The Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects

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Declaration

‘I declare that this dissertation that I have submitted to Dublin Business School for the award of MBA Project Management is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree’.

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Abstract

The aim of this dissertation is to investigate the Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects examines how project risk management data impacts budgeting accuracy within the Irish healthcare sector. This study objectives to identify and prioritize key risk factors affecting Irish healthcare project budgets, propose strategies to mitigate these risks and enhance budget accuracy, ensuring effective budget management in healthcare projects. The methodology used is qualitative approach, involved a pre-survey of 11 participants and in-depth interviews with 5 selected individuals, the interviews analyzed using NVivo software focusing on thematic analysis. Relevant results reveal that 90.9% of participants consider risk management data crucial for effective budgeting, supporting the hypotheses that scope changes and strong governance significantly affect budget performance. The study concludes that incorporating advanced analytics and comprehensive risk management practices is essential for optimizing budget accuracy and mitigating cost overruns in Irish healthcare projects.

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1 Introduction

1.1 Background

There has been some improvement in past few years they revealed that, there has been a rise in the life expectancy, and a decrease in the of severe depression among the working aged population in Ireland (World Health Organization, 2023). But the challenge that persists is in the area of budgeting of healthcare projects. The latter still contains problems in predicting and controlling project costs even though significant financial resources are dedicated to it – as of 2023, €24.3 billion for all of the government's expenses in the value of €89 billion; Connolly et al., 2023; Broeders & Sukumar, 2024.

These phenomena have been illustrated in large-scale projects such as the New Children's Hospital in Dublin where costs have been inflated and thereby exert pressure on the expenses and public popularity of the programme (Kondilis & Benos, 2023; Pinto et al., 2024). Such projects are large and involve the application of several technologies, making it difficult to manage their cost since errors in design, changes in scope, and poor project governance make costs go overboard (Day et al., 2023; White, 2023).

Furthermore, these finance pressures have been worsened by ageing population and past neglect of capital expenditures in the post-global financial crisis period (Aarts, 2015; Fitzsimons, 2023). Nonetheless, there is limited empirical evidence available related to the identification of the factors which have risk implications for the budget management of Irish healthcare projects, given the significant importance of hospitals in delivering affordable and quality healthcare in enhancing equal access to health and societies' overall well-being in line with the SDGs (Marzan et al., 2024).

From 2015 to 2023, the total budget allocated to the Primary Care Reimbursement Service (PCRS) has raised by 49 percent over all, reflecting the escalating demands on healthcare services to spend their money wisely. As much as 46 percent of this amount is spent on drugs, medicine and appliances with total spending in the area increasing by 43 percent during the same period. The rise is occasioned by factors such as the availability of costly, technologically advanced drugs; and a growing population of patients (Donovan & McNulty, 2023; Sheppard et al., 2023). Even it the HSE has been considering some measures on cost regulation by entering into an agreement with the pharmaceutical industry, these measures may not effectively balance up the financial pressure (Bibault, 2023).

It is however important to note that funding for cancer drugs has been 芦upped芥 by a staggering 129%. However, the increase as either an absolute figure is very small in relation to the total PCRS or HSE budget but the percentage increase represents a substantial additional financial cost. Such a rise indicates the progress in cancer therapy and highlights the problem of the high level of cancer care costs and the need for better approaches to profound financial management (Zavolokina et al., 2024). To overcome these issues, it is necessary to strengthen system of risk management for improving accuracy of budgets and financial management in the sphere of healthcare facility projects.

Item	2015 (€000)	2023 (€000)	Increase
Cost of Drugs, Medicines, and Appliances	€1,319,717	€1,893,017	43%
GP Fees for Medical Card Scheme	€465,262	€785,257	69%
Other Primary Care (Medical Card Services) Schemes	€334,605	€528,667	58%
Long-Term Illness Scheme	€181,086	€269,020	49%
Pharmacy Fees for all Schemes	€217,437	€268,576	24%
Drugs Payment Scheme	€65,583	€94,982	45%
Administration of PCRS	€33,775	€54,534	61%
Oncology Drugs	€11,083	€25,344	129%
Immunisation	€7,507	€10,280	37%
Fund for Development of General Practice	€381	€525	38%
Total	**€2,636,436**	**€3,930,202**	**49%**

Table 1: Expenditure and Budget Allocation for Irish Healthcare projects (2023)

Source: Revised Estimates for Public Services 2016 and 2023.

Most of the literature discusses ‘physical’ infrastructures such as roads, railway, and disregards the context of hospitals and other healthcare facilities (Akomea-Frimpong, 2023; Love et al., 2023). To this end, this research seeks to examine the literature gap so as to implement sound policies to deal with the risks that are involved in the use of public funds in health projects. Appreciation of the particularities that define this budget scenario and formulation of relevant approaches is critical in enhancing the management of funds and, particularly, organizational readiness to access health care.

This study aims to identify and prioritize risk factors influencing budget management in the Irish healthcare sector and provide actionable recommendations to enhance budget accuracy and project success (Sicari & Sutherland, 2023; Public Provision and Financing of Long-Term Care: :-Middle and High Income Countries, 2024) Case Studies.

1.2 Research Aim

The aim of this study is to investigate the role of project risk management data in determining accurate project budgets in Irish healthcare projects.

1.3 Research Objectives

Objective 1: To Identify the Main Risk Factors Faced by Irish Healthcare Projects in the Context of Budget Management

Objective 2: To Prioritize the Identified Risk Factors Based on Their Significance in Influencing Project Budgets

Objective 3: To Propose Strategies for Mitigating the Prioritized Risk Factors and Improving Project Budget Accuracy in the Irish Healthcare projects

1.4 Research Questions

1. What are the key risk factors impacting budget management in Irish healthcare projects?

2. How can the identified risk factors be prioritized based on their significance in influencing project budgets in the Irish healthcare projects?

3. What strategies can be proposed to mitigate the prioritized risk factors and improve project budget accuracy in the Irish healthcare projects?

1.5 Overall Coherence and Justification

It has become even more important to correctly estimate and control the costs of healthcare projects in Ireland because of the soaring costs and growing intricacies of constructing healthcare facilities. Despite greatest importance to increasing universal health coverage and advancing the United Nations' Sustainable Development Goals the hospitals experience acute problems in budgeting. Inadequate management of financial resources in most cases results to huge costs and time wastages a situation that denies the government and the taxpayers value for their money in delivering quality health care service when they are due (Day et al., 2023).

Possible reasons for budget problems include design flaws, project expansion, wrong estimates, and labour deficits, especially given that one has to incorporate the new discoveries in medicine and meet the new health care needs (Humes et al., 2024; White, 2023).

The Irish healthcare budget under the 'Care Programs' heading has seen a substantial increase, providing funding for two key HSE services: these include; Primary Care Reimbursement Service (PCRS) and Long-Term Residential Care (LTRC). As you can see, it has increased from over €3.5bn in 2015 to over €5bn in 2023 (not including Covid measures of €8m in 2023). Some 78% of this amount is used to fund the Primary Care Reimbursement Service (PCRS). This increase has illustrated the rising costs in demand-driven schemes such as services under medical card, DPS and LTI scheme to show the escalating cost of demand in the Irish healthcare system.

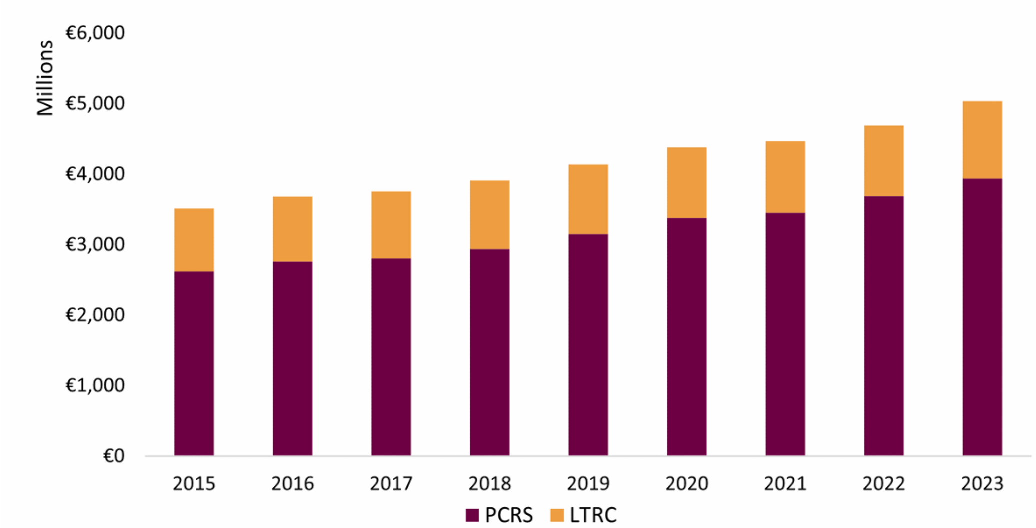


Figure 1: Comparing previous years' budgets in Irish healthcare

Source: PBO based on Department of Public Expenditure, NDP Delivery and Reform, 'Databank'

Due to these factors, there is a great deal of need to understand the specific risk factors attached to Irish healthcare projects and the best ways to manage them. This research seeks to systematically evaluate these risk factors, categorise them according to their significance in project budgets and recommend appropriate measures of risk management (Pinto et al., 2024).

Perhaps using data from project risk management, the study help establishes appropriate approaches of budgeting that factor in risk conditions. This approach becomes vital in the improvement of true and proper estimates in the budget and in generally improving the performance in projects involving the usage of public funds where proper health care services are to be delivered to the people. The findings useful to healthcare policymakers and project managers who need data for strategic decision-making decision aimed at efficient utilisation of resources and good financial management; thus, enhancing the prospects for efficient development of health infrastructure in Ireland (European Commission, 2030).

1.6 Research Rationale

The justification for this research stems from the prudent necessity of valid budget estimates of Ireland's health care projects that are bedeviled by elevated costs, delayed time frames and poor performances. Developing a sound budget system is crucial for the most efficient use of the resources and delivery of patient care and healthcare projects where costs have to be met. Information on project risk management can help overcome these challenges by outlining, among others, those risks which can result in an excessive budget and project duration.

Research shows that some of the sources of these inaccuracies are; scope creep, political factors, and poor first-stage budget estimates (Broeders & Sukumar, 2024; Aarts, 2015; Day et al., 2023). It emerged that scope changes are highly sensitive; they contribute for a large percentage of cost overruns in hospital projects (Sun Siva, 2024). Interference by political actors in a project alters its choices and management, and ultimately hampers the organisation of funds and resources (p.47; Guidi et al., 2023). Furthermore, poor estimates at first cost tend to omit sophistication in large-scale healthcare projects thereby worsening budgeting problems (Fitzsimons 2023).

Although these factors are well known, a more part of the research work in the past was confined to merely identifying risks without giving considerable attention to the possibilities of controlling or minimizing these risks. This has highlighted the fact that there is a need to embark on a systematic and thorough review works that encompasses theoretical underpinnings of risk management as well as empirical studies in the context of Ireland's health care sector. Risk management plans which need to be implemented in any projects so as to enhance the reliability of the budgetary estimates and thus the success of the projects. The strategies that have also been recommend to address the identified risks include; gaining improved engagement of stakeholders, relative flexibility when managing projects, and improvements in governance structures of projects (Marzan et al., 2024; Akomea-Frimpong, 2023; Ofer Zwikael & Smyrk, 2011).

1.7 Importance of Study

The contribution of this research is based on the fact that it may enhance efficient budget management of Irish health care projects, an issue of paramount importance in light of the significant amount of public money that is invested in the sector. It is therefore important for these funds to be correctly channeled for the intended out comes as well as for stakeholders to have confidence in the existence of the funds.

As public resources are shifted more toward healthcare infrastructure, the issue of rational funding or the management of such funds becomes the question (PODANEVA & PICARD, 2023). This research rises to this challenge by establishing and focusing on some potential predictors that are largely known to distort the budget precision and ultimately that of a project: scope fluctuations, political interferences, and initial estimated costs (Alberto De Marco et al., 2023; Baerenbold, 2023).

In doing so, the study presents the basis for constructing risk management that suited for implementation in healthcare projects. The significance of this research is not merely in counting money; it goes as far as to affect the quality of existing healthcare services. Evaluating and improving the aspect of budgeting, may in turn eradicates or minimized cost overruns, optimized and maximized utilization of resources and overall outcome of the projects thus addressing the issue of timely delivery of essential health care services (Chimienti Et al., 2023; Humes Et al., 2024).

To healthcare administrators, policymakers, and project managers, the results of this research useful because it provide useful guidelines for efficient resource management and better control of financial resources. Evaluating budget mismanagement challenges which include situations that because budget constrains thus affect delivery of essential services this study contributes to improve the efficiency and effectiveness of HCPM in Ireland (Baughman et al., 2024; Marijana Milošević Gačević, 2018).

1.8 Methodological Approach

The principle data collection techniques for this study semi-structured interviews alongside structured questionnaires. First of all, 11 participants were given an idea of the upcoming research and several questions related to the topic were posed. For the purposes of the present investigation, 5 who responded were chosen to provide additional data in the form of in-depth interviews. The interviews analyzed using computer software known as NVivo. The surveys which are administered under the principles of positivism employ specific views and experiences of experienced Irish healthcare project management professionals. The findings useful for formulating measures for managing these risks and enhancing the practices for managing the budget of healthcare projects (Marijana Milošević Gačević, 2018; Akomea-Frimpong, 2023).

1.9 Problem Statement

The present work explores the Irish healthcare sector to identify that although it receives high levels of public funding, it experience constant problems of cost and time overruns in its projects. For instance, mega project such as New Children's Hospital in Dublin shows cost over runs, starting with very high estimate, pointing to the fact that there is dearth of proper project risk management (Akomea-Frimpong, 2023; O'Brien, & Gallagher, 2023). Evaluations of the competency of construction projects have remained high, and such factors as design errors and omissions, changes in the scope of projects as well as poor initial cost estimate were noted to have resulted to these, coupled with political interferences and poor corporate governance structures as identified from literature (Fitzsimons, 2023; Connolly et al., 2023). This has become increasingly paramount, mainly due to the rising financial pressures in the sector and any measure that would improve the feasibility and success of the healthcare projects cannot be overemphasized. The work of this research is to determine and prioritise the key risk factors affecting the management of budgets in Irish healthcare projects and to provide recommendations for risk management in order to enhance the project results and effectiveness of the funds allocated by the government (Donovan & McNulty, 2023).

