DUBLIN BUSINESS SCHOOL

(DBS)

Is there a relationship between applying lessons learned and project success?

A mixed method study of project manager's in Ireland.

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Mr. Patrick Mongey.

Table of contents:

List of abbreviations:

KM	Knowledge Management
LL	Lessons Learned
PM	Project Manager
PMs	Project Managers
PMI	Project Management Institute
PPR	Post Project Reviews

List of figures

List of tables

Declaration

I, John Connolly, declare that this research report is my own, unaided work, except as indicated in the acknowledgments, the text and the references.

This report is being submitted in partial fulfilment of the requirements for the degree of ‘Master of Business Administration Project Management’ at Dublin Business School, Dublin.

It has not been submitted before, in whole, or in part for any degree or examination at any other institution.

John Connolly

Signed …….…… on the day of 22/08/2014

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Abstract

The aim of this dissertation is to discover if there is relationship between applying Lessons Learned (LL) and project success in the context of project management. In addition it will investigate the factors affecting the collection and dissemination of LL to determine what role these play in inhibiting the successful use of LL. This paper was built around Project managers (PMs) in Ireland. From this research recommendations are made to improve the use of LL and to avoid the barriers that impede the successful implementation of LL. There is very little research done on the direct impact of LL on project success particularly Ireland.

The dissertation includes a mixed method approach to generate the data. The mixed method approach combines quantitative and qualitative research. The quantitative research was compiled by the use of an electronic questionnaire. The qualitative research consisted of face to face interviews. This approach has given a more complete and comprehensive understanding of the research problem that either approach alone.

The research findings correlate with both the primary and secondary sources of data to establish that there is a relationship between applying lessons learned and project success. The findings strongly suggest that the approach to how lessons learned are collected and disseminated needs to be modified to increase the benefits from applying lessons learned.

Chapter 1 - Introduction

This paper starts with an introductory chapter. An introduction is the first passage and sets the stage for the entire project (Creswell 2014 p.107). The researcher’s goal is to introduce the reader to the background of the dissertation, clarify the significance of the research problem and explain the benefits and importance of this study.

1.1 Research background and rationale

In the current climate Project managers (PMs) have to reach project goals without an appropriate budget, a rational timetable, or a competent project team etc. To add to this the environment is unpredictable and unreliable. To achieve project success PMs must be armed with dependable contemporary knowledge and innovative practice experiences (Neverauskas et al 2013).

To stay competitive, organisations today have been moving from operations and business as usual to project management as part of their competitive strategy. The ability to execute projects effectively will drive the realisation of the proposed benefits and the achievement of business objectives (PWC, 2012). Organisations are becoming more project focused with defined, even mature processes for initiating, planning, monitoring, executing and controlling activities. The important question being asked is “are they learning from project to project” (Rowe, 2008).

LL has been mentioned as one of the most important and value adding pieces of the project management lifecycle but it has been stated that it is often the most ignored part of finishing a project (Walker, 2008). Knowledge creation and knowledge sharing are important factors in a company’s ability to survive and compete in today’s knowledge based economy (Hall-Andersen and Broberg, 2014).

It appears projects are not being successfully executed in the current environment. On average large IT projects run 45% percent over budget and 7% over time while delivering 56% less value than predicted. When comparing budgets, schedules, and predicted performance benefits with actual costs and results found that these IT projects in total had a cost overrun of $66 billion (Bloch et al., 2012). In a project management institute (PMI) study which is consistent with other studies, shows that less than two-thirds of projects meet their goals and business intent (success rates have been falling since 2008), and about 17 percent fail outright (PMI, 2013). It appears many PMs are not using recommended good practices and face uncertain issues because of the lack of reliable information (Neverauskas et al 2013).

Knowledge management (KM) relating to temporary organisations is an increasingly even decisive competitive factor (Hanisch, 2009). Since (Drucker, 1999) argued that knowledge had replaced tangible assets as the principle driver of economic growth KM has generated widespread interest. There are significant figures relating to ineffective KM research. It is estimated that US Fortune 500 companies lose at least $31.5 billion a year by failing to share knowledge (Babcock, 2004, cited in Massingham and Massingham, 2014). Only 40% of companies surveyed say their companies are good or excellent at feeding back lessons from successful implementation into strategic planning and just 33% when it comes to unsuccessful ones. 33% have no method for doing so (PMI, 2013).

A focus on KM ensures that there are practices in place to transfer the insights and experiences of a team working on projects with other teams throughout the organisation facing similar challenges or opportunities. 65% high performing PMOs regularly communicate LL and 59% consider the impact of collaboration on projects. This compares to

low performing companies with only 49% and 40% of respectively (PMI, Nov, 2013). This indicates that higher performing PMOs use LL.

The area of LL is important for many reasons. Firstly, it can improve results at an operational level resulting in an improvement in the profits. Secondly as mentioned earlier knowledge based assets are a source of competitive advantage. Subsequently Learning lessons from previous project experiences helps to achieve economies of learning but also, these practices can contribute to a company's competitive advantage, due to knowledge based practices uniqueness and difficulty in replicating and become organisationally embedded over time (Jugdev, 2012).

Academic publications on the role of using KM and how it can be used in the management of projects to improve success are very rare (Lierne and Ribiere, 2008). The project management community are aware that they are poor at LL and they do not know why this is or how they can improve their current stance (Rhodes and Dawson, 2013).

This dissertation investigates if KM specifically the use of LL can demonstrate a relationship between their implementation and future project success. While also considering the barriers that hamper the effective use of LL on current/new projects. By not utilising LL are PMs in Ireland missing a big opportunity to enhance the service they provide to their clients and to improve as PMs?

1.2 Research area:

Is there a relationship between the use of LL and project success?

How do PMs in Ireland record/access LL and what factors affect their use?

How are LL shared by PMs in Ireland and what factors affect this process?

What are the cultural implications experienced by PMs in Ireland in relation to the use of LL?

1.3 Research objectives:

Research objectives are clear, specific statements that identify what the researcher wishes to accomplish as a result of doing the research (Saunders et al. 2012, p680). Based on the extensive literature review the main objectives for this research are:

1. To examine if the use of LL has a relationship with new or existing project success.
2. To discover the methods which LL are recorded/accessed, and access what factors impacts their use on current and future projects.
3. To discover how LL are being shared and what factors impacts their use on current and future projects.
4. To determine if the organisational culture in Ireland either inhibits or promotes the use of LL in current and future projects.

1.4 Research questions:

1. *Does the use of LL by PMs in Ireland affect new and existing project success?*

Rationale: LL is becoming an increasingly important topic for organisations, but many struggle with the collection and dissemination of lessons, consequently making them poor at achieving any benefits from LL (Rhodes and Dawson, 2013). The literature would suggest that LL is important to project success. The aim is to discover if PMs in Ireland have experienced benefits from using LL.

2. *What methods do PMs in Ireland use to record/access LL and what factors inhibit this process?*

Rationale: Post project reviews (PPRs) appear to be the most popular method used by PMs around the world and play a fundamental role in promoting organisational learning (Carrillo, 2011). Their effectiveness has widely been questioned (Milton, 2010). Research has also highlighted the limited use of KM systems (Carrillo et al., 2013).The aim of this question is to highlight what methods PMs in Ireland use to capture/access LL and to discover what factors impact this process. By researching this area it may highlight issues regarding the use of LL on future projects.

3. *How are LL shared by PMs in Ireland and what factors inhibits this process?*

Rationale**:** For the sharing knowledge to occur and contribute, certain factors have to be in place so that an individual shares his knowledge with others (Obrenovic and Qin, 2014). Milton, (2010) found that organisations identified and capture lessons but the lessons were not shared to deliver intended changes in organisations behaviour, process, best practices or standards. Key factors affecting the sharing of LL highlighted in recent studies include top management support, values, incentives and social capital (Obrenovic and Qin, 2014). The

aim here is to highlight how PMs in Ireland share LL and to discover what factors impact this process. By researching this area it may highlight issues regarding the use of LL on future projects.

4. *Does the organisational culture experienced by PMs in Ireland affect the use of LL in current/future projects?*

Rationale: Organisations with a positive culture, encouraging the values of individual learning by sharing processes that contribute to group or organisational learning, can lead to organisational success (Rebel and Gomes, 2011). A positive culture alone may be inadequate to assist knowledge sharing and more research is needed to understand how a knowledge sharing culture can be promoted (Wang and Noe, 2010). The aim for this question is to discover if PMs in Ireland experience a learning culture promoting to the use of LL. By researching this area it may highlight issues regarding the use of LL on future projects.

1.4 Research hypotheses:

H1: There is a positive relationship between the use of LL by PMs in Ireland and current/future project success.

H2: The most commonly used method to record and access a LL is a PPR but it is not fit for purpose.

H3: The lack of clear guidelines regarding LL is the main reason for LL not being shared.

H4: There is a positive relationship between being in an organisation with a learning culture and the use of LL experienced by PMs in Ireland.

1.5 Research suitability:

The researcher holds a degree in Landscape architecture from University College Dublin. He has successfully completed all the relevant modules in the MBA Project Management program at Dublin Business School. The use of all the information gained throughout the modules, especially the two project management modules; project management tools and techniques and project management planning and control, has supported this research project.

The researcher has knowledge and enthusiasm towards project management especially the areas of KM and in particular the use of LL for continuous improvement in project management. He is self – assured, dedicated and suitable to undertake this research project.

1.6 Recipient of research:

This research project is intended to perform a detailed investigation to understand PMs in Ireland understanding of the relationship of LL and its contribution to project success. Many of the respondents, of the self-administered web based surveys and face to face interviews, have shown an interest in the results of this research project. A copy of the results of this survey will be available to any respondents who have requested the results.

This dissertation is submitted as part of the Masters in Business Administration Project Management curriculum in Dublin Business School in association with Liverpool's John Moore University. The primary recipient of this research project is Dublin Business School and Liverpool's John Moore University staff and students, especially Mr. Patrick Mongey.

1.7 Research limitations

Although this study has revealed meaningful findings in the area of LL specially identifying the relationship between LL and project success plus what affect the use of LL by PMs in Ireland. First and foremost the research is conducted in Ireland.

Limitations may include access to information, availability of enough resources and time management. In time management the ability to balance work and study may be difficult especially during the summer as it is peak season in the researcher business. To overcome this issue a study plan was created and followed with two evenings a week dedicated to the dissertation. This increased closer to the hand in date.

To access primary data, the PMs were contacted and persuaded of the importance of the research and how valued their response to the survey would be. As the researcher has had no previous contact with PMs this may lead to disinterest towards the research and ultimately unwillingness to participate in the surveys and interviews.

Another limitation maybe the availability of experts in editing and guidance at difficult times could be minimal. Also as PMs are very busy, there is a risk that they will not have sufficient time to complete the survey or meet for face to face interviews. If the PMs respond to the survey their busy schedules might affect the quality of responses. To counteract this adequate notice will be given to experts so as they have time to respond and offer their guidance.

Shortage of time, due to completing this mixed method research study part time proved a challenge as the balance between working and research is a difficult balancing act. When using a mixed method approach the research can face many limitations. First of all due to time constraints a mixed method approach is time consuming as the researcher has to learn multiple methods and mix each method effectively. A mixed method approach is costly as

arrangements have to be made to meet interviews. The limitations of each approach are discussed further in the chapter 3.

Despite these limitations, this study has made a valuable contribution in extending the literature in the area of knowledge management especially LL.

1.8 Benefits of this research:

The researcher hopes that the resulting research will illustrate to project management professionals, organisations and project management students a greater appreciation of the valuable contribution Lessons Learned can make, not only to increased project success but to an organisation as a whole. It will also highlight the barriers that hamper the effective use of LL on current/new projects.

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1.9 Organisation of dissertation

The organisation of this dissertation is divided into nine separate chapters, each dealing with a separate area of the study for this research project.

Chapter 1: is an introduction to the dissertation including several parts of the research project including the research area, research objectives, research questions and research hypothesis

Chapter 2: Is the literature review which contains the academic materials read and critiqued by the researcher about this dissertation topic.

Chapter 3: Comprises of the research methodology. This section illuminates how and why the researcher is going to carry out the research project in order to obtain answers to research questions, determine the validity of the research hypothesis and meet the objectives of the research objectives.

Chapter 4: Contains the data analysis and findings section. In this section the results and findings of the data collected are recorded on paper

Chapter 5: Includes the conclusions, which provides the researchers conclusions to the research project and research area.

Chapter 6: Precludes are the recommendations, which provides the recommendations the researcher has made in relation to the topic.

Chapter 7: Deals with the researcher's reflection about the experience in conducting this research project at Dublin Business School.

Chapters 8 and 9: Contain the appendices and bibliography related to the research undertaken for this project.

Chapter 2 - Literary review

2.1 Introduction to the literature review

Reviewing the Literature gives you a foundation on which your research is built. It helps the researcher develop a good understanding and insight into relevant previous research and the trends that have emerged. A critical literature review should be a constructively critical analysis that develops a clear argument for what is known and unknown about the research question (Saunders et al., 2012, p. 73).

The following chapter will first give a general insight into project success to illustrate to the reader what exactly defines a successful project. From here the project management methodologies approach to LL, the concept of LL and how it impacts on existing and new projects including the barriers that affect its success will be discussed and analysed from the existing literature. This will be done to provide a framework to be compared against the primary data collected from project management professionals in Ireland.

There have been many articles published on KM, organisational learning and the barriers to LL. However not many studies have focused on specifically the relation between LL and project success. The expected result of the undertaken study is to add to the existing literature by closing the gap and enlighten project management professionals regarding the increased likelihood of project success by the use of LL. While also making PMs aware of the issues concerning the processes involved in using LL on future projects.

2.2 Project success:

Organisations need successful projects to improve their performance. As the review of the literature has illustrated there is no consistent interpretation of project success (Neverauskas et al., 2013). The universally accepted definition of a project according to the Project

Management Institute (PMI) is "A project is a temporary endeavour undertaken to create a unique product, service or result (PMI 2013, p. 3). PMs frequently have to reach project goals without having an appropriate budget, rational timetable, competent project team. To add to this, the environment is unpredictable and unreliable, so PMs must be equipped with dependable contemporary knowledge and advanced practice experiences. These combined will contribute to project success (Neverauskas et al., 2013).

In early literature project success was viewed narrowly as the accomplishment of certain objectives. These included specification, time and budget but the project context has now shifted. Now it is recognised that there is a need for a broader set of outcome measures (Andersen et al., 2006). One of the broader outcome measures for temporary organisations is KM which is now becoming an increasingly important and even a decisive competitive factor (Hanisch, 2009). Knowledge creation and dissemination are now included by project owners as factors that determine if the project is successful or not (Fusco, 1997).

In determining project success it is important to know what factors are critical to project management success, an individual project and what leads to consistently successful projects (Neverauskas et al., 2013). To answer these there is need for a distinction between the concepts 'project management success' and 'product success' (Van der Westhuizen & Fitzgerald, 2005).

'Project management success' coincides with the traditional views of the successful accomplishment of cost, time and quality objects but broadens to include the quality of the project process or work. This extra objective is considered to be the responsibilities of project management, hence if these objectives are met this is considered a 'project management success' (Munns and Bjeirmi, 1996). Whereas 'product success' focuses on the projects final product and its impact after it is completed, as in all the objectives are met, such as meeting

all the stakeholders' needs where they relate to the product (Baccarini, 1999). Van der Westhuizen & Fitzgerald (2005) believe the old parameters for project success have now changed and the diagram below illustrates the new approach to project management and project success.

Figure 1: New approach to project management criteria.

Source: (Van der Westhuizen and Fitzgerald, 2005)

Another interpretation of project success is a balancing between the scope and schedule in parallel with budget and benefits, or budget and scope in parallel with schedule and benefits. Benefits may include a combination of business objectives such as end user adoption, customer satisfaction and other criteria (Duggal, 2010).

2.3 Project management methodology

The world is becoming increasingly complex and the business landscape in all sectors and regions are changing. Organisations are struggling to succeed and prosper, resulting in failures and closures (Fisser and Browaeys, 2010). Does the methodology that PMs follow to manage projects reflect how they learn? There is no one answer to organisational challenges;

however it becomes clear that many traditional management assumptions may not be valid anymore (Fisser and Browaeys, 2010).

2.3.1 PMBOK

PMBOK is the most popular methodology used by project management professionals, accounting to 41% of a survey by the PWC (PWC, 2012). In the project management body of knowledge (PMBOK guide) - Fifth edition the documentation of LL is cited in several places such as quality, communications, procurement and stakeholder management including project integration and closure (PMI, 2013). In these areas the (PMI, 2013) states that the causes of variances, the root cause analysis of issues faced, the reasons behind the corrective action chosen, process improvements and other types of lessons from these areas should be documented. These become part of a data base for both the project and the performing organisation. It is only in the stakeholder LL section of the PMI (2013, p409) where it states LL are 'documentation and distributed'.

The PMI (2013, P151) states that the LL knowledge base containing historical information regarding activity lists used by previous similar projects can influence the define activities process. Define activities are the process of identifying and documenting the specific actions to be performed to produce the project deliverables (PMI 2013, p.141). Process assets are the plans, processes, policies, procedures and knowledge bases specific to and used by the performing organisation (PMI, 2013, p27). To summarise, the PMI states that the use of LL can affect the project deliverables.

2.3.2 PRINCE2

One of the principles of a PRINCE2 project is that the project management team learns from experience. Adopting PRINCE2 promotes learning and continual improvement in organizations (OGC, 2009). Lessons are sought, recorded and actioned throughout the

lifecycle project. It is often in the reviewing of progress that lessons are identified. Lessons can include information about management or specialist processes, products, techniques or procedures that either made a contribution to the project's achievements or caused a problem (OGC, 2009). To summarise how Prince2 captures and shares LL is as follows,

- When starting a project: Previous or similar projects should be reviewed to see if any LL can be applied.
- As the project progresses: To capture lessons, a lessons report or log is produced. The project should continue to learn as it progresses. Lessons should be included in all reports and reviews. The goal is to seek opportunities to implement improvements during the life of the project.
- As the project closes: As a minimum a lessons report should be produced during the closing of a project.
- The project should pass on lessons: Unless lessons provoke change, they are only lessons identified not lessons learned.
- It is the responsibility of everyone involved with the project to seek LL rather than waiting for someone else to provide them (OGC, 2009).

2.3.3 Agile

Private sectors organisations are leading the current adoption and use of Agile, with these organisations stating Agile has contributed to project success, project efficiency and enabling business performance goals (PWC, 2012 p19). Agile as a concept strongly has its thinking in software development contexts and project management, the agile concept has been adopted and applied to supply chain management as a means of coping with market volatility and uncertain demand (Browaeys and Fisser, 2012). Agile can be seen as a method of improving the effectiveness and performance of organisational processes (Browaeys and Fisser, 2012).

Agile focuses on integrated, self-directing teams in which team members take responsibility for managing their tasks and commitments (PWC, 2012, p.19). Agile promotes team learning which needs to be fostered by companies who are striving for innovation and sustainability (Fisser and Browaeys, 2010).

2.3.4 Summary of methodologies approaches

Using a combination of PRINCE2 and PMBOK methodologies is now becoming popular and companies that do use a combination have the highest project success rate (PWC, 2012 p.18). In both PMBOK and PRINCE2 they refer to the use of LL in scope change control, cost control, and schedule control (PMI, 2013; OGC, 2009). The stage a LL is recorded differs between PMBOK and PRINCE2. In PMBOK it states LL should be recorded at the project closure, whereas in PRINCE2 it states that LL should be captured, sought and actioned throughout the project lifecycle (PMI, 2013; OGC, 2009). It appears Agile adoption is increasing as it fits for smaller organisations who do not have a PMO (PWC, 2012, p.26) The standards do require a project review to be carried out but in reality it is not done successfully (Thomas, 1998).

2.4 Project knowledge management:

Knowledge can be defined as the set of skills, experiences, information and capabilities individuals apply to solve problems. KM is the set of practices an organisation applies to create, store use and share knowledge. Project KM is the use of KM in project situations (Hanisch, 2009).

In the writings of KM, knowledge has been viewed as a sustainable advantage in an organisation. Davenport and Prusak (2000) defines knowledge 'as being neither data nor information, but both'. Data is defined as a set of discrete objective facts about events such as

LL; following the creation of this information and organisations stores this data in a technology system. Knowledge can be classified into tacit (internal) knowledge and explicit (external).

- Implicit knowledge: "is a combination of a wealth of beliefs, presumptions and experiences that are shared typically within a cultural group such as a nation, company, family etc. and are not commonly articulated as they are presumed to be familiar to all".
- Explicit knowledge: "refers to books, manuals, printed procedures and guides that convey information clearly through language, images, sounds and other means of communication" (Polanyi, 1962, cited in Chileshe and Ghasabeh, 2014).

Knowledge gained in projects covers a wide range of areas, knowledge can relate to areas including design, planning or operation and maintenance. Knowledge furthermore encompasses team building, communication and stakeholder management and risk management. Relevant knowledge is not just about technical issues, but also about 'softer' topics such as social interactions and building commitment. Technical issues may be recorded but softer knowledge is not regularly captured in LL. (Buttler and Lukosch, 2012).

It appears a lot of companies realise the need for action when it comes to project KM but there does not appear to be a concrete systematic approach, this may be due to the varying use of project management methods by organisations (Hanisch, 2009).Figure 2 illustrates the different approaches.

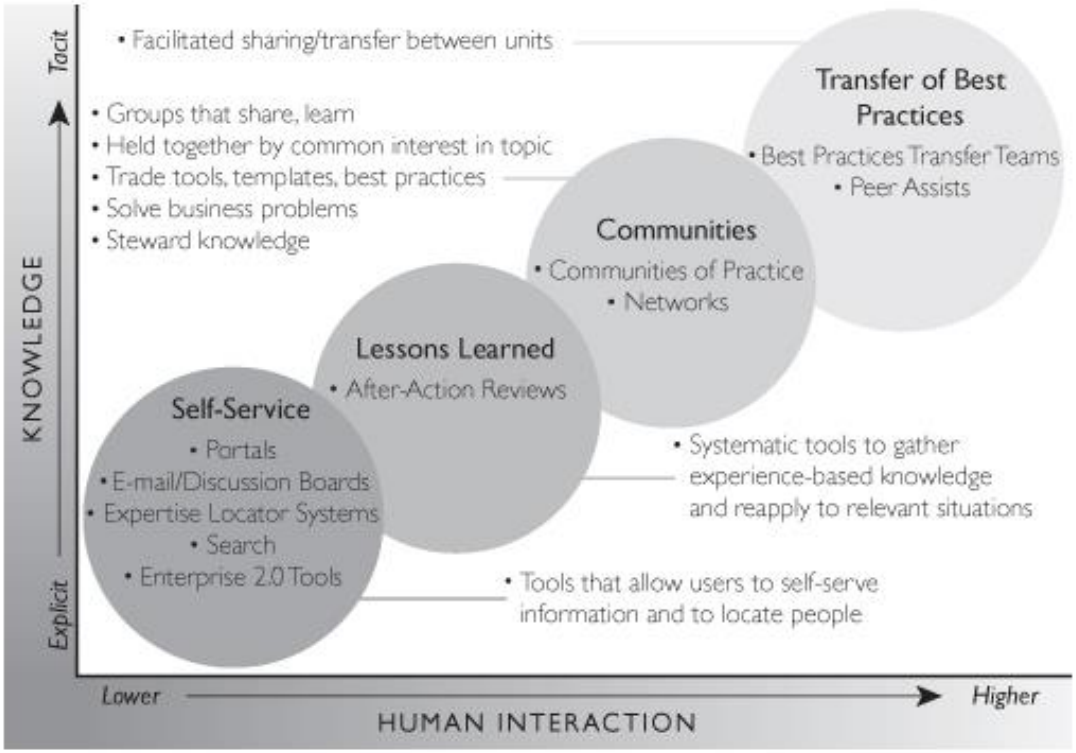

Figure 2: Categories of KM Approaches

Source: (O'Dell and Hubert, 2011)

Organisations capture knowledge about products, technical issues and achievements but fail to retained process knowledge which is knowledge about the processes that a team had deployed to achieve their goals and why these processes seemed to have failed or worked. The tacit nature of process knowledge is one reason it is difficult to measure (Newell et al. 2006)

2.5 Lesson learned definition:

A lot of the definitions of LL create some confusion and lack of certainty over the topic. Weber et al. (2001) highlights a historical account to LL and provides a detailed critique of the numerous definitions available. They propose that Secchi et al. (1999) definition of LL as the most complete:

> *"A lesson learned is a knowledge or understanding gained by experience. The experience may be positive, as in a successful test or mission, or negative, as in a mishap or failure. Successes are also considered sources of LL. A lesson must be significant in that it has a real or assumed impact on operations; valid in that is factually and technically correct; and applicable in that it identifies a specific design, process, or decision that reduces or eliminates the potential for failures and mishaps, or reinforces a positive result" (Secchi et al., 1999, cited in Weber et al., 2001).*

This definition highlights several criteria for LL. They are knowledge from past experience, gathered from either positive or negative experiences, are validated for correctness and, when reused, can significantly impact organisations processes. This definition illustrates the following,

- Accepts legitimacy of learning from success as well as failures;
- Reframes the LL as an artefact of knowledge;
- Re-orients towards an emphasis on re-use;
- Clarifies the guiding criteria for reuse (i.e., significant, valid and applicable);
- Focuses on the processes that a lesson can impact (Fosshage, 2013).

To simplify this Nick Milton (2011, pg.16) proposes a lesson learned definition. *'A lesson Learned is a change in personal or organisation behaviour as a result of learning form experience.'* Kotnour (1999) highlighted how a LL has two important roles, it identifies actions to avoid and solutions in rectify it. It is also a tool to distribute this knowledge with others (Kotnour, 1999, as cited in Fosshage, 2013).

2.6 The value of using Lesson Learned:

The design of the project management team, outline business case, the contents of the project brief, and the stage plan for the initiation stage can be influenced by LL from previous projects (OGC, 2009 p.124). LL is one of the most important value added aspects of the project management lifecycle (Walker, 2008). It is even said that LL are the most valuable contribution of the closure process (Larson and Gray, 2011, p.511).

Companies work on a large amount of projects every year, valuable knowledge and information is assimilated during these projects for refining standards, approximating future bidding and the way business is conducted. Successful organisations learn from their experiences with projects (Walker & Christenson, 2005). Many companies have established a formal approach to learning through a LL process (Milton, 2010; Paranagamage et al., 2012). They do this in order to effectively identify, capture and exploit knowledge gain from past projects to enhance learning and future performance (Schindler and Eppler, 2003).

Experienced PMs know the importance of capturing LL and often do so (Larson and Gray, 2011). Past lessons should provide useful knowledge that contributes to the planning of new projects, avoiding PMs from repeating mistakes and in due course supporting functional areas associated with the project to improve their operations (Wiewiora and Murphy, 2013).

With increased project complexity, and constant PM and team turnover, subject matter expertise is not always readily available. Driving LL into your best practice/process is vital to make them repeatable. If not companies will learn the same LL again and again. By not maximising on project success we miss opportunities to implement good processes and practices to successfully complete existing or future work (Boehringer, 2009; Rowe, 2008). Nick Milton (2010 p.9) says most teams learn and get better naturally, over time, without

conscious focus on LL see graph Fig.3. However, by focusing on learning, and by introducing a LL system, their learning can be accelerated. See Fig. 4

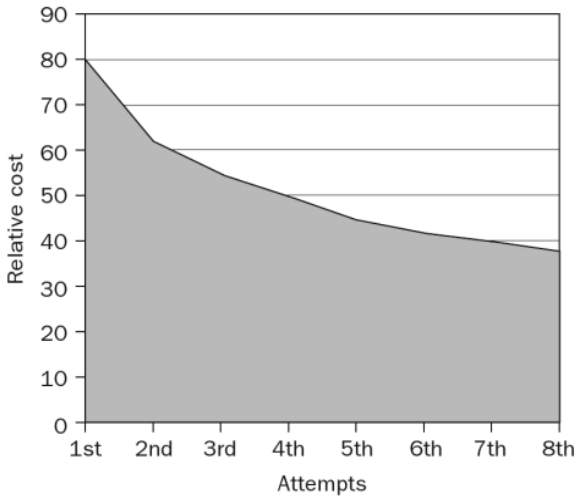

Figure 3: The Organisational learning curve for improved performance over a series of repeat activities or projects following learning. Adapted from Nick Milton (2010 p.9).

