing and questionnaire. By applying these techniques organization would be able to retain its competency and would be able to achieve success in the projects.

5.2 Limitation and future research directions

This study has some limitations which provide directions for future research. First of all an insignificant relationship has been found between development perspective of human resource management and project management competency retention. In future studies, it would be beneficial to investigate cultural impact on project management competency retention (Holtom, 2008). This study has investigated the impact of only two independent variables that are development perspective of human resource management, lesson learned system of knowledge management. There are many other variables like organizational environment, market conditions, perceived organization support that have impact on project management competency retention and project success. Secondly, the sample has been drawn from Gujranwala district of Punjab, Pakistan. Thus, the results can be tested on other districts of Punjab as well as other provinces of Pakistan.

5.3 Conclusion

The contribution of this study is imperative in existing knowledge of development perspective of human resource management, lesson learned system of knowledge management, project management competency retention and project success. The relationship of development perspective of human resource management, lesson learned system of knowledge management and project success with mediation of project management competency retention is examined by using the statistical techniques such as "Pearson's Correlation", "Descriptive Statistics" and "Factor Analysis". This study is based on the sample of employees from telecom sector, GEPCO and SNGPL of Gujranwala district of Punjab, Pakistan, confirmed that development perspective of human resource management and lesson learned system of knowledge management has insignificant positive relationship with project management competency retention and project success. There is no mediation of project management competency retention has been proved between development perspective of human resource management, lesson learned system of knowledge management and project success. A significant positive relationship has been proved between project management competency retention and project success. The results of this study suggested that it is crucial for the organizations to retain competency to achieve project success and this study be supposed to helpful for management to retain competency to achieve success in the projects.

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