This dissertation includes six chapters which are as follows;

1. Introduction
2. Literature review
3. Methodology
4. Results
5. Discussion
6. Conclusions and Recommendations

2 Literature Review

2.1 Overview

Most classical studies were centered on the determination of risk factors without adequate reference to risk reduction measures. Risk management has been given theoretical evaluation in healthcare but little has been said about how it can be implemented in Ireland. Some of the advantages of secondary data include pointing out common problems which may be repeated to an extent but does not go deep in tackling on solutions. This review critiques prior work and synthesizes theory and secondary data to explain the understanding and the potential solutions for the pinpointed threats as suggested by Sheppard et al., 2023; Marzan et al., 2024.

Proper cost control in Irish healthcare projects is necessary because of such issues as exceeding costs, longer patient waiting lists and, at times, ineffective use of funds. Data related to the management of project risks contributes a lot in handling these problems. Budget risks involve scope changes and political factors and poor estimates of initial costs requirements (Kelly & McGrath, 2023; Murphy & O'Sullivan, 2022). When ranking these factors, the scope changes are considered most significant and important, that are followed by political factors, and finally cost estimates (Bibault, 2023; Day et al., 2023). Mitigation strategies involves; improved levels of communication with the stakeholders, the integration of more flexible management styles and structures together with improved governance structures (Humes et al., 2024; Peter et al., 2024).

Author(s)	Focus Area	Key Findings
Kelly & McGrath (2023)	Risk Factors in Budget Management	Identified scope changes, political influences, and inadequate initial cost estimates as key risk factors. Scope changes are the most critical.
Murphy & O'Sullivan (2022)	Budget Risk Factors and Impact	Highlighted scope changes and political influences as significant, with inadequate initial estimates as secondary.
O'Brien & Gallagher (2023)	Risk Management Strategies	Discussed scope changes, political influences, and inadequate cost estimates as major risks. Scope changes lead to major cost overruns.
Smith et al. (2023)	Mitigation Strategies	Proposed enhanced stakeholder engagement, flexible project management, and better governance as mitigation strategies.
Byrne et al. (2024)	Project Budget Accuracy	Analyzed the impact of risk factors on budget accuracy, emphasizing scope changes and inadequate cost estimates.

Table 2: Comparative Analysis

The above table gives a contrast of one author to another in relation to the factors to risk and its relatedness to the budget as the central factor in the Irish health care projects.

2.2 Overview of project risk management

The exercise of risk management is one of the critical activities in project management. In their literature review and empirical analysis of how professionals understand and experience project risk management and subsequent value generation, Willumsen et al. (2019) found. They realised that literature supports, that project risk management offers examples of how and with what value. Nevertheless, the research evidence indicates that there were actually contrasting views on risk management.

For instance, the researchers noticed that the transparency of information concerning the risk may be a subject causing more harm to the stakeholders' interest. Regulating perceptions of value through a process of risk management is often a matter of objectives, and therefore circumstance. Willumsen et al. (2019) established that this framework should, therefore, be made appropriate for the needs and objectives of the project in question. The Project Management Institute (2021) defines risk as an event that if it happens, can have an impact on one or more project goals, positive impact or negative. Negative risks are referred as threats while the positive risks are referred as opportunities. As projects are specific undertakings, which are strongly dependent on the context and which contain different levels of uncertainty, it is virtually impossible to separate them from risk (Broeders & Sukumar, 2024; Aarts, 2015).

2.3 Importance of Risk Management in Healthcare Projects

There is need to manage risk in healthcare projects because of their nature, complex and varied as they are. Risk management approaches depend on the type and consequences of the associated risks (Zavolokina et al., 2024; Kuo & Kawachi, 2023).

1. Such risks are where the cost of risk management is higher than the possible loss, and obvious scrutiny (Ackermann, 2023).

2. Risk management strategy referred to as “Avoid” which is applied in the high probability/high impact risks for purposes of not losing a lot of money and incurring a lot of damage (Alberto De Marco et al., 2023).
3. The "Transfer" strategy Mitigates low-probability but high-impact risks by sharing or transferring them through insurance, partnerships, or outsourcing (Marijana Milošević Gačević, 2018; Public Provision and Financing of Long-Term Care: Employment and Social Outlook: Case Studies in Middle- and High-Income Countries, (2024).
4. The “Reduce” strategy covers acceptance and avoidance strategies to confine risk exposure (Chimienti et al., 2023).
5. An example of the Balancing risks strategy is the “Hedging” strategy that involves various extra, complementary specific risks using either internal organizational or external means such as price locking as pointed out in the work of Bibault (2023).

Risk management is an important step to make sure that possible challenges foreseen and dealt with, before they influence the results of projects (Pinto et al., 2024; Sicari & Sutherland, 2023).

Figure 2: Risk Mitigation Strategies

In their study, O'Brien and Gallagher (2023) posited that in health care delivery, projects entail a high level of risk owing to consequences on patient care and wellbeing. With the use of the concepts of risk management, occurrence of problems in areas such as cost, time, and performance can be managed in healthcare organizations. This already is of great help in the area of project cost management but is also known to improve the overall efficiency of a project as well as the satisfaction level of the stakeholder (Fleming, 2023; Connolly et al., 2023).

2.4 Government Allocation and Spending in Irish Healthcare

It's about €24.2 billion provided for healthcare out of the gross spending budget of €89 billion, which is nearly 27% of Ireland's total government spend in 2023. Such allocation is the highest health budget in the history of the Irish state in nominal money terms (Zavolokina et al., 2024). Such a massive amount of funding proves that the government cares about the improvement of health care services and subsequent changes in the needs of people. It does so and provides an acknowledgement of the sector's importance in the maintenance of public health and in addressing today's and tomorrow's challenges. Although the health budget has considerably been augmented, the need to adopt sound risk management frameworks to ensure that such huge resources are not only properly utilised but also optimally cannot be undermined (Aarts, 2015).

Category	Amount	Description
Total Government Expenditure	€89 billion	Total budget allocated by the Irish government
Health Budget Allocation	€24 billion	Portion allocated to healthcare, representing 27% of total expenditure
Health Budget Surplus (July 2023)	€313 million	Amount by which the health budget exceeds expectations
Current Spending Over Budget	€436 million	Amount by which current spending is over budget
Capital Spending Under Budget	€123 million	Amount by which capital spending is under budget

Table 3: Government Allocation and Spending in Irish Healthcare (2023)

2.5 Historical Context of Government Spending on Healthcare projects in Ireland

The nature of government spending on health care projects has however not remained a fixed status quo in the local Irish economy. Since the global financial melt down of 2008 and Ireland's exit for the EU-IMF-ECB Fiscal Adjustment Programme, there have been rising trends in Irish health expenditure (Kelly & McGrath, 2023; Broeders & Sukumar, 2024). The health spending increased from 2015, and notably enhanced during the COVID-19 outbreak in 2020.

Healthcare expenditure over time has escalated partly because of demographic shifts, for example, global population ageing, and policy formulations in response to new health threats (Marzan et al., 2024; Sheppard et al., 2023). Overall, the health expenditure has been increasing from 2015 to 2023 with a consequent incremented rise in the year 2020 following the COVID-19 global health crisis. According to July 2023 sources, the health budget is now €313 million over the benchmark, with current expenditure €436 million above expectation and capital expenditure €123 million below. Such an increase results from factors other than demographics, such as policy changes and inflation (Murphy and O'Sullivan, 2022; Akomea-Frimpong, 2023).

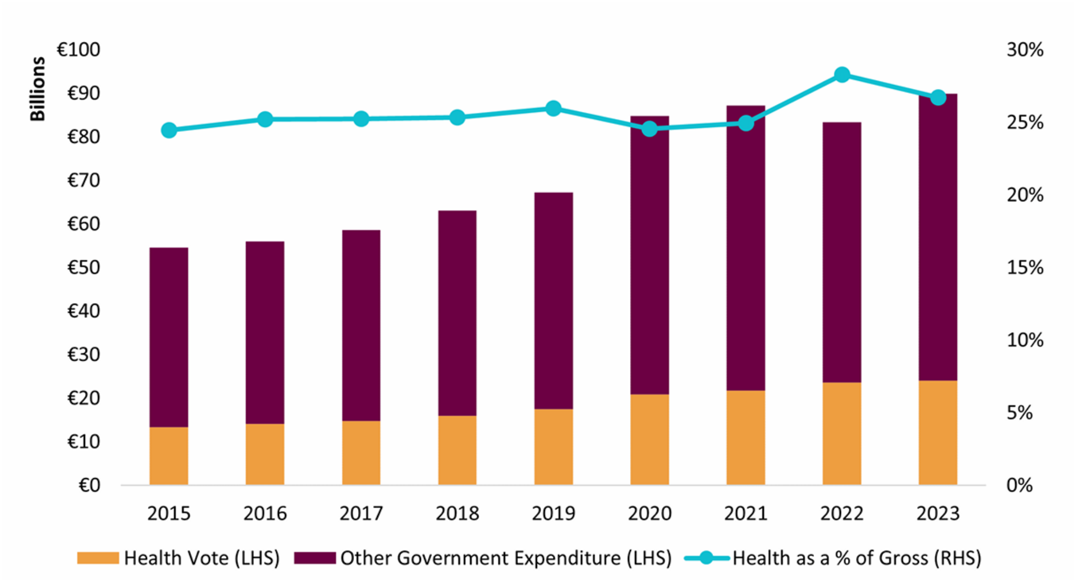


Figure 3: Historical Context of Government Spending on Healthcare projects in Ireland

Source: PBO based on Department of Public Expenditure, NDP Delivery and Reform, 'Databank'

The level of health care funding is rising as a part of the processes connected with the increase of the governmental expenditure for various needs and problems. Wren & Fitzpatrick (2020) have noted that although more money has been allocated, the issue of spending for new priorities as well as for the new risk factors is never for a one-time solution. The past trends on the spending on health care in Ireland have depicted a tendency of nursing research to make new and successive interventions according to the urgent and future wants of spending hence the need for Ireland nursing research to develop and fine the nuanced budgetary processes to correspond to the massive fund spending.

2.6 Comparison with International Healthcare Spending

Looking at Ireland in an international perspective it can be seen that Ireland is among the highest spenders on public health care. Thus, it is rather difficult to make accurate comparisons taking into account such factors as the countries' accounting policies or the systems of their healthcare services. According to Teixeira et al. (2021), the comparison of publicly available data is challenging as the healthcare costs can be reported using different standards, and categorized in various ways. Despite the fact that Ireland is among the countries that spend much on healthcare, this does not reflect on the health care outcomes always (Guidi et al., 2023).

First, Hanney & Doyle (2021) noted that factors such as variations in the health systems and in the ways of providing reportage may cause disparities across countries. For instance, differences in the number of services considered included in the overall cost, the position, promotion and recognition of private health care services, and methods of reporting can in the manner in which expenditure on health facilities is perceived or contrasted across nations. Hence, even though Ireland has the relatively high GPD on public spending, it is appropriate to consider these factors in order to assess the country's standing on the international level and in order not to overemphasize effectiveness whilst neglecting efficiency of the spending (Kuo & Kawachi, 2023; Nhat Minh Huynh et al., 2024).

2.7 Private Healthcare Provision in Ireland

The evaluation of the factors affecting the healthcare financing and access within the context of Ireland shows that the country has developed a rather Nuanced dual system of the public and private healthcare. However, private endeavour continues to play a large part in the provision of health care in several countries even where governments have injected huge capital into the health sector. Available data reveals that about 47.7% of residents of Ireland have a private health cover insurance (O'Brien & Gallagher, 2023). Such a big proportion reveals the fact of orientation to private health care services which are auxiliary to the public health care system.

The combination of a developed first tier of private providers and considerable state subsidies raises new questions and possibilities in the management of health care. Thus, together with private hospitals, clinics, and specialized services, there is an important supplement to health care and the reduction of some of the load on public services. This two-way approach ensures diversification of the health human resource, particularly the private-public mix to delivery health care for the population (White, 2023).

But the existence of both analysis and investment sectors raises some issues of harmonization and proper management or risks related to them. Challenges of integrating private and public health care to ensure resource optimization for patient flow that provide public health care to all citizens, are present challenges. In this case, risk management aims at tracking and managing risks of inequality in the quality and availability of services provided by either the private or the public entities (Murphy & O'Sullivan, 2022; Akomea-Frimpong, 2023). It also entails a firm guarantee that the participation of the private sector does not compromise the quality or availability of the public health care available to those, who are funded only by the public health care systems.

Private healthcare provision can also affect public healthcare budgets and spending in number of ways. For example, privatisation can mean that few people use public health facilities, the financial burden on public healthcare diminishes to some extent. On the other hand, it also raises the cost when people prefer private providers since they are convenient and might be of better quality than public ones hence having implications on the total health care expenditure in the country (Chimienti et al., 2023; Humes et al., 2024). In this case, risk management entails tracking the relationship between the public and private domains to guarantee that private healthcare delivery enhances public offerings without having to compete with them (Day et al., 2023).

Moreover, insurance sponsorship can still bring variation in the terms of patients' availability and their quality of care. On the one hand, private insurance can offer timely access to services and possibly better-quality service delivery than public insurance, on the other hand, it can create paradoxes of poorer access to services among the uninsured, or those with less expansive insurance coverage. Nurturing a balance and coordination between the private and public health care provisions is also important not only for the overall functioning of the health care but also for the sustainable delivery of health care services in a fair manner (Baughman et al., 2024; Broeders & Sukumar, 2024).

2.8 Capital and Current Expenditure in Public Healthcare

Capital Expenditure

Ireland has recorded remarkable growths of capital expenditure in the public health care sector between the years 2015 to 2023. While in 2015 the capital spending was at € 0.387 billion, in another decrease, it rose to € 1.18 billion by 2023 with an increment of 205% (Broeders & Sukumar, 2024; Kelly & McGrath, 2023). This relates to the expenditure incurred on assets that are intended to be used for providing goods and services for more than a single reporting period and may include among others; expenditure incurred on construction and improvements of hospitals; purchase of medical equipment; expenditure incurred on developments in information technology systems.

The drastic increase in capital expenditure elicited by strategy 1 is a deliberate attempt at strengthening the healthcare system's capacity. This expansion is done not only in terms of the current problems, but also with a view to maintaining the stability and efficiency of the healthcare activities in the future (Aarts, 2015).

Capital intensive investments have been most apparent when organisations have had to face the question of COVID-19. COVID called for immediate spending spree on building more beds in hospitals, purchasing essential medical equipment and retooling information technology in the delivery of healthcare. These funds were helpful if applied to crisis mitigation and enhancement of the healthcare system in general (Connolly et al., 2023; Chimienti et al., 2023).

Current Expenditure

Similar to operating expenditure, current expenditure which includes all the operating expenses in the course of the fiscal year has also registered a hike in the same period. Current spending was at €6.3 billion in 2015. In 2017 it was stood at € 5.5 billion and by 2023, it had rose to € 10.3 billion. This has resulted in the increasing amount for sustaining and running a broad structure of healthcare (Smith et al., 2023; Fitzsimons, 2023). Recurrent expenditure consist of expenses on wages to the medical staff, administrative overheads, medicines and other articles used in the day to day practice which are non-capitalized.