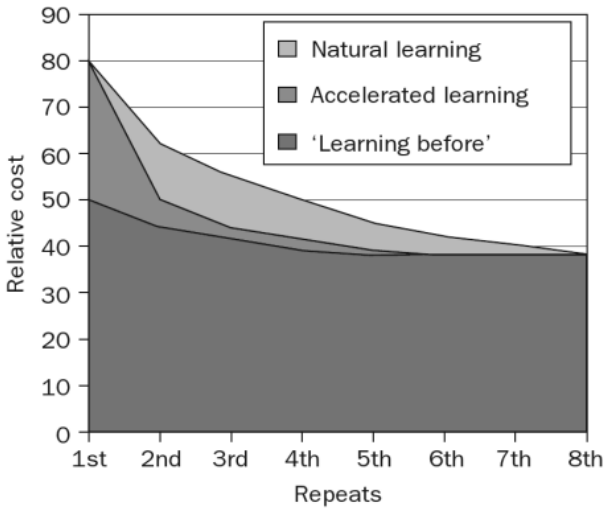

Figure 4: Organisational Learning curves showing how learning can be accelerated. Adapted from Nick Milton (2010 p.10).

The diagrams above are organisational learning curves and they illustrate how the performance of team members improves when accelerated learning is introduced and even

better results are achieved when lessons are introduce before the project. The whole point of gathering LL is that it shouldn't be an exercise that is carried out without real interest or effort. The key to developing a PMO lies in how you use LL. If used correctly, LL can be a decisive device for continuous improvement in your organisation (Boehringer, 2009)

2.7 Impact of lessons learned on project success

In projects it is important to have knowledge mapped to processes, resources and schedule. This will ensure the right knowledge is distributed to the right person at the right time throughout the project lifecycle. This will increase the control and reduce the uncertainty allowing for a greater probability of project success (Lierni and Ribiere, 2008).

Three companies that reap the benefits from PPRs these are Intel, Agile and the U.S. Army. They have found great value in combing the concepts of lean and structure learning and reflection to continually deliver faster and better results. How they have achieved this is by building in these practices into their ongoing project and management approach (Jerry, 2009). In research on Intel and the use of retrospectives, it was discovered that a seasoned PM estimated an effective four-hour retrospective could add up to releasing his software project four months earlier (Lavell, 2010).

Organisations can save money by not treating each new project as if no other project happened before it. So PMs can use the learning from past projects and incorporate past success and avoid past failures (Trevino, and Anantatmula, 2008). The potential cost savings by excellent project KM in the plant construction sector was 3 -5 percent of total project volume (Hanisch, 2009). In a survey by Chileshe and Ghasabeh (2014) 82.9% of respondents believed the use of LL documentation helped them effectively select feasible projects to bid on.

2.8 The lessons learned process

Many organisations struggle with implementing a successful LL system or process (O'Dell and Hubert (2011). There are two major issues with the LL process one is organisations insufficiently recording of LL or recording them inadequately. The second is that if these LL are being recorded they are not being reviewed and applied to benefit future project success in the majority of project organisations (Whitten, 1999). All organisations should emphasise the importance of knowledge and encourage all employees follow a LL process to create, share, search out and use knowledge in their daily routines (Davenport and Prusak, 2000). The diagram below in figure 5 illustrates how the flow of LL should flow in an organisation.

Figure 5: A generic LL process
Source: (Weber et al., 2001).

1. Define the Project: To begin, the need for LL is identified and the process and team through which the lessons will be collected must be established. It is important to engage all key players in advance. Select people with expertise or knowledge needed to champion the process (White and Cohan 2005).

2. Collect: This involves the capture of information through structured and unstructured processes such as PPR.
3. Verify: This process verifies the accuracy and applicability of lessons submitted. This may include the inspection by experts to determine if lessons are relevant across other projects or to the organisation as a whole.
4. Store: The storage of LL usually involves adding lessons to an electronic database for future sharing and dissemination. These may include a lessons learned repository, spreadsheet etc.
5. Disseminate: This is the final and most important part. As lessons are of little benefit unless they are distributed and used by team members who will benefit from them (Weber et al., 2001).

O'Dell and Hubert (2011) stated that the LL approach typically focuses on a few key questions

- What was supposed to happen?
- What actually happened?
- Why was there a difference or variation?
- Who else needs to know this information?

The usefulness of LL will be determined by their relevance to future projects, the time that elapsed since their capture, clarity, degree of detail, cross reference standard or codes, ease of retrieval and breath of subjects addressed. (Chapman, 2014) The critical success factors of KM is leadership, culture, roles and responsibilities, IT infrastructure and measurement (Koenig and Srikantaiah, 2004, cited in Rhodes and Dawson, 2013).

Mature organisations are more likely to capture and disseminate LL and perform this practice at regular intervals during the project life cycle. They are much less likely to do it as only a response to something or a business need. In contrast organisations that are immature in terms of the use of project management gain little or no benefits processing and following procedures (Thomas, 2012).

2.8.1 Collection of Lessons learned

The collection or capture of LL is the process of collecting, capturing, and storing knowledge during an event, such as a team meeting, or in a medium such as a portal database or blog **(**O'Dell and Hubert, 2011 p.43). The method use to capture a LL should be kept simple. A constructive meeting or workshop is generally best (Boehringer, 2009). Anyone who has been involved in similar projects should attend, or if it's an unknown project, the inclusion of external expertise would be advisable (OGC, 2009 p.124; Boehringer, 2009). In conducting a meeting, a LL template should be sent out in advance of meeting and the ground rules should be set feedback should target process, templates and guidelines not people. Finally members should then give feedback on the LL session (Boehringer, 2009). Alternatively when conducting a PPR there are 12 steps to capture LL as follows:

1. Call the meeting;
2. Invite the right people;
3. Appoint a facilitator;
4. Revisit the objectives and deliverables of the project
5. Revisit the project plan or process;
6. Ask "What went well?"
7. Find out why these aspects went well, and express the learning as advice for the future;

8. Ask "What could have been done better?"
9. Find out what the difficulties were;
10. Ensure that the participants leave the meeting with their feelings acknowledged;
11. Determine "What next?" and
12. Record the meeting (Collinson and Parcel, 2001, cited in Paranagamage et al., 2012).

There are different types of projects reviews which can take place at different stages of the project lifecycle. PPRs appear to be the most popular and play an essential role in promoting organisational learning (Carrillo, 2011). PPRs should not be conducted just for the sake of doing it. They should be used for the results that can contribute to future projects (Von Zedtwitz, 2002).

Some of the difficulties with PPRs are ad hoc process, availability of key staff, timing, content and finally dissemination. These are not insurmountable but require resources that are not always readily available (Carrillo, 2011). As most projects are being run by a 'temporary organisation' this makes project reviews quite difficult, other factors that contribute to this is the complexity of projects and project organisations (Busby, 1999). An issue with project reviews was the length of time between the completion of the project and the review meeting. This lag made it difficult to motivate and get PMs together as they had started new projects. Prioritizing daily work over project reviews was also noted as an issue (Newell et al, 2006). In the LL reports a lack of contextual information, results in distorted understanding of lessons, thereby affecting their reuse in future projects (Chirumalla, 2013). There can be three approaches to collecting lessons learned as listed below.

- Integrated: This is the incorporation of LL early, regularly and consistently through regular project reporting. The process would be embedded in the initial project management plan.

- Post Project: This is sometimes done reactively or as an after taught. Usually is done in relation to a large project, where management is keen on replicating similar projects and is willing to spend time and money to improve future efficiency. This approach brings project members and partners for an extensive look into operations, success and shortcomings. In figure 6 the pros and cons of each approach are listed.

Table 1: Pros and cons of integrated versus post project methods for collecting LL.

Approaches	**Pros**	**Cons**
Integrated	• Less costly • Less time - Intensive	• Focus with the organisation may not allow broader perspective or include partner's lessons
Post project	• Brings Multiple partners together for extensive analyses • Process can be designed to build better collaboration with a partnership	• Resource – intensive (time and money) • Often Requires specialised lessons learned leader,

Source: (White and Cohan 2005).

- Combination: This is a combination of the integrated approach where team members capture lessons regularly throughout the project and bring together key team members and stakeholders together at the end of the project. Result of this approach is a broader analysis building a sense of collaboration (White and Cohan 2005).

The most significant barrier to capturing LL was the 'lack of processes with 79% rating it as having either a high or very high significance. Culture was second and third was the nonexistence of a searchable repository for LL (Rhodes and Dawson, 2013).

2.8.2 Sharing of Lesson learned

There is a vast growing body of knowledge on fostering knowledge sharing in project management. Knowledge sharing is the processes that involve the exchange of knowledge between individuals and groups (Abu-Shanab, 2014). Knowledge sharing is perceived as an essential process of KM as it is an important source of value creation as the core of continuous improvement process for transforming an individual's process improvements into actual learning (Yu et al., 2010). Research currently focuses on capturing lessons learned rather than the problem area which is the dissemination and implementation of LL (Carrillo et al., 2013). In a study by Rhodes and Dawson (2013) 89% of the people surveyed stated they transfer lessons poorly (Rhodes and Dawson, 2013).

The success an organisation can depend on how effectively it manages the internal and external knowledge. Companies increasingly recognise knowledge sharing is an important element in gaining competitive advantage (Switzer, 2008). Organisations must integrate past experiences into their current and future projects (Ladika, 2008). Many organisations have a specific department responsible for LL. Outside staff such as customers and contractors can be involved in the process but for some reason internal staff such as team members, senior members and technical experts are rarely present. One of the least successful parts of the LL process is the transfer of the knowledge from the project team to the organisation (Thomas, 2012).

Improvements in both efficiency and effectiveness of project management can be achieved by nurturing knowledge sharing within projects, across projects, and over time. It is not easy to do so, due to the many factors such as the different types of knowledge and knowledge sharing methods used (Ramaprasad et al. 2009). Knowledge can only be encouraged and not forced as it resides in an individual who can be motivated externally or has the deep-down

desire to share knowledge (Obrenovic and Qin, 2014). Knowledge can be shared both orally and written using formal and informal methods. Oral-informal methods are probably the most frequently used in project management (Ramaprasad et al 2009). The way knowledge is being shared is changing rapidly with the evolution of information and communication technology. In a project environment people work under pressure and often have limited time for social interactions beyond the immediate demands of the project (Riege, 2005).

For a lesson-learned to be beneficial and be of value for others in addressing similar situations Chapman (2014) devised a list of the key criteria to make the reuse of LL easier. They include,

- Identify the project management stage in which the problem arose;
- Identify the project disciplines affected;
- Describe how the problem or opportunity arose (i.e. the catalyst);
- Identify the stakeholders involved (for instance the sponsor, designer, contractor, supplier, local authority or approving body);
- Define the problem or positive development encountered; and
- Provide concrete, practical solutions or recommendations based on this experience.

Source: (Chapman, 2014)

Without a structured methodical process for the sharing of LL, the reasons behind project outcomes will not be shared by an organisation (Chapman, 2014). In a study of PMs LL databases were considered important by 87% of respondents, but only 22% are using them (Walker, 2008).

2.9. Barriers to Lessons learned.

It is felt by PMs that they put insufficient effort into LL. The top barriers to the use of the LL process are 'lack of employee time', 'lack of clear guidelines/processes, lack of senior management support', 'lack of money/resources', 'method through which LL are accessed' 'employee related issues', 'the blame game', ' incentives 'and 'organisation culture' (Chileshe and Ghasabeh, 2014; Rhodes and Dawson, 2013; Busby, 1999). Some of these barriers will be analysed below.

Project Teams/People: The success of a LL evaluation is very much dependent on the project management team selected for the project. They must be committed to project management and evaluation and should understand the importance and value of LL to the organisation (Thomas, 2012). Human resources are so critical in the learning process that Bresnen et al. (2002) considered them as one of the key factors enabling organisational learning.

Researchers have identified the following human resource related causes that inhibit people capturing lessons. They include, inadequate resources, employee egos, employee resistance, lack of attention, personal interest and ability, lack of incentives, inadequate communication Additionally the process not being included in a formal job description and an insufficient willingness to learning from mistakes are mentioned (Chileshe and Ghasabeh, 2014).

Timing: The main reason for the failure to act on LL is time (Rose, 2007). LL should be integrated into a project from the outset, identify recent process and template changes from a previous use of LL to highlight the importance of LL, hence creating greater buy in (Boehringer, 2009). In Intel PMs believed pausing multiple times along the project lifecycle allows the team to apply the LL as the project is progressing, rather than waiting until the end where the opportunity to improve has passed (Lavell, 2010).

Incentives: Lack of incentives has been suggested to be a major barrier to knowledge sharing across cultures (Wang and Noe, 2010). Ajmal, et al. (2010) suggests that for managers to improve KM initiatives an attractive incentive package to motivate PMs should be developed.

Lack of guidelines: From a survey compiled by Carrillo et al. (2004), 96.8 per cent of participant's stated insufficient guidelines or processes for LL documentation was the most important barrier to KM in the UK (Carrillo et al., 2004, cited by Chileshe and Ghasabeh, 2014). PPR guidelines are not in the PMBOK, the standards generally require a PM to carry out a project review but there are no guidelines as to how it should be done (Williams, 2008). Project members cannot make meaningful contribution to KM unless they are familiar with the aims and processes that it entails. Workshops help to promote understanding to enlighten project team members that their knowledge is a valuable resource and if managed correctly it will benefit individuals, the team and the whole organisation (Ajmal, et al., 2010).

Large subject area: Another challenge to LL is that the knowledge gained in a project covers a wide range of areas. Lessons can be learned in numerous areas from design, contracting, planning or operation to softer topics such as social interactions and building commitment (Buttler and Lukosch, 2012).

Value added. Companies do not recognise the value added by the use of LL, in some cases they are only done if requested by clients (Carrillo, 2012).

Temporary projects: With most projects being run by a 'temporary organisation' this makes project reviews quite difficult, other factors that contribute to this is the complexity of projects and project organisations (Obrenovic and Qin, 2014).

Management Support: Leadership is a relevant factor influencing knowledge sharing (Obrenovic and Qin, 2014). Management support for knowledge sharing has been shown to

be positively associated with employees' perceptions of a knowledge sharing culture (e.g., employee trust, willingness of experts to help others) and willingness to share knowledge (Wang and Noe, 2010).

Company size: Large multinational companies with projects spread across the globe have been disappointed in their failure to effectively use LL; smaller organisations experienced the same problems. It appears many organisations find the use of LL difficult to enforce and therefore it becomes a meaningless box ticking exercise (Larson and Gray, 2011). It has been well documented that there are shortcomings in existing LL practices and systems across multiple industries especially those related to PPRs (Rhodes and Dawson, 2013).

Many organisations consider a LL report an end product rather than a continuous activity. Gathering of LL is another document that needs to be filled in and ends with placing the LL in a knowledge-base that is infrequently riffled through by PMs or project teams (Whitten, 1999; Newell et al., 2006; Chirumalla, 2013). Projects that are closed out in the "LL" meeting were shallow in content and concept, and need more analysis and planning in order to be of more benefit to the individuals of the project team, the stakeholders and the organisation as a whole (Busby, 1999). This is often the case, with evidence suggesting that projects rarely learn from each other and thus tend to repeat the same mistakes resulting in unnecessary rework, errors and time over run (Landaeta, 2008).

2.10 Organisation culture:

Many studies have examined the effect of an organisations culture on the sharing of Knowledge (Wang and Noe, 2010). Culture is a "pattern of basic assumptions – invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration". When these patterns are considered to be valuable by an

organisation, they are taught to new members as the correct way to act in relation to those problems (Darvish and Nazari, 2013). A learning culture can be described as an organisational culture that is oriented towards the promotion and facilitation of workers learning, it's sharing and dissemination, in order to contribute to organisational development and performance (Rebelo and Gomes, 2009, cited in Rebelo and Gomez 2011).

A trend has emerged illustrating that "Organisational culture" is an underlying factor causing most of the barriers to LL (Shokri-Ghasabeh and Chileshe 2014). Reasons why culture affects LL are an unwillingness to speak about difficult issues, the threat that the project might be stopped or curtailed, ambition, fear of failure, and a desire to justify the past rather than manage the future. These are engrained in the culture of organisations and can substantially limit the effectiveness of PPRs and LL. (Granville, 2003, cited in Shokri-Ghasabeh and Chileshe, 2014).

A culture encouraging trust and innovation is favourable to knowledge sharing (Wang and Noe, 2010). Learning from mistakes can be a challenge in itself. Capturing LL about mistakes can involve re-experiencing the past, thus creating frustrations and anger (Kasi et al., 2008). An open and honest productive culture that would facilitate the vocalisation and analysis of errors is rarely present in most project based organisations (Ajmal et al., 2010). Therefore organisational culture often creates barriers to learning from mistakes (Butler and Lukosch, 2012).

In contrast research found that a lack of authority to manage knowledge and an absence of cultural support was one of the least significant barriers to successful KM initiatives in the project based organisations studied. At the top of the list was familiarity with KM, coordination among employees and departments and an incentive for knowledge efforts (Ajmal et al. 2010). It is also mentioned that even though culture is last in the list of six

critical factors, managers still need to embrace an organisational culture that encourages participation in KM initiatives and in turn encourages all project members to perform their activities to the best of their ability (Ajmal et al. 2010). A positive culture alone may be inadequate to assist knowledge sharing and more research is needed to understand how a knowledge sharing culture can be promoted (Wang and Noe, 2010).

Chapter 3 - Research Methodology

3.1 Introduction to methodology chapter:

This Chapter outlines the research methodologies used. Saunders et al. (2012, p5) defines research as "something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge". Various ways exist in which a researcher can carry out their research, the quality of research, however, depends largely on the identified method in use and of the chosen method to the research (Saunders et al., 2012, pp. 158 - 159).

The purpose of this research is to explore the relationship between LL and project success. LL should be a requirement for future project planning. They can define best practices, streamline process, and identify positive and negative behaviours that can affect the outcome of a project. The problem is LL are not being used by PMs because of a variety of reasons. This research investigates if PMs in Ireland feel there is a relationship between the use of LL and projects success. While also considering the barriers that hamper the effective use of LL on current/new projects. The focus will be project management professionals across Ireland.

3.2 Research design

The research methodology designed for this dissertation was guided by the 'Research onion' model constructed by Saunders et al. (2012) See the Figure 6 below. The 'Research onion' illustrates the different layers and approaches that are available to a researcher, to come to the central point of the onion there is a need for the researcher to explain the choices made so that others can see that the research should be taken seriously (Crotty, 1998 cited in Saunders et al., 2012, p.126). This means that each layer is integral to conducting successful research (Saunders et al, 2012, p.126). The layers are:

- Research Philosophy
- Research Approach
- Methodological Choice
- Research Strategy
- Time Horizon
- Data Collection & Data Analysis

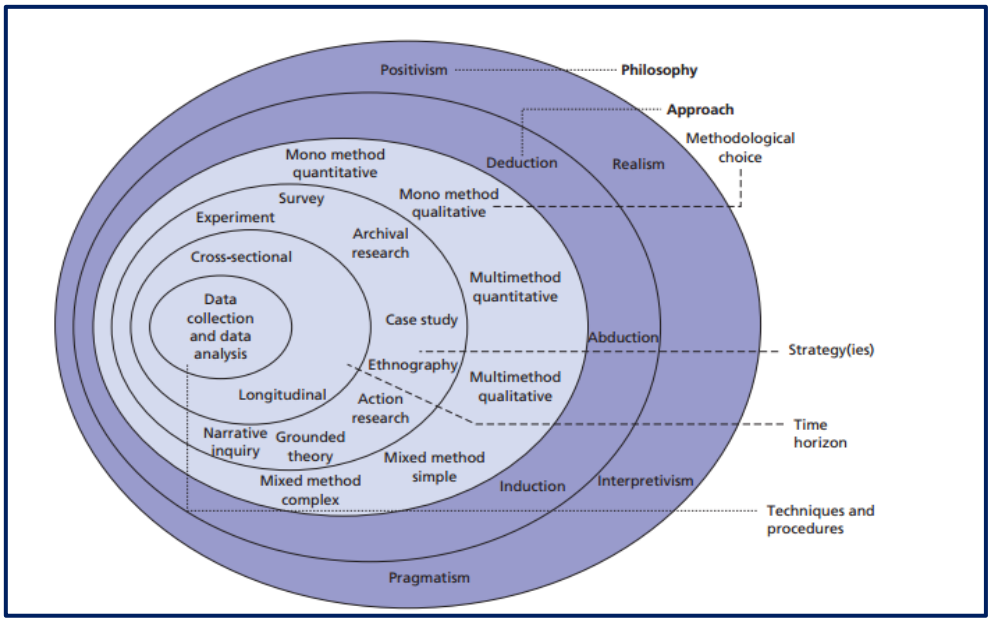

Figure 6: The 'Research Onion'

Source: (Saunders et al., 2012, p.128)

3.3 Research methodology:

The methodology justifies the strategy and outlines the design chosen. The design chosen is based on the research questions. The method selected will guide the researcher to answer the research questions while ensuring the quality of the final results (Saunders et al., 2012, p.5).

There are various different research methods each with their own distinctive advantages and disadvantages. The method chosen will influence the researcher towards the type of data

being collected (Saunders et al., 2012, p.126). Figure 8 describes the steps taken by the researcher through the research.

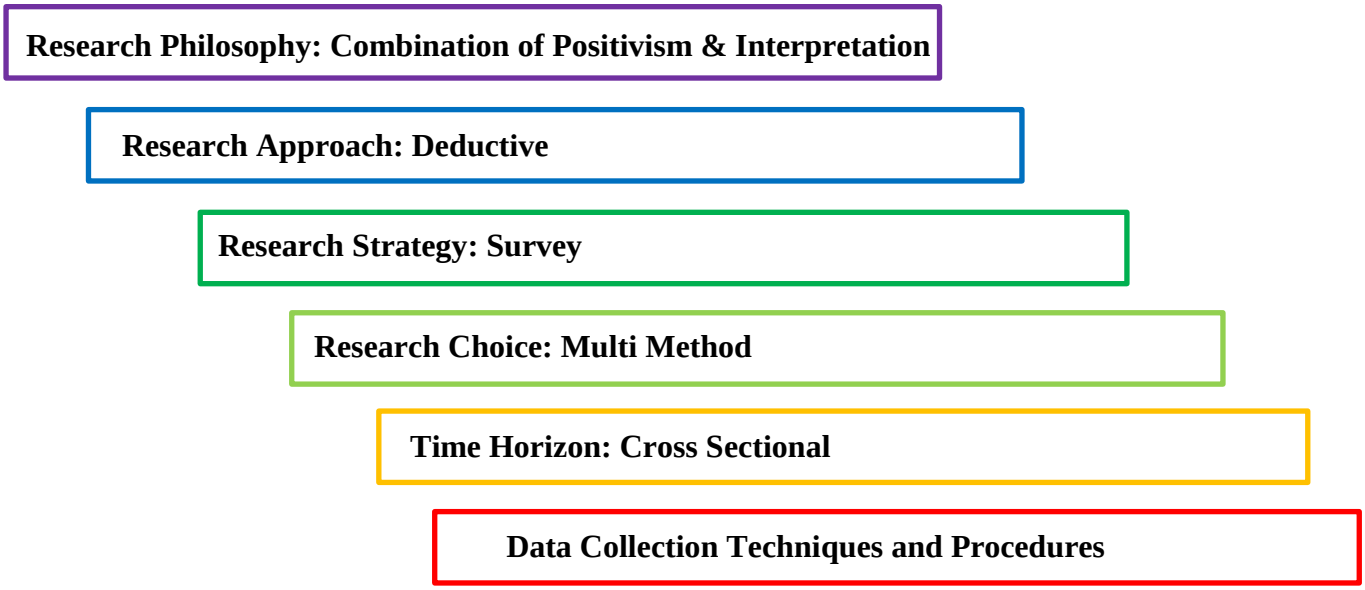

Figure 7: Diagram of the researchers methodology based on Saunders's 2012 theory.

(Source: own interpretation**)**

This research is an explanatory study, as its aim is to establish the relationships between variables. The variables are the relationship between LL in past projects being influential on future project success in project organisations. This research will also illustrate the variables as to why LL are not being used correctly by project organisations in Ireland and what can be done to promote the best practices to increase their effectiveness in future project success. The method taken to conduct this research will adopt a combination of positivism and interpretive philosophies within a deductive approach using quantitative data and qualitative data through questionnaires and structured interviews (multi method). The reason of each choice will be illustrated by the 'Research Onion'.

3.4 Research philosophy: Combination of positivism & interpretation.

According to Saunders et al (2012), the research philosophy can be considered as being the multitude of assumptions that the researcher has made about the way in which he/she views the world. There are three main philosophical research positions, ontology, epistemology and axiology available to academic researchers.

- Epistemology is concerned with what constitutes acceptable knowledge in a field of study.
- Ontology is concerned with the nature of reality or being.
- Axiology which is a branch of philosophy that studies judgements about value (Saunders et al, 2012, p.128).

Saunders et al (2012, p.132) believes that ontology is not suitable for business research. The research philosophies that are suitable to business research are positivism, realism and interpretivism which are embraced by epistemology. There are three main branches of epistemology: positivism, interpretivism and realism (Saunders et al., 2012 p.134).

Positivism

Positivists believe that the social world exists superficially and can be viewed impartially by a researcher who is independent of the research (Blumberg et al., 2011, p.17). The positivist approach involves testing theories to provide materials for the development of laws (Bryman p.14). Positivists prefer collecting data about recognisable reality and search for regularities (Gill and Johnson, 2010 cited in Saunders et al., 2012, p.134). Positivism implies the following assumptions,

- The social world is observed by collecting objective facts.

- The social world consists of simple elements to which it can be reduced (Blumberg et al., 2011, p.17).

Realism

Realism can take the form of direct realism or critical realism. Direct realism supports the idea that we experience through our senses portrays the world as it actually is. On the other hand, critical realism supports the idea that what we see and live are only sensations. It is believed that our senses deceive us (Saunders et al., 2012, p.136).

Interpretivism

Interpretivists focus on the details of a situation and the meaning behind these details by using two intellectual traditions; phenomenology and symbolic interaction (Saunders et al., 2012 p.137). Interpretivism implies the following assumptions:

- The social world is observed by seeing what meanings people give to it and interpreting these meanings from their view point.
- Social occurrences can only be understood by looking at the totality (Blumberg et al., 2011, p.18).

As an interpretivism researcher, it is important to understand the differences between humans in our role as social actors (Saunders’s et al., 2012 p.137). Interpretivism can be used as a term which is given to contrasting epistemology to positivism. “Interpretive is taken to denote an alternative to the positivist orthodoxy that has held sway for decades” (Bryman, 2008, p.16).

Positivism and Interpretivist combined.

Positivism and interpretivist approaches are sometimes seen as completely opposed ways of conducting research. However it is believed that not only can positivism and interpretivist approaches be combined in analysis but this combination can further the goals of both approaches by contributing information that may have been missed by adopting only one perspective. The positivist approach can be used to address questions of causation, and the interpretive approach can be used for analysis and to gather subjective truths or ways of understanding, which offer valuable insights into the background. Lastly interpretive analysis and positivist analysis are used to inform one another (Roth and Mehta, 2002).

In producing this research, the philosophies guiding it will be a combination of positivism and Interpretation. Positivism will allow for the testing of hypotheses which has been developed from existing theory. Interpretivism will allow for the collection of contextual information to increase the researchers understanding of the subject and its environment.

3.5 Methodology approach: Deductive:

There are three types of research approaches which are inductive, deductive or abductive. Business management researches are characterised by two approaches: deduction and induction (Saunders et al., 2012, p.680).

Deductive approach

“A deductive approach represents the commonest view of the nature of the relationships between theory and social research” (Bryman, 2008 pg.8). As a research method it is based on established theory and concepts. It is often associated with quantitative research (Gill and Johnson, 2010 p.46; Saunders et al 2012 pg.145). It also has a tendency not to tolerate alternate theories that may arise (Cooper and Schindler, 2008, p.72-74). It represents the

commonest view of the nature of the relationships between theory and social research (Bryman, 2008 pg.8). There are six steps for a deductive research approach: Proposal of hypothesis, using existing literature, determine a testable position, examine the logic of the argument and if there is an advantage of knowing the answer to the argument, test the position, analyse the results, if the results do not back up the position, either reject or reconsider the position, analyse the results; if they are consistent the position is corroborated (Blaikie, 2010, cited in Saunders et al, 2012, p.145). The diagram below illustrates the steps involved in the process of deduction.