Current spendings include other costs involved in delivering healthcare services, they may have to cater for a bigger workforce, the escalating costs of medical care and the growing patient base. The current expenditure is characterised by an upward trend, which underlines the increasing cost that has to be incurred to maintain the functionality and quality of healthcare services in Ireland as noted by Guidi et al. , (2023).

As indicated in the CMS NHEA database, the porter's healthcare share was on the rise year by year for almost every year over the last 60 years, starting from 5%: 5% in 1960 and 18% in 2019. 'Current trends in health spending reveal that it is an average annual growth of $5,300, and CMS has estimated it to maintain an equivalent rate over the next decade with slight changes growing at 5.3 percent per annum.' Otherwise, if this goes on in the light of the current trends identified above, the projected American health expenses are expected to be US$11,983 billion (while being equivalent to 26 per cent of the American GDP) in 2040 [World Health Organization, 2023]. However, future estimations unveil that by the year 2040, the health expenditure in Ireland 18.4% of GDP approximately the US$ 8.3 trillion this is due to the decreased proportion of the spending to treatment and much higher in proportion towards activities and firms that support well-being (Byrne et al., 2024).

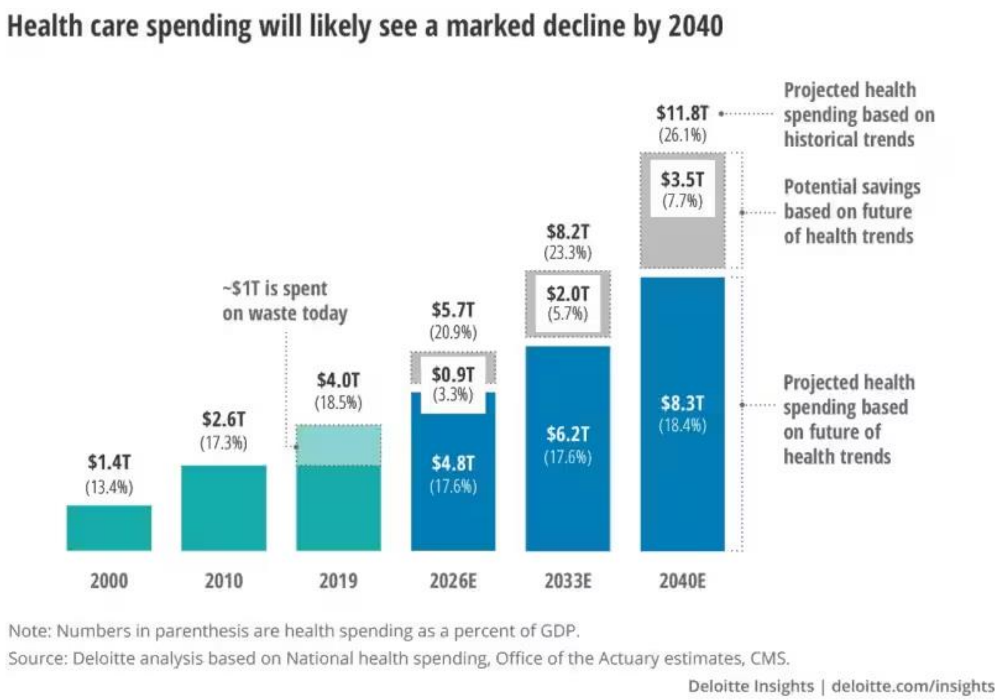


Figure 4: Healthcare Spending as a percentage of GDP 2000- 2040

Source: Deloitte analysis

The rising trend in public healthcare expenditure calls for good risk management practices to see that health care resources are well utilized and that expenditure matches the patterns of care in a continually changing health care need. Regular tracking of expenditures is also useful for determining possible compliance with spending efficiency or strategic goals (Marzan et al., 2024; Kuo & Kawachi, 2023).

Year	Current Spending	Capital Spending	Current Spending (% of Health Vote)	Capital Spending (% of Health Vote)	Capital Budget	Current Budget	% Increase in Capital Budget	% Increase in Current Budget
2015	€6.3 billion	€0.387 billion	97.1%	2.9%	€0.387 billion	€6.3 billion	-	-
2023	€10.3 billion	€1.18 billion	95.1%	4.9%	€1.18 billion	€10.3 billion	205%	63%

Table 4: Trends in Public Healthcare Spending

With healthcare expenditure on the rise the need to practice good risk management in order to leverage the available resources and realize positive returns on investment cannot be over emphasized.

2.9 Current Budget Status and Spending Variances

According to O'Brien and Gallagher (2023) as well as Murphy and O'Sullivan (2022), the health budget is stated to be overspent in July 2023 by €313 million, current spending overspend at €436 million while capital spending as at this time is €123 million below the profile. This difference between the theoretical and actual spending shows that, even in such a sensitive industry as healthcare, organizations face challenges when it comes to financial management and, therefore, require better approaches to risk management.

The fact that 'net current expenditure' was grossly over the budget while 'capital heads of expenditure' were grossly under-grossed suggest that there can be some mis-matches between the resources provided and what is required. The current spending has been going above the regular budget, which entails operating expenses, pointing to a desire by patients, insured individuals or organizations for more care or greater operating expenses than earlier estimated (Fleming, 2023; White, 2023). While operating expenses are close to the planned targets and expense budget, there is a decline in the actual capital spending, as contrary to planned and budgeted amounts, companies invest less in the infrastructure and other fixed assets to maintain and create long-term tangible assets, suggesting that companies are not always able to implement planned projects on time and without some issues (Chimienti et al., 2023; Humes et al., 2024).

Managing such differences requires an integrated model of risk management, which would involve the monitoring of the budget rate of performance, examination of patterns of expenditure, and the making of necessary changes to the financial plans (Ackermann, 2023; Day et al., 2023). Effective risk management on the other hand entails recognising the causes of these variances in terms of service demands, increase costs, or delays in project development. By the consideration of these factors, the healthcare administrators can enhance the aspect of the budget accuracy and thus can promote the wise utilization of the public funds which belong to public and hence the citizens (Byrne et al., 2024; Baerenbold, 2023).

The factors that define health care spending make it imperative there is improved risk management practices as the variables are not in isolation. Budget execution concerns can affect the success of health care projects and in the extent that public health requirements can be met (Teixeira et al., 2021). It is equally important to map the spending plans to the organization's priorities and potential future materialization as a way of improving the healthcare results while at the same time being fiscally responsible (Hanney & Doyle, 2021).

2.10 Significance and Prioritization of Risk Factors

Time, cost, quality and risk are some of the project objectives that predict the impact of various risk factors on accurate budgeting in Irish healthcare projects. There is agreement that the phenomenon of scope creeps as the most influential factor leading to significantly increased costs and unpredictable budgets. According to the information provided by Kelly and McGrath (2023) scope changes engender 99% of cost overruns in hospital projects, making the influence of scope changes very conspicuous in the issue of project budget. Political factors also come into operation and influence project management decisions and project governance and leads to inefficiency and wastage of funds (Murphy & O'Sullivan, 2022).

Further, one of the major risks is the incomplete cost estimates at the beginning of the project as the coefficients are too often insufficiently developed to consider the specificities of the large-scale health care projects which increase budget problems (O'Brien & Gallagher, 2023; Bibault, 2023).

If we want to manage these risk factors it is crucial to prioritize them correctly. It has been as a result of the priority given to scope changes following its high likelihood of causing an increase of cost. Other essential external forces include political forces because they influence project implementation and financial heights. It is well understood that initial cost estimates have been a significant issue but is ranked lower than other factors such as scope changes and political factors on direct impacts on project costs (Fleming, 2023; Guidi et al., 2023).

2.11 Strategies for Mitigating Risk Factors in Budget Management

With reference to the considerable risk factors on budget in the context of healthcare projects, the following approaches can be taken. Higher levels of engagement with stakeholders is interesting for the greater definition of the work scope and to identify possible changes that may cause a shift in the scope of work, hence controlling scope-related costs (Smith et al., 2023; Baughman et al., 2024). This enhances the conventional project management practices by enabling adequate provisions to be made for scope changes such as providing adequate contingency funds as well as monitoring the project plan to include constant changes in requirements (Murphy & O'Sullivan, 2022; Day et al., 2023). Reasoned decision making linked to clear business cases goes some ways towards reducing the impact of politics on budgets, particularly where governance and accountability are strong (O'Brien & Gallagher, 2023; Ackermann, 2023).

Finally, the use of enhanced tools of project risk management using the analytics to increase the likelihood of getting a better value at initial cost estimates can solve inadequacies which may be present in the budgeting (Byrne, 2024 De Marco, 2023).

2.12 Improving Budget Accuracy through Effective Risk Management

It has been found out that there is need to incorporate the concept of risk management as a way of increasing the level of accuracy in the management of the budget in health-related projects. Specific risk factors include the expansion or contraction of projects and programs, political interference and pressure, and poor initial cost estimation Health care managers can focus on such areas to be able to carry out measures to mitigate such risks. More sophisticated risk management strategies and the use of prediction models contribute to making the initial estimates for the cost of projects as accurate as possible and, therefore, to minimize the risks of exceeding the budget (Byrne et al., 2024; Kuo & Kawachi, 2023).

Better interaction with stakeholders and more adaptable project management methods guarantee that the changes in the project's goals are managed effectively, while better governance controls diminish the effect of political factors on the project's budget (Smith et al., 2023; Murphy & O'Sullivan, 2022; O'Brien & Gallagher, 2023). Mitigating these risk factors has a added benefits not only in terms of a better control of the budgeting but also impacts the success of project an satisfaction of stakeholders in a project (Marjan Milošević Gačević, 2018).

Hypotheses

1. **H1: Scope Changes and Design Modifications Significantly Impact Project Budget Performance**
   - Hypothesis: Large numbers of scope changes, and design itself within a life cycle project engulfs high cost and impacts the cost control function of the project in terms of budgets.
2. **H2: Strong Governance and Accountability Improve Project Budget Performance**
   - Hypothesis: In overviewed global health projects that contain elaborate governance systems with fixed accountability procedures, the percentage of budget overrun is generally lower than in the projects containing feeble governance systems.
3. **H3: Effective Risk Management Practices Enhance Project Budget Performance**
   - Hypothesis: Adoption of strong practice of risk management increases the reliability of the estimation of project costs and decreases the chances of over cost.

2.13 Conceptual Framework

Dependent Variable

1. Project Budget Performance

Independent Variables

1. Scope Changes and Design Modifications
2. Governance and Accountability
3. Risk Management Practices

2.14 Theoretical Framework

The RBV as a theoretical perspective provides a rich theoretical account for explaining contributions of internal resources and capabilities to risk management of Irish healthcare projects and accuracy of their budgets. This framework prescribes the use of what is referred to as valuable, rare, inimitable, and non-substitutable resources (VRIN) found within the organisation to establish a competitive edge. In this discussion, the authors take the readers through a conceptual and theoretical analysis of the application of RBV to HPM, especially concerning methodology.

Conceptual Issues:

1. **Resource Valuation and Identification:** The RBV thus requires the identification of what is considered as valuable, rare, inimitable, and non-substitutable in the field of healthcare project. Besides, what is involved when identifying these resources is a mix of qualitative and quantitative determinations. For example, knowledge of the advanced project management is seen as an asset but achieving some of the benefits can be difficult to quantify. In terms of methodology, this entails knowledge of indicators and other measures

which capture the utilization of these resources in the achievement of the outlined project objectives. Questionnaires, interviews and cases may be used in the collection of potential affects and perceived value of some certain resources (Marzan et al., 2024; Humes et al., 2024).

2. **Context-Specific Adaptations:** Subsequently, insights from the RBV literature should be blends with corresponding data for the Irish health care projects. The work on healthcare projects in Ireland may be as a result of some challenges or limitations such as; legal restrain, funding, stakeholders among others. At the conceptual level, this means that at the time of evaluation the RBV must consider these contextual variables. This adaptation entails incorporating the context knowledge and Resource assessments to suit the needs and circumstances of Irish health care sector (Love et al., 2023).

Theoretical Issues

1. **Operationalizing the VRIN Criteria:** When it comes to risk management in healthcare projects, the four VRIN criteria are approached as conceptual constructs, which need to be made quite concrete in terms of measurable characteristics. For instance, defining whether a resource is a problem or imitable call for a comparison with other organizations and industries. Methodological concerns typical for these criteria relate to issues of construct definition and validation when operationalising the assessment methods, and the need to guarantee their reliability and validity. Ethical issues are important again in relation to the mentioned problems, using the mixed methods to gather redundant sources of data and to check the results (Ackermann, 2023; Pinto et al., 2024).

2. **Dynamic Capabilities and Resource Evolution:** The RBV has traditionally emphasized on the stock resources while the healthcare projects involve dynamic settings in which resources and capabilities change. The construct of dynamic capabilities, which focuses on the firm's capability to mobilise, create and reconfigure resources, builds on the RBV. A methodological implication therefore is the use of longitudinal data to monitor movement in resource and capability portfolios. Such dynamic perspective is useful in explaining how organizations manage the resource base if the organization is to sustain operational advantage and address emerging risks (Baughman et al., 2024; Fitzsimons, 2023).

2.15 Methodological Considerations

1. **Data Collection and Analysis:** For one to use the RBV framework properly, it is required to use more than one method of data collection. Another method is of observing the rate of occurrence and the extent to which various resources affect the society by offering a quantitative coverage. Interviews, case studies, questionnaires and survey present a richer picture of context and use of the resources. Integrating both quantitative and qualitative data have benefits such that using both methods can boost the confidence of the outcomes (Guidi et al., 2023; Sheppard et al., 2023).

2. **Validation and Reliability:** A key consideration to strengthen this work is to consider ways of maintaining validity and reliability of the results of the assessment of resources. This entails being precise about what constitutes 'good' resources, employing standardised tools for data collection and performing sophisticated data analysis. Theoretical and methodological approach to validation contributes to the improvement in credibility and utility of the findings. The assessable validity and reliability of the research findings can

be strengthened by peer reviews, pilot testing, and cross-validation of data sources (Day et al., 2023; Sun & Siva, 2024).

Implication of the RBV in the management of project risk in Irish health care project entails solving a number of conceptual and theoretical problems associated with the identification of the resources, their context sensitivity and a process of translating the VRIN criteria into pracitce. Epistemologically, it means that there are special considerations in terms of the approach to data collection and data analysis to get nearer to the truth and carry out meaningful work. Managing these matters well, it is possible to apply the RBV framework to advance knowledge and optimize results in one's projects in the context of healthcare (Darmody, 2021; White, 2023).

2.16 Summary

Budgetary risk management in Irish healthcare projects is complex and depends on several factors such as scope changes, political influences and initial inadequate estimates. These risk factors that squarely influence the project cost, and thereby create costs overruns and cost uncertainties.