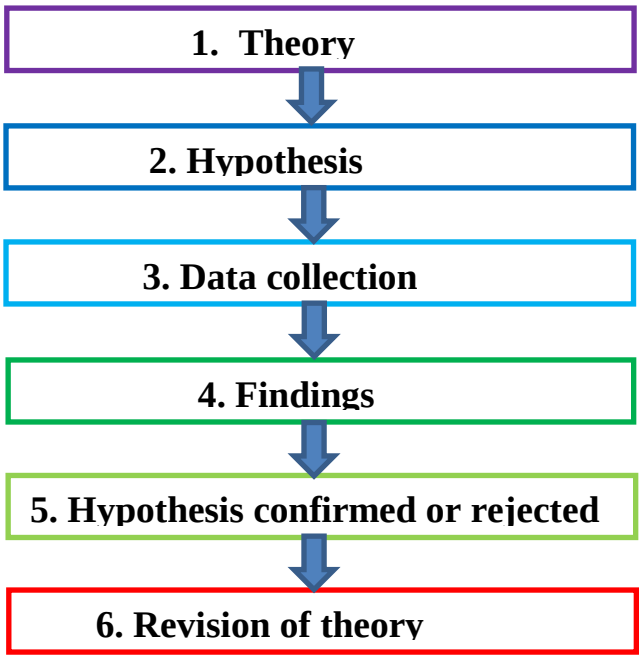

Figure 8: The process of deduction.

Source: (Bryman 2008, p10)

Inductive approach: Building theory

Induction is the opposite of deduction. It involves examining the existing world and formulating theories to explain what has been observed (Gill and Johnson, 2010, p. 56; Saunders et al., 2012, p.147)

The purpose of this research is to establish a relationship between the use of LL and project success. This study puts emphasis on the principles, formulation of hypotheses, the collection of data, testing of the hypothesis with the data collected, and generalising the findings. Inductive or abductive approaches are considered not suited for his research hypotheses. Due to it being a highly structured process, a deductive approach is considered appropriate for this research. Additionally it is best suited for a cross sectional study due to the time constraints of the MBA.

3.6 Research strategy: explanatory – Survey: Questionnaire & Interviews

The third layer of the research onion is the research strategy that will be used to achieve the objectives of the research. Research strategy is how the research questions are going to be answered. There are three main types of research strategy used in conjunction with the deductive research approach; they include experiments, case studies and surveys (Saunders et al., 2012 p.173).

Experiments

The purpose of an experiment is to study the probability of a change in an independent variable causing a change in another, dependent variable (Hakin, 2000, cited in Saunders et al., 2012 p.166). An experiment is similar to this research as it looks for a relationship between variables and would be suitable to this research. The reason an experiment wasn’t chosen was due to the time constraints, as experiments need to be reproduced over a period of time for the data gathered to be considered valid.

Case study

Case study strategy would be relevant if the researcher wishes to gain a rich understanding of the context of the research and the processes being enacted. Similarly to this research the case

study strategy uses a mixed method approach and the use of triangulation. A case study is useful when a 'how' or 'why' question is being asked about a contemporary set of events over which the investigator has little or no control (Rowley, 2002 as cited in Yin, 1994). As this research is concerned with 'what and how much' a case study is not suitable for this study.

Surveys

A survey is a method of questioning participants by using questions and instructions for the participant's involved (Blumberg et al., 2008, p.492). Surveys can be conducted through different formats:

- Face to face interviews
- Telephone Interviews
- Paper questionnaires
- Online questionnaires
- A combination of these methods (Thomas, 2014).

In this research the use of surveys were chosen because there is a need to understand PMs in terms of what they do, think, feel and want, so the researcher can better understand their thoughts and behaviours towards LL and its effectiveness. The research questions and research hypotheses revolve around investigating PMs in Ireland. The main objective was to establish what factors inhibit the use of LL and whether LL has an influence on project success. The main factors to consider when deciding on the format were cost, project length, sampling and bias (Office of Planning and international insights, 2006). The combination of methods selected was Face to face interviews and online questionnaires.

3.7 Research choice: Multi method

Mixed methods research is an approach which involves collecting and integrating both quantitative and qualitative data, thus giving a more comprehensive understanding of the research problem than either approach alone (Creswell, 2014 p. 4). Mixed methods research is a relatively new approach to research. It can be seen as new methodology originating around the late 1980s and early 1990s based on work from sectors such as management, education, sociology and health sciences (Creswell, 2014 p. 217).

Mixed methods were chosen because of its strength of drawing on both qualitative and quantitative research and minimising the limitations of both approaches. It also allows the researcher to compare different perspectives drawn from quantitative and qualitative data (Creswell, 2014 p. 218).The challenges included in this type of research are,

- Need for extensive data collection
- The time intensive nature of analysing both quantitative and qualitative data
- The requirement of the researcher to be familiar with both quantitative and qualitative forms of research (Creswell, 2014 p. 219).

In the diagram below figure 10 we see the methodological choices there are to the researcher. For this research project the researcher will select a mixed method research in order to answer the research questions in a comprehensive manner.

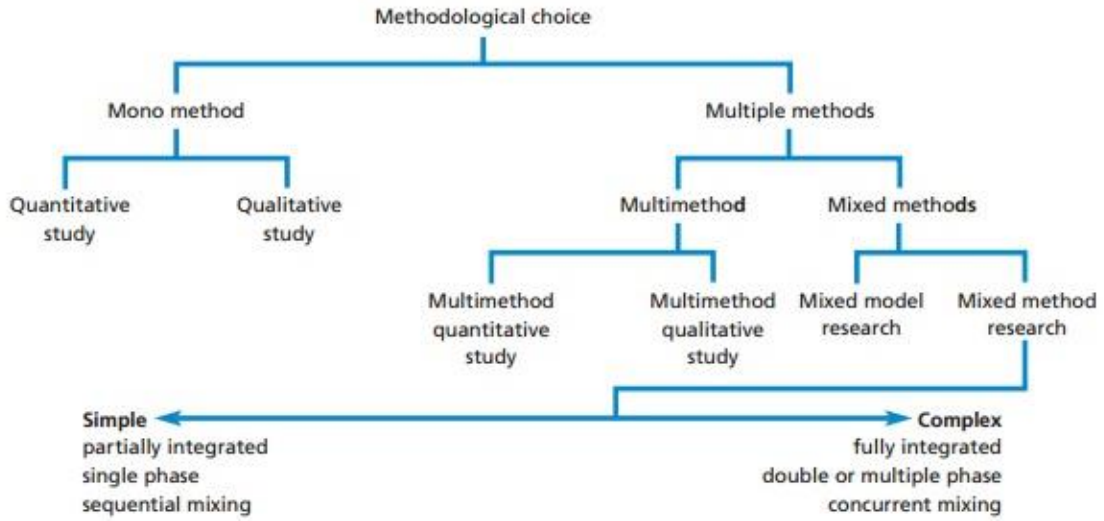

Figure 9: Methodological choices

Source (Saunders et al., 2012 p.165)

Qualitative approaches:

Qualitative approaches are used in exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2014, p.4). Quantitative data collection approaches are use when the researcher is using well defined theoretical models and research problems (Hair et al, 2003 p.124). This type of approach is used when the researcher needs to understand the meanings, experiences ideas beliefs and values. Qualitative research can be associated with interpretive philosophy (Denzin and Lincoln, 2005, cited in Saunders et al., 2012, p.163). Some fundamental features of qualitative research are identified below;

- The recognition and analysis of different perspectives.
- The correct choice of appropriate theories and methods.
- The researcher's reflections on the research as part of the process (Flick, 2002).

Researchers who engage in this method of research understand the importance of rendering the complexity of the situation (Creswell, 2014, p.4). The success of the this research is dependent on gaining physical access to the participants, building a rapport and demonstrating sensitivity to gain constructive data (Saunders et al., 2012 p.163). Some of the issues regarding qualitative research are highlighted below;

- Qualitative research can be too subjective. This means that the findings are generally based on what the researcher considers significant and important.
- Difficult to replicate. This relates to the researcher being the main instrument of data collection, so what the researcher decides to concentrate on depends on them.
- Problems of generalisation. Due to the usually small number of interviews in a certain location, it is considered that these views cannot be generalised.
- Lack of transparency. It can sometimes be difficult to establish from qualitative research what the researcher actually did and how he or she arrived at the study's conclusions (Bryman, 2008, p.391).

Quantitative approaches:

Creswell (2014) summarises the features of quantitative research by inferring that it comprises of a deductive approach to test a relationship between theories and variables. Emphasis is placed on testing theories and this can be achieved by using instruments so that numbered data can be analysed using statistical procedures (Creswell p. 4, 2014). Bryman (2008) states it has incorporated the norms of natural scientific model and of positivism in particular, plus it embodies a view of social reality as an external body of reality. (Bryman, 2008 p.22) Some of the issues that arise from conducting quantitative research are;

- Quantitative research can fail to distinguish people and institutions from how they view the world.
- The way the data is measured can give a false sense of accuracy as people may interpret the questions differently
- The reliance in instruments such as a survey hinders the connection between the research and everyday life.
- The analysis of the relationships between variables creates a static view of social life that is independent of people's lives (Bryman, 2008 p.159).

Qualitative vs. Quantitative approaches

Cooper and Schindler (2008) illustrates the distinction between both methods of research, stating that quantitative research attempts to understand something and interpret it by accurately measuring it, while qualitative research includes refers to describing, explaining and predicting (Cooper and Schindler, 2008, p.164).

*Table 2**:** Fundamental differences between quantitative and qualitative research strategies*

	Quantitative	**Qualitative**
Principle orientation to the role of theory in relation research	Deductive: testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Source: (Bryman, 2008, p. 22)

It is useful to contrast the two research strategies but necessary to be careful about hammering a wedge between them too deeply. Both qualitative and quantitative data

collection methods have limitations and strengths (Bryman, 2008 p.22). It can be argued that mixing of data provides a stronger understanding of the problem or question than either by itself (Creswell, 2014 p.215). Thus the methodologies should complement each other rather than rival each other (Cooper and Schindler, 2008, p.186).

As mentioned earlier, this study involves a combination of research methods in order to answer the research questions and meet the objectives of this dissertation. By using a combination of qualitative and quantitative approaches more accurate results will be achieved, without bias and within the very tight time constraints.

The research started by distributing online questionnaires among project management professionals from a variety of industries and conducting seven interviews with senior PMs. Each of whom have considerable experience managing a variety of projects. This process will be explained in more detail in the data collection section.

3.8 Time horizon: Cross sectional

Due to the time constraints of this research project it was a cross sectional study. This is the study of a particular phenomenon (or phenomena) at a particular time i.e. ‘a snapshot’ in the time horizon (Saunders et al., 2012 p.190).

As this is an academic research project with a short time frame and a deadline it does not allow sufficient time for a longitudinal study. The main disadvantage of carrying out a cross-sectional research is that it is difficult to measure changes that are occurring in the participants over time (Saunders et al., 2012 p.190).

3.9 Data collection and analysis

The way in which data is analysed is extremely important for every research project. Studies that establish causal relationships between variables may be termed explanatory research (Saunders et al 2012 pp172). This study was an explanatory research as the emphasis here was on studying a problem or situation in order to explain relationships between variables. Therefore the purpose of this study was to find a relationship between LL and project success, and also to discover what factors inhibit its use.

Other forms of studies include exploratory studies and descriptive studies. As this research is looking to find a relationship between variables, exploratory and descriptive studies would not have delivered the results needed to complete this study. In order to answer the research questions, primary and secondary data were analysed. This research project will be based on the investigation of returned web based surveys and face to face structured interviews.

3.10 Population & sample

The population selected was project management professionals in different industries based in Ireland. The sampling method that is used for a study is dependent on the scope of the study and develops from the research questions (Saunders et al., 2012, p260). Sampling techniques are relevant in research were it would be impractical to survey the entire population and where there would be budget or time constraints (Saunders et al., 2012 p261).

Probability sampling techniques are primarily used in quantitatively orientated studies and involve selecting a relatively large number of units from a population in a random manner where the probability of inclusion for every member of population determinable (Teddlie and Yu, 2007). The process of Probability sampling can be broken down into four stages:

- Identify a suitable sample frame based on your research questions and objectives.

- Decide on a suitable sample size.
- Select the most appropriate sampling technique and select the sample.
- Check that the sample is representative of the population.

Source: (Saunders et al., 2012, p. 261).

Purposive sampling techniques are primarily used in qualitative studies and may be defined as selecting units based on specific purposes associated with answering a research study's questions (Teddlie and Yu, 2007).

A sample provides a valid alternative (Saunders et al., 2012, p. 260). The sample frame was project management professionals based in Ireland on LinkedIn, who are members of the Project Management Ireland Group consisting of a population of 1700. Due to this research being mixed method research, the sampling technique used was a concurrent mixed method sampling technique. This involves using probability sampling techniques to generate the data for the quantitative strand of the research and purposive sampling techniques to generate the data for the qualitative strand (Teddlie and Yu, 2007).

In order to collect the quantitative data the researcher requested the respondents to complete a questionnaire online using a program called survey monkey which was sent to them via a private message on LinkedIn. To ensure a high response rate the survey was sent out to 600 PMs, 145 PMs responded to the survey giving a response rate of over 24%. From these respondents, seven senior PMs were selected and contacted to partake in the interviews. (See appendix 10 for the steps followed by the researcher to conduct a social survey)

3.11 Evaluation: Data collection, editing & coding

After defining the research problem of the dissertation, and selecting the method to be adopted, now the evaluation process, adopted for this research, had been explained. The

evaluation process includes data collection, editing and coding of the collected data in order to develop the outcome of the prospective research.

Secondary data

Secondary data is a tool used to help compare the primary data findings to a general context to help triangulate the data (Saunders, et al 2012, p.307). The literature review was compiled using secondary data collection by journals, books and websites. These were used as a secondary source of information considered for this research project.

Primary data

For the collection of primary data in this research project, an exploratory research method will be used. Quantitative data will be gathered by a survey technique through online questionnaires from project management professionals for basic understanding. Qualitative information will be collected by 7 structured interviews from senior PMs.

Questionnaires: Quantitative research

The questionnaire strategy is usually associated with a deductive approach. It is a popular and common strategy in business and management research and is most frequently used to answer who, what, where, how much and how many questions (Saunders et al., 2012, p. 176). A questionnaire is a list of questions structured around the research objectives, to retrieve relevant information from participants (Hair et al, 2003). This allowed the collection of a large amount of data from a large population in an extremely economical way.

A questionnaire was administered using standardised data allowing for easy comparison. Time will be spent making sure the sample is representative and the design will optimise the response rate. As mentioned earlier the survey was sent out via private messages on

LinkedIn, using a program called survey monkey. The online distribution will help capture a broad spectrum of the entire Irish market.

There are some downsides to surveys which include people in the target market not responding, partially completed surveys and shallow information about the target market. To back up the survey data, interviews were conducted using the parallel questions to the survey; this will enable people to respond at length. The opportunity to ask follow questions to fully grasp a person's response is a key advantage to this type of research. It is important not to bias the interviewee answers. Through the questionnaires and structured interviews the analysis and examination of data answered the hypothesis.

Questionnaire's pilot testing

A pilot test is normally performed before the data collection so as to identify the shortcomings in design and instrumentation, and to provide alternative data for the selection of a probability sample. The pilot test should take subjects from the target population and encourage the procedures and protocols that have been designated for data collection. Although the size of the pilot group may vary depending on the choice of the method to be tested, it is not necessary that the respondents should be statistically selected (Cooper and Schindler, 2008, p.91).

After the pilot test, it emerged that there were too many questions. The wording on certain questions was difficult to follow and there were some grammatical issues. These were all rectified and the survey was piloted once more. Once this came back with a positive response it was ready to be administered.

Interviews - Qualitative research

For further understanding of the challenges regarding LL in the increasingly demanding business world, the data collection process included the interviews of senior PR's professionals. An interview is the primary data collection technique for gathering perspective of a small number of respondents (Cooper and Schindler, 2008, p.170). Structure interviews are efficient in collecting valid and reliable data. This is essential to answering specific research questions. It allows for flexibility during the interview as the interviewer can ask additional questions and interviewees can elaborate on answers (Saunders et al 2012 pp373-374).

One of the concerns related to the reliability of the data within interviews, is personal bias of the interviewer (Saunders et al., 2012). There are generally four issues that could imply some type of bias during interviews:

- Tone and non-verbal behaviour - it can create bias in the way that interviewees answer the questions;
- Wrong interpretation of responses - the interpretation of answers can be biased by the interviewer's personal judgement
- Lack of credibility from the interviewer - could raise doubts about the reliability of the answers – depending on the level of trustworthiness of the interviewer, the responses could lack validity and credibility (Saunders et al., 2012, p.381)

Some of the criteria of a successful interviewer include being knowledgeable and clear on the subject, sensitive to the interviewee, open regarding the answers and critical and interpretive when analysing the data (Kvale, 1996, cited in Bryman, 2008, p.445). An interviewee should be balanced by not talking too much and ethical sensitivity. (Bryman, 2008 p.445)

For analysis purpose the data collected from the interviews has been coded under four distinct categories, the relationship between LL and project success/best practices, the method LL are captured and the issues. The method LL are shared and the issues, and the relationship between LL and culture. The purpose of this exercise was to gain rich data to develop more background knowledge to the LL processes and its successes and failures as seen by experienced PMs in Ireland.

Triangulation

Triangulation was used in this study to bring together different sources of information to converge or conform to one interpretation. As defined by Saunders et al. (2012 pg.180) "Triangulation refers to the use of different data colleection techniques within one study in order to ensure that the datais telling you what you think they are telling you."

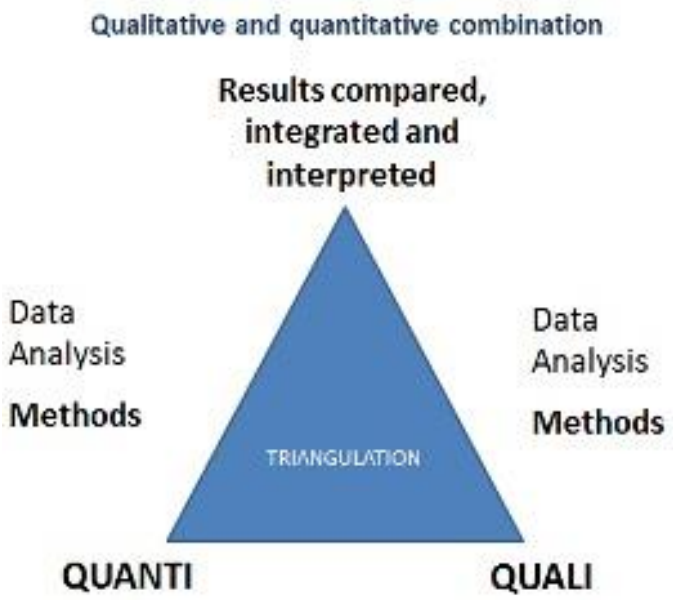

Figure 10: How to combine Qualitative and Quantitative Research.

Source: (Research Method Gdansk, 2013)

There are two types of triangulation methdology which are 'across method' and 'within method' (Bekhet, and Zauszniewski, 2012). The methodology used in this research is 'across

method' as it combines qualitative method of open-ended surveys which are explanatory and textual and can include passive observation. The second method used was quantiative methods that includes statisical analysis of outcomes from questionaires.

Triangulation is a strong technique that facilitates validation of data. The 'within method' uses two or more data- collection procedures, quantitative or qualitative but not both. This 'across method' is also refered to as covergent parallel mixed methods design, the key to this design is to collect both forms of data, using the same or parallel variables, constructs or concepts (Creswell, J. 2014 pp.223-224). For example the questions you ask in the survey must relate to the questions you ask in the interview. Due to the sample size of each the information gathered from each method will be different. The qualitative data will be much smaller because of the sample size and due to the need to get a large number of respondents for the quantitative the data will be larger.

The data will be analysed in a side by side comparison. The researcher will first report the quantitative statistical results and then discuss the qualitative findings identifying any themes that either confirm or disconfirm the statistical results.

3.12 Quality Standards

Validity

Validity ensures that the questionnaire and interview effectively measures what they are designed to measure (Blumberg et al., 2008, p.505). In completing research two major types of validity varieties that must be considered are,

- Internal validity – Does the research instrument have the ability to measure what it is supposed to measure.

- External validity – refers to the data's ability to be generalised across people, settings and times (Blumberg et al., 2008, p.344).

In considering this convergent approach to the research, Creswell (2014, p.223) validity should be based on both quantitative validity (e.g. Construct) and qualitative validity (e.g. triangulation) for each database. He describes these further as,

- One area to consider is the unequal sample size may provide less of a picture on the qualitative side than the larger quantitative side.
- The use of different variables on both sides may yield difficult to merge findings
- A lack of follow up on conclusions when the scores and themes diverge also represent and invalid strategy

Triangulation methodology has been found to be beneficial in providing confirmtion of findings, more comprehensive data, increased validity and enhanced understanding of studied phenomenon (Halcomb and Andrews ,2005; Casey and Murphy, 2009 cited in Bekhet and Zauszniewski, 2012).

Reliability

Reliability means that if the data collection method and techniques were replicated in the future, or by a different researcher, they would produce similar findings (Saunders et al., 2012 p.192). Threats to reliability include participant error, participant bias, researcher error and researcher bias (Saunders et al., 2012, p.192). Considerations of reliability, validity and generalizability are included in this research.

Researcher bias

In this research, as mentioned earlier the researcher has taken careful consideration not to introduce bias during the conduct of the interviews.

3.13 Research ethics

When compiling research, ethics refers to following principles that direct your conduct to protect the rights of those who become subject of your work or are affected by it (Saunders et al., p. 2012 p226). The integrity of the study is vital, when planning your research. The researcher must include this layer of thinking no matter how difficult it is. Thinking about ethical issues will stimulate you to consider your own values and how you intend to integrate them into your researching (Brown, R. 2006).

Ethical issues can arise throughout this research (Saunders et al., 2012, p.236). Careful consideration will be taken throughout this research, to maintain ethical integrity in the researcher’s role as researcher. The following will be ethically considered, deciding on the research topic, designing research, collecting data, processing and storing data, and finally analysing and reporting the findings. Particular consideration must be given to the participants of the research.

In this research the information gathered through the surveys and interviews will only be used for the dissertation purposes and the confidentiality and identity of all the participants of the survey will be respected and held in the highest regard. The participants were informed in detail about the purpose of the research and knew in advance the information required. They were also informed of their rights and protections. Consequently with all these factors being considered they could decide whether they would like to take part or not.

The participants had the right to refuse answering any question that breaches their companies' policies or they deem inappropriate.

3.14 Assumptions to research:

A number of studies delve into the success and failure rates of projects. These studies indicate that a serious number of problems exist across a broad number of industries. Very few organisations (9 percent) rate themselves as excellent on successfully executing initiatives to deliver strategic results. Consequently, only 56 percent of strategic initiatives meet their original goals and business intent. This poor performance results in organisations losing $109 million for every $1 billion invested in projects and programmes (PMI, Feb 2014).

The results from numerous studies, the review of the available literature and observation of the project management environment indicate there are valuable lessons being wasted in projects. In this study the researcher will investigate the relationship between LL and project success. Illustrating that PMs are missing a big opportunity to enhance the service they provide by not using LL.

Chapter 4 - Data analysis and findings

4.1 Overview

This chapter outlines the data analysis and significant findings of the research project. The data analysis takes into account all data from both primary and secondary sources. Chapter 2 the literary review illustrates the secondary data. The secondary data compiled is used to support the findings from the primary sources. A mixed method research method combining quantitative analysis through self-administered online surveys and qualitative analysis which complied of face to face interviews was used for this project.

The questionnaire results were analysed using frequency analysis for each of the 29 questions. A total of 145 respondents took part in the survey, with 139 completing the survey. This means that the 139 completed surveys will be used for the analysis. All respondents were PMs in Ireland working in a variety of the key project managements industries such as IT, financial services, construction etc. The first four questions with in the quantitative questionnaire provide a demographic profile of the quantitative respondents. The remaining questions were chosen because of their relevance to the research questions.

4.2 Findings from quantitative analysis: Questionnaires.

Question 1:

What is your gender? Gender Profile of Quantitative Respondents: From the 139 respondents 32 (23%) were female and 107 (77%) were male.

Table 3: Frequency Table Gender profile of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	107	77.0	77.0	77.0
	2 Female	32	23.0	23.0	100.0
	Total	139	100.0	100.0	

Question 2:

What is your age? According to this question the majority of the respondents were in the age range from "35 to 44". The age range is used to provide the average age of the respondents. From the survey the results are as follows 18 respondents (12.9%) are between "25 and 34" years old, 69 respondents (49.6%) are between "35 and 44" years old, 46 respondents (33.1%) are between "45 and 54" years old and 5 (3.6%) respondents are over 55 years old.

Table 4: Frequency Table for age profile of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 25 to 34	18	12.9	13.0	13.0
	3 35 to 44	69	49.6	50.0	63.0
	4 45 to 54	46	33.1	33.3	96.4
	5 Over 55	5	3.6	3.6	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Question 3:

What Industry do you work in? According to Murphy (2014) the Vice President of the Ireland Chapter of the Project Management institute he stated that project management in Ireland is drawn across all industry sectors which includes IT, Technology, Finance, Consulting, Pharmaceutical, engineering, construction, healthcare and transport. The frequency distribution of the study shows that a broad cross section of industries is covered by this research. IT was the largest group of respondents with a total of 49 (36.8%) responding.

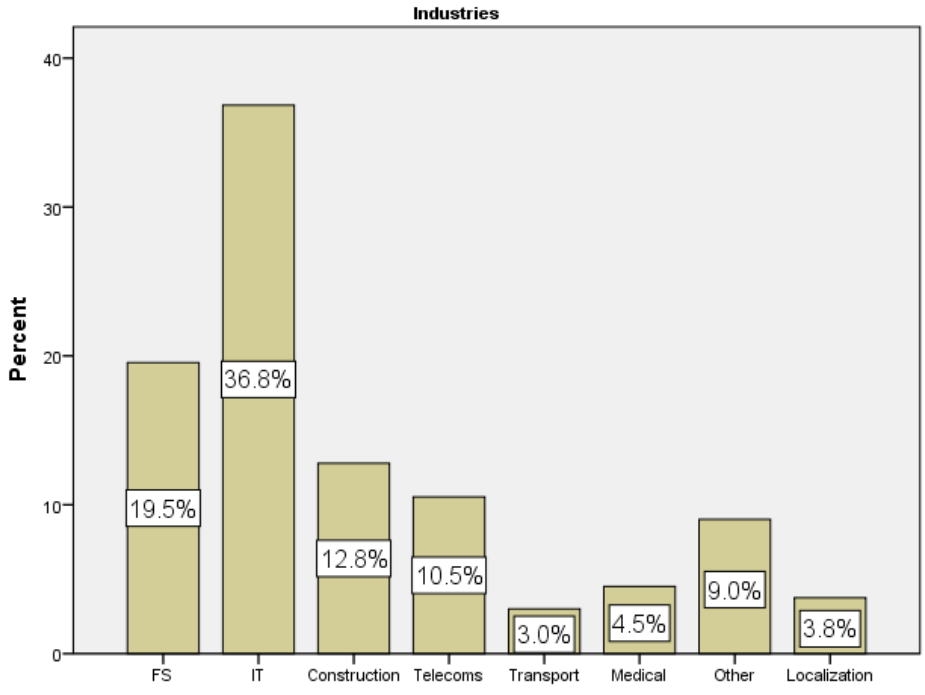

Figure 11: Bar Chart showing industry distribution of the sample.

Question 4:

How long have you worked managing projects? The vast majority of the PMs surveyed, a total of 109 (78.4%) of the respondents had managed projects for more than 6 years. None of the respondents have managed projects for less than one year. 12 (8.6%) worked 1 to 3 years and 17(12.2%) managed projects for 4 to 6 years. It was important to survey PMs with comprehensive experience managing projects, as they would have real world knowledge of the use and barriers to LL.