The risks, scope change risks take the largest slice in budget consumption as it is seen as the most important risk factor (Broeders & Sukumar, 2024; Kelly & McGrath, 2023). Political factors are equally important as they come into play when making project decisions and choosing governance frameworks that lead to inefficiency and cost escalations (Murphy and O'Sullivan, 2022; Aarts, 2015).

Improve stakeholder engagement is the basic important key activity in setting a better understanding of the project's scope and potential change, which allows decrease the probability of the cost increase caused by the scope change (Smith et al., 2023; Baughman et al., 2024). Doing stakeholder management early and continuously lets the project manager ensure that what the project is trying to achieve correlates well with stakeholder expectations, which in turn makes change management easier.

Basic to addressing scope changes and adapting to shifting project needs are aspects of a versatile project management style as well as the provision of sufficient contingency funds as well as active and iterative review of the project plan (Murphy & O'Sullivan, 2022; Day et al., 2023). Reduced political Interference on project budgets can be achieved through making sound decisions, due to governance and Accountability brought about by transparent decision-making processes with supporting business cases: (O'Brien & Gallagher, 2023; Alberto De Marco et al., 2023). Sophisticated tools include giving better first estimates of risk costs and improving on problems of inadequate budgeting (Byrne et al., 2024; Connolly et al., 2023).

There has been modest increase in the healthcare expenditure in Ireland also; the capital and current spending has increase immensely hence implying that risk management is essential. Hence, the increase in spending evident due to demographic changes, policies and more, to cater for emergent, and renewed health risks calls for good stewardship of the funds to meet the new health needs (Smith et al., 2023; WHO, 2023). Sundry variances like undertaking of the current costs while under spending on the capital budgets give an idea of the real health care financial management pith and the need for accrued differentiation of risk management mechanisms to address these issues (O'Brien & Gallagher, 2023; White, 2023).

Ireland is among the top investors in public health care spends; however, international comparisons should consider differences in accounting standards and healthcare systems (Teixeira et al., 2021, Hanney & Doyle, 2021). Division of health care where it is composed of the public and the private sectors bring about further complexity as well as prospects in the management of health care. From the literature, this study has noted the need for efficient coordination between the private and public sectors with regard to, for example, the need for timely access to healthcare services, cost effectiveness, and availability of resources of sufficient quality (Murphy & O'Sullivan, 2022; Akomea-Frimpong, 2023). Overseeing the relationship between the business and government sectors introduces control of the gaps and aligns the financial planning services for service quality and accessibility (Guidi et al., 2023).

The increase in the trend of public health meaning higher spending calls for constant improvement of the ways in which resources are allocated in the budget (Wren & Fitzpatrick, 2020; Broeders & Sukumar, 2024). With healthcare expenditure set to rising in the future, proper risk management processes must be put in place in order to realize upto the set goals while being mindful of financial outlay. Focusing efforts on risk factors including scope changes political issues and poor cost estimate coupled with deployment of VRIN resources improve the quality of the budget in Irish health care projects.

Thus, a broad understanding of risk management in Irish healthcare projects should point at the major risks, explore specific ways of managing them, and utilize precious resources available within the framework of the project. Two of the causes of budget inaccuracy and project failure are scope changes, political factors and poor estimation of costs, which if managed by the healthcare administrators, shall enhance healthcare budget estimates. Implementing some of the sophisticated risk management, and practicing improved engagement of stakeholders as well as governance structures lead to the improved management of the financial aspect as well as the overall success of the health-care projects (Pinto et al., 2024; Humes et al., 2024).

3 Methodology

3.1 Methodology Overview

This study employs a qualitative research approach to investigate the role of project risk management data in accurately budgeting Irish healthcare projects. The research design includes a pre-survey conducted with 15 participants, from which 5 will be selected for in-depth interviews. The aim is to explore the nuances of how risk management data impacts budgeting processes within the Irish healthcare sector, gaining a deeper understanding of the challenges and strategies involved.

3.2 Overall Aims

The overall aims of the thesis are to investigate the role of project risk management data in accurately budgeting healthcare projects in Ireland. It assists in identifying and categorising crucial sources of risk that influence the solidity of budgets including; scope changes, political interferences, among others, and recommend on how the risks can be minimised. The paper is centered on revealing the tactics of utilizing more enhanced analytics and integrated risk management strategies with the goal of enhancing the budgetary performance and averting over cost.

3.3 Key Terms Defined

The following are some of the important terms in healthcare project management;

- **Scope Changes and Design Modifications:** These are the factors that are influential in determining project budget performance. Persistent changes to the scope and designs of the project affect the cost and the budget in a negative manner. This article firmly indicates that efficient management of these changes is of paramount important as the needs for preserving the budget's effectiveness.

- **Governance and Accountability:** This is a term that is used to indicate the set applied structures and processes that are placed in order to increase the level of accountability in the management of project. Accountability relationships and sound governance characterize well-performing budgets and minimize the occurrence of over cost.
- **Risk Management Practices:** These practises help in the implementation of the systematic measures for risk identification, evaluation, and control. Risk management is important in enhancing the accuracy of the budget estimates and minimize the probabilities of incurring other expenses.

3.4 Research Design

This research adopts a qualitative research methodology to investigate the use of data in project risk management for Irish health care projects with a view of determining how they assist in project budgeting. The research design includes:

1. **Pre-Survey:** A pilot study of 11 participants therefore first of all be undertaken to elicit their perceptions on risk management and budgeting. The survey assists in pinpointing main concerns and topics to discuss in interviews and in order similarly as in interviews, after, themes and main concerns with regard to the study those presented on the survey, as suggested by Eco (2015).
2. **In-Depth Interviews**: As suggested by pre-survey, and then, 5 participants were chosen for more interviews. It is in these interviews that the researcher seeks to gather more specific information on issues to do with risk management and budgeting.

The combination of the research design guarantees the generation of holistic information supply on the impact of risk management data to the accuracy of budget.

3.5 Justification of Research Approach

The research adopts a qualitative approach, focusing on understanding the experiences and perspectives of professionals involved in healthcare project management. This approach aligns with interpretivist frameworks, which emphasize the importance of understanding individuals' subjective experiences and the meaning they attach to their work (Long and Godfrey, 2004). By conducting in-depth interviews and analyzing thematic insights, the research aims to provide a nuanced understanding of how risk management data influences budgeting accuracy in the Irish healthcare sector.

3.6 Sampling Approach

The population for this study involves 11 respondents in the pre-survey while the in-depth interviews have 5 respondents.

Target Population

The target population for this study is the population of persons between the age of 25 to 65 years involved in project risk management and budgeting for the project in Ireland's heath care industry. This group includes the project managers, financial controllers and those specialize in risk management among others. To achieve the objectives of the study, it is proposed to attract 11 people for the pre-survey, and 5 of them for in-depth interviews.

Participant Selection

Convenience sampling used in the selection of the participants. The pre-survey shared via email, WhatsApp, LinkedIn and other professional networks which help identify and post-reach employees in the Irish Health Sector. This approach endeavors to obtain a number of viewpoints from personnel directly engaged in healthcare project management and financial planning. After the pre-survey, there selected five participants who willing to participate in a detailed interview for further elucidation.

3.7 Research Strategy

The research strategy involves:

1. **Descriptive Qualitative Research:** In the pre-survey questions descriptive in nature and aim at collecting some basic information regarding the participants' exposure to risk management exercises and budgeting practices (Eco, 2015). This aid to find out major topics for other phases of the research.
2. **Thematic Analysis:** Interview analysis conducted qualitatively using thematic analysis where an identification of patterns, themes as well as conversations concerning the objectives of the study. This approach give a clear picture of the issues and approaches concerning generating and applying the data on risk management budgeting.

This approach thereby guarantees a holistic approach in analyzing the influence of risk management data on the budget thereby relevance of the findings for understanding improved practices and emerging issues in healthcare project management.

3.8 Data Collection

Qualitative Research Design

The present work utilises a qualitative research methodology to analyse the use of project risk management data to increase the accuracy of budgeting for Irish healthcare projects. The emphasis is made on getting detailed understanding of the case studies and ideas of practicioners working in the area of healthcare project management.

Pre-Survey and In-Depth Interviews

The study was initiated with the initial questionnaire survey; 11participants were identified based on their experience in working within the healthcare project management sector. The need for conducting pre-survey was to establish important themes and risks that can influence accuracy of budget. This first stage enabled the researchers to test the interview questions carefully and thus reduce the likelihood of the following in-depth interviews not capturing many emerging issues.

The pre-survey was done using self-developed structured questionnaire which was aimed at determining the respondents' perceptions concerning different aspects of project risk management and budgeting. The participants were allowed enough time to respond to the questions in the survey as well as encouraged to be elaborate in their responses. The initial survey set a grounding baseline of understanding for the more general issues of identifying risk factors and impediments that would likely to be encountered when budgeting for health care projects.

Subsequent to the pre-survey five participants were chosen for interviews. These individuals were selected based on the pre-survey and they were selected based on their experience in project risk management and budgeting. The interviews were intended to provide the further quantitative and qualitative data regarding the contribution of risk management data to budgeting processes by focusing on participants' experiences, suggestions and measures used to address risks and achieve the budgeting accuracy.

These interviews were semi-structured so it was possible to pursue leads arising from the interviews and at the same time remain on track regarding the aims of the research. The individual interviews were semi structured where each interview was accompanied by a number of general questions developed from the pre-survey analysis. It also made it possible to analyse diverse participants' perceptions on risk factors, risk management processes, and their effects on budgeting activities.

3.9 Data Analysis

Qualitative Data Analysis

The data retrieved from the pre-survey and the in-depth interviews were analysed using thematic analysis. Interpretations on qualitative data collected during a research involve studying patterns or themes in the data to answer research questions.

1. **Pre-Survey Analysis**: To establish any pattern, trends or important issues related to risk management and budgeting prior to the survey the collected pre-survey data were analysed. The answers were grouped into the specific topics, which the further interviews were based on, and which ensured the identification only of the necessary aspects of the subject matter.
2. **Interview Analysis**: The interviews were recorded and later transcribed onto typescript word by word, thus the transcripts were used in analysis. Thematic analysis is not a single step and so the following activities were conducted;
    - **Familiarization with Data**: Transcript coding: the first level – the first stage where the transcripts read more than once as a way of becoming familiar with the data.
    - **Coding**: Categorization of data with a purpose of coding of data in order to identify major concepts.

- **Theme Development**: Gathering all the codes into more general categories that would adequately represent the most essential nature of this study, from the perspective of risk management and budget precision.
- **Interpretation**: Explaining and comprehending the relationship between risk management practice and budget: determining ways of increasing the budget precision.

3.10 Ethical Considerations

Confidentiality and Consent

- **Confidentiality**: Regarding the collected pre-survey and the interviews all identities of participants disguised to ensure their anonymity. Responses shall be kept confined to the research team only, and full confidentiality shall be maintained in handling the information. Solicited information expunged or disguised in such a way that participants can't be recognized.
- **Informed Consent:** Appropriate information made available to the participants and these include; the reason for undertaking the research, what the participant subjected to, the dangers that may be incurred, and the gains to be made. All participant's informed and written consent sought before the participants undertakes the pre-survey and the interviews. Participants also be told that they are free to withdraw their participation in the study at any time or stage without any repercussions.
- **Data Protection:** The study keeps to the GDPR and any other related data protection laws that may apply. They told that their data used for research and published in such a way that people cannot identify them.

- **Bias and Representation**: Bias avoided in the process of the research to a considerable extent. Efforts to seek the views of a number of professionals made so that both the pros and cons on the matters concerning risk management and budgeting in the healthcare projects can be captured.

Inclusion and Exclusion Criteria

Inclusion Criteria:

1. **Professional Experience:** Applicants have to be working in the health care sector and have a current job description that involves project risk management, budgeting or financial control.
2. **Voluntary Participation:** In the context of this research, respondents must be willing and able to be open and willing to be interviewed/voluntarily respond to questions before the survey.

Exclusion Criteria:

1. **Non-Healthcare Professionals:** Everyone not directly engaged in the healthcare field or not occupying positions that include participation in project risks management or estimating the project costs.
2. **Non-Voluntary Participation:** Non-consenters, that is, people who denied participation or who could not give informed consent.

3.11 Research Difficulties

I started my pre-survey with an aim of recruiting 15 participants, but I found it difficult to locate and communicate with people who had the appropriate level of understanding about the topic within this short period of time. I also anticipated some dropouts due to holiday, work, family issues, or being too busy. In the end, I managed to secure 11 participants for the pre survey out of which 5 were selected for the depth interview.

Data Access and Bias

This study acknowledges several limitations that may impact the findings:

- **Data Access**: It can be very difficult to achieve such data because risk management data raises several issues such as confidentiality constraints and data protection laws that hinder the comparability of various risk management datasets. This limitation may reduce the extent and validity of data gathered; especially in terms of the depth of the data that may be gathered.
- **Sample Size and Selection**: The study has limitations to generalization of the results because of relatively small sample of 11 participants for the pre-survey and only 5 participants for in-depth interviews. One limitation of the study is that convenience sampling was used, which may have brought in selection bias and limit the population external validity of the findings.
- **Integration of Data:** Despite the fact that the study was confined to Qualitative approach, there is a need to review the findings from the pre-survey in a manner that is compatible to that of the findings from the interviews. Other types of bias in the study may originate from participants' responses distorting the research outcomes.

However, this study has some limitations which include the following: Nevertheless, the study expects to contribute to the literature on the contribution of project risk management data to the accuracy of budget in the following ways: The study brings understanding of the effectiveness of PRM data in the accuracy of budget for financial planning and the following recommendations are offered:

3.12 Summary

This research uses a qualitative research method to investigate the extent to which project risk management data impact budget accuracy of Irish healthcare projects. Pre-survey was conducted on 11 participants while a total of 5 participants were interviewed in detail. The quantitative data collected analysed through desk top computing and thematic analysis to develop an understanding of the qualitative effects of risk management in relation to budgeting. Confidentiality and informed consent are some of the vital aspects of an ethical consideration in research. The study recognises constraints such as data availability, sample size and possible prejudice that might exist but seeks to provide a broad insight of how risk management data can enable accurate health facility budgets for projects.

4 Result

The analysis of this chapter includes results from surveys and interviews. The data that is generated from the virtual interviews with highly experienced professionals in healthcare project management is valuable to understand the role of the project risk management data in budgeting. The results also pointed out the effects of risk factors such as scope changes, design modifications, and governance problems on the amount of accuracy in the budgets. From these patterns, it is revealed that most of the effective risk management practices and strong governance structures are important to sustain budgetary control. By analysing these results systematically, this chapter also underscores the critical activities that must be performed to improve efficiency and reduce the risks affecting Irish healthcare projects, as far as their budget estimations are concerned.

4.1 Presurvey Analysis

Question 1: On a scale of 1 to 5, how important do you believe project risk management data is in the accuracy of budgeting for Irish healthcare projects?

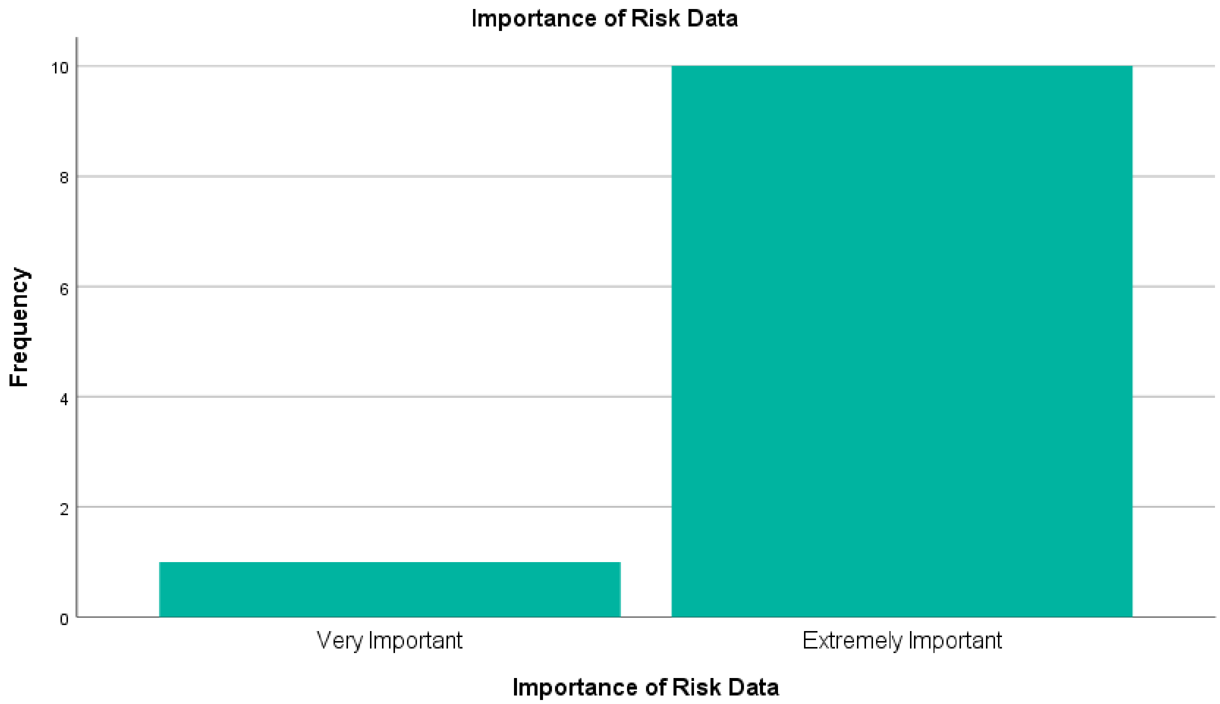
- **1: Not Important**
- **2: Slightly Important**
- **3: Moderately Important**
- **4: Very Important**
- **5: Extremely Important**

The number of participants in the study was 11 all the participants completed the questions and there were no measurement missing from any participant. The responses are pointing to the fact that risk management data is very key in the process of ensuring that the budget set for the project is correct. Particularly, the participants respond to the question about the importance of risk management data for the budget management with the following distribution: 90.9% of them rate risk management data as ‘Extremely Important’, whereas the 9.1% of participants state that it is ‘Very Important.’ The responses have shown that the majority of the respondents have given the risk data an importance level of very high, supporting the author’s proposition that risk assessment is instrumental in achieving budgetary control and project success.

Table 5: Importance of Risk Data

Importance of Risk Data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Important	1	9.1	9.1	9.1
	Extremely Important	10	90.9	90.9	100.0
	Total	11	100.0	100.0	



Question 2: To what extent do you agree that scope changes are a significant risk factor affecting budget management in healthcare projects?

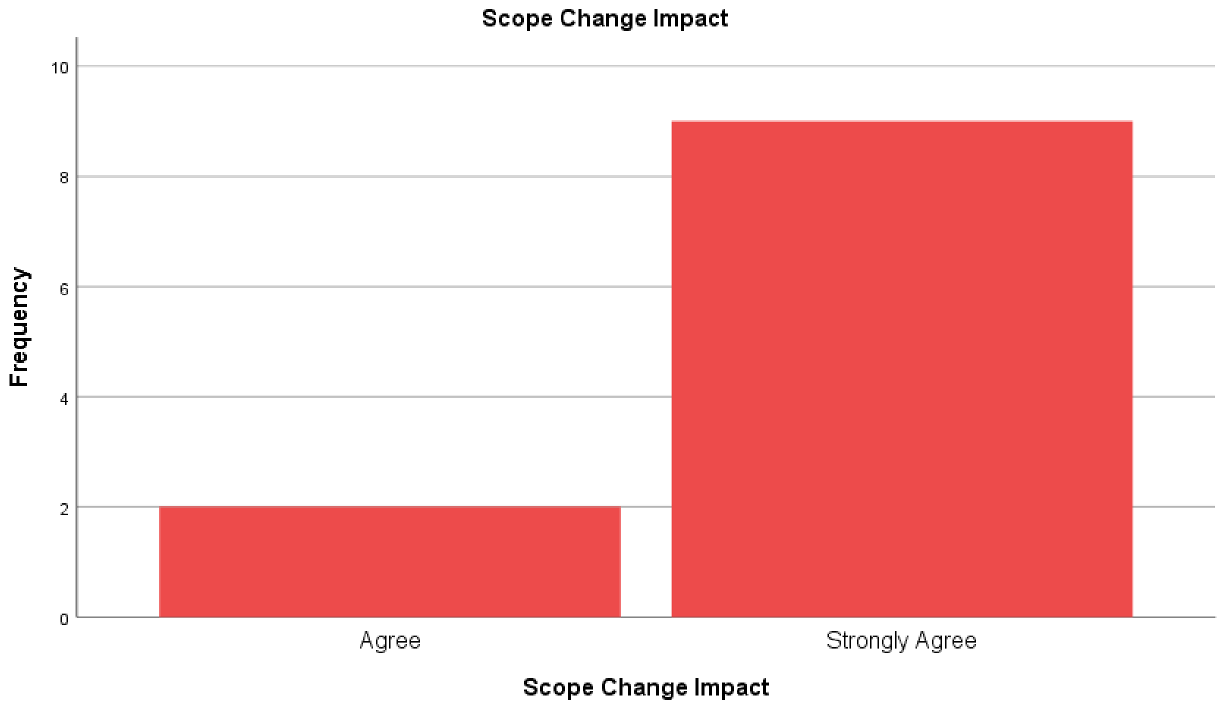
- **1: Strongly Disagree**
- **2: Disagree**
- **3: Neutral**
- **4: Agree**
- **5: Strongly Agree**

Hence, all eleven participants were probed and all of them responded validly with no instance of missing data. The research analysis shows that the scope changes have severe effects on the project budget performance. In line with this, 18.2% percentile of participants firmly believed that scope changes influence the budget while 81.8% strongly agreed with the same notion showing a strong conviction that scope changes do incur additional costs. The cumulative percentage supports the fact that all the respondents agree with the fact that scope changes play an important role in budget determinacy in project environments. This data speaks clearly of the fact that there is a need to control and especially adjust the scope of a project to affect the budget accordingly. There is therefore the need for strong corporate governance and effective risk management strategies to handle these issues with a view of enhancing the credibility of the budget.

Table 6: Scope Change Impact

Scope Change Impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	2	18.2	18.2	18.2
	Strongly Agree	9	81.8	81.8	100.0
	Total	11	100.0	100.0	



Question 3: How critical do you think political influences are in causing budget overruns in Irish healthcare projects?

- 1: Not Critical

- 2: Slightly Critical

- 3: Moderately Critical

- 4: Very Critical

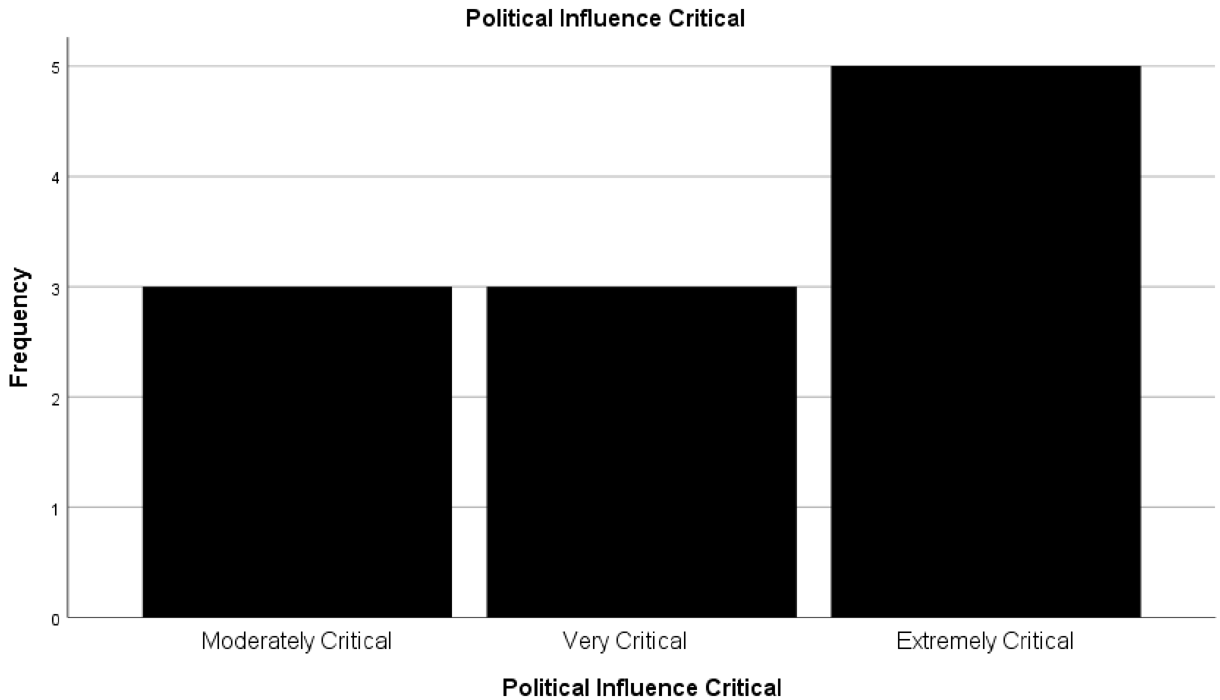
- 5: Extremely Critical

The number of total participants involved in the study was 11 out of which no participants had any missing response data. Several perceptions of participants on the political influence on budget management were evident as analysed below. In particular, 27.3% of respondents considered political influence as “Moderate Critically”, while the 27.3% of respondents viewed political influence as "Very Critically" Meanwhile, 45.5% of the respondents labelled political influence as "Extreme Critically", This proves that, there is a close agreement in regard to the impact of political factors in project budgeting. They highlight the need and the importance of being more cautious and more vigilant over political risks in the case of healthcare projects Moreover the results presented also indicated that there is a real need for an improved understanding and better management of political risks in regard to healthcare projects.

Table 7: Political Influence Critical

Political Influence Critical

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Moderately Critical	3	27.3	27.3	27.3
	Very Critical	3	27.3	27.3	54.5
	Extremely Critical	5	45.5	45.5	100.0
	Total	11	100.0	100.0	



Question 4: Rate the effectiveness of current risk management practices in mitigating budget overruns in healthcare projects.

- **1: Very Ineffective**
- **2: Ineffective**
- **3: Neutral**
- **4: Effective**
- **5: Very Effective**

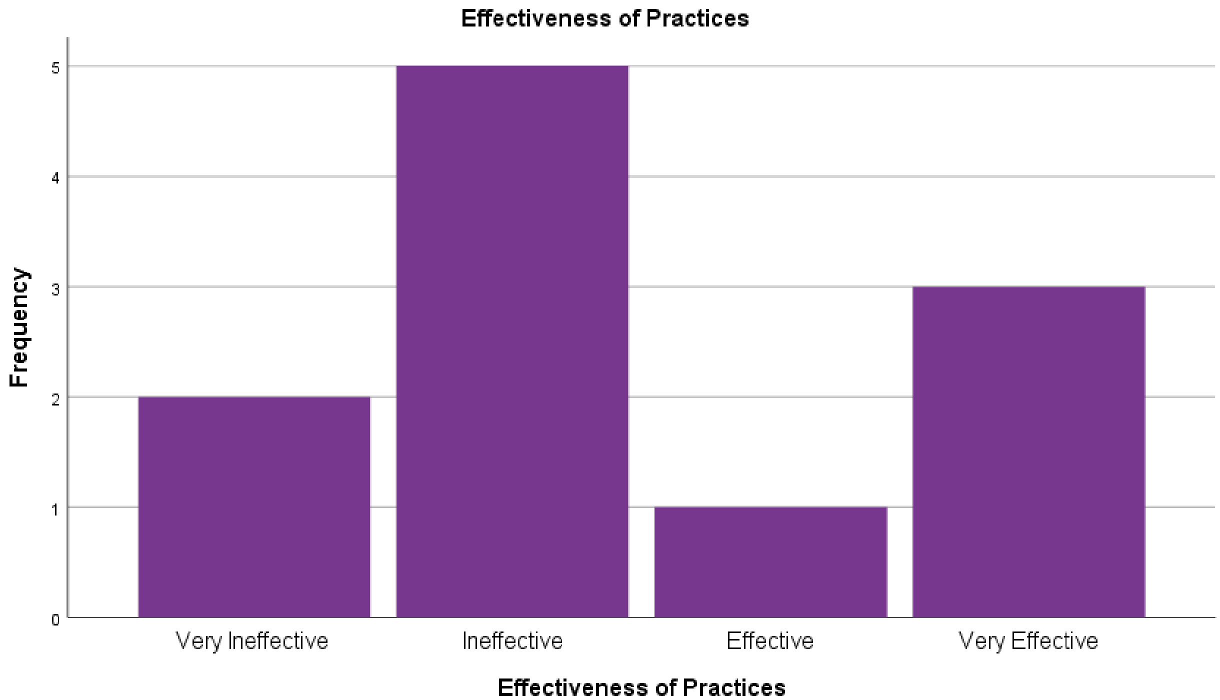
The study involved 11 total participants all of whom provided valid responses there was no data missing or left blank. The sharpest evaluations of the practices were made with the help of frequency distribution that showed the variations in their effectiveness. Concerning the overall effectiveness of the discussed practices, 18.2% of respondents rated it as “Very Ineffective”, 45.5%

said “ineffective”, 9.1% said “effective” and 27.3% said “Very effective”. This perception shows a range of the effectiveness with most of the respondents giving low ratings to the practices. The percentages per item sum up the fact that 63.6% of the respondents stated that the particular practices are either ineffective or very ineffective; in other words, a major gap in effectiveness can be identified. However, a rather smaller proportion, 36.4%, responded that they considered the practices as effective to very effective. This exercise thus brings out a point that current observed practices need to be improved probably by developing more effective risk management strategies and soundest governance structure. It is important that these gaps are filled to achieve the best budget performance of a project in respect to Irish healthcare projects and improve the reliability of the budget estimates.