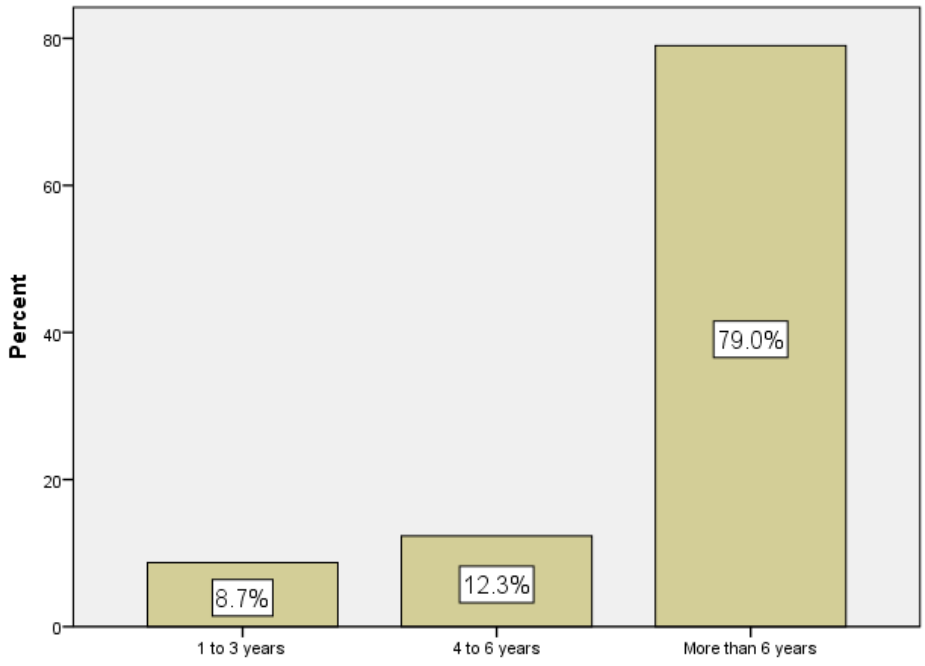

Figure 12: Bar Chart showing the project management experience of the sample.

Question 5:

Would you consider this a definition of Project Success? To determine what PMs in Ireland define project success as was important in the context of this research. The respondents were required to base their responses on a definition developed from the literary review and the *new approach to project management criteria* developed by (Van der Westhuizen and Fitzgerald, 2005). The definition used in this research project was "A successful project will be one where all project objectives were successfully completed on time and within budget and the customer realises the benefits". When asked was this project a success we see 124 (89.9%) of the respondents agreed with the definition.

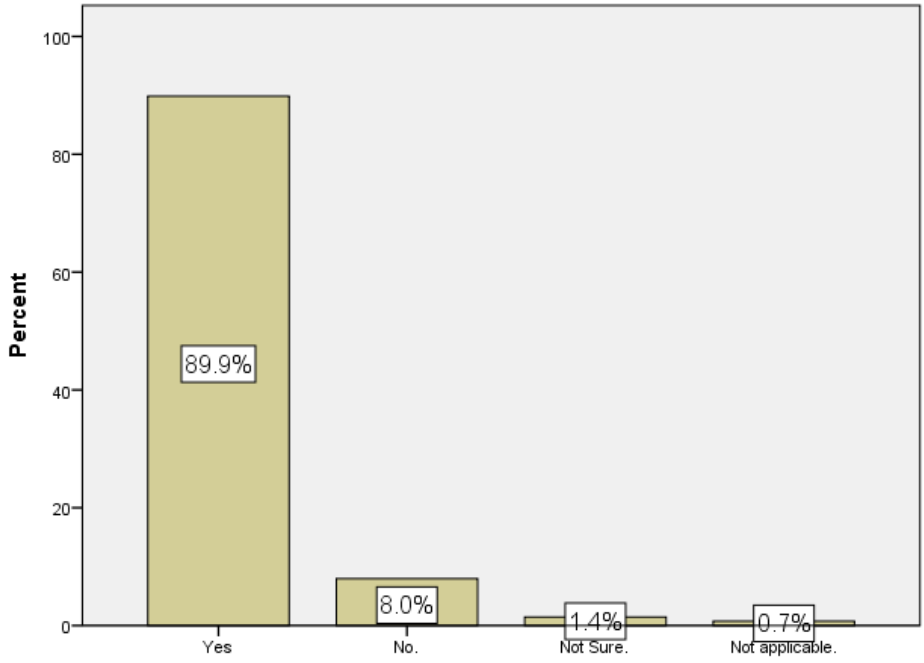

Figure 13: Bar Chart showing clarifying definition of 'project success' for study.

Question 6:

Do you access a lesson learned report before or during a new project? To begin the research into LL it was important to establish from the outset how many of the respondents assessed a LL report before or during a new project. The results from this question were as follows, 5 (4.5%) said never, 17(14.45%) said rarely, 39 (35.45%) said occasionally, 40 (36.4%) said often and 9 (8.2%) said very often. From the literary review this seems to coincide with the mixed relationship between PMs and the use of LL. In a study of PMs LL databases were considered important by 87% of respondents, but only 22% are using them (Walker, 2008).

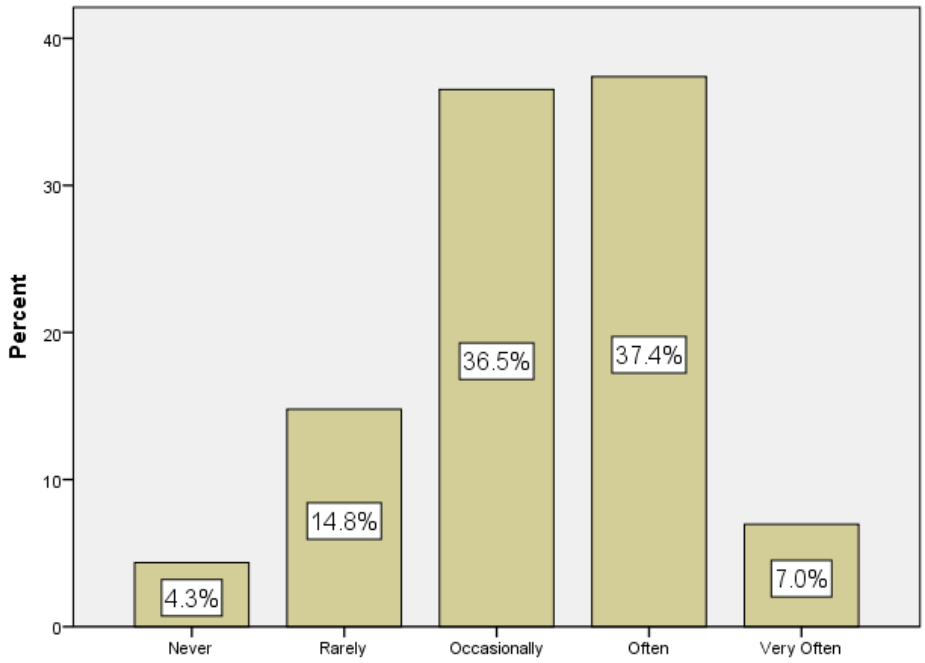

Figure 14: Bar Chart showing the frequency a LL report is accessed.

Question 7:

How do you see the benefits of using a LL report? The following question accesses how PMs in Ireland view the importance of using a lesson learned report for new and existing projects. From the respondents answers we see that PMs view the use of a LL report as relatively high in its benefits for projects. No respondent viewed it as "not important at all" and only 3 (2.2%) respondents viewed it as "not important". The frequency in the positive answers was a lot higher as 44 (31.7%) respondents viewed it as "important", 56 (40.3%) viewed it as very important and lastly 36 (25.9%) viewed it as extremely important.

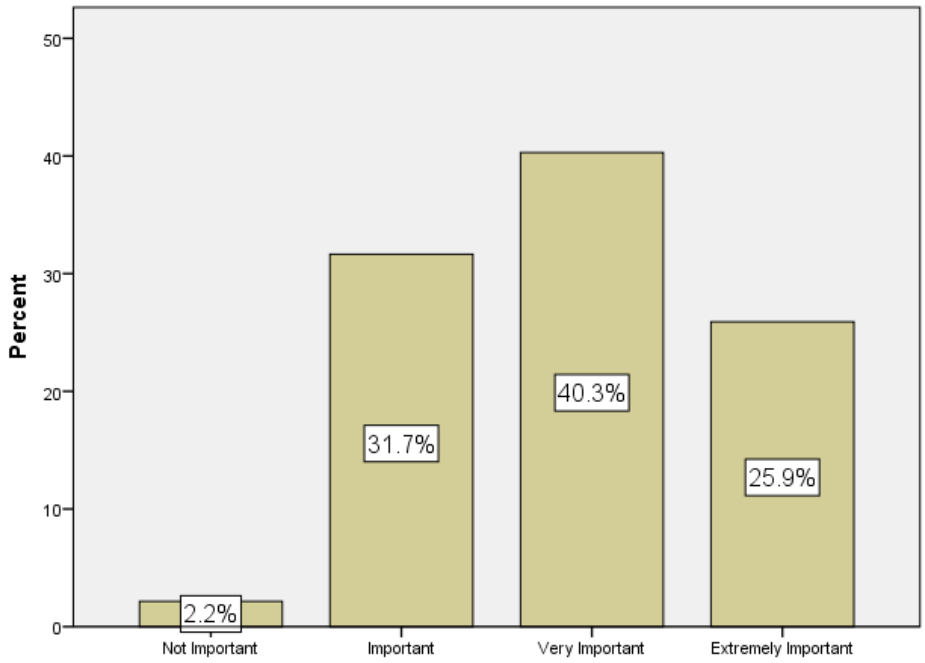

Figure 15: Bar Chart showing the respondents perception on the benefits of LL.

Question 8:

Has a lesson learned you recorded contributed to the success of other projects you have worked on? This question looks at LL and its contribution to project success, again we can see that the respondents answered positively with only (1.4%) and 10 (7.2%) selecting "Never" and "Rarely" respectively. In contrast we can see that the bulk of the respondents 91.4% have increased the likelihood of project success at least occasionally from using LL on new projects. This is broken down into 58 (41.7%) selecting "occasionally", 51 (36.7%) selecting "Often" and lastly 18 (12.9%) selecting "Very often".

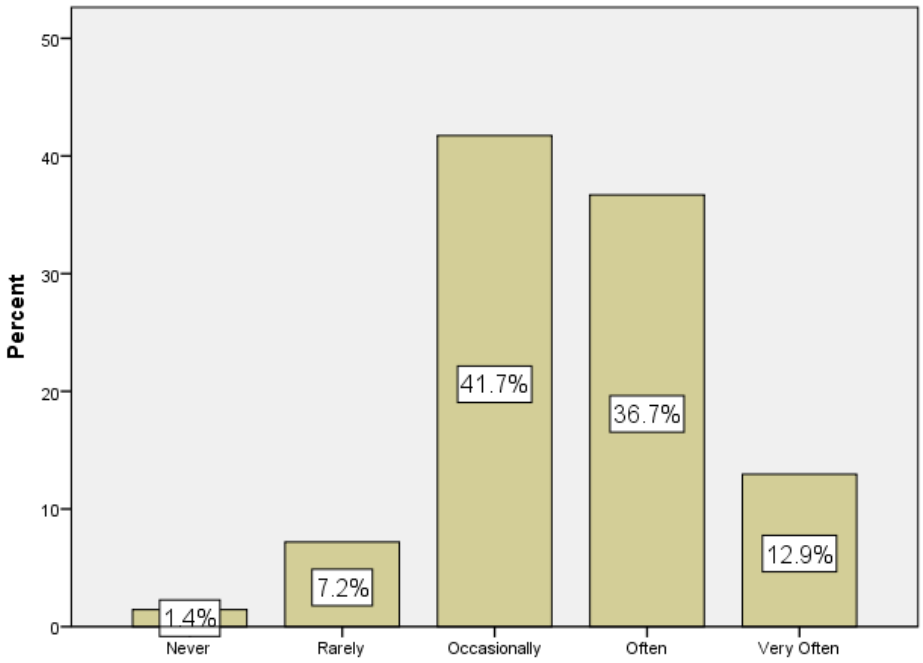

Figure 16: Bar Chart showing respondents experience of LL affecting project success.

Question 9:

Do you think the chance of a project being successful can be increased by developing and implementing the use of a LL report? Question 8 illustrates the current state of the use of LL in relation to project success, whereas this question highlights if improvements where made would how would LL contribute to project success. An interesting insight into the PMs perception of LL and project success is gained in this question. In total 97.1% of the respondents deemed it either 'likely' (21.7%), 'very likely' (43.5%) or 'Extremely likely' (31.9%) that the chance of a project being successful can be increased by introducing a correct procedure for the implementation of LL report.

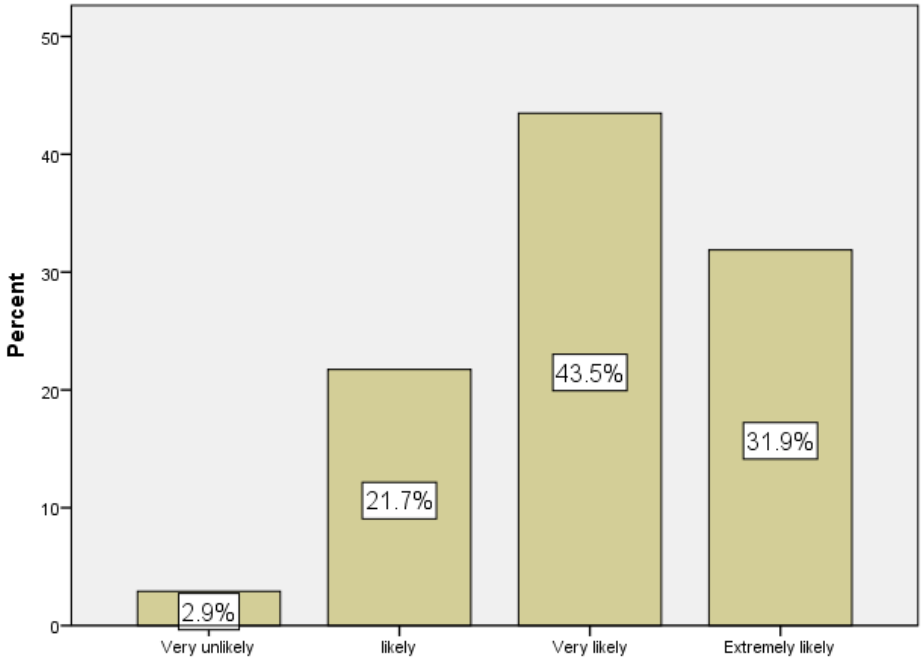

Figure 17: Bar Chart showing the chances of project success if developing and implementing a LL report.

Question 10:

How likely is it that the lessons you shared on a new or current project resulted in a project success? From viewing the responses to this question it is evident the majority of the respondents are not confident that a lesson they have shared has resulted in a project success. This would lend to one the major issues in the literature. Milton, (2010) found that organisations identified and capture lessons but the lessons were not shared to deliver intended changes in organisations behaviour, process, best practices or standards. If you compare this question and question 8 you can see that respondents believe LL they capture is more likely to affect project success than an LL being shared.

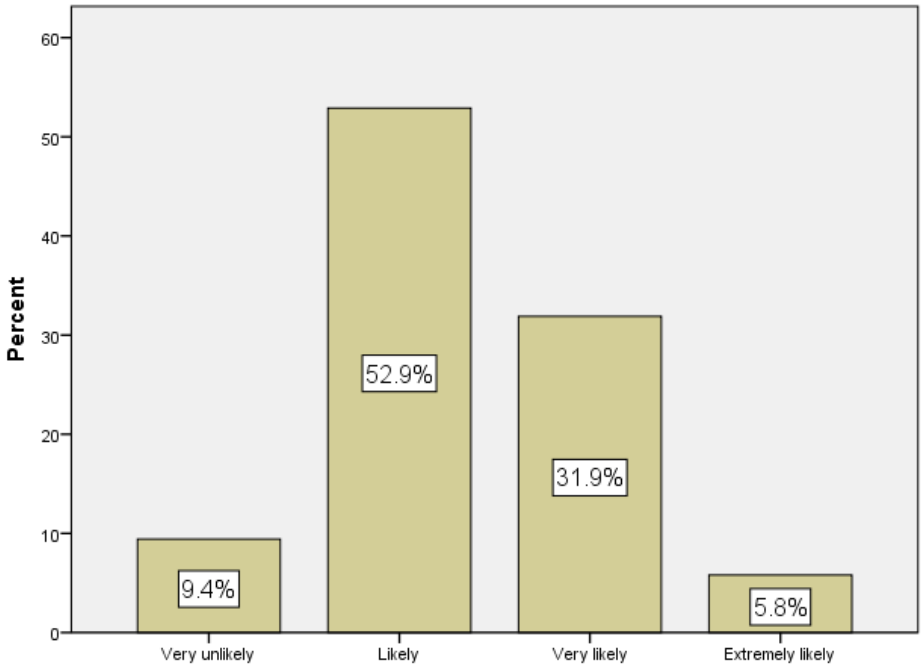

Figure 18: Bar Chart showing respondents views on the sharing of LL and project success.

Question 11:

If similar mistakes occur during a project, do you think these mistakes could have been avoided by using LL? This questions intention was to see to see how PMs felt regarding the use of LL to avoid mistakes in projects. The responses illustrate that the majority of PMs do believe LL can be used to avoid mistakes again indicating that if LL are used and implement correctly can increase the likelihood of project success. In total 98.5% believe the use of LL is either 'Likely' (32.1%), 'Very likely' (43.8%) or 'Extremely likely' (22.6%) to avoid mistakes in projects.

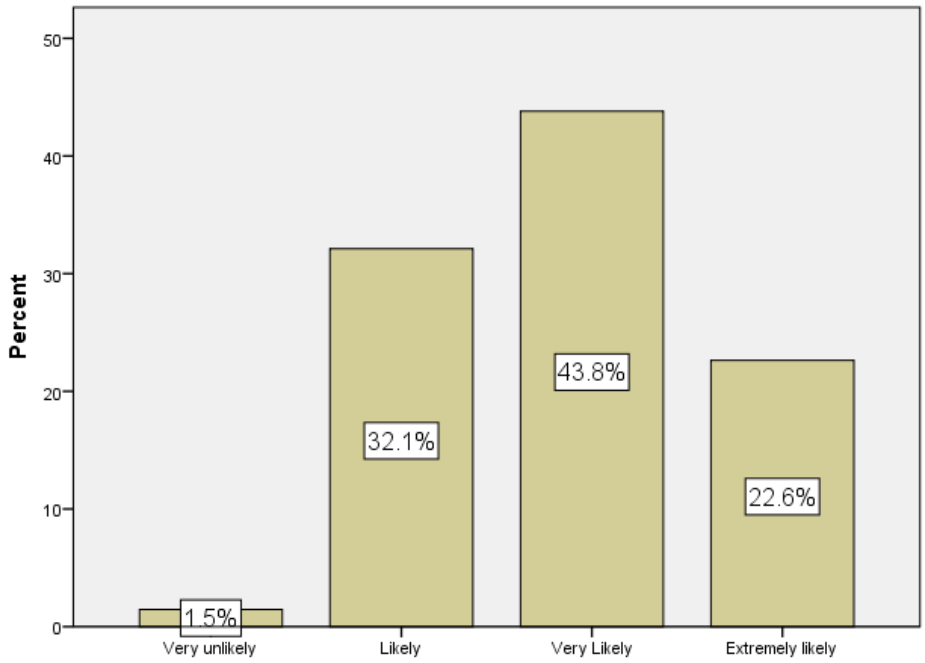

Figure 19: Bar Chart showing views on the avoidance of mistakes by using LL.

Question 12:

Do you think it is likely that not using LL can contribute to increased project costs, extended schedules and a lack of communication, considerable rework and costly mistakes? From this question the aim is to illustrate if not using LL can contribute to project failure. The graph below indicates a very positive response with 92.1% indicating that it is at the very least 'likely' that not using a lesson learned can contribute to project failure.

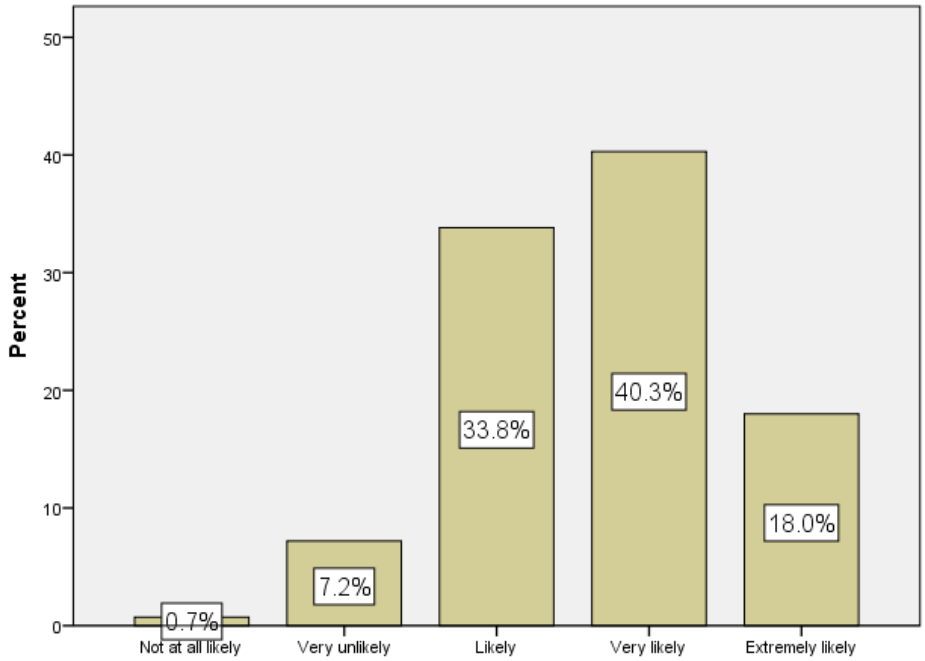

Figure 20: Bar Chart showing views on the contribution to mistakes by not using LL.

Question 13:

Has the use of LL report benefited these areas in new projects? In this graph the nine knowledge areas from the PMI (2013) have been selected with the addition of benefits. These where selected to highlight which areas LL impact the most as perceived by PMs. The area LL seems to have the most influence in projects is, reducing risk, improving communications and improving the quality of a project.

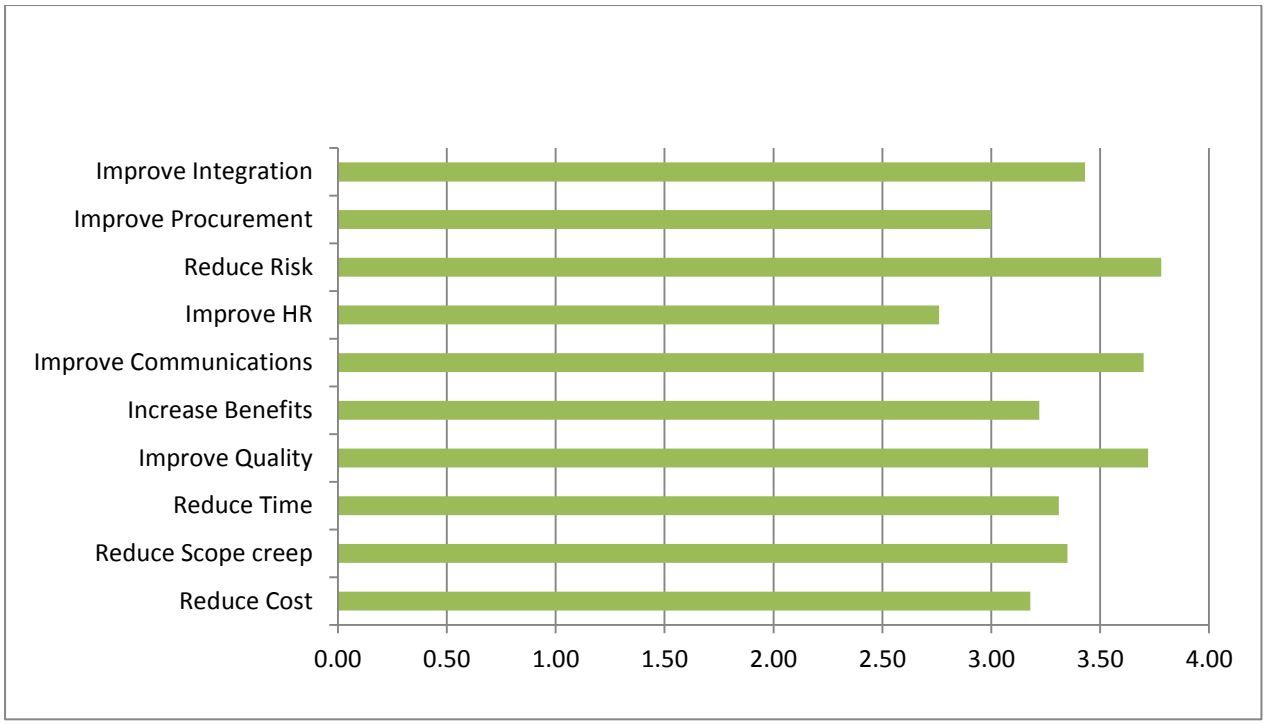

Figure 21: Bar Chart showing areas affect most by using an LL report

Question 14:

Regarding projects, how likely is the following going to affect the capturing and recording of LL? The next three questions access what affects capturing and recording of LL in three separate key areas to LL. One is projects; the second is procedures and lastly people. From the first graph we can see that see time is the most likely to inhibit a lesson and from being captured and recorded. This is closely followed by changing workforce and lack of resources

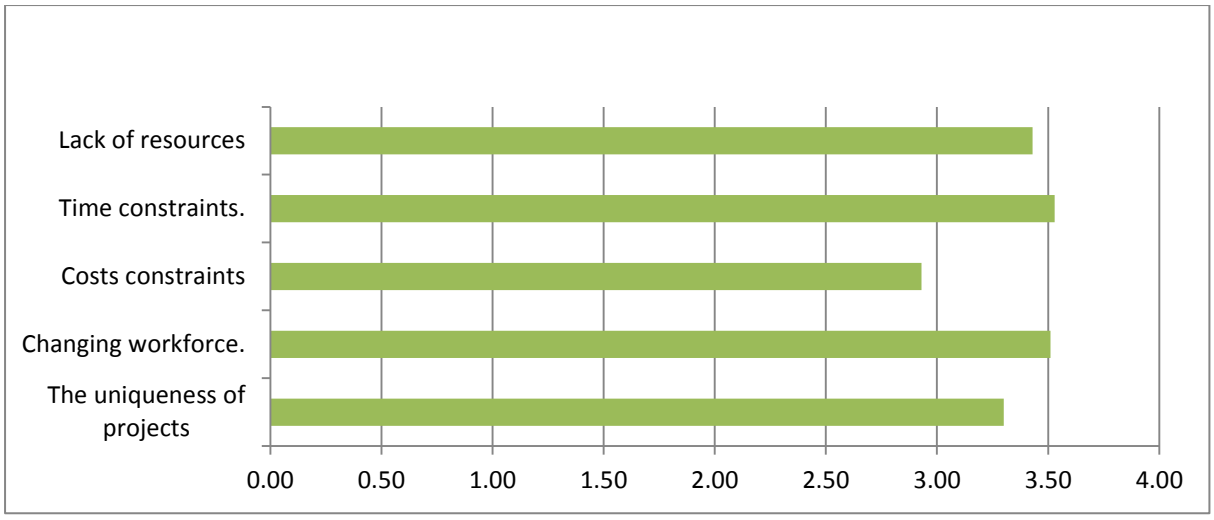

Figure 22: Bar Chart showing the relationship between projects factors and LL.

Question 15:

Regarding procedures, how likely is the following going to affect the capturing and of LL? From the responses to this question it appears the method lessons are recorded is the least likely to affect the capturing of LL. What causes the biggest disruption to capturing LL is lack of processes and clear guidelines to capture the information. This information coincides with the findings of a survey compiled by Carrillo et al., (2004) indicating 96.8 per cent of participants stated having no proper guideline or process for LL documentation which was the most important barrier to KM in the UK (Carrillo et al., 2004, cited in Chileshe and Ghasabeh, 2014).

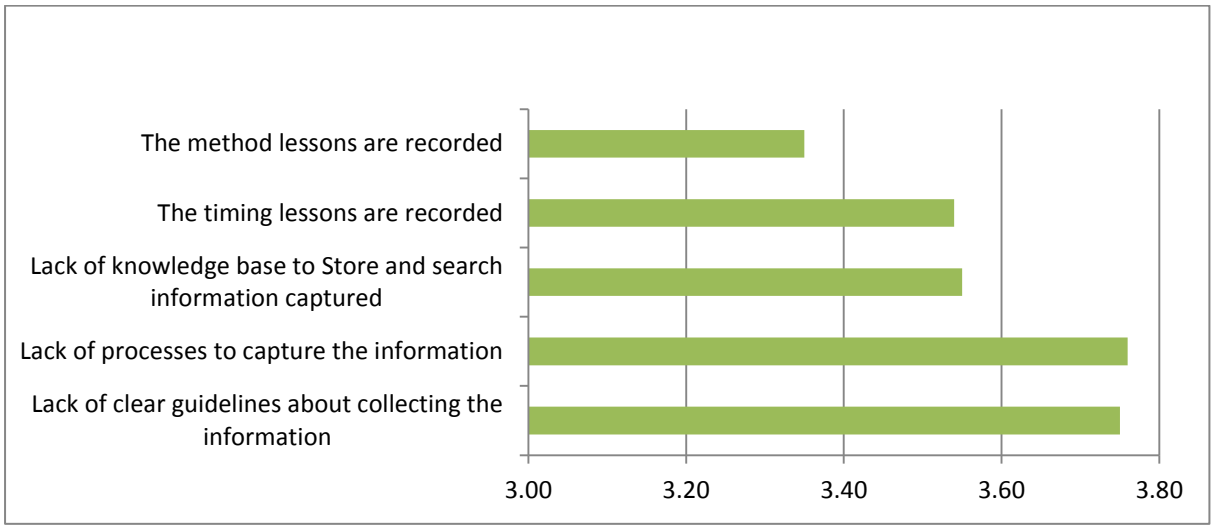

Figure 23: Bar Chart showing the relationship between procedural factors and LL.

Question 16:

Regarding people, how likely is the following going to affect capturing and recording of LL?

Lack of management support, heavy workload and the organisations culture are the three areas selected by the respondents as the most likely to affect LL being captured and recorded.

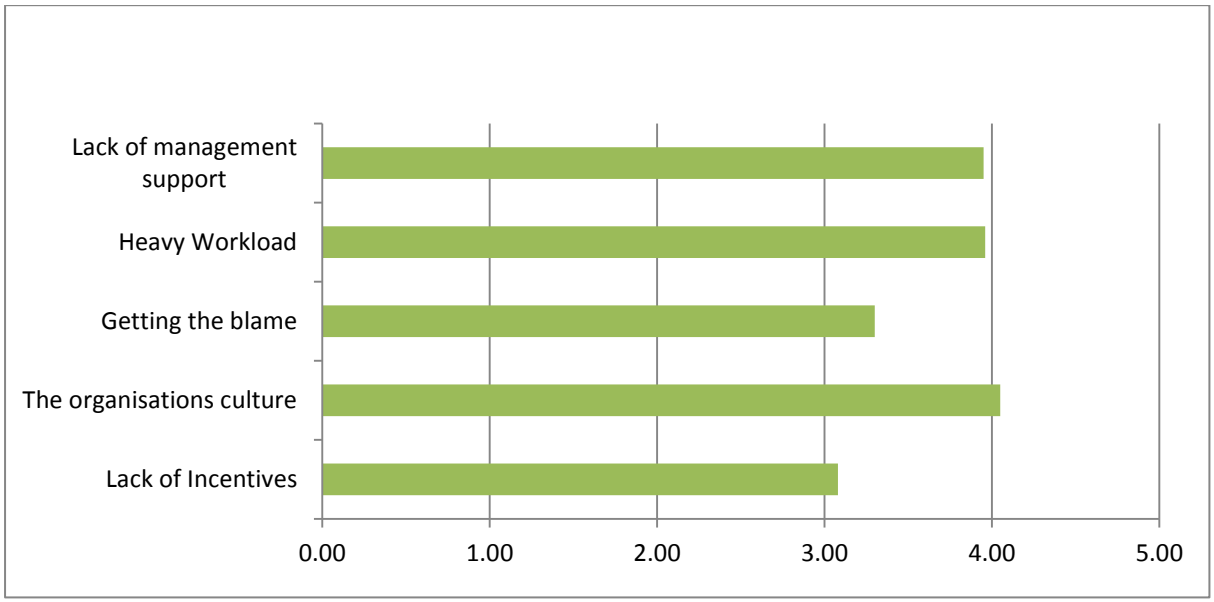

Figure 24: Bar Chart showing the relationship between people factors and LL.

Question 17:

Which three of the following methods/tools would you use for recording LL? From the response's to this question, 'PPRs' were the most selected method for capturing and recording a LL. Out of 139 respondents it was selected by 79.1% of the PMs. Second on the chart was a 'Formal Workshop' which was selected by 63.3% of the respondents. Third and fourth on the graph were selected by a similar amount of the respondents. 'Informal Gatherings' were selected by 37.4% of the respondents and a 'Spreadsheet' was selected 36.7% of the respondents. Interestingly no one selected the 'none' option. This compares with the literature as PPRs appear to be the most popular and play a fundamental role in promoting organisational learning (Carrillo, 2011).

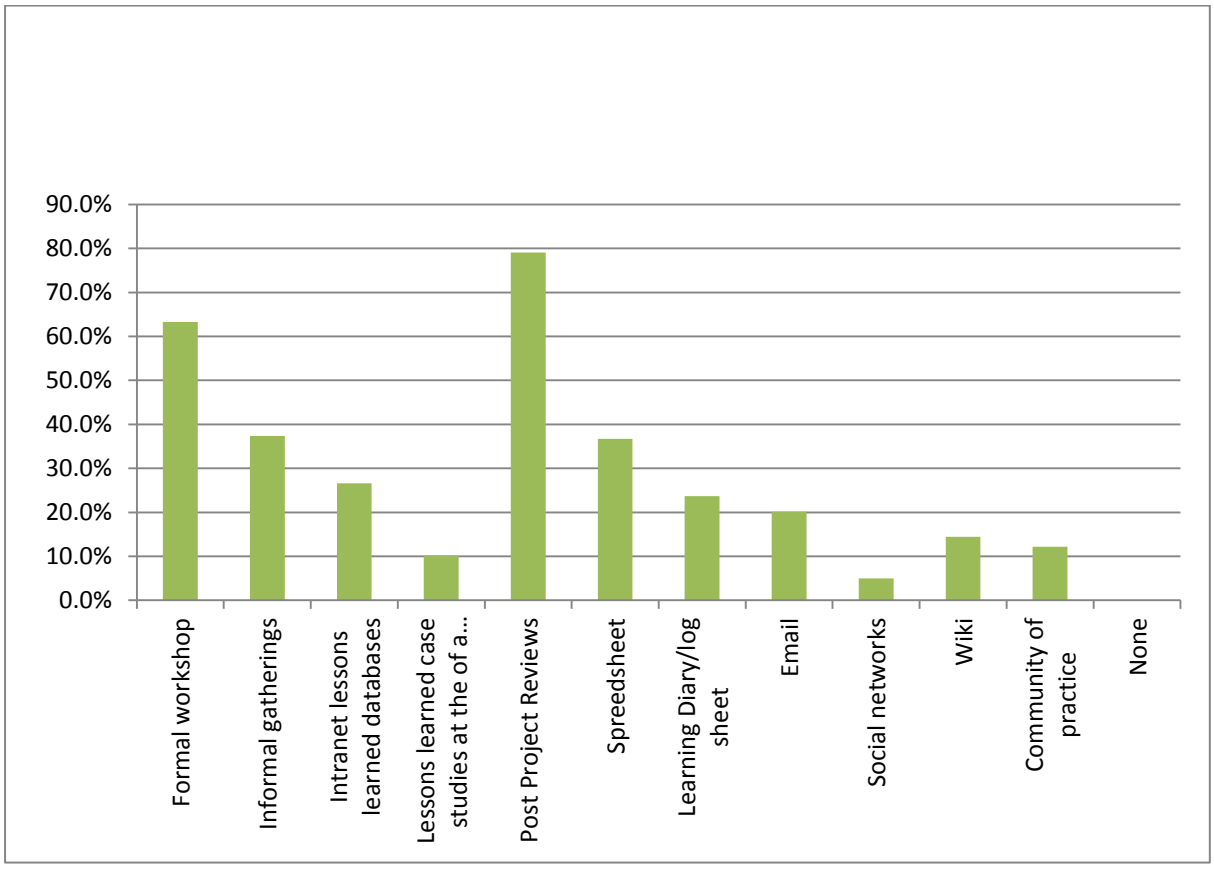

Figure 25: Bar Chart showing the tools/methods used to capture and record LL.

Question 18:

Which three of the following methods/tools would you use for accessing LL for a new project? This question was used to identify what PMs in Ireland use to access LL for a new project. An intranet LL database and PPMs were selected by the same number of respondents which was 50.4% of the respondents. The third highest method of choice selected by PMs was a spreadsheet, which was chosen by 40.9% of the respondents. It seems that there is a wide use of different methods for accessing lessons learned which matches up with the literature.

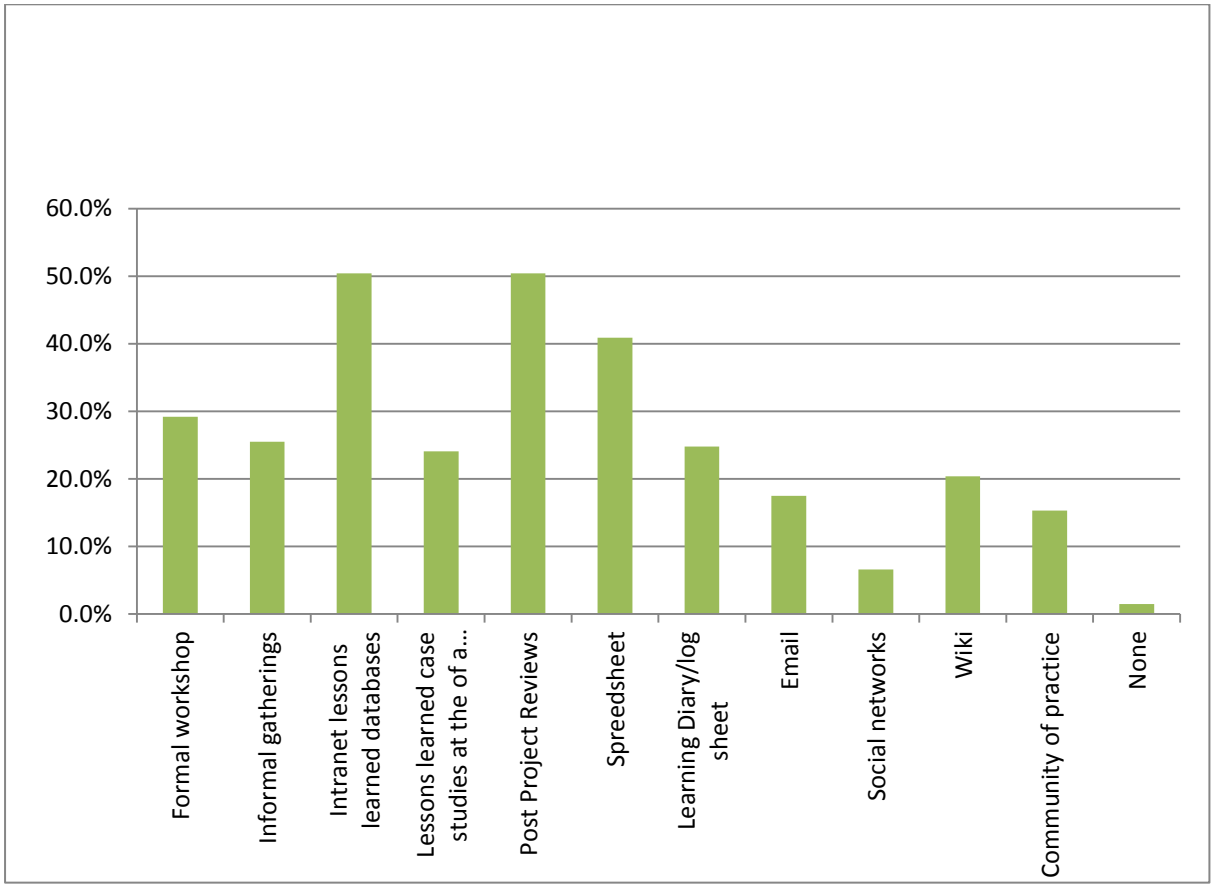

Figure 26: Bar Chart showing the methods/tools used to access LL.

Question 19:

Do you agree the method in which lessons are recorded and captured affects their use on future projects? This questions seeks to identify do PMs in Ireland believe that the method lessons are recorded affects their use on future projects. From the table below the majority of PMs (77%) either 'agree' or 'strongly agree' that the method a LL is recorded affects their use. Many organisations struggle with implementing a successful LL system or process to capture LL (O'Dell and Hubert (2011).

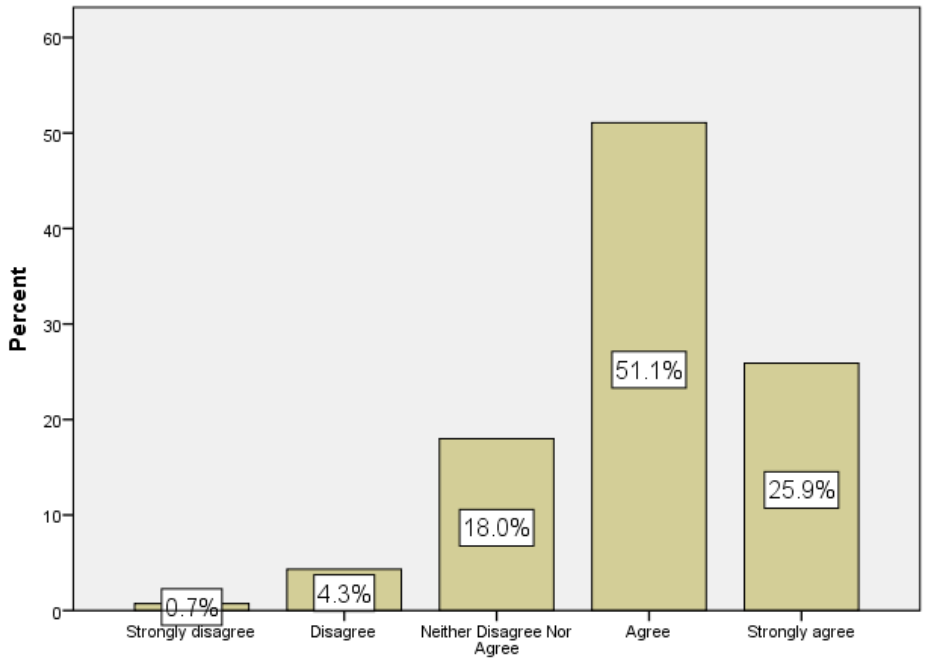

Figure 27: Bar Chart showing method used to record/capture LL affects their future use.

Question 20:

How likely is it that each of the following is going to affect you sharing LL in your organisation? In question 14 we can see 'time' is the most likely factor to affect capturing and recording LL. This also appears to be the case for sharing LL as the diagram below illustrates. 'Time' is the PMs most likely to affect sharing of LL. The similarities continue we can see that lack of management support is believed to be the second most likely to affect sharing LL similarly to what affects the recording of LL. Lack of motivation is third on the graph which can suggest PMs lack of interest in sharing LL.

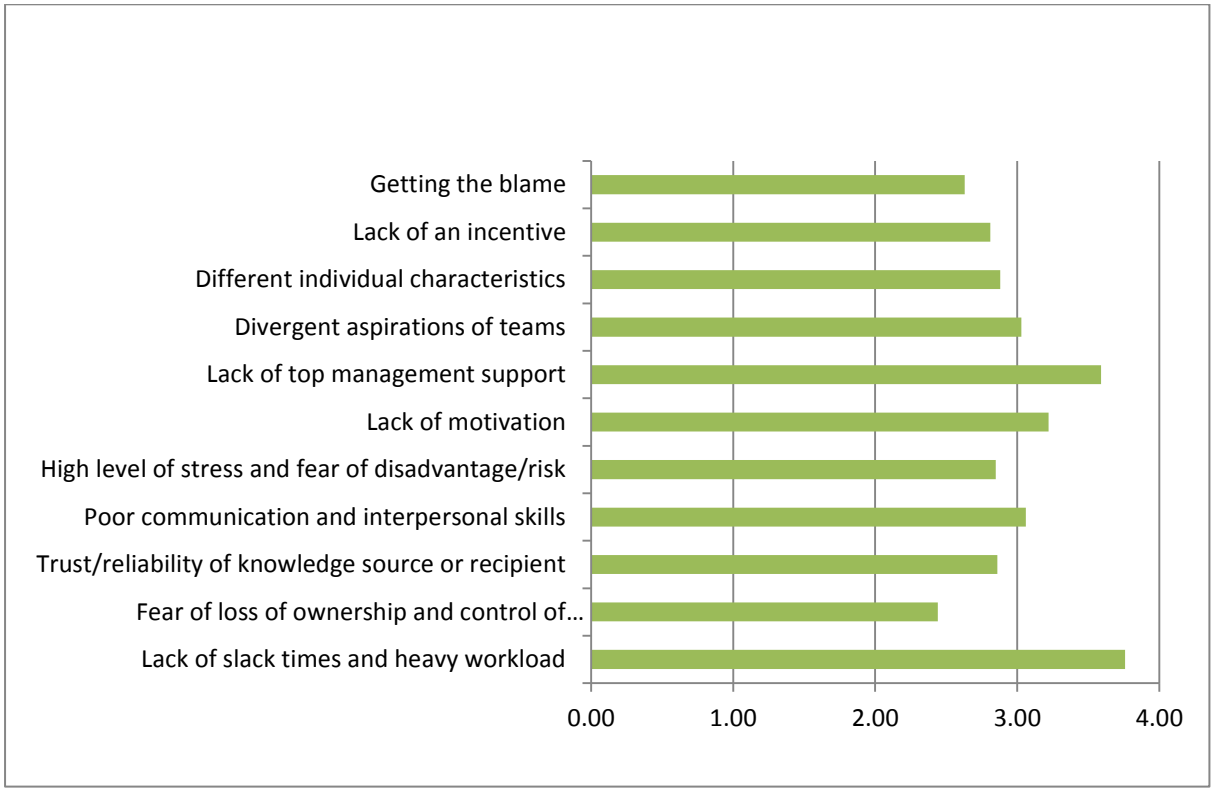

Figure 28: Bar Chart showing the factors that affect LL being shared.

Question 21:

How likely is each of the following going to improve you sharing LL in your organisation?

Management support and a lesson learned repository were the most likely factors to encourage sharing LL by PMs in Ireland. The third most likely factor is the introduction of a learning culture. These three factors are concurrent in what has been found in the literature.

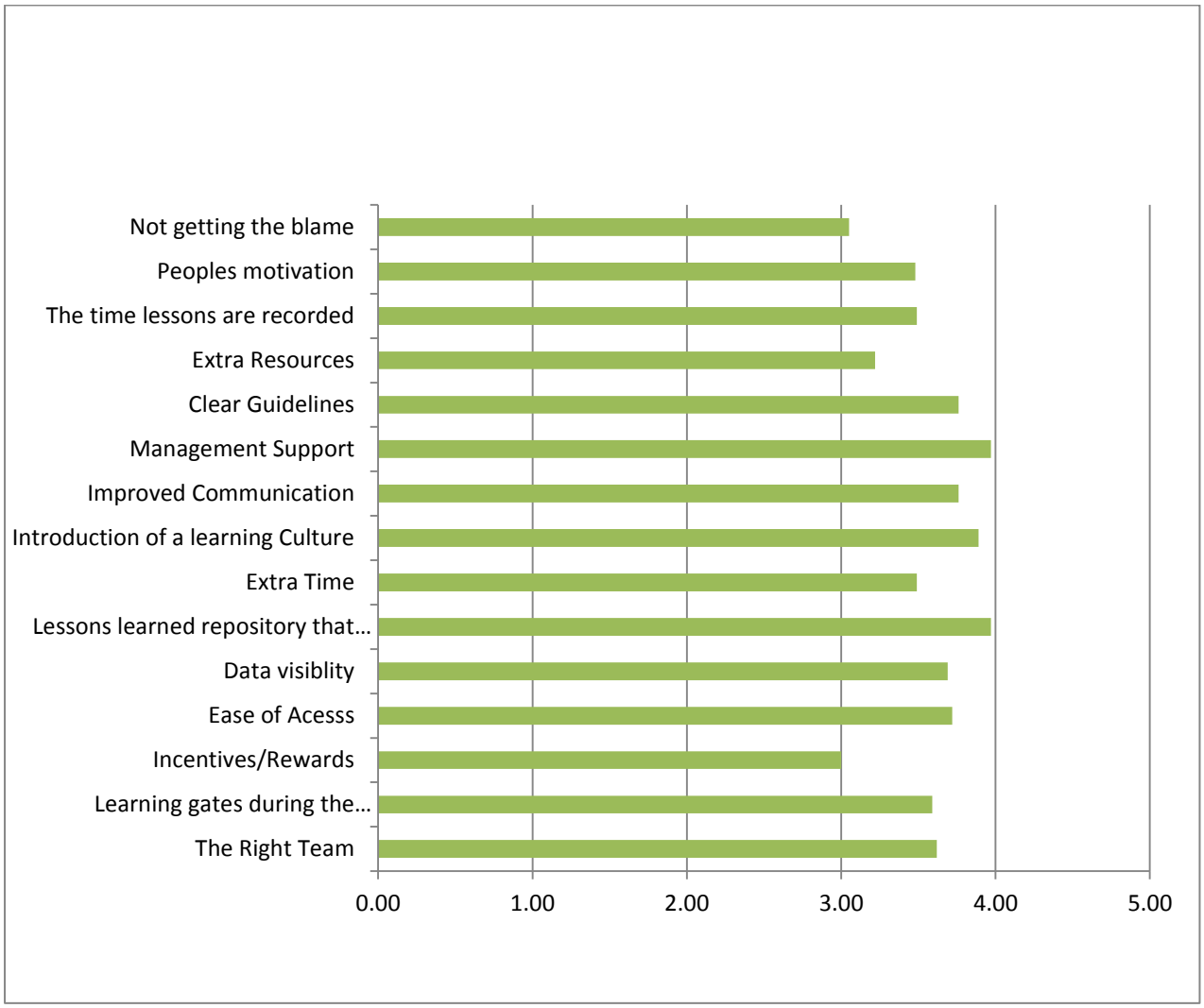

Figure 29: Bar Chart showing the factors that may promote the sharing of LL.

Question 22:

Do you agree people are the main drivers for the use of LL? The use of LL is dependent on people (Thomas, 2012). It is important to discover if people's importance in the literature is perceived in an Irish context. With 88.3% of the respondents indicating that they either 'agree' or 'strongly agree'. From this graph it appears PMs in Ireland believe that people are one of the main drivers for the use of LL.

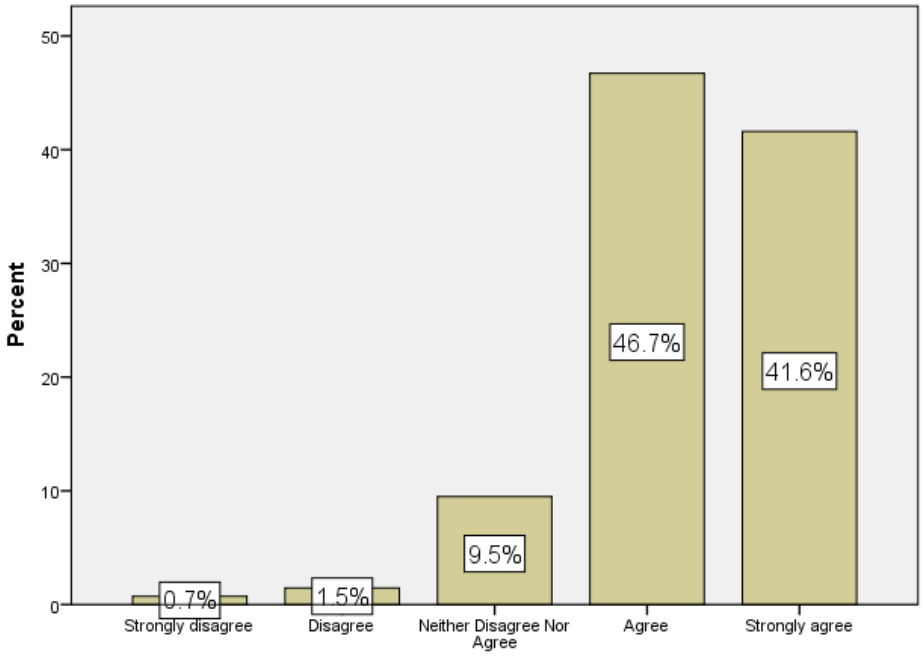

Figure 30: Bar Chart showing views on are people the drivers of LL.

Question 23:

Do you or your company perform a PPR after each project for recording LL? From the literature review a PPR is the most popular method for recording LL. It was important to ascertain if PMs in Ireland performed them. From this graph we can see PPMs are used quite frequently by PMs in Ireland. With 92.8% stating that they either 'occasionally', 'often' or 'very often' use a PPR and only 7.2% stating the either 'rarely' or 'never' use a PPR.

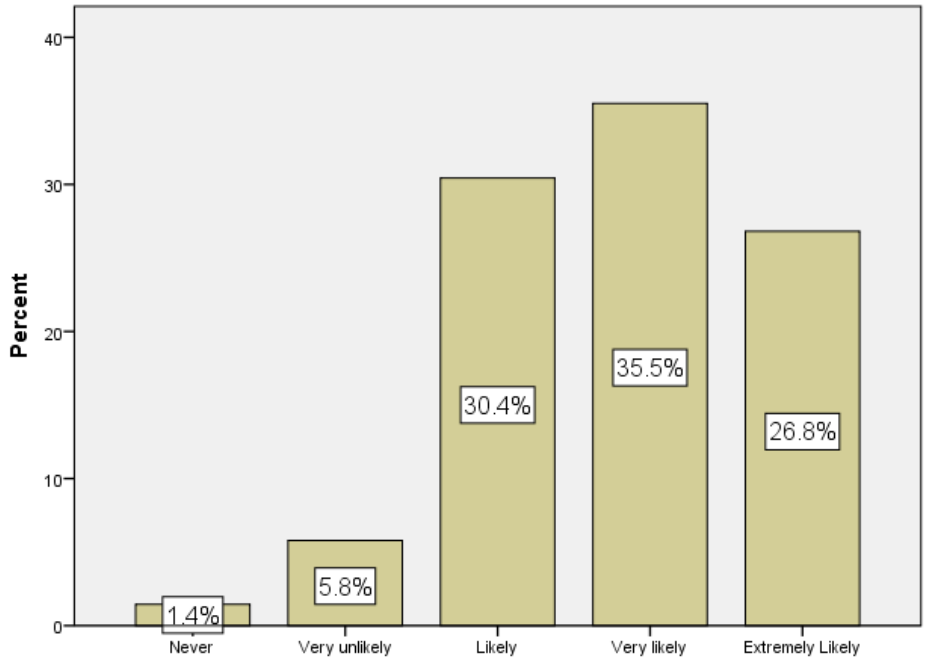

Figure 31: Bar Chart showing how likely it is if organisations perform PPRs.

Question 24:

Do you think if it was mandatory for your organisation to perform a PPR when a project or a major phase of a lengthy project has been completed, it would be likely to improve the project's success? The perception is that LL documents provide little added value; teams are being asked to generate documents but they see no evidence of them being useful and they do not have access to the outcomes (Carrillo, 2013). Due to the inconsistency in the literature review regarding the LL process, if it was made mandatory would this improve the likelihood of project success From this question 90.6% of the respondents believe that it is either 'likely', 'very likely' or 'extremely likely' the it would result in project success, indicating that they do believe LL can add value.