Table 8: Effectiveness of Practices

Effectiveness of Practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Ineffective	2	18.2	18.2	18.2
	Ineffective	5	45.5	45.5	63.6
	Effective	1	9.1	9.1	72.7
	Very Effective	3	27.3	27.3	100.0
	Total	11	100.0	100.0	



Question 5: How well do you think initial cost estimates reflect the actual costs incurred in healthcare projects?

- 1: Very Poorly

- 2: Poorly

- 3: Adequately

- 4: Well

- 5: Very Well

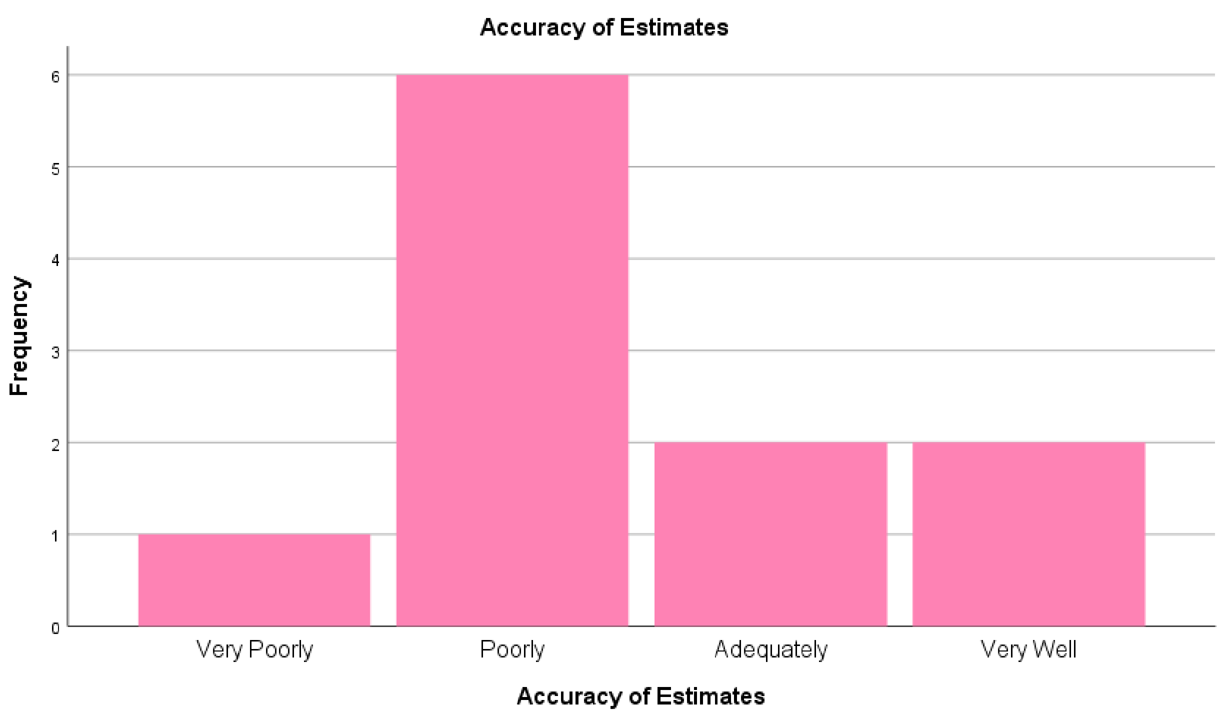
Participants recruited for the study were 11, and all met the criteria of having valid response and no missing data. The findings demonstrate that such competencies are perceived in Ireland as being characterized by a low level of accuracy of the budget estimates in the frames of healthcare projects. Precisely, 9.1% of the respondents considered the accuracy of estimated to be "Very

Poorly" while 54.5% considered the accuracy to be "Poorly" out of a rating scale of Very Well, Well, Adequate, Poorly, and Very Poorly. Only 18.2% of the respondents considered the estimates to be "Adequately" and the same was said of the estimates being

Table 9: Accuracy of Estimates

Accuracy of Estimates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Poorly	1	9.1	9.1	9.1
	Poorly	6	54.5	54.5	63.6
	Adequately	2	18.2	18.2	81.8
	Very Well	2	18.2	18.2	100.0
	Total	11	100.0	100.0	



Question 6: How effective are the current strategies used to manage risk factors in improving the accuracy of project budgets?

- 1: Very Ineffective

- 2: Ineffective

- 3: Neutral

- 4: Effective

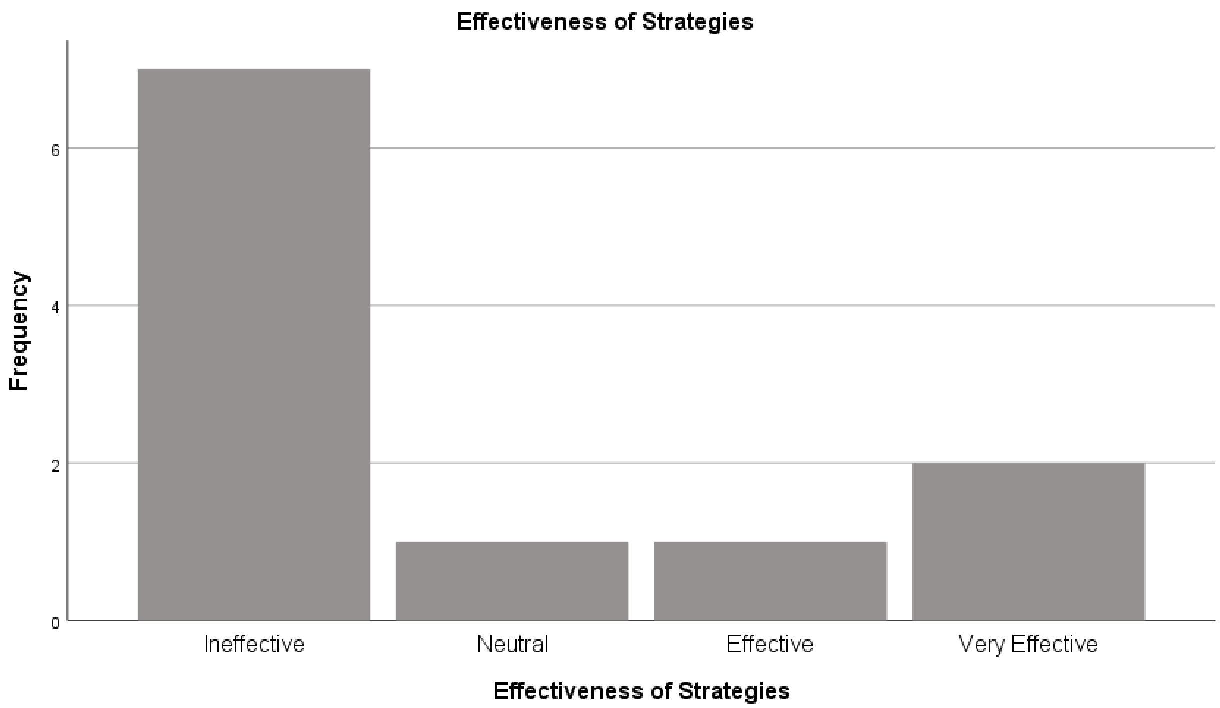
- 5: Very Effective

All of the participants for the study were 11 and all the participants responded fully the questionnaires and none of the data was missing. Self-reported observational data were also collected for the effectiveness of the proposed strategies for which 63.6% of the participants opined that they were ineffective. A similarly 9.1% responded the strategies were non-influence but an equivalent also thought them to be adequate. It is worth noting that out of all the learners 18.2% stated that the strategies are very effective. By these findings it can be deduced that though the strategies are seen as being very effective by one third of the sample, two thirds are still not convinced of the overall effectiveness. Such a difference in the perception shows that it is essential to develop strategies and possibly research other approaches to improve the effectiveness of the implemented approaches.

Table 10: Effectiveness of Strategies

Effectiveness of Strategies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ineffective	7	63.6	63.6	63.6
	Neutral	1	9.1	9.1	72.7
	Effective	1	9.1	9.1	81.8
	Very Effective	2	18.2	18.2	100.0
	Total	11	100.0	100.0	



Question 7: To what extent do you agree that incorporating advanced risk management tools can improve budget accuracy in healthcare projects?

- 1: Strongly Disagree

- 2: Disagree

- 3: Neutral

- 4: Agree

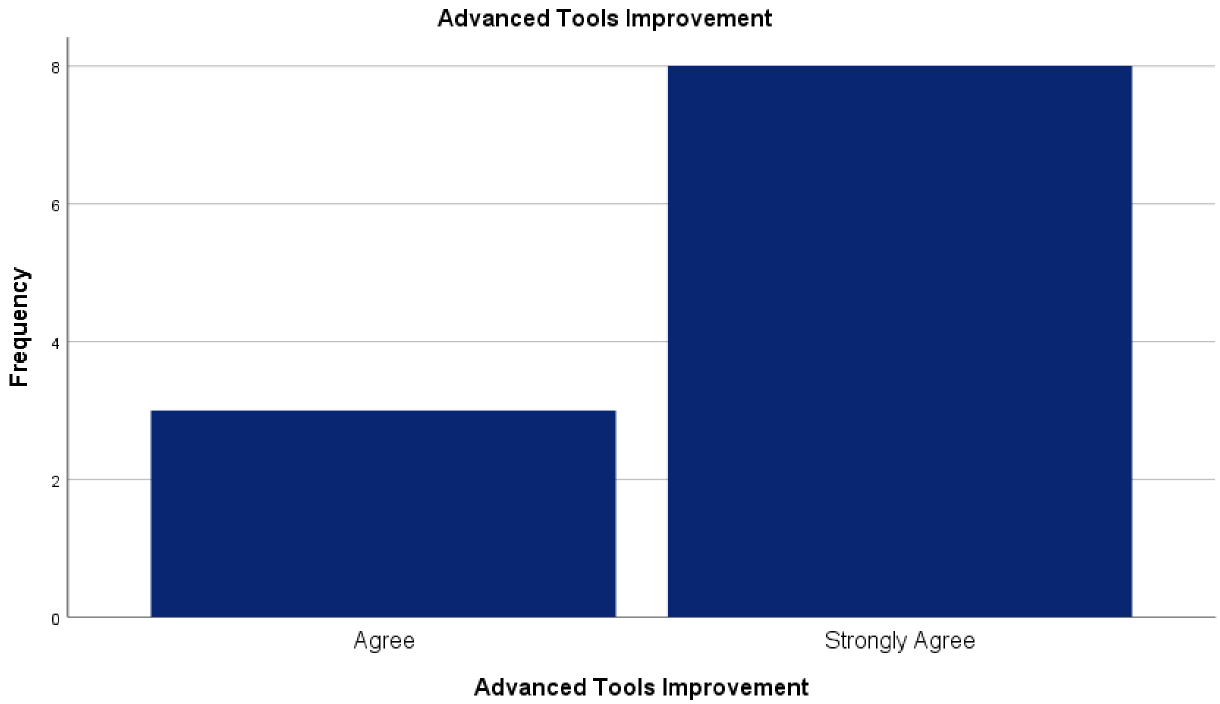
- 5: Strongly Agree

Of the 11 participants, all responded validly with no missing data; hence, data analysis involved the entire sample population. Of these participants, 27.3% supported the proposed strategies for increasing the accuracy of project budgets while 72.7% of the respondents strongly supported the proposed strategies. This high level of agreement shows the realism of the perceived effectiveness of the proposed strategies towards risk prevention and improvement of the accuracy of the budget. lt has emerged that stakeholders are in agreement with regards to the need to enhance risk management and governance practices with an aim of increasing the extent of project budget accuracy in Irish healthcare projects. The findings stand in support of the hypothesis outlined to the effect that outstanding risk management initiatives can lead to better improvement of the general budget performance in project undertakings by lessening on instances of cost overruns and improving the means of risk control.

Table 11: Advanced Tools Improvement

Advanced Tools Improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	3	27.3	27.3	27.3
	Strongly Agree	8	72.7	72.7	100.0
	Total	11	100.0	100.0	



Question 8: Are you open to a follow-up interview to discuss this topic more?

- Yes

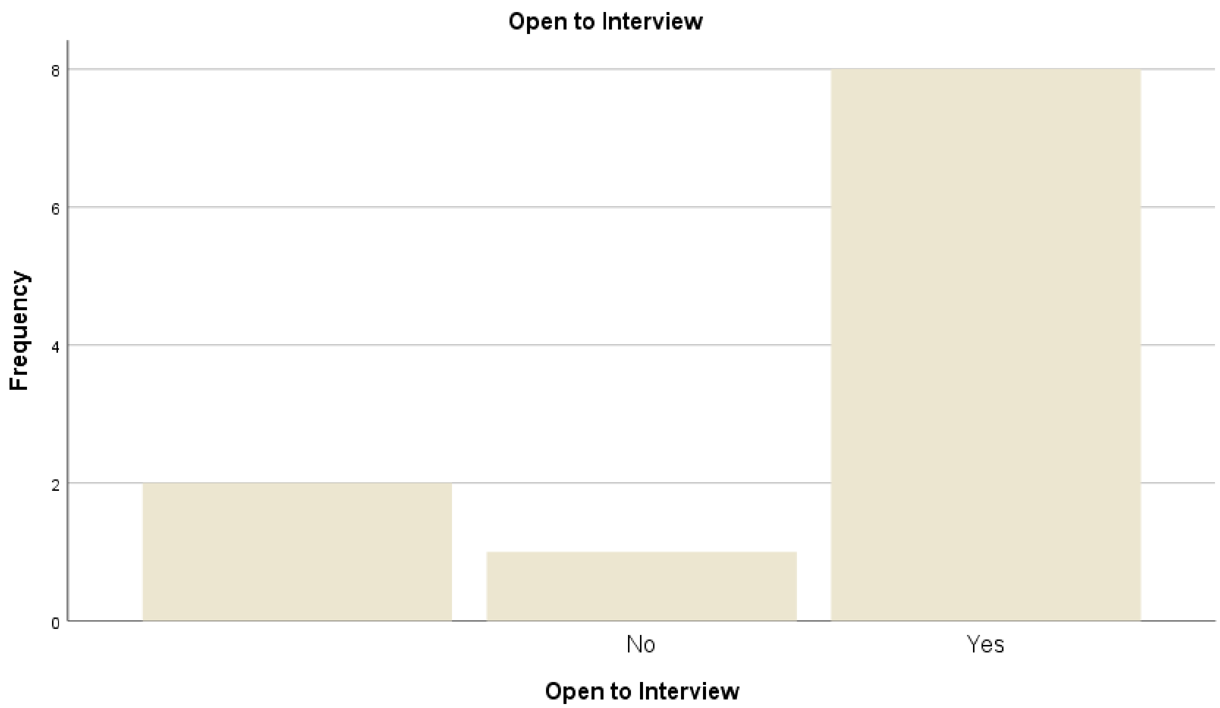
- No

A total of 11 participants were available for the study, of which 2 were considered as having missing values. Of the total valid responses, 8 participants agreed to a follow-up interview as opposed to 1 who disagreed and 2 who neither agreed nor disagreed to this question, having a missing response. A very high percentage of participants who are willing to provide interview follow-ups demonstrate their interest and willingness to contribute more into the research.