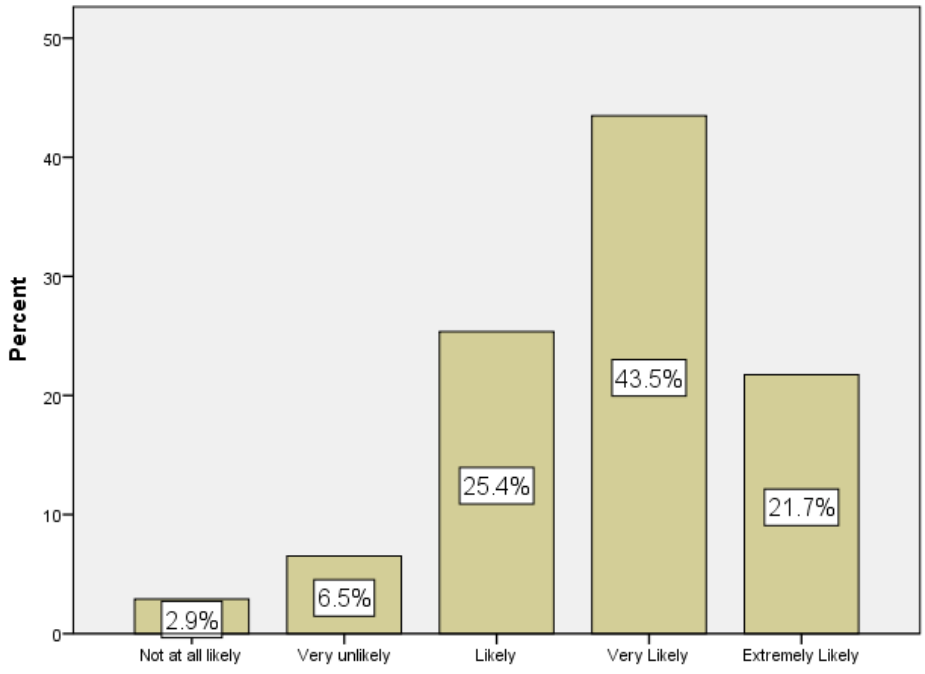

Figure 32: Bar Chart showing views on performing a mandatory PPR and project success.

Question 25:

If it was mandatory for a PM to go before a small review board to prove that the LL from recent projects will be directly applied to this project, would it improve the project's success?

In a study by Carrillo (2013) indicated some post project reviews only occur if forced. This question is used to understand if the use of LL was mandatory would it increase project success. The responses to this was positive with 34.5% choosing 'likely', 31.7% choosing 'very likely' and 15.8% choosing 'extremely likely'. In contrast only 18% seemed to think it would have very little bearing on project success.

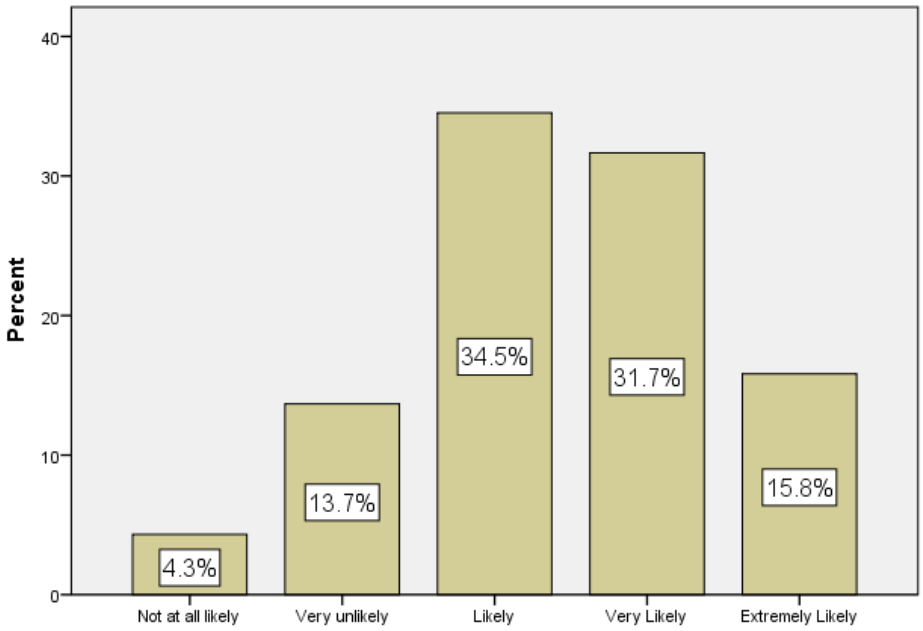

Figure 33: Bar Chart showing views on if the use of LL had to be proved.

Question 26:

How often has your organisation screened LL using criteria such as Risks/benefits to prioritise which will be installed into best practices/operating procedures? This question relates to one of the main issues relating to LL which is their reuse after recording. We can see that 26.2% either 'often' or 'very often' install LL in to best practices or operating procedures. This is where the real value of LL is achieved and 73.8% are only occasionally or less doing it. Past lessons should provide useful learnings that contribute in the planning of new projects, avoiding PMs from repeating mistakes and in due course supporting functional areas associated with the project to improve their operations (Wiewiora and Murphy, 2013).

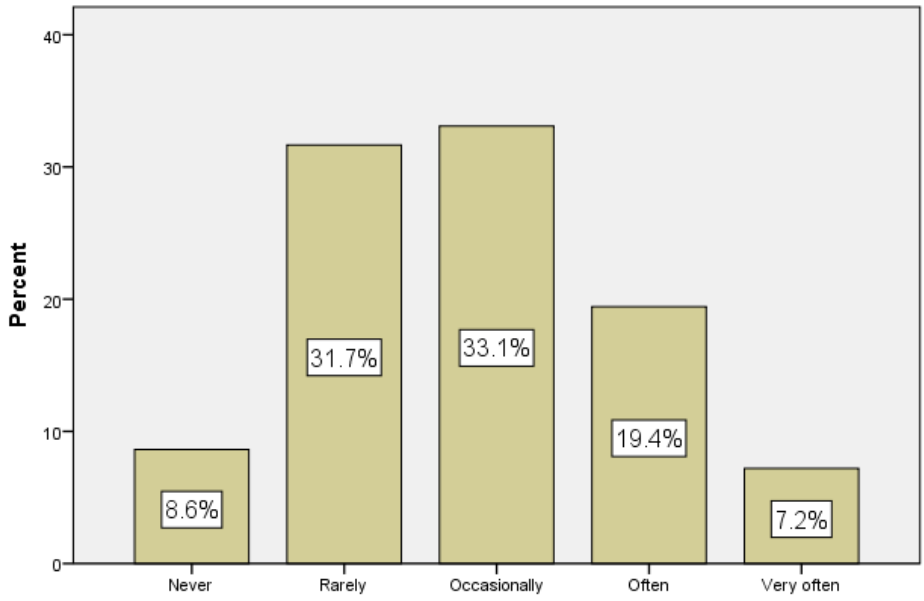

Figure 34: Bar Chart showing views on installing LL into best practices.

Question 27:

Do you agree that the use of LL should be improved in your company? This question was asked to clarify if PMs are satisfied with the use of LL in there organisation. As we can see from the bar chart below 82.7% either 'agree' or 'strongly agree' that LL should be improved in there company.

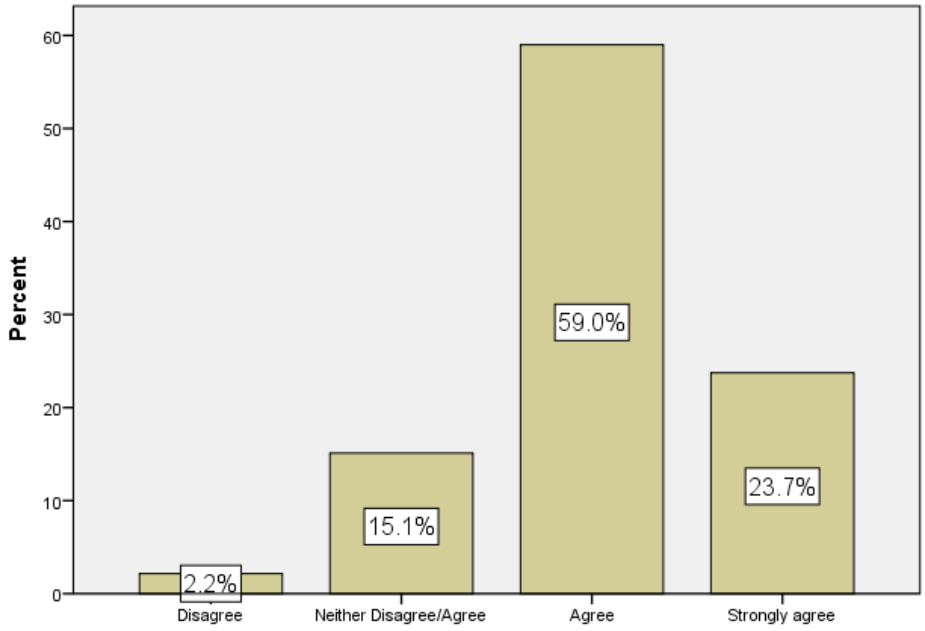

Figure 35: Bar Chart showing if LL should be improved in their organisation.

Question 28:

Do you think training would improve the use of LL in your organisation? The project management community are aware that they are poor at LL and they do not know why this is or how they can improve their current stance (Rhodes and Dawson, 2013) One of the issues that arose in the literature was a lack of knowledge regarding the processes invovled with LL. The need for training to improve LL is evident as 87.1% believe it is either 'likely', 'very likely' or 'extremley likely' that training would improve the use of LL.

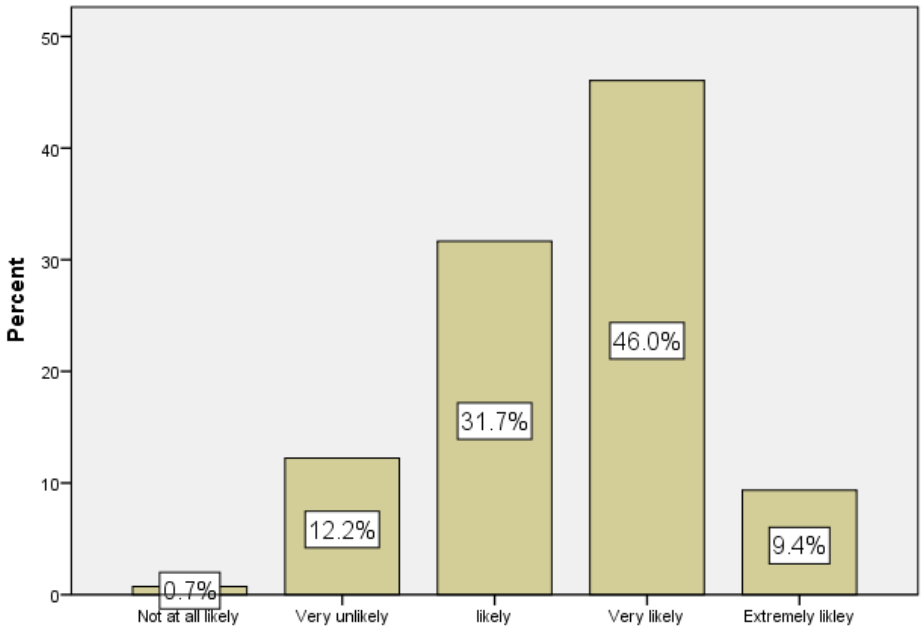

Figure 36: Bar Chart showing whether training would improve the use of LL.

Question 29:

Do you agree if your organisation improved its learning culture it would result in improved project success? There needs to be a change in mind-set to encourage others to learn and to be willing to offer/take advice (Carrillo, 2012). This is manifested in the company's culture and by top management. From the respondents we can see that this need for cultural change is being experienced by PMs in Ireland. 83.1% either 'agree' or 'strongly agreed' that if there organisation improved its learning culture it would result in project success.

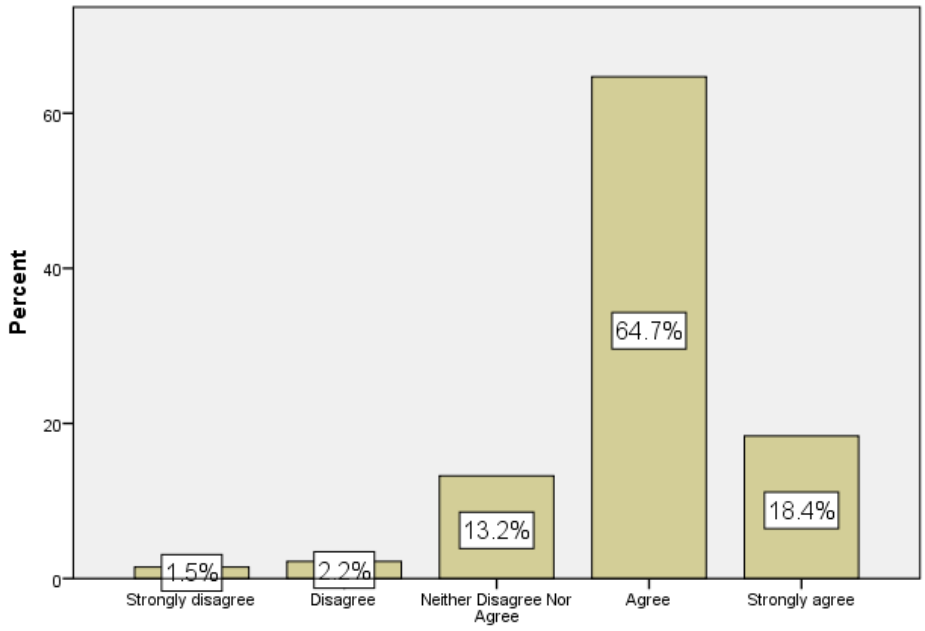

Figure 37: Bar Chart showing responses to improving organisations learning culture.

4.3 Findings from qualitative analysis: Interviews

For the qualitative section of this mixed method research, seven PMs were selected from respondents to the quantitative research to partake in face to face structured interviews (See appendix 6 for questions). As LL is quite a challenging subject the researcher felt it was important to supplement the primary data collected in the surveys with qualitative interviews. The researcher recorded each interview using a Dictaphone. Due to the word could limit on the dissertation; concise findings of the interviews are presented in this section.

H1: There is a positive relationship between the use of LL and current/future project success.

1. All of the Interviewees said that some projects they worked on have benefited from the use of LL. Some examples are listed below.
    - *"We had a formal workshop with the department of education chaired by myself and we had some very positive and meaningful results from that LL and subsequently we got reengaged by that client on a similar programme of works the following year where we were able to bring some of the benefits of that LL into that programme."* (Interviewee 1)
    - *"Based on this lesson learned we defined a handoff template for the client to complete internally before handoff to our team. This reduced the communication effort on both sides."* (Interviewee 2)
    - *LL documents contain nuggets of information that if the PR wasn't aware of before the project starts they may cause a delay in the project. If the information is not shared, the result would be the delay of the project.* (Interview 5)
2. Areas that benefited from the use of LL were reduction in time, definition of scope, reinforcing positive behaviour or process, risk avoidance, client reengagement increased personal knowledge and budget planning

3. By not using LL it is felt that they are missing a big opportunity to enhance the service they provide to the client and to improve as PMs. The pressures of delivering projects under the constraints time, quality and cost makes LL not always viable.
4. It is also felt that there is no emphasis on LL. Resulting in non–consistent use of LL and different styles of operating LL, in most cases they said they would like to use LL more but usually the LL documents are not available.
5. For LL to be successful in an organisation they need to be living throughout the project, so that the project team can review at gateways and improve the project itself as well as affording information for future projects.

H2: The most commonly used method to record and access a LL is a PPR but it is not fit for purpose.

6. The methods in which LL are recorded and accessed include, word documents or excel spreadsheets, CAPA (Corrective and Preventive Action) a PPR, a workshop and a Lesson learned database.
7. There are inconsistencies when and how each of the interviewees capture/record LL
    - Interviewee 1: *"Within our office we work to the project stage plans of the RIAI which is an eight stage process which includes a lesson learned review at the start of a project on some projects we follow that process on other projects we don't".*
    - Interviewee 2: *"On small projects we use CAPA at any time a problem escalates"…"On larger projects we perform a PPR at the end of production or very shortly thereafter".*
    - Interviewee 3: *"Purely at a meeting you just record it email it to the PMO and say I've ticked that box."*
    - Interviewee 4: *"PPR"*

- Interviewee 5: *"Again in the closing out phase of the project is normally the time we capture them.*
- Interviewee 6: *At the start of the project and reviewed after every Sprint delivery & Workshop and finalised at the end of the project.*
- Interviewee 7: "*At the end of each phase in the project lifecycle (per company process".*

8. The two respondents who used a mixed approach such as CAPA and PPR achieved the best LL usage results. CAPA is suited to small projects or between a project milestone for capturing LL during a project and PPR are more suited to large projects.
9. A structured data base was recommended as the best way to access LL.

H3: The lack of clear guidelines regarding LL is the main reason for LL not being shared.

10. Some of the key issues that affect the recording, accessing and sharing of LL are,
    - *The context:* How the lessons are recorded appears to be an issue. When LL are recorded it must be clear, to be interpreted by another reader outside the project. If not this can affect the sharing of LL.
    - *Lack of availability:* When asked 'if they review LL documents during the planning phase of a project', four out of the seven of the interviewees state the lack of availability of a lessons document is a problem. This can depend on the company they are working for or the project size. When asked would the find them useful all said they would.
    - *Lack of guidelines:* Once lessons learned are recorded, they tend to sit there because no one knows what to do with it.
    - *Size of company:* The chances of LL being gathered and implemented can vary depending on the size of the company. The interviewees believe if you were in a large

company with a PMO who manage a lot of projects they would have a centralised data storage archive. In this they may have stored all the LL from the different types of projects they have managed. So in a larger organisation the information such as LL is easier to access. Smaller organisations don't have the dedicated resources.

- *Time:* From the interviews lack of slack times and workload is a major issue. LL are not being used as PMs are all busy and working in lean organisations. One interviewee believes the lack of time is created as a result of bad organisational culture.
- *Buy in:* Trying to get the team members together as one entity for LL which some people may not see the immediate benefit of it is difficult. Buy in is a huge issue internally and externally. Related to this is the changing work force.
- *Cost:* One interviewee estimated it would cost roughly €12,000 to prepare and construct a LL report for one of his projects. Putting this cost onto the client would result in losing the contract.

H4: There is a positive relationship between being in an organisation with a learning culture and the use of LL.

11. Culture has appeared as one of the key factors in the effectiveness of LL from certain interviewees. An open culture is critical to the identification of LL. One particular company has a culture of operation excellence that focuses on financial results and seeks to remove waste from processes/procedures as much as possible.
12. The opposed view is sharing is vital for LL to become part of process improvement and contribute to project success, but a culture of sharing is missing but if you get a culture and people backing that culture you will get more LL.

13. Depending on the stakes regarding learning from mistakes, the culture of learning lessons can be different. It was described by one interviewee ‘you build it first and then fix it afterwards’ this was in regards to an IT project. This illustrates that it was acceptable to make mistakes in his organisation and not learn from them.
14. If there is a lack of sharing culture, one method to ensure LL gets done is enforcement i.e. a LL document must be produced before each project etc.
15. What an independent PM does is normally ruled by the organisational culture and so that's very important. The point described here is PMs know LL is the right thing to do but if the organisation does not recognise the importance of it, it will not be done.

Additional information:

16. Refinement of what is being recorded in LL documents was suggested, tying together LL and the effort estimate could be an alternative method that will increase the better distribution of resources by recording the lessons regarding the performance of each resource.
17. Tying LL in with a risk document and try and ensure there is a correlation between the two of them.

A Common thread gained through the Interviews was the lack of consistency in regards to LL. There was inconsistency in their availability, how they are recorded, how they are shared, and PM’s attitudes and knowledge towards the topic. This would concur with the literature reviewed for this research. Although, there is evidence that the use of LL has a relationship with project success.

Chapter 5 – Conclusions

The purpose of this chapter is to sum up the theoretical findings gathered in the literature review chapter and combine them with the quantitative and qualitative research findings in chapter 4 in relation to the research questions. The process by which positivist and interpretivist analysis inform one another was vital to this research. A deeper understanding of the research questions was achieved by using the mixed method approach rather than either by itself.

Validation of hypothesis

The hypotheses laid were the implication of the research questions that the researcher started with. The aim of the research is to illustrate to PMs in Ireland the benefits of LL and to highlight the factors that inhibit their use. It commenced by developing a better understanding of how learning is achieved on projects. This was supplemented by data obtained via questionnaires and interviews with those responsible for project management.

"There is a positive relationship between the use of LL and current/future project success."

As illustrated in the previous chapter. From the primary research the examples of how PMs in Ireland have used LL to contribute to project success are as follows, defining scope, providing information on risks that can be prevented in the planning stage, planning the budget and timeline for future project and reengagement by clients. The use of LL has also added value to projects, streamlined processes going forward. On a personal knowledge level LL eliminates a PM from taking a risk with a new project because you know from previous lessons it is deemed to fail. In the PMBOK guide it states that the use of LL can affect the project deliverables (PMI, 2013).

In question 8, 91.6% of the PMs surveyed said at least occasionally a LL they recorded contributed to current or future project success. In question 9, 97.1% believed it was at least likely that the use of a LL report would impact the likelihood of project success. If we use the definition of project success as described earlier in question 6, incorporating time, cost, quality plus the realisation of benefits. There is evidence of LL affecting each of these criteria positively in question 13 and from the interviews from the respondent's. The research may not be conclusive on the relationship, as LL are not being used on every project. There is evidence that when LL are used on projects it is likely to have a positive effect on new and existing projects by project managers in Ireland once it is used correctly.

H2: The most commonly used method to record and access a LL is a PPR but it is not fit for purpose.

From this research it has discussed how the recording and accessing of LL is done in an ad hoc fashion. PMs use a variety of tools which appear to be insufficient and not easy to administer. In the literature review Post project reviews (PPRs) appear to be the most popular and play an essential role in promoting organisational learning (Carrillo, 2011). The most popular method used by PMs in Ireland is the PPR as we can see from question 17 and 18 and the interviews. It also appears to be the most effective method used but it is not without issues. The barriers to PMs in Ireland are consistent with the literature review as illustrated in questions 14, 15 and 16. Time, lack of resources, changing work force, lack of clear guidelines/processes, lack of management support and the organisations culture have been highlighted by the respondents as the significant barriers to LL recording.

From the interviews one company used a mixed method approach to capturing and assessing LL. This included a combination of CAPA for capturing LL during the project and at the end of milestones. Then closing the project using a PPR, this appeared to achieve the best results

in capturing and accessing LL (See table 1.). In question 19, 77% of PMs believe that the way in which LL are captured and recorded affects their use. In question 15 a lack of guidelines/processes scored highest in the barriers to capturing LL. It is also stated in the interviews that when LL are recorded there is uncertainty on how to use them going forward.

In triangulating all the research and data it is believed that PPRs as a method for capturing and assessing LL needs updating. As projects are temporary endeavours with changing workforces and resources constraints etc. The idea of gathering all parties together for a PPR is not working. To promote better LL practices it would appear that learning has to occur right throughout the project and not confined to the closing out phase. This can only be done through the implementation of clear guidelines and the backing of the organisations culture. A combination of an integrated LL process, where lessons are gathered during the project and the use of a PPR for closing the project would appear as the best method to record and access LL.

H3: The lack of clear guidelines regarding LL is the main reason for LL not being shared.

Research currently focuses on capturing lessons learned rather than the problem area which is the dissemination and implementation of LL (Carrillo et al., 2013). This is where the whole LL process falls down. From this research it has been discovered that access to recorded LL is difficult, due to the lack of guidelines, the size of the organisation, lack of a sharing culture and general lack of emphasis on LL as a profession. From the interviews a common thread develops, which is once a project is initiated the availability of LL documents are rarely available. It is also apparent that once LL are recorded the lack of knowledge regarding LL processes means they are rarely shared. In a study, 89% of the PMs surveyed stated they transfer lessons poorly (Rhodes and Dawson, 2013). This statement is backed up by question

10, as the responses illustrated indicate that the likelihood of sharing a LL to affect project success is not as positive as previous questions.

Question 20 in this research describes lack of management support, lack of time due to heavy workload and a combination of lack of motivation and poor communication skills are the leading reasons for LL not shared by PMs in Ireland. In question 21 the top factors that would encourage sharing include management support, the introduction of a learning culture and an easy to use LL repository. The relationship between how LL are captured and the sharing of LL must not be ignored. As how the LL is recorded and in what context can prevent the right person getting the right knowledge at the right time. In question 28, 87.1% of the respondents believed that training would be likely to improve their use of LL in their organisation.

When all the data is triangulated it appears that the lack of guidelines is not the main reason why LL are not being shared but it is viewed as an important barrier. It is a combination of lack of guidelines, no management support, lack of resources and people as a result of the organisational culture. There is a need to introduce guidelines to the LL process as it is evident that there is a lot of confusion regarding how and in what way LL should be done. The standards generally require a PM to carry out a project review but there are no guidelines as to how it should be done (Williams, 2008). As a starting point guidelines should be introduced into the standards.

H4: There is a positive relationship between being in an organisation with a learning culture and the use of LL.

An underlying factor causing most of the barriers to LL is "Organisational culture" (Shokri-Ghasabeh and Chileshe 2014). In triangulation of the date culture has appeared as a common factor in the barrier to LL. In question 16 it was the highest selected barrier to

capturing/recording LL and in question 21 it was the second highest factor selected as the most likely factor to encourage sharing. In the interview process it was clear that there is a huge inconsistency between the process PMs think their organisations should be doing and those which are actually done. One interviewee said *"PMs do recognise the importance of LL but there just isn't a focus on it. Organisations are focused on delivering projects and haven't made it easy to incorporated LL onto the day to day processes"*.

Question 29 shows that 83.1% of the respondents at least agree that if their organisation improved its learning culture it would result in increased project success. Indicating the respondents view culture is conducive to learning. *"I think there has to be a culture of constant achievement within those running projects within an organisation. It is about sharing, taking time to give and also to receive and I think that's missing but I think when you do have that culture and people backing that culture then you will get more LL use"*

In conclusion it would appear that PMs in Ireland do believe that organisational culture has an important part to play in the use of LL. One interviewee described an open culture as critical to the identification of LL. In some companies, the culture appears to be one of the major barriers to embracing LL. Primarily the project management culture is focused on completing projects within in the constricted triple constraints of time, cost and quality. Therefore time and resources are not being allocated to LL. It appears many organisations find the use of LL difficult to enforce and therefore it becomes a meaningless box ticking exercise (Larson and Gray, 2011). From this research it gives the impression unless LL is part of a company's culture, no strategy will enforce it. Having a LL mentality throughout a project must be taught and value needs to be promoted to encourage buy in. If lessons are not learnt, then team members will be less likely to participate in future LL exercises. It then

becomes a box ticking exercise. It is clear that more research is needed to understand how a knowledge sharing culture can be promoted (Wang and Noe, 2010).

Chapter 6 - Recommendations

The following are considered as recommendations for project managers in Ireland derived from the research results:

1. Educate – Inspire – Change.

- ‘To increase the benefits of LL it is essential to education PMs in Ireland regarding a structured approach to learning from projects. Organisations need to follow a coherent manner to collect and disseminate LL, and then there is a need to gain an understanding of the benefits of LL.
- Following on from education, the next phase is to inspire all members of the successes of LL. This should come from the top down. To continue to highlight the importance and benefits of LL, LL should be consistently referred to. This may improve the buy in.
- The last step is change realisation. Change should be realised by the organisations and an increase in the use of LL to increase the likelihood of project success.

2. Guidelines.

- To improve organisational learning in Ireland, project management methodologies need to establish a standard set of guidelines for LL.
- A suggested methodology is associating the LL documents with the effort estimate as this may provide a meaningful LL toolkit. It could identify the performance of resources so they can be deployed effectively on future projects. This may provide a clear framework and context for the reuse of LL.
- Another recommendation is to try and tie the LL document in with a risk document. To ensure that there's a correlation between the two of them.

3. Culture

- The process should be systematic and engrained in the standard workflow to ensure it is carried out as a matter of course and in a defined way. It should not be left to individuals to define on an ad hoc basis.
- It takes leadership from management to start and maintain this, but ultimately it is the resources. All parties involved need to engage in the process and implement the findings. If individuals engage, then it becomes the culture.
- A statement of intent that encourages that LL should be used will almost definitely fail if time isn't allocated to it. Time to record, access, and shared LL must be prioritised and planned and be driven from the top down such as senior management if it is to be effective.

4. New process

- For realisation of the benefits of learning as PRINCE2 describes lessons should be sought, recorded and actioned throughout the lifecycle project (OGC, 2009). The researcher would recommend using CAPA or a Central Project Repository to record LL during a project lifecycle so they can be accessed during the project to improved current operations. Once the project is complete a PPR should be performed, using the LL imputed into the CAPA or Central Project Repository as the basis for the review.
- By doing this LL are not being missed or forgotten about and can be accessed during the project and if warranted developed into best practices at the PPR. This would be a combination if PMBOK and PRINCE2/Agile methodologies.