Table 12: Open to Interview

Open to Interview

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Missing Values	2	18.2	18.2	18.2
	No	1	9.1	9.1	27.3
	Yes	8	72.7	72.7	100.0
	Total	11	100.0	100.0	



Question 9: Could you please share your availability for the interview over the next weeks, including dates and times?

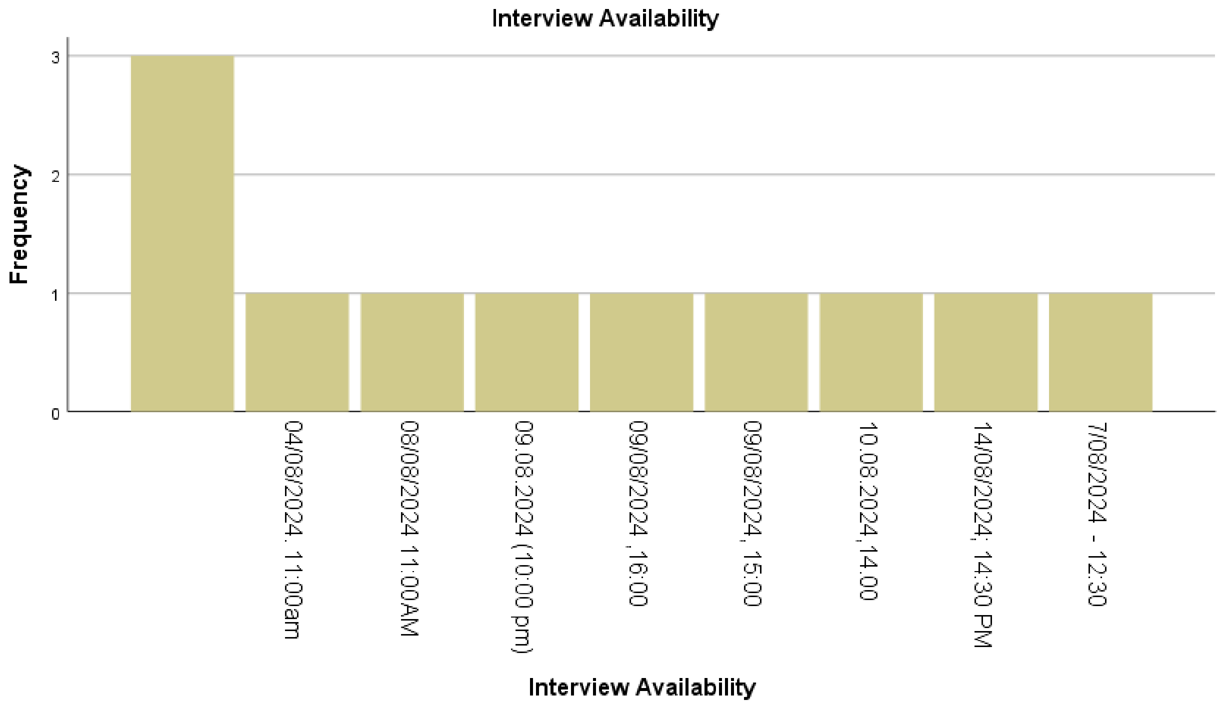
The number of contacts made for interviews drawn from the total participants was 11 with all response being valid and non-missing. The breakdown of interview availability is as follows:

Concerning the missing values, 27.3% of the participants mentioned their absence while 72.7% of participant committed their presence for some of the dates and time. The availability options included: at: August 4, 2024 at 11:00 AM, 8:00 AM, 5:00 PM, 4:00 PM, 3:00 PM, 2:00 PM, August 14, 2024 at 2:30 PM, August 7, 2024 at 12:30 PM their results were 9.1 percent each. This distribution also means that a number of time slots was made available to cover the participants' timetable, thereby showing that the interviews were arranged without bias. Such multiple involvement of the participants through all those available slots is emblematic of the effort to obtain accurate and meaningful data for the research.

Table 13: Interview Availability

Interview Availability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Missing Values	3	27.3	27.3	27.3
	04/08/2024.11:00am	1	9.1	9.1	36.4
	08/08/2024 11:00AM	1	9.1	9.1	45.5
	09.08.2024 (10:00 pm)	1	9.1	9.1	54.5
	09/08/2024 ,16:00	1	9.1	9.1	63.6
	09/08/2024, 15:00	1	9.1	9.1	72.7
	10.08.2024,14.00	1	9.1	9.1	81.8
	14/08/2024; 14:30 PM	1	9.1	9.1	90.9
	7/08/2024 - 12:30	1	9.1	9.1	100.0
	Total	11	100.0	100.0	



Question 10: Years of Experience in Healthcare Project Management:

- 0-2 years

- 3-5 years

- 6-10 years

- 11-15 years

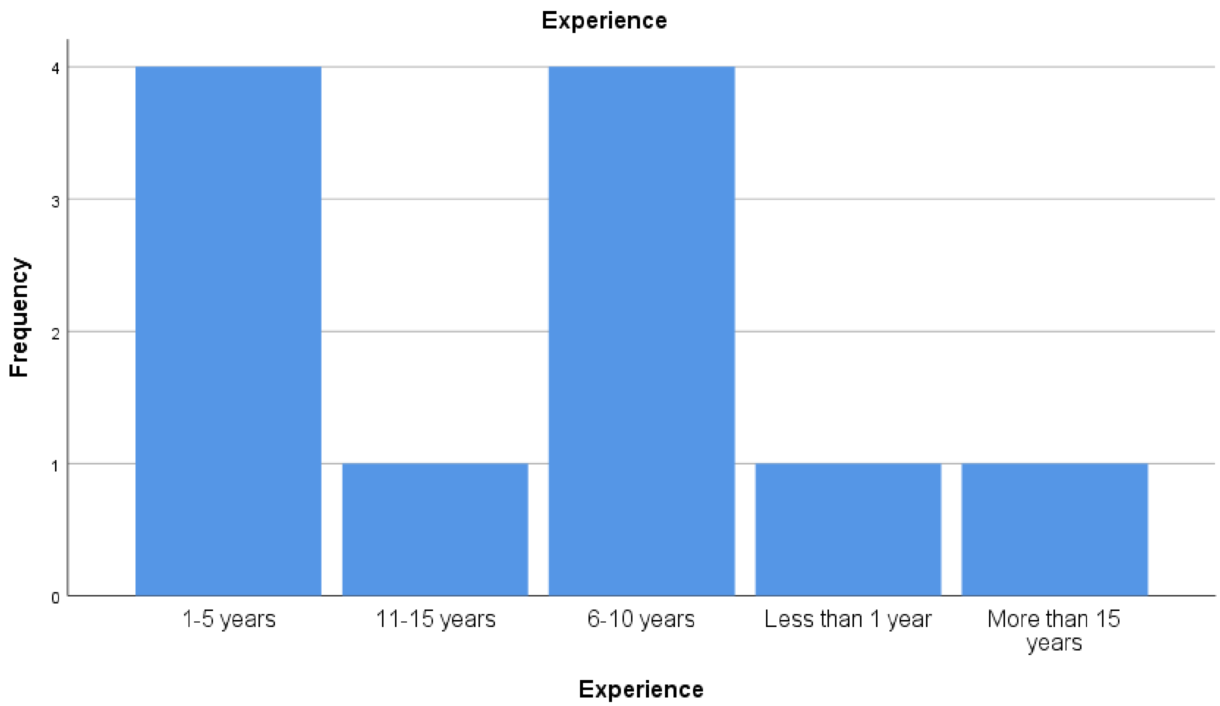
- More than 15 years

The total number of participants for this current study was 11 and all of these participants responded valid data without any data missingness. The distribution of experience among the participants is as follows: The number of participants with experience of 1-5 years is 4 (36.4%), with experience of 6-10 years is also 4 (36.4%), with 11-15 years of experience is 1 (9.1%), with less than one-year experience is 1 (9.1%), and with more than 15 years of experience is 1 (9.1%).

Table 14: Experience

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 years	4	36.4	36.4	36.4
	11-15 years	1	9.1	9.1	45.5
	6-10 years	4	36.4	36.4	81.8
	Less than 1 year	1	9.1	9.1	90.9
	More than 15 years	1	9.1	9.1	100.0
	Total	11	100.0	100.0	



Question 11: Gender

- Male

- Female

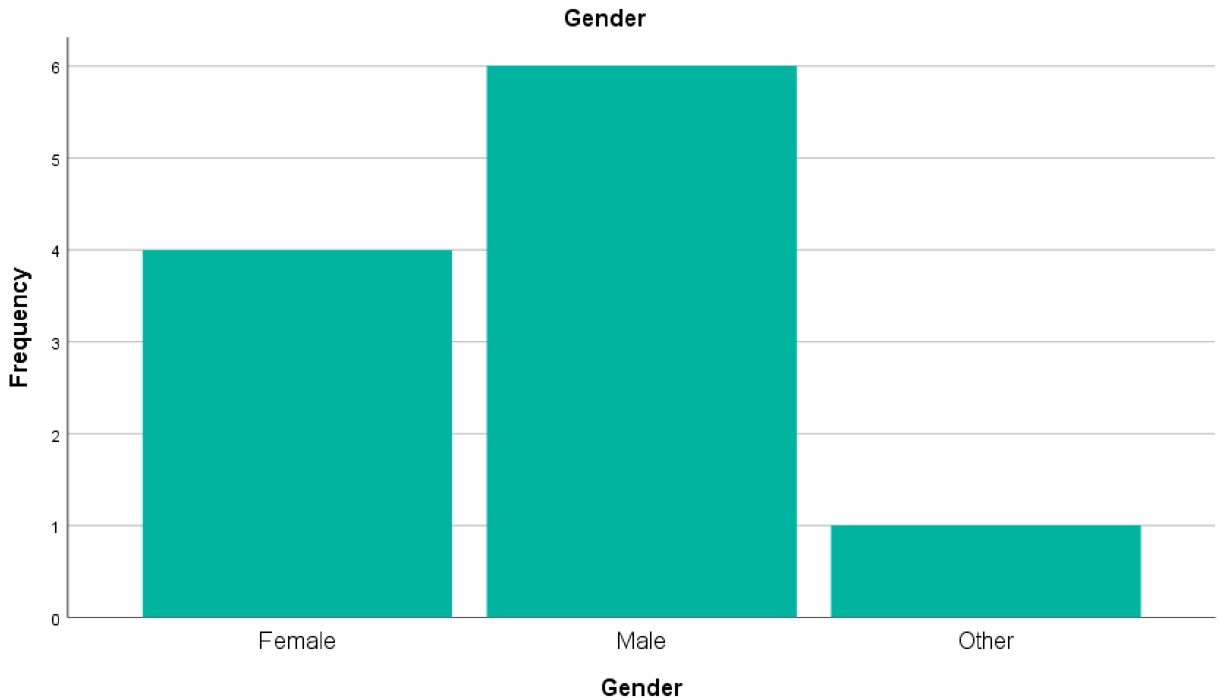
- Other

Out of 11 total participants, there were no missing values in the data collected. The gender distribution was as follows: 4 of the participants (36.4%) were females, 6 (54.5%) were males and 1 participant were of the other gender.

Table 15: Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	4	36.4	36.4	36.4
	Male	6	54.5	54.5	90.9
	Other	1	9.1	9.1	100.0
	Total	11	100.0	100.0	



4.2 Qualitative Analysis

Themes and Codes

Qualitative analysis of interviews regarding project risk management in Irish healthcare projects reveals 10 interconnected themes. The thematic analysis, guided by Braun and Clarke's (2006) methodology, uncovers significant patterns, including the impact of budget adjustments, scope changes, and cost management on project performance. Key themes such as "Advanced Analytics Tools" and "Comprehensive Risk Mitigation Plans" highlight the role of sophisticated data analysis in enhancing budget accuracy and managing risks effectively. Visual representation like project map also illustrate these networks in integrated risk management approaches to project facilitation. Word frequency clouds further emphasize recurrent concept like ‘Risk Assessment’ and ‘Funding’ as essential factors when considering the ways to enhance the accuracy of the budgeting process and, at the same time, manage the risks associated with budget deviations.