Future research:

- Further research into how a LL is utilised after it has been recorded as this is where LL falls down. PMs struggle to understand what should happen next with the LL process.
- A further investigation into the relationship between the size of a company and the use of LL. This may reveal how the LL process could be designed for both. From the research it has become evident that a ‘one size fits all’ is not the suitable for the correct use of LL.
- A longitudinal study of redefining what information LL is attached too by focusing LL on an area such as the effort estimate may provide a valuable contribution and framework for the improved reuse of LL.
- A comparison of how each project management methodology approaches LL, to discover which methodology or combination of methodologies will contribute best to LL for organisations going forward.
- Conduct a study between two very similar projects where LL are used on one and not on the other. Then study the differences between the two. Focusing on areas such as project cost reduction, risk reduction, scope definition etc.

Chapter 7 - Self-reflective on own learnings and performance

This chapter is concerned with the personal reflection of the researcher’s learning experience and the researchers own personal development as a result of conduct in this research. Also included in this section are personal reflections on how the MBA programme and dissertation writing added value to the researcher and future career prospects.

7.1 Introduction

The researcher’s enrolment into the MBA programme was motivated by personal ambition and a genuine interest in business administration specifically the area of project management. Working in a family business the researcher always questioned the way things were done and consistently looked at ways to improve. So to further deepen the researchers understanding of business administration was seen as the platform to progress professionally. Participating in the MBA has been very challenging, but the knowledge, experience and connections have made the experience very rewarding.

7.2 Learning styles

Kolb (1984 p.21) conceived that learning is a four stage cycle. Kolb’s diagram below it illustrates that the four separate processes that must be present for learning to occur. This cycle begins with concrete experiences that are the basis for observation and reflection. These observations are assimilated into theory from which the researcher deducts new implications.

To follow on from the learning cycle there four learning styles:

- Diverging – people with this learning style are best at viewing concrete situations from different viewpoints.

- Assimilation – People with this learning style are best at understanding a wide range of information and putting it into concise and logical form
- Converging – People with this learning style are the best at finding practical uses for ideas and theories.
- Accommodating – People with this learning style have the ability to learn from primarily "hands-on" experience.

  Source: (Kolb 1984, pp. 77-78).

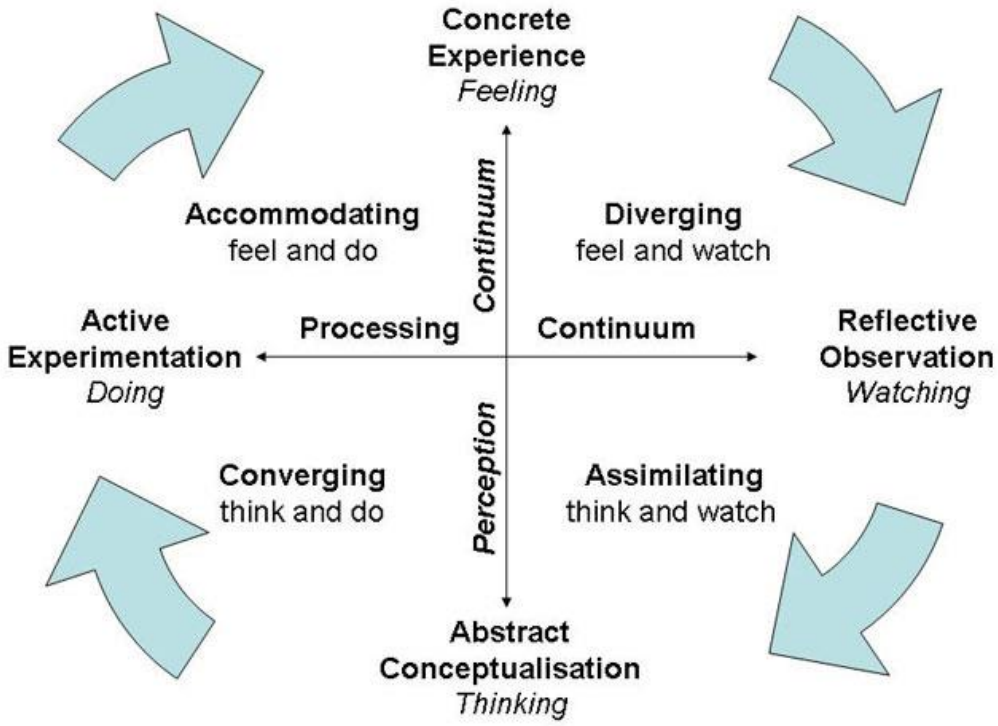

Figure 38: Kolb's Learning Cycle

Source: (http://www.simplypsychology.org/learning-kolb.html)

The researcher believes their approach to learning was originally based in convergent learning, as the knowledge was organised in such a way through hypothetical deductive reasoning. As the MBA and the dissertation progressed the researcher found that he has developed some of the traits of the accommodative learning style. This style encompasses doing things, carrying out plans and tasks and getting involved in new experiences. (Kolb 1984, p. 78) Through the process of the MBA and the dissertation the researcher has experienced many new things such as designing primary research tools, interviewing and surveying project managers, networking by meeting the interviewees and developing the confidence and knowledge to take risks.

To further the discussion Honey and Mumford (1992) developed a set of individual learning styles that are parallel to the four stages identified by Kolb (1984). These styles are:

- Activist: Open-mind and act first and consider consequences after. Involve themselves fully and without bias into new experiences and only after make conclusions about their experience. Activities preferred are brainstorming, problem solving, group discussions and competitions.
- Theorist: Prefer to systematically analyse and synthesis observations to create complex and logical theories. Driven by perfectionism therefore, exigent in regards to themselves. The preferred activities include the use of statistics, models and application theories
- Pragmatist: Seek practical implication of theories and concepts. They are experimenters who try new ideas, theories or techniques to see if they work. Preferred activities are case studies, problem solving and discussion.
- Reflector: Stand back and reflect on experiences from different perspectives. They have to thoroughly collect and analyse gathered data before coming to a sound and

logical conclusions. These individuals tend to observe activities, to coach, to interview and take time outs.

The researcher would consider the theorist and pragmatist approaches (Honey and Mumford, 1986) similar to the convergent and accommodative styles described by Kolb (1984). So he believes his learning styles to be a combination of the theorist and the pragmatist.

7.3 Reflection on the dissertation writing the process:

Refining the topic was a difficult procedure. The researcher was motivated by finding a gap in the literature and to discover issues that needed to be addressed, therefore ensuring contribution to the body of existing knowledge. The researcher also focused on picking a topic that would be viewed highly by future employers.

The topic selected for this dissertation was the relationship between LL and project success. To me this is quite an important subject as right throughout my personal and working life I have always tried to learn from my mistakes and improve as an individual. In the working environment I became frustrated with the company I was working for because from year to year there was no measurement or recording of things ‘that well’, things ‘that went wrong’ or things ‘that could have been done better’. I could see that this way of operating was not sustainable and in the end the business paid the price. In business continuous improvement and KM is seen as a sustainable source for competitive advantage (Hanisch, 2009).

7.4 Reflection on sources

To maintain the relevance of this research and its contribution to KM in project management in Ireland the research was ardent on using an up to date bibliography. The majority of journals, articles and books used in the process of writing the dissertation are referenced

text’s published between 2006 and 2014. It was felt that the researcher could have managed these resources better from the beginning by setting out a structured database and storing relevant articles into categories from the beginning

7.5 Reflection on dissertation formulation

The major challenge was the very first stage of the process, which was choosing an interesting and new research topic, which added value to the industry, academia and the researcher. As the researcher aspires to join the project management profession my topic search began by trying to identify what employees were looking for. I searched employment sites, specifically looking at what job the specifications were for PMs.

The next step was to meet with the project management lecturers and from here I got some advice on current interesting topics and then began to research these. Due to the researchers personal inclination to continuous improvement the topic of LL would develop a thorough understanding of this area. To begin the process a literature map was drawn and identifying the main themes related to LL, KM, and project success. For the secondary researcher, the researcher used a varied collection of resources such as Emerald, Athens, and the PMI to collect information, reading a combined total of over 100 articles. Project management resources in this context were quite rare. This experience helped me improve my research skills and analytical skills.

7.6 Self-assessment of learning and skills acquisition and future skills development.

During this two year part time MBA course, it is apparent that my self-confidence and willingness to learn have been immensely enhanced. Another important cognitive acquisition worth mentioning is the research topic. The detailed knowledge acquired while researching LL has been substantial.

Networking: Before this dissertation the researcher had never organised and conducted face to face interviews. This was a very confident boosting and rewarding experience as the researcher not only acquired the value information and insights he was looking for but also made valuable contacts in the project management industry. Going forward this will only be beneficial towards future career prospects.

Research skills: In writing the Dissertation and during the MBA programme my research skills have greatly improved. In completing the literature review, skills were developed in a variety of areas such as the collection and analysing relevant information, planning, decision making and logical thinking.

DBS thought the researcher new management theories and introduced modern ways to apply them in the present business environment. Through the preparation and completion of this paper, the researcher developed his cognitive skills.

Personal management skills: The balance of work and partaking in this MBA part time in the evenings illustrates that time management was certainly a skill I developed throughout this MBA. Producing projects and assignment's individually and in group work on time and to a high standard.

Time management: Working under pressure and delivering projects on time and to a high standard is something that's has tested the abilities of the researcher. It is not felt that no matter what the next challenge is the researcher will face it head on and believe in his ability.

Critical analysis skills: One of the first things I remember from beginning of the MBA was to question information and don't always take reports, surveys or any sort of information on face value. This has definitely changed the way I have conducted this research and my professional life.

These critical skills have also helped in preparation of this research paper, as the researcher critically analysed books, journal articles and other resources and came to conclusions for the purpose of this research paper.

Interpersonal skills: Working in groups with different cultures is another skill which I have improved on in the MBA. The group work lets you see how people from different backgrounds and culture work. The skills I developed in learning how to compromise, delegate and work together on a common goal will only stand for me in the future.

Public speaking has always been one of my fears, our presentations in the MBA in front of the class has help eased my anxiety and built up my confidence.

Management skills: In the course of the program the researcher developed skills on how to approach and manage projects, introducing skills into his professional life. Using theories learned in college to manage projects in work more efficiently.

This MBA has given me confidence in the skills I possess and have developed through the journey of the MBA. In conclusion the researcher has not only developed the skills mentioned above, but has developed a more pragmatist and activist style of learning. These learning styles will open up new approaches to learning and professional aspirations for the researcher.

7.7 Reflective conclusions

The MBA programme has added value to the researcher in his personal development and providing new skills. Working on this dissertation was an unpredictable and stressful journey as it involved many uncertainties and commitment. The personal rewards from those experiences have been significant. The skills and confidence the researcher has acquired in this MBA has resulted in improved optimism about future career prospects.

7.8 Lesson learned during this process.

1. **Topic Selection and Scope:** In the area of topic selection, the researcher procrastinated to long on deciding on which area to select for research. At an early stage the researcher should have investigated academic journals on a continuous basis, to see what academics suggested for future research. The researcher’s advice to someone doing a dissertation in the future is to be clear on your title and your direction as early as possible to avoid wasting time. It is only natural that your dissertation will evolve as the research progresses but still be clear on your direction and the scope of your project.
2. **The research skills class:** The researcher attended all of the research skills classes but believes these classes would have been more beneficial if the researcher was clear on a research topic. As the researcher was not going through the methodology being described in the class, it was difficult to put the class in context. The result being the researcher had to revisit and develop an understanding of these methodologies at a later stage.
3. **Organisation:** As the dissertation is a large body of work, organisation is vital to avoid repeated reading. During this dissertation the researcher read over a 100 academic journals etc. to source the value information for the research. From the beginning these should have been saved and categorised to avoid double reading and searching.
4. **Project plan:** Due to the length of time it takes to complete your research project, the project plan is a vital tool to staying on course. The lesson learned regarding the project plan is to try a stick as close as possible to it. The mistake made here was the researcher spent too long on the literature review without making much progress, therefore reducing the time to complete other areas.

5. **Start writing early:** The researcher spent far too long on research without making any real progress or what felt like no progress. The lessons learned here is set up your structure early and start filling in bits as you go along. Once you start seeing words on the page it feels less daunting.
6. **Primary research:** A mixed method research gave the researcher the opportunity to develop knowledge on both questionnaire's and Interviewing PMs. The need to meet and interview PMs face to face gave the research a great opportunity to not only obtain some valuable information for the research but to also network and acquire some contacts for job opportunities after the course completion. Lesson learned for the researcher here was a very positive experience. The researcher learned new skills, made new contacts and developed a well-rounded knowledge of the research subject.
7. **Research design:** There are two sides two a mixed method research. Second lesson learned regarding the mixed method approach was to be clear on the increased work load a mixed method research encompasses. The researcher put themselves under increased time constraints and pressure developing knowledge on the two methods plus collecting the data for each section.

Overall the lessons learned have improved the researchers approach to research and professional life in general. The knowledge gained has improved the researcher as a person and will influence their life going forward.

Chapter 8 - References

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Chapter 9 - Appendix

Appendix 1: Research Plan

Stage of the dissertation writing process	Number of days	Start date	End date
STAGE ONE: Reading and research			
a) Read literature	84	22/04/2014	22/06/2014
b) Draft literature review	14	11/06/2014	23/06/2014
STAGE TWO: Meet supervisor			
a) Review detailed plan of the dissertation and set objectives	1	11/06/2014	11/06/2014
STAGE THREE: Initial writing			
a) Draft the various sections of the dissertation	7	24/06/2014	30/06/2014
b) Undertake additional research where necessary	7	1/07/2014	7/07/2014
STAGE THREE: Questionnaires			
Develop questionnaires	7	1/07/2014	7/07/2014
Pilot test questionnaires	7	1/07/2014	7/07/2014
Conducting survey	7	8/07/2014	14/07/2014
Administer questionnaires	7	8/07/2014	14/07/2014
Enter data into computer	7	15/07/2014	21/07/2014
Analyse data	7	15/07/2014	21/07/2014
Drafting the findings	7	15/07/2014	21/07/2014
STAGE FOUR: The first draft			
a) Compile and collate sections into first draft of dissertation and update literature	14	15/07/2014	28/07/2014
b) check the flow of the dissertation	2	27/07/2014	28/07/2014
c) Check the length of the dissertation	2	27/07/2014	28/07/2014
d) Undertake any additional editing and research	7	29/07/2014	4/08/2014

STAGE FIVE: Final draft			
a) Check for errors	7	5/08/2014	11/08/2014
b) Prepare for submission	7	5/08/2014	11/08/2014
c) Final proof-read (by a friend or yourself) and final editing	1	12/08/2014	12/08/2014
d) Compile bibliography	7	13/08/2014	19/08/2014
e) Get the dissertation bound	1	20/8/2014	20/8/2014
f) Submit dissertation	2	21/8/2014	22/8/2014

Appendix 2: Frequency Charts

What industry do you work in?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 FS	26	18.7	19.5	19.5
	2 IT	49	35.3	36.8	56.4
	3 Construction	17	12.2	12.8	69.2
	4 Telecoms	14	10.1	10.5	79.7
	5 Transport	4	2.9	3.0	82.7
	6 Medical	6	4.3	4.5	87.2
	7 Other	12	8.6	9.0	96.2
	8 Localization	5	3.6	3.8	100.0
	Total	133	95.7	100.0	
Missing	System	6	4.3		
Total		139	100.0		

Table 5: Frequency Table Question 3

How long have you worked managing projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 1 to 3 years	12	8.6	8.7	8.7
	3 4 to 6 years	17	12.2	12.3	21.0
	4 More than 6 years	109	78.4	79.0	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 6: Frequency Table Question 4

Project definition?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Yes	124	89.2	89.9	89.9
	2 No.	11	7.9	8.0	97.8
	3 Not Sure.	2	1.4	1.4	99.3
	4 Not applicable.	1	.7	.7	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 7: Frequency Table Question 5

Do you access a LL report before or during a new project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never	5	3.6	4.3	4.3
	2 Rarely	17	12.2	14.8	19.1
	3 Occasionally	42	30.2	36.5	55.7
	4 Often	43	30.9	37.4	93.0
	5 Very Often	8	5.8	7.0	100.0
	Total	115	82.7	100.0	
Missing	System	24	17.3		
Total		139	100.0		

Table 8: Frequency Table Question 6

How do you see the benefits of using a LL report for new and existing projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Not Important	3	2.2	2.2	2.2
	3 Important	44	31.7	31.7	33.8
	4 Very Important	56	40.3	40.3	74.1
	5 Extremely Important	36	25.9	25.9	100.0
	Total	139	100.0	100.0	

Table 9: Frequency Table Question 7

Has a LL you recorded contributed to the success of other projects you have worked on?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never	2	1.4	1.4	1.4
	2 Rarely	10	7.2	7.2	8.6
	3 Occasionally	58	41.7	41.7	50.4
	4 Often	51	36.7	36.7	87.1
	5 Very Often	18	12.9	12.9	100.0
	Total	139	100.0	100.0	

Table 10: Frequency Table Question 8

Do you think it is likely that the chance of a project being successful can be increased by developing and implement the use of a LL report for a project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Very unlikely	4	2.9	2.9	2.9
	3 likely	30	21.6	21.7	24.6
	4 Very likely	60	43.2	43.5	68.1
	5 Extremely likely	44	31.7	31.9	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 11: Frequency Table Question 9

How likely is it that the LL you shared on a new or current project resulted in a project success?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Very unlikely	13	9.4	9.4	9.4
	3 Likely	73	52.5	52.9	62.3
	4 Very likely	44	31.7	31.9	94.2
	5 Extremely likely	8	5.8	5.8	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 12: Frequency Table Question 10

If similar mistakes occur during a project do you think these mistakes could have been avoided by using lessons learned?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Very unlikely	2	1.4	1.5	1.5
	3 Likely	44	31.7	32.1	33.6
	4 Very Likely	60	43.2	43.8	77.4
	5 Extremely likely	31	22.3	22.6	100.0
	Total	137	98.6	100.0	
Missing	System	2	1.4		
Total		139	100.0		

Table 13: Frequency Table Question 11

Do you think it is likely that not using LL can contribute to increased project costs, extended schedules and a lack of communication, considerable rework and costly mistakes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all likely	1		.7	.7
	2 Very unlikely	10	7.2	7.2	7.9
	3 Likely	47	33.8	33.8	41.7
	4 Very likely	56	40.3	40.3	82.0
	5 Extremely likely	25	18.0	18.0	100.0
	Total	139	100.0	100.0	

Table 14: Frequency Table Question 12

Has the use of LL report benefited these areas in new projects?

		Count	Table Total N %	Table Valid N %
Reduce Cost	1 Never	2	1.4%	1.5%
	2 Rarely	24	17.3%	17.6%
	3 Occasionally	63	45.3%	46.3%
	4 Often	37	26.6%	27.2%
	5 Very Often	10	7.2%	7.4%
Reduce Scope Creep	1 Never	5	3.6%	3.7%
	2 Rarely	20	14.4%	14.7%
	3 Occasionally	43	30.9%	31.6%
	4 Often	55	39.6%	40.4%
	5 Very Often	13	9.4%	9.6%
Reduce Time	1 Never	3	2.2%	2.2%
	2 Rarely	19	13.7%	13.9%
	3 Occasionally	50	36.0%	36.5%
	4 Often	58	41.7%	42.3%
	5 Very Often	7	5.0%	5.1%
Improve Quality	1 Never	1	0.7%	0.7%
	2 Rarely	9	6.5%	6.6%
	3 Occasionally	37	26.6%	27.0%
	4 Often	66	47.5%	48.2%
	5 Very Often	24	17.3%	17.5%
Improve Benefits	1 Never	3	2.2%	2.2%
	2 Rarely	23	16.5%	16.9%
	3 Occasionally	56	40.3%	41.2%

	4 Often	47	33.8%	34.6%
	5 Very Often	7	5.0%	5.1%
Increase Communication	1 Never	2	1.4%	1.5%
	2 Rarely	12	8.6%	8.8%
	3 Occasionally	35	25.2%	25.7%
	4 Often	59	42.4%	43.4%
	5 Very Often	28	20.1%	20.6%
Improve HR	1 Never	7	5.0%	5.2%
	2 Rarely	44	31.7%	32.6%
	3 Occasionally	62	44.6%	45.9%
	4 Often	17	12.2%	12.6%
	5 Very Often	5	3.6%	3.7%
Reduce Risk	1 Never	1	0.7%	0.7%
	2 Rarely	8	5.8%	5.8%
	3 Occasionally	35	25.2%	25.4%
	4 Often	66	47.5%	47.8%
	5 Very Often	28	20.1%	20.3%
Improve Procurement	1 Never	6	4.3%	4.4%
	2 Rarely	29	20.9%	21.3%
	3 Occasionally	66	47.5%	48.5%
	4 Often	26	18.7%	19.1%
	5 Very Often	9	6.5%	6.6%
Improve Integration	1 Never	3	2.2%	2.2%
	2 Rarely	15	10.8%	11.0%
	3 Occasionally	53	38.1%	39.0%
	4 Often	47	33.8%	34.6%
	5 Very Often	18	12.9%	13.2%

Table 15: Frequency Table Question 13

Regarding projects, how likely is each of the following going to affect the capturing and recording of LL?

		Count	Table Total N %	Layer Column Valid N %
Uniqueness of projects	1 Not at all likely	10	7.2%	7.3%
	2 Very unlikely	21	15.1%	15.3%
	3 Likely	44	31.7%	32.1%
	4 Very likely	44	31.7%	32.1%
	5 Extremely Likely	18	12.9%	13.1%
Changing Workforce	1 Not at all likely	2	1.4%	1.5%
	2 Very unlikely	21	15.1%	15.3%
	3 Likely	40	28.8%	29.2%
	4 Very likely	53	38.1%	38.7%
	5 Extremely Likely	21	15.1%	15.3%
Costs Constraints	1 Not at all likely	9	6.5%	6.6%
	2 Very unlikely	39	28.1%	28.5%
	3 Likely	48	34.5%	35.0%
	4 Very likely	34	24.5%	24.8%
	5 Extremely Likely	7	5.0%	5.1%
Time constraints	1 Not at all likely	2	1.4%	1.5%
	2 Very unlikely	16	11.5%	11.7%
	3 Likely	48	34.5%	35.0%
	4 Very likely	52	37.4%	38.0%
	5 Extremely Likely	19	13.7%	13.9%
Lack of Resources	1 Not at all likely	3	2.2%	2.2%
	2 Very unlikely	21	15.1%	15.3%
	3 Likely	42	30.2%	30.7%
	4 Very likely	55	39.6%	40.1%
	5 Extremely Likely	16	11.5%	11.7%

Table 16: Frequency Table Question 14

Re: Procedures, how likely is the following going to affect the capturing of LL?

		Count	Table Total N %	Table Valid N %
'Lack of guidelines'	1 Not at all likely	3	2.2%	2.2%
	2 Very unlikely	9	6.5%	6.6%
	3 Likely	36	25.9%	26.3%
	4 Very likely	62	44.6%	45.3%
	5 Extremely Likely	27	19.4%	19.7%
'Lack of processes'	1 Not at all likely	2	1.4%	1.5%
	2 Very unlikely	12	8.6%	8.8%
	3 Likely	31	22.3%	22.6%
	4 Very likely	62	44.6%	45.3%
	5 Extremely Likely	30	21.6%	21.9%
'Lack of knowledge base'	1 Not at all likely	5	3.6%	3.6%
	2 Very unlikely	22	15.8%	16.1%
	3 Likely	26	18.7%	19.0%
	4 Very likely	56	40.3%	40.9%
	5 Extremely Likely	28	20.1%	20.4%
'Timing'	1 Not at all likely	5	3.6%	3.6%
	2 Very unlikely	14	10.1%	10.2%
	3 Likely	43	30.9%	31.4%
	4 Very likely	49	35.3%	35.8%
	5 Extremely Likely	26	18.7%	19.0%
'Method'	1 Not at all likely	5	3.6%	3.7%
	2 Very unlikely	20	14.4%	14.7%
	3 Likely	45	32.4%	33.1%
	4 Very likely	48	34.5%	35.3%
	5 Extremely Likely	18	12.9%	13.2%

Table 17: Frequency Table Question 15

Re: People, how likely are the following going to affect the capturing of LL?

		Count	Table Total N %	Table Valid N %
'lack of Incentives'	1 Not at all likely	7	5.0%	5.1%
	2 Very unlikely	43	30.9%	31.4%
	3 Likely	39	28.1%	28.5%
	4 Very likely	28	20.1%	20.4%
	5 Extremely Likely	20	14.4%	14.6%
'Organisation culture''	1 Not at all likely	0	0.0%	0.0%
	2 Very unlikely	7	5.0%	5.1%
	3 Likely	28	20.1%	20.4%
	4 Very likely	54	38.8%	39.4%
	5 Extremely Likely	48	34.5%	35.0%
'Blame''	1 Not at all likely	6	4.3%	4.4%
	2 Very unlikely	33	23.7%	24.1%
	3 Likely	33	23.7%	24.1%
	4 Very likely	44	31.7%	32.1%
	5 Extremely Likely	21	15.1%	15.3%
'Heavy workload''	1 Not at all likely	0	0.0%	0.0%
	2 Very unlikely	9	6.5%	6.6%
	3 Likely	29	20.9%	21.2%
	4 Very likely	58	41.7%	42.3%
	5 Extremely Likely	41	29.5%	29.9%
'Management Support''	1 Not at all likely	0	0.0%	0.0%
	2 Very unlikely	13	9.4%	9.5%
	3 Likely	28	20.1%	20.4%
	4 Very likely	49	35.3%	35.8%
	5 Extremely Likely	47	33.8%	34.3%

Table 18: Frequency Table Question 16

Which three of the following methods/tools would your use for recording LL?

	Count	Table Valid N %	Table Total N %
	53	38.1%	38.1%
Formal workshop	86	61.9%	61.9%
	88	63.3%	63.3%
Informal gatherings	51	36.7%	36.7%
	102	73.4%	73.4%
Intranet lessons learned databases	37	26.6%	26.6%
	125	89.9%	89.9%
Lessons learned case studies at the of a project	14	10.1%	10.1%
	31	22.3%	22.3%
Post Project Reviews	108	77.7%	77.7%
	89	64.0%	64.0%
Spreadsheet	50	36.0%	36.0%
	106	76.3%	76.3%
Learning Diary/log sheet	33	23.7%	23.7%
	111	79.9%	79.9%
Email	28	20.1%	20.1%
	132	95.0%	95.0%
Social networks	7	5.0%	5.0%
	119	85.6%	85.6%
Wiki	20	14.4%	14.4%
	122	87.8%	87.8%
Community of practice	17	12.2%	12.2%
None	139	100.0%	100.0%

Table 19: Frequency Table Question 17

(Note: Formal Workshop: Top % which is 38.1% is the respondents that did not select it, and the bottom % which is 61.9% is the respondents who did select the method).

Which three of the following methods/tools would your use for accessing LL?

	Count	Table Valid N %	Table Total N %
	100	71.9%	71.9%
Formal workshop	39	28.1%	28.1%
	105	75.5%	75.5%
Informal gatherings	34	24.5%	24.5%
	71	51.1%	51.1%
Intranet lessons learned databases	68	48.9%	48.9%
	106	76.3%	76.3%
Lessons learned case studies at the of a project	33	23.7%	23.7%
	71	51.1%	51.1%
Post Project Reviews	68	48.9%	48.9%
	84	60.4%	60.4%
Spreadsheet	55	39.6%	39.6%
	105	75.5%	75.5%
Learning Diary/log sheet	34	24.5%	24.5%
	115	82.7%	82.7%
Email	24	17.3%	17.3%
	130	93.5%	93.5%
Social networks	9	6.5%	6.5%
	111	79.9%	79.9%
Wiki	28	20.1%	20.1%
	119	85.6%	85.6%
Community of practice	20	14.4%	14.4%

Table 20: Frequency Table Question 18

(Note: Formal Workshop: Top % which is 71.9 % is the respondents that did not select it, and the bottom % which is 28.1% is the respondents who did select the method).

Do you agree the method in which lessons are recorded and captured affects their use on future projects?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	1	.7	.7	.7
	2 Disagree	6	4.3	4.3	5.0
	3 Neither Disagree Nor Agree	25	18.0	18.0	23.0
	4 Agree	71	51.1	51.1	74.1
	5 Strongly agree	36	25.9	25.9	100.0
	Total	139	100.0	100.0	

Table 21: Frequency Table Question 19

How likely is it that each of the following is going to affect you sharing LL in your organisations?

		Count	Table Total N %	Table Valid N %
Factors that affect the sharing of LL 'Workload'	1 Not at all likely	3	2.2%	2.2%
	2 Unlikely	11	7.9%	8.0%
	3 Moderately Likely	28	20.1%	20.3%
	4 Very Likely	71	51.1%	51.4%
	5 Extremely likely	25	18.0%	18.1%
Factors that affect the sharing of LL 'loss of ownership'	1 Not at all likely	22	15.8%	15.9%
	2 Unlikely	59	42.4%	42.8%
	3 Moderately Likely	33	23.7%	23.9%
	4 Very Likely	20	14.4%	14.5%
	5 Extremely likely	4	2.9%	2.9%
Factors that affect the sharing of LL 'Trust of source'	1 Not at all likely	9	6.5%	6.6%
	2 Unlikely	48	34.5%	35.0%
	3 Moderately Likely	46	33.1%	33.6%
	4 Very Likely	27	19.4%	19.7%
	5 Extremely likely	7	5.0%	5.1%
Factors that affect the sharing of LL 'Poor communications'	1 Not at all likely	14	10.1%	10.1%
	2 Unlikely	30	21.6%	21.7%
	3 Moderately Likely	38	27.3%	27.5%
	4 Very Likely	45	32.4%	32.6%
	5 Extremely likely	11	7.9%	8.0%

Factors that affect the sharing of LL 'Stress and fear'	1 Not at all likely	19	13.7%	13.8%
	2 Unlikely	38	27.3%	27.5%
	3 Moderately Likely	38	27.3%	27.5%
	4 Very Likely	34	24.5%	24.6%
	5 Extremely likely	9	6.5%	6.5%
Factors that affect the sharing of LL 'Lack of motivation'	1 Not at all likely	8	5.8%	5.8%
	2 Unlikely	33	23.7%	24.1%
	3 Moderately Likely	35	25.2%	25.5%
	4 Very Likely	45	32.4%	32.8%
	5 Extremely likely	16	11.5%	11.7%
Factors that affect the sharing of LL 'Top Management support"	1 Not at all likely	6	4.3%	4.3%
	2 Unlikely	21	15.1%	15.2%
	3 Moderately Likely	26	18.7%	18.8%
	4 Very Likely	59	42.4%	42.8%
	5 Extremely likely	26	18.7%	18.8%
Factors that affect the sharing of LL 'Team aspirations"	1 Not at all likely	7	5.0%	5.1%
	2 Unlikely	35	25.2%	25.5%
	3 Moderately Likely	51	36.7%	37.2%
	4 Very Likely	35	25.2%	25.5%
	5 Extremely likely	9	6.5%	6.6%
Factors that affect the sharing of LL 'Individual Characteristics'	1 Not at all likely	6	4.3%	4.4%
	2 Unlikely	46	33.1%	34.1%
	3 Moderately Likely	45	32.4%	33.3%
	4 Very Likely	30	21.6%	22.2%
	5 Extremely likely	8	5.8%	5.9%
Factors that affect the sharing of LL 'Lack of incentive'	1 Not at all likely	10	7.2%	7.4%
	2 Unlikely	54	38.8%	39.7%
	3 Moderately Likely	32	23.0%	23.5%
	4 Very Likely	32	23.0%	23.5%
	5 Extremely likely	8	5.8%	5.9%
Factors that affect the sharing of LL 'Blame'	1 Not at all likely	20	14.4%	15.4%
	2 Unlikely	48	34.5%	36.9%
	3 Moderately Likely	32	23.0%	24.6%
	4 Very Likely	21	15.1%	16.2%
	5 Extremely likely	9	6.5%	6.9%

Table 22: Frequency Table Question 20

How likely is each of the following going to improve you sharing LL in your organisation?

		Count	Table Total N %	Table Valid N %
Factors that may improve LL sharing 'The Right team'	1 Not all likely	4	2.9%	2.9%
	2 Very unlikely	14	10.1%	10.1%
	3 likely	36	25.9%	25.9%
	4 Very likely	60	43.2%	43.2%
	5 Extremely Likely	25	18.0%	18.0%
Factors that may improve LL sharing 'Learning gates'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	17	12.2%	12.2%
	3 likely	34	24.5%	24.5%
	4 Very likely	67	48.2%	48.2%
	5 Extremely Likely	19	13.7%	13.7%
Factors that may improve LL sharing 'Incentives'	1 Not all likely	7	5.0%	5.0%
	2 Very unlikely	43	30.9%	30.9%
	3 likely	41	29.5%	29.5%
	4 Very likely	35	25.2%	25.2%
	5 Extremely Likely	13	9.4%	9.4%
Factors that may improve LL sharing 'Ease of Access'	1 Not all likely	1	0.7%	0.7%
	2 Very unlikely	11	7.9%	7.9%
	3 likely	34	24.5%	24.5%
	4 Very likely	72	51.8%	51.8%
	5 Extremely Likely	21	15.1%	15.1%
Factors that may improve LL sharing 'Data Visibility'	1 Not all likely	1	0.7%	0.7%
	2 Very unlikely	12	8.6%	8.6%
	3 likely	34	24.5%	24.5%
	4 Very likely	72	51.8%	51.8%
	5 Extremely Likely	20	14.4%	14.4%
Factors that may improve LL sharing 'Lesson learned res'	1 Not all likely	1	0.7%	0.7%
	2 Very unlikely	7	5.0%	5.0%
	3 likely	25	18.0%	18.0%
	4 Very likely	66	47.5%	47.5%
	5 Extremely Likely	40	28.8%	28.8%
Factors that may improve LL sharing 'Extra Time'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	25	18.0%	18.0%
	3 likely	34	24.5%	24.5%
	4 Very likely	57	41.0%	41.0%
	5 Extremely Likely	21	15.1%	15.1%
Factors that may improve LL sharing 'Intro of a learning culture	1 Not all likely	1	0.7%	0.7%
	2 Very unlikely	10	7.2%	7.2%
	3 likely	26	18.7%	18.7%
	4 Very likely	67	48.2%	48.2%

	5 Extremely Likely	35	25.2%	25.2%
Factors that may improve LL sharing 'Improved communications"	1 Not all likely	1	0.7%	0.7%
	2 Very unlikely	7	5.0%	5.1%
	3 likely	37	26.6%	26.8%
	4 Very likely	70	50.4%	50.7%
	5 Extremely Likely	23	16.5%	16.7%
Factors that may improve LL sharing 'Management Support'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	6	4.3%	4.3%
	3 likely	23	16.5%	16.5%
	4 Very likely	68	48.9%	48.9%
	5 Extremely Likely	40	28.8%	28.8%
Factors that may improve LL sharing 'Clear Guidelines'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	10	7.2%	7.2%
	3 likely	32	23.0%	23.0%
	4 Very likely	66	47.5%	47.5%
	5 Extremely Likely	29	20.9%	20.9%
Factors that may improve LL sharing 'Extra Resources'	1 Not all likely	3	2.2%	2.2%
	2 Very unlikely	35	25.2%	25.2%
	3 likely	40	28.8%	28.8%
	4 Very likely	44	31.7%	31.7%
	5 Extremely Likely	17	12.2%	12.2%
Factors that may improve LL sharing 'The time lessons are recorded'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	17	12.2%	12.2%
	3 likely	44	31.7%	31.7%
	4 Very likely	55	39.6%	39.6%
	5 Extremely Likely	21	15.1%	15.1%
Factors that may improve LL sharing 'Peoples Motivation'	1 Not all likely	2	1.4%	1.4%
	2 Very unlikely	16	11.5%	11.6%
	3 likely	47	33.8%	34.1%
	4 Very likely	57	41.0%	41.3%
	5 Extremely Likely	16	11.5%	11.6%
Factors that may improve LL sharing ' Not Getting the blame'	1 Not all likely	10	7.2%	7.2%
	2 Very unlikely	34	24.5%	24.6%
	3 likely	38	27.3%	27.5%
	4 Very likely	44	31.7%	31.9%
	5 Extremely Likely	12	8.6%	8.7%

Table 23: Frequency Table Question 21

Do you agree people are the main drivers for the use of LL?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	1	.7	.7	.7
	2 Disagree	2	1.4	1.5	2.2
	3 Neither Disagree Nor Agree	13	9.4	9.5	11.7
	4 Agree	64	46.0	46.7	58.4
	5 Strongly agree	57	41.0	41.6	100.0
	Total	137	98.6	100.0	
Missing	System	2	1.4		
Total		139	100.0		

Table 24: Frequency Table Question 22

Do you or your company perform a PPR after each project for recording LL**?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never	2	1.4	1.4	1.4
	2 Very unlikely	8	5.8	5.8	7.2
	3 Likely	42	30.2	30.4	37.7
	4 Very likely	49	35.3	35.5	73.2
	5 Extremely Likely	37	26.6	26.8	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 25: Frequency Table Question 23

Do you think if it was mandatory for your organisation to perform a post-project review when a project or a major phase of a lengthy project has been completed, it would be likely to improve the project's success?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all likely	4	2.9	2.9	2.9
	2 Very unlikely	9	6.5	6.5	9.4
	3 Likely	35	25.2	25.4	34.8
	4 Very Likely	60	43.2	43.5	78.3
	5 Extremely Likely	30	21.6	21.7	100.0
	Total	138	99.3	100.0	
Missing	System	1	.7		
Total		139	100.0		

Table 26: Frequency Table Question 24

If it was mandatory for a PR to go before a small review board to prove that the LL from recent projects will be directly applied to this project, would it improve the project's success?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all likely	6	4.3	4.3	4.3
	2 Very unlikely	19	13.7	13.7	18.0
	3 Likely	48	34.5	34.5	52.5
	4 Very Likely	44	31.7	31.7	84.2
	5 Extremely Likely	22	15.8	15.8	100.0
	Total	139	100.0	100.0	

Table 27: Frequency Table Question 25

How often has your organisation screened LL using criteria such as Risks/benefits to prioritise which will be installed into best practices/operating procedures?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never	12	8.6	8.6	8.6
	2 Rarely	44	31.7	31.7	40.3
	3 Occasionally	46	33.1	33.1	73.4
	4 Often	27	19.4	19.4	92.8
	5 Very often	10	7.2	7.2	100.0
	Total	139	100.0	100.0	

Table 28: Frequency Table Question 26

Do you agree that the use of LL should be improved in your company?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Disagree	3	2.2	2.2	2.2
	3 Neither Disagree/Agree	21	15.1	15.1	17.3
	4 Agree	82	59.0	59.0	76.3
	5 Strongly agree	33	23.7	23.7	100.0
	Total	139	100.0	100.0	

Table 29: Frequency Table Question 27

Do you think training would improve the use of LL in your organisation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Not at all likely	1	.7	.7	.7
	2 Very unlikely	17	12.2	12.2	12.9
	3 likely	44	31.7	31.7	44.6
	4 Very likely	64	46.0	46.0	90.6
	5 Extremely likely	13	9.4	9.4	100.0
	Total	139	100.0	100.0	

Table 30: Frequency Table Question 28

Do you agree if your organisation improved its learning culture it would result in improved project success?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Strongly disagree	2	1.4	1.5	1.5
	2 Disagree	3	2.2	2.2	3.7
	3 Neither Disagree Nor Agree	18	12.9	13.2	16.9
	4 Agree	88	63.3	64.7	81.6
	5 Strongly agree	25	18.0	18.4	100.0
	Total	136	97.8	100.0	
Missing	System	3	2.2		
Total		139	100.0		

Table 31: Frequency Table Question 29

Appendix 3: Cover letter for Questionnaire

Hi XXXX,

I'm John, a MBA student specialising in Project Management. I came across your profile through the Project Manager Network Group which I am member also. Currently I am working on my Dissertation which is investigating the area of KM specifically the use of lessons learned. As part of my research I am conducting a survey and I need your help and expertise.

I am looking to survey project managers in Ireland like you and I really hope you will be able to help me. It's very quick.

The link to the Survey is https://www.surveymonkey.com/s/YTRBLST. All you have to do is copy and paste it into your address bar. It's a concise survey and takes less than 10 minutes. All responses are confidential.

Your response will be valued and help support my research. For more information on the survey my email address is Johnnolly21@yahoo.ie. I would be happy to email you the full information. Please reply to the survey until Friday 11th of July 2014.

Thank you for your time and sorry for disturbing you. I will be happy to share the results of the research with you when the study is complete.

John Connolly,

MBA Student

Appendix 4: Confidentiality agreement

Topic of the research project:

"'Is there a relationship between applying LL and project success and what factors affects their use"

Name of the researcher:

John Connolly, final year student of Master of Business Administration in Project Management.

I, _____, agree to be interviewed for the research project which is being produced by John Connolly, student of Master of Business Administration at Dublin Business School.

I certify that I have been told of the confidentiality of information collected for this project and the anonymity of my participation. I confirm that I have been given satisfactory answers to my queries concerning project procedures and other matters, and that I have been advised that I am free to withdraw my consent and to discontinue participation from this research at any time without prejudice. I agree to participate in one or more electronically recorded interviews for this project. I understand that such interviews and related materials will be kept completely anonymous, and that the results of this study may be published in an academic journal or book. I agree that any information obtained from this research may be used in any way thought best for this study. I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below (Please tick the box below):

☐ I agree to quotation/publication of extracts from my interview

☐ I do not agree to quotation/publication of extracts from my interview

Printed name of Participant: _____

Signature of Interviewee: _____ Date _____

Appendix 5: Quantitative Questionnaire

Demographics

1. What is your gender?

- What is your gender? Female
- Male

2. What is your age?

- What is your age? 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- Over 55

3. What industry do you work in?

What industry do you work in?

4. How long have you worked managing projects?

- How long have you worked managing projects? Less than 1 year
- 1 to 3 years
- 4 to 6 years
- More than 6 years

5. For this survey would you consider a project success to be? See statement below.

A successful project will be one where all project objectives were successfully completed on time and within budget and the customer realises the benefits.

- For this survey would you consider a project success to be? See statement below.

A successful project will be one where all project objectives were successfully completed on time and within budget and the customer realises the benefits. Yes

- No.
- Not Sure.
- Not applicable.

The relationship between LL and new projects

Do you access a lesson learned report before or during a new project?

7. How do you see the benefits of using a LL report for new and existing projects?

8. Has a lesson learned you recorded contributing to the success of other projects you have worked on?

9. Do you think that the chance of a project being successful can be increased by developing and implementing the use of a LL report for a project?

10. How likely is it that the lessons you shared on a new or current project resulted in a project success?

11. If similar mistakes occur during a project, do you think these mistakes could have been avoided by using LL?

12. Do you think it is likely that not using LL can contribute to increased project costs, extended schedules and a lack of communication, considerable rework and costly mistakes?

13. Has the use of LL report benefited these areas in new projects?

Reduce Cost
Reduce Scope creep
Reduce Time
Improve Quality
Increase Benefits
Improve Communications
Improve HR
Reduce Risk
Improve Procurement
Improve Integration

Recording and sharing LL

14. Regarding projects, how likely is the following going to affect the capturing and recording of LL?

The uniqueness of projects
Changing workforce.
Costs constraints
Time constraints.
Lack of resources

15. Regarding procedures, how likely is the following going to affect the capturing and of LL?

Lack of clear guidelines about collecting the information
Lack of processes to capture the information
Lack of knowledge base to Store and search information captured
The timing lessons are recorded
The method lessons are recorded

16. Regarding people, how likely is the following going to affect capturing and recording of LL?

Lack of Incentives
The organisations culture

Getting the blame

Heavy Workload

Lack of management support

17. Which three of the following methods/tools would you use for recording a lesson learned?

- [ ] Which three of the following methods/tools would you use for recording a lesson learned? Formal workshop
- [ ] Informal gatherings
- [ ] Intranet LL databases
- [ ] LL case studies at the of a project
- [ ] PPMs
- [ ] Spreadsheet
- [ ] Learning Diary/log sheet
- [ ] Email
- [ ] Social networks
- [ ] Wiki
- [ ] Community of practice
- [ ] None

18. Which three of the following methods/tools would you use for accessing LL for a new project?

Formal workshop

- [ ] Informal gatherings
- [ ] Intranet LL databases
- [ ] LL case studies at the of a project
- [ ] PPMs
- [ ] Spreadsheet
- [ ] Learning Diary/log sheet
- [ ] Email
- [ ] Social networks
- [ ] Wiki
- [ ] Community of practice
- [ ] None

19. Do you agree the method in which lessons are recorded and captured affects their use on future projects?

20. How likely is it that each of the following is going to affect you sharing LL in your organisation?

Lack of slack times and heavy workload

Fear of loss of ownership and control of knowledge

property and individual competitive edges/professional
Trust/reliability of knowledge source or recipient
Poor communication and interpersonal skills
High level of stress and fear of disadvantage/risk
Lack of motivation
Lack of top management support
Divergent aspirations of teams
Different individual characteristics
Lack of an incentive
Getting the blame

21. How likely is each of the following going to improve you sharing LL in your organisation?

The Right Team
Learning gates during the project life cycle
Incentives/Rewards
Ease of Access
Data visibility
LL repository that is easy to use
Extra Time
Introduction of a learning Culture
Improved Communication
Management Support
Clear Guidelines
Extra Resources
The time lessons are recorded
Peoples motivation
Not getting the blame

22. Do you agree people are the main drivers for the use of LL?

Your organisation and LL

23. Do you or your company perform a PPR after each project for recording LL?

24. Do you think if was mandatory for your organisation to perform a post-project review when a project or a major phase of a lengthy project has been completed, it would be likely to improve the project's success?

25. If it was mandatory for a PR to go before a small review board to prove that the LL from recent projects will be directly applied to this project, would it improve the projects success?

26. How often has your organisation screened LL using criteria such as Risks/benefits to prioritise which will be installed into best practices/operating procedures?

27. Do you agree that the use of LL should be improved in your company?

28. Do you think training would improve the use of LL in your organisation?

29. Do you agree if your organisation improved its learning culture it would result in improved project success?

30. To receive a copy of the results from this survey please enter your email address below.

Appendix 6: Interview Questions

1. What is your role in your company
2. How much experience managing projects do you have?
3. Do you review Lesson Learned documents during the planning phase of the project?
   a. If no when and why,
   b. If yes, do you find them useful and why?
4. Describe when and how you capture a lesson learned during a project in your company?
   a. Do you think this is effective?
   b. What are the issues?
5. Describe what you use to store a lesson learned in your company?
   a. Do you think this is effective?
   b. What are the issues?
6. Describe what you use to share a lesson learned in your company?
   a. Do you think this is effective?
   b. What are the issues?
7. What method do you use to access a lesson learned in your company?
   a. Do you think this is effective?
   b. What are the issues?
8. Have you ever used a lesson learned from a previous project to benefit a previous or current project?
   a. If yes…. how and in what way?
   b. If no….. Why
9. From your experience, what do you think are the real benefits from using LL?
10. What are the main factors that inhibit the use of LL in your company?
11. Do you think your organisations culture affects the use of LL?
12. In your opinion, what do you think ultimately drives the use of LL?
13. In your experience, do you think LL contributes to project success?
14. Is there anything else you would like to add?

Thank you very much for your time and for participating in my research.

Appendix 7: Interviewee details

Interviewee 1:

Position: A certified senior project manager

Company: in a small project management consultancy based in Dundrum,

Responsibilities: Reports to the managing director and has sole responsibility for various projects of different values from between £50,000 up to a £150,000,000 and has sole responsibility for those projects full profit loss responsibility and full responsibility to report to the client and works across the main sectors of commercial, retail, data centres, education and healthcare projects.

Experience: Eighteen to nineteen years' experience managing projects.

Date interviewed: Friday July 25th

Location: DBS Aungier Street meeting room.

Interviewee 2:

Position: Senior Project Manager

Company: Welocalize (http://www.welocalize.com).Welocalize is a Language Services company.

Responsibilities: Include managing production and the overall program for two accounts.

Experience: 6 years' experience managing projects.

Date interviewed: Friday July 25th

Location: Skype

Interviewee 3:

Position: Senior Project Manager

Company: Daybreaks ltd. The company is involved in supplying airlines with internet based booking.

Experience: With excess of thirty years.

Date interviewed: Sunday July 27th

Location: Metro Coffee shop at the top of south William Street.

Interviewee 4:

Position: Senior Project Manager

Company: Q-match who are an IT contracting company which are primarily specialising in the financial services industry. We tend to have contracts with a lot of the major financial services organisation like Bank of Ireland

Responsibilities: Development of professional services, pre-sales engagements and communication projects within banks and tactical design projects more sort of recently. Effectively anything he does involves actually sort of defining what the project is, defining the scope, defining where the resources are, identifying how we get then to work and then managing the project through to completion.

Experience: Managing IT projects for the best part of 25 years.

Date interviewed: Wednesday July 30th

Location: Jury's Inn beside the Custom House.

Interviewee 5:

Position: MD of Newport technology

Company: Newport technologies it's a company which specialises in project management.

Responsibilities: (Did not mention)

Experience: Approximately ten to twelve years.

Date interviewed: Thursday July 31th

Location: Lobby of Camden Court Hotel.

Interviewee 6:

Position: Project Manager

Company: Valeo

Responsibilities: (Did not mention)

Experience: 15 – 20 years

Date interviewed: Thursday July 31st

Location: Skype

Interviewee 7:

Position: Program Manager – Operations Group

Company: Openet Telecom

Responsibilities: (Did not mention)

Experience: About 18 years

Date interviewed: Monday August 4th

Location: Skype

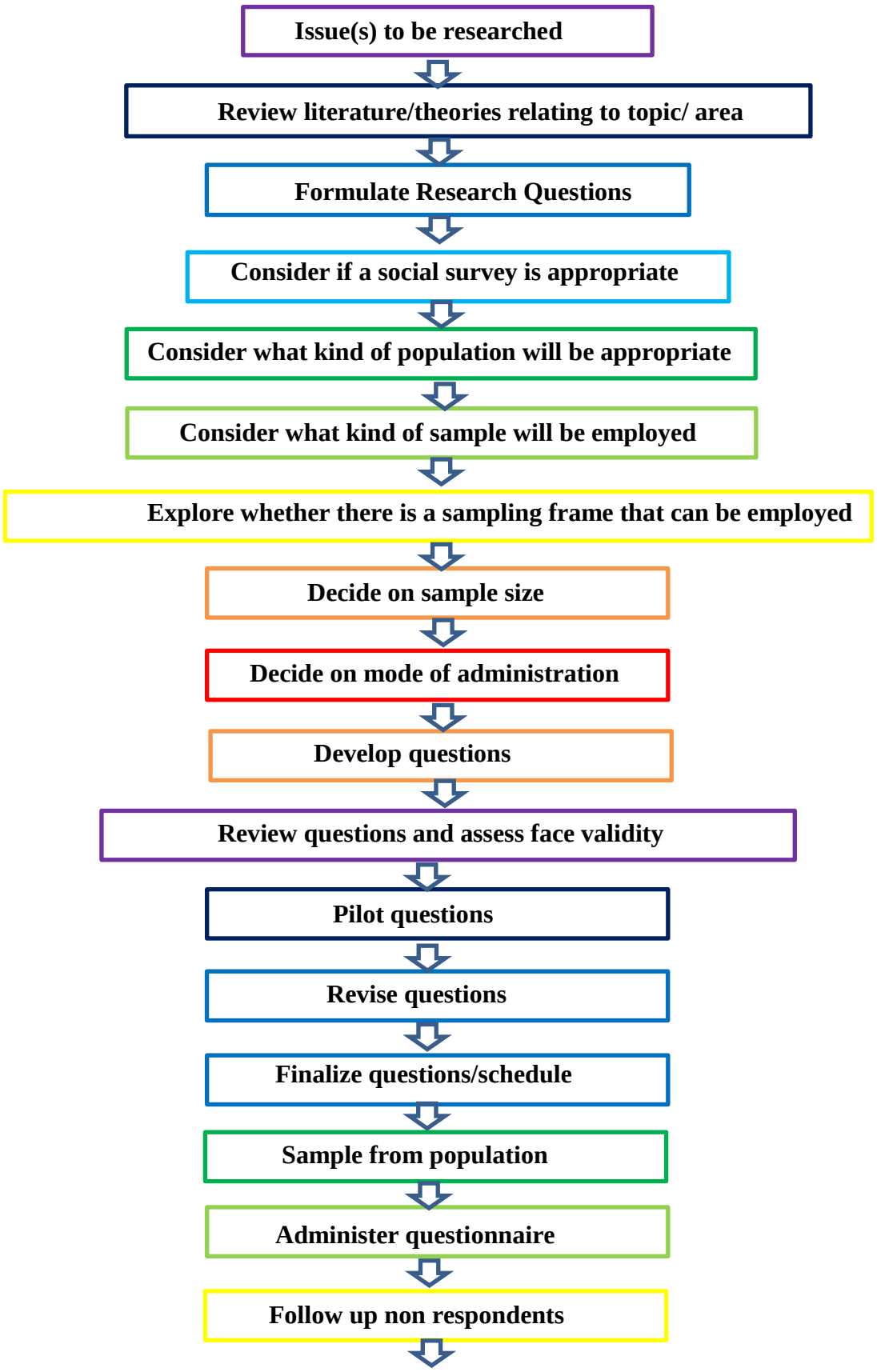
Appendix 8: Cost incurred during research:

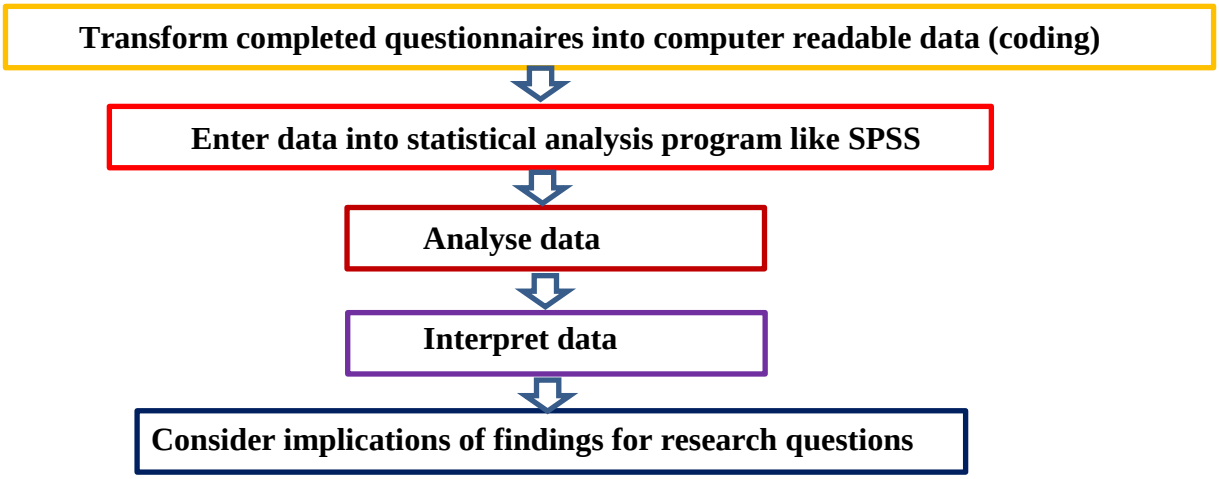
Phase	Activity	Cost:
Phase 1:	This was the cost of printing out drafts and journals for proof reading and research	€50 - 60
Phase 2:	This section involve purchasing a higher level of money as the survey was over 10 questions	€15-20
Phase 3:	This included conducting interviews in a convenient location which meant driving into town and paying for parking.	€80 - 90
Phase 4:	This required getting 3 coil bound copies of the completed dissertation	€90 - 95

Appendix 9: Researcher’s SWOT analysis

Strengths	Weaknesses
• Attention to detail • Motivated • Disciplined • Time management • Project orientated	• Lack assurance • Writing skills • Lack of confidence in ability • Procrastination
Opportunities	**Threats**
• The completion of the MBA opens new career opportunities • Future Research • Work abroad	• Attention detail can inhibit progress • Competition for employment from graduates MBA • The economy

Appendix 10: Steps in conducting a social survey





Source: (Bryman, 2008, p.166)