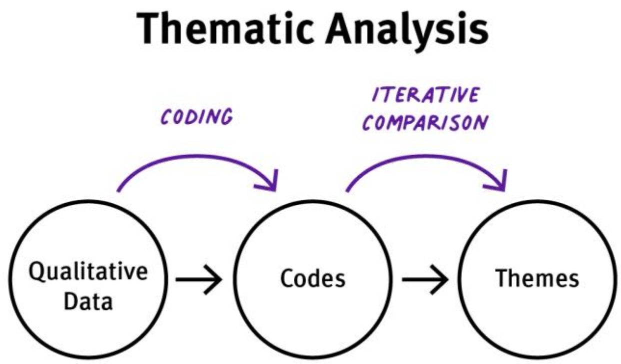


Figure 5: Thematic Analysis

Table 16: Themes and Codes

Theme	Theme 1: Budget	Theme 2: Changes	Theme 3: Costs	Theme 4: Data	Theme 5: Funding	Theme 6: Impact	Theme 7: Management	Theme 8: Planning	Theme 9: Project	Theme 10: Risk
Working Title	Adaptive Budget Adjustments	Challenging Scope Change	Associated Costs	Advanced Analytics Tools	Additional Funding Sources	Detailed Impact Assessments	Budget Management	Comprehensive Risk Mitigation Plans	Certain Project Elements	Actual Risks
Codes	Adaptive Budget Adjustments Budget Areas Budget Forecasts Budget Management Budget Shortfalls	Challenging Scope Change Handling Scope Changes Major Change Political Changes Potential Changes	Associated Costs Avoiding Cost Overruns Compliance Costs Controlling Costs	Advanced Analytics Tools Advanced Data Analytics Comprehensive Risk Assessment Tools Enhanced Data Analytics	Additional Funding Sources Alternative Funding Sources Contingency Fund Funding Allocations	Detailed Impact Assessments Financial Impact Impact Analyses Potential Impacts Significant	Budget Management Improving Risk Management Integrating Risk Management Management Data	Comprehensive Risk Mitigation Plans Contingency Planning Financial Planning Processes Project Planning	Certain Project Elements Maintained Project Stability Maintaining Project Timelines Overall	Actual Risks Comprehensive Risk Assessment Tools Comprehensive Risk Mitigation Plans Detailed Risk Models

	Budget Stability Budgeting Process Careful Budget Adjustments Regular Budget Reviews Significant Budget Adjustments Significant Budget Impacts Significant Budget Overruns	Recent Scope Change Regulatory Changes Reimbursement Rate Changes Significant Changes Specific Changes Structured Change Control Process Structured Change Management Process Sudden Change Unexpected Changes Unexpected Policy Changes	Major Cost Overruns Material Cost Fluctuations Operational Costs Potential Cost Overruns Project Costs Rising Labor Costs Significant Cost Overruns Supplier Cost Increases Unforeseen Costs	Forecasting Tools Historical Data Analysis Management Data Predictive Analytics Tools Real-Time Risk Monitoring Tools Risk Data Specific Data Analytics Tools	Funding Bodies Funding Levels Government Funding Reallocated Funds Reduced Funding	Budget Impacts Thorough Impact Analysis	Risk Management Practices Senior Project Manager Structured Change Management Process Updating Risk Management Plans Using Risk Management Software	Scenario Planning Updating Risk Management Plans	Project Delivery Project Approvals Project Conditions Project Costs Project Delays Project Execution Project Features Project Needs Project Outcomes Project Planning Project Requirements Project Scope Senior Project Manager	Dynamic Risk Assessment Models Emerging Risks Frequent Risk Assessments Improved Risk Modeling Improving Risk Management Integrating Risk Management Key Risk Factors Major Risk Factors Mitigating Risks Particular Risk Factor Political Risks Possible Risks Potential Risk

										Indicators Previous Risks Prioritizing Risk Factors Real-Time Risk Monitoring Tools Regular Risk Assessments Regular Risk Reviews Risk Assessment Matrix Risk Data Risk Identification Risk Management Practices Risk Mitigation Strategies Risk Reporting

Theme 1: Budget

Budget Areas For instance, Participant 1 observed that there are “The government funding has a stronger influence especially with fluctuations.” There is a need to comprehend many different areas of budgeting as remarked by Participant 1. The output of Participant 2 revealed that new safety standards resulted in a 15 per cent increase in the budget to support it pointing to the fact that changes in regulations hold the potential of impacting the different budget areas. One participant noted that reimbursement from the insurance company changes from time to time, which externality affects the overall budget. Nevertheless, Participant 5’s adaptation of more money to cater for the huge number of patients also reveals that flexibility in the budget is very important.

Budget Forecasts Participant 3 emphasized the role of forecasting tools: Another advantage is that regular budget forecasting is useful for making changes for new policies which have not been budgeted for by calculating the cost difference from the past data, which corresponds with Participant 4’s use of history for the cost effects of budget. Like the above participants, participant 5 also stressed on the use of the tools of the activity to maintain expenditure and financial balance.

Budget Management As with all financial management hopefuls need to acknowledge that budgeting is not a one-time event, but rather requires constant check and adjustments. Apart from risk management, Participant 1 who conducted a risk assessment matrix, and Participant 2’s monthly adjustments to the project’s budget are valuable preventive approaches toward responsible budgeting. Participant 3 and Participant 4 both operated accounting policies on conventions regarding the change of budget, whereas Participant 5 incorporated accurate forecast for pragmatic budget control.

Theme 2: Changes

Challenging Scope Change In explaining the effects of scope changes on budgeting, Participant 1 said that by prioritizing regulatory changes ‘this enabled the pro-active allocation of resources. Participant 2 explained how adding of the safety standards was evident on how the scope creep could lead to an overrun of budgets. When asked what challenge she had encountered in relation to policy changes, it was said by Participant 3, For reimbursements, there were some incidental expenses from policy changes to certain services I would need to make an advance payment I had to manage my budget for such an eventuality Because of such reasons, there is the need to be able to adjust ones budget as Participant 3 had to do in terms of reimbursements for policy changes. Participant 4’s SCMP and Participant 5’s concern with higher patient volume also show that scope changes are difficult for different organisations.

Handling Scope Changes It was found that participants dealt with scope changes using number of strategies. Participant 1 avoided risks to do with scope changes by using a risk assessment matrix and Participant 2 moved money around and looked for more funds. Participant 3’s approach of daily briefings and Participant 4 pointing out at structured change control process as to how scope changes were managed. It can be seen from participant 5 that flexibility is also a critical approach in managing volumes to cater to many patients.

Theme 3: Costs

Associated Costs Participant 1 responded that the efficiency in handling of other costs was done by “proactively adjusting budgets based on risk data.” The two participants; Participant 2 discussed about the material cost fluctuations and participant 4 elaborated about the insurance reimbursement rate changes affect the associated costs. Participant 5 view on additional patient load underlines increased operating costs in relation to project costs.

Controlling Costs Controlling costs is a careful process of a number of strategies and practices. Participant 1 kept costs in check by utilising the contingency funds as well as risk management software. Risk management plans and forecasts of Participant 2, Participant 3's inclusive risk management plans, and Participant 4's contingency management are different ways of having minimized costs. Participant 5 went a bit further and made me reach a conclusion that advanced data analytics also call for efficiency in cost control measures.

Theme 4: Data

Advanced Analytics Tools On the issue of making budgets much more accurate, participants noted the effectiveness of the advanced analytics. Participant 1 said that the strategy could be improved by including predictive analytics and machine learning and Participant 2 said that other improvements could be made in relation to risk modelling and scenarios. The data analytics involving risk management are highlighted by real-time risk monitoring in operation by Participant 3 and Participant 4's employing a broad risk assessment toolkit. Participant 5 recommendation on usage of the advanced analytics tools also emphasize on data as a crucial factor in budget management.

Risk Data Risk data is a key input to consideration when making budgeting. Participant 1 provided an example of using risk management software to update risk management plans Participant 2's example of using forecast tools points out that risk data must be accurate. Participant 3's preference for dynamic risk assessment models and Participant 4's focus on the assessment of budget risk information demonstrate how risk data are used in decision-making. Participant 5's description of the use of other tools such as forecasting also points to the requirement of risk data.

Theme 5: Funding

Additional Funding Sources Several sources of fund was highlighted during the discussion. It is important that we have other sources of funds and contingency funds according to Participant 1. Participant 2 also adjusted funds and looked for funding to cater for the budget effects. Participant 3's strategy involved a focus on collaboration with funding organisations and Participant 4 mentioned that they should 'observe politics and look for more funds'. This appreciation of the various sources of funding and the need to keep track of funding levels as a participant 5 pointed out was very valuable in the management of project costs.

Funding Allocations According to the various analyses made, Funding allocations have implications on the budgets. The example with Participant 1's concern about monitoring the funding bodies' communication and Participant 2's efforts to address the funding changes prove that funding allocation is crucial. Participant 3's way of interacting with policymakers and Participant 4's method of employing historical data to request funding show other ways that funding can be effectively managed. Participant 5's focus on the use of tools for predicting financial consequences also contributes to the understanding of funding allocations.

Theme 6: Impact

Detailed Impact Assessments It was also made clear that elaborated impact integration should be made. Participant 1 ensured that they had impact assessments to cover all costs that may arise ensuring they eliminated cases of cost overruns while Participant 2 had more frequent risk reviews and/or adjustment of the budget. Various approaches have been applied in the assessment of the impacts, as evidenced by Participant 3's use of structured change management processes and by Participant 4's historical data analysis. Participant 5's views on the necessity of advanced data analysis based on the impact of the project also pointed at the need for sophisticated evaluations.

Financial Impact It can be stated that risks affect the budget to a great extent. Participant 1's measures of budgeting ahead of time according to the risk data shows how risks cost and Participant 2's encounter with cost overruns depict the monetary losses entailed by risks. Participant 3's interventions for policy alterations, and Participant 4's management of insurance reimbursement risks demonstrate the importance of risk factors' financial consequences. It was vividly illustrated in the case of Participant 5, who used forecasted numbers of the possible financial consequences of the risks.

Theme 7: Management

Budget Management Budgeting practice entails several approaches and practices. Risk assessment matrix and risk management software were applied by Participant 1 to manage budgets. Thus, Participant 2's risk management plans and budget forecast are the examples of different approaches to the issue, as well as Participant 3's inclusive risk mitigation plans and Participant 4's formal change control procedures. The example of Participant 5 and the corresponding use of the forecasting tools and advanced analytics pointed out the significance of the best practices in the management of the budget.

Risk Management Practices Concerning risk management practices, the participants spoke about the following. Participant 1's response of frequent updates and contingency funds, Participant 2's risk management plans and risk modelling, Participant 3's highly systematic change management approach and Participant 4's contingency planning are examples of different ways in managing risks. Other insights that echo with Participant 5's assertion of the need for better data analytics tools and risk assessment techniques are that more should be done in the way of risk management.

Theme 8: Planning

Comprehensive Risk Mitigation Plans This was well underlined by the participants as they called for a strict formulation of risk management plan when it comes to the management of the approved budget. The methods used in risk management by participant 1 include risk management software and contingency funds, by participant 2 include budget adjustments and risk management plans, by participant 3 include risk management plans and by participant 4 include contingency planning. Participant 5's recommendation for detailed risk models underlines the need for efficient planning of the risks involved.

Project Planning There are several techniques of project planning. In Participant 1's view, the organisational budget should be revised more often while risk management should be facilitated through a software. Predicting activities on one hand and the contingency measures used by Participant 2, and the formal change management processes employed by Participant 3, and the historical data used by Participant 4 demonstrate different planning strategies. Participant 5's focus on the use of the most sophisticated data analysis and forecasting techniques also underscore the importance of planning.

Theme 9: Project

Certain Project Elements Participants highlighted several aspects of a project that affects the budget. Supply chain disruptions mentioned by Participant 1, material cost fluctuation discussed by Participant 2, how Participant 3 dealt with policies in relation to project budget and insurance reimbursement rates managed by participant 4 show various aspects of project elements in relation to budgets. Participant 5's additional measures taken to cater for the elevated patient numbers underscore that certain aspects of the project should be taken into consideration when doing the costing.

Project conditions are important when it comes to budgeting The project conditions involve various factors such as; A case of Participant 1 is that they are keen to have regular communication with funding bodies, while Participant 2 approach of managing the impact of regulations show how crucial it is to appreciate project conditions. The policymaker contacts of Participant 3 and the historical data work of Participant 4 demonstrate two approaches to handling project circumstances. Effective management of the project conditions was seen in the case of Participant 5, who used forecasting tools in order to predict financial impacts.

Theme 10: Risk

Actual Risks Some of the changes that participants suggested included better assessment of real risks in budgeting. Risk management in actual risks can be seen in Participant 1, who used a risk assessment matrix and risk management software to manage risks, Participant 2 who developed risk mitigation plans and scenarios, Participant 3, who employed structured change management processes, and Participant 4 who employed contingency plan. The subsequent suggestion made by participant 5 for increase in data analytics, and detailed risk models also emphasizes the need for better risk management.

Mitigating Risks Minimising risks entail different techniques and instruments. Contingency funds and risk management software mentioned by Participant 1, budget flexibility mentioned by Participant 2, Participant 3 – risk mitigation plans, and change control process mentioned by

Participant 4 shows different ways in which risks are managed. In this case, Participant 5's use of data analytics and forecasts the need to follow proper measures to counter risks.

The understanding of risk management of the participants' in this study of project risk management in healthcare budgeting shows a clear appreciation of the issues at stake. Every person highlighted the relevance of different themes and codes, such as finance and costs, risks and analytics. It is evident from their experiences that risk management, contingency planning and data analysis are important in planning for adequate budget and successful implementation of projects in the Ireland's health care sector.

4.3 Project Map of Theme Nodes & Codes

The project map for analysing the potential of project risk management data in correct costing of Irish healthcare projects also stand as a guide in identifying the different influence factors that affect the budget. Such an approach is based on the observations made by Participants 1-5 who present various opinions on how different risk factors impact the project budget.

Theme 1: Budget includes areas concerning budgeting for instance; Adaptive Budget Adjustments, Budget Forecasts, and Budget Stability. It is in line with the Hypothesis 3 where participant 1 stresses that in order to achieve and maintain budget stability it is essential to fine tune the forecasts in relation to the risk data. The codes under this theme include Regular Budget Reviews and Careful Budget Adjustments that are important in avoiding costs that are likely to go high.

Theme 2: Changes encompasses Handling Scope Changes, Regulatory Changes, as well as Structured Change Control Process. This theme supports the Hypothesis 1 of this study which postulates that the changes in scope and design have a great and significant effect on the project budget performance. This fact proved by the experience of Participant 2 who spoke about the impact of regulatory changes leading to the increase in budget spendings, which indicates the need for proper management of scope changes and their consequences.

Theme 3: Costs are subdivided into Controlling Costs, Material Cost Fluctuations and Operational Costs. This theme relates with Hypothesis 1 in the manner that Significant Cost Overruns and Rising Labor Costs impact the general budgets of projects, hence the importance of proper cost control measures.

Theme 4: Data comprises of Advanced Data Analytics, predictive analytics tools, and historical analysis of data. This theme is important for Hypothesis 3 that posits that sound risk management practices as moderating factor that improves budget performance. Participant 5 mentioned the usage of Forecasting Tools and Risk Data to amend budgets demonstrates the need to incorporate advanced analytics into risk management to enhance the precision of budgets.

Theme 7: Management and Theme 8: Planning is associated with Risk Management Practices and Financial Planning Processes and Scenario Planning. These themes can be related to Hypothesis 2 posited that there is a positive relationship between governance and accountability and budget performance. Budget stability is evident again from Participant 4's comment on Contingency Planning and Structured Change Management Process as the key elements of management practices and strategic planning.

Theme 10: They include Risk Assessment Matrix, risk management plans, risk management matrices, risk management maps, and dynamic risk assessment models. This theme supports

Hypothesis 3 by showing how Frequent Risk Assessments and Detailed Risk Models help in credible budgeting and sound risk management strategies. In this context, Participant 3's contribution in the use of Risk Management Software and Comprehensive Risk Mitigation Plans shows how effective risk management practices can improve the budget's performance.

Consequently, the project map combines different themes and codes to confirm the hypotheses and objectives of the research. The mapping also validates the fact that proper risk management, efficient management of scope change, and governance are crucial in the budgeting process in Ireland's healthcare projects. The participants' experiences emphasise the importance of analytics and new and more disciplined management procedures and risk checks to enhance the precision of the budget and the success of applications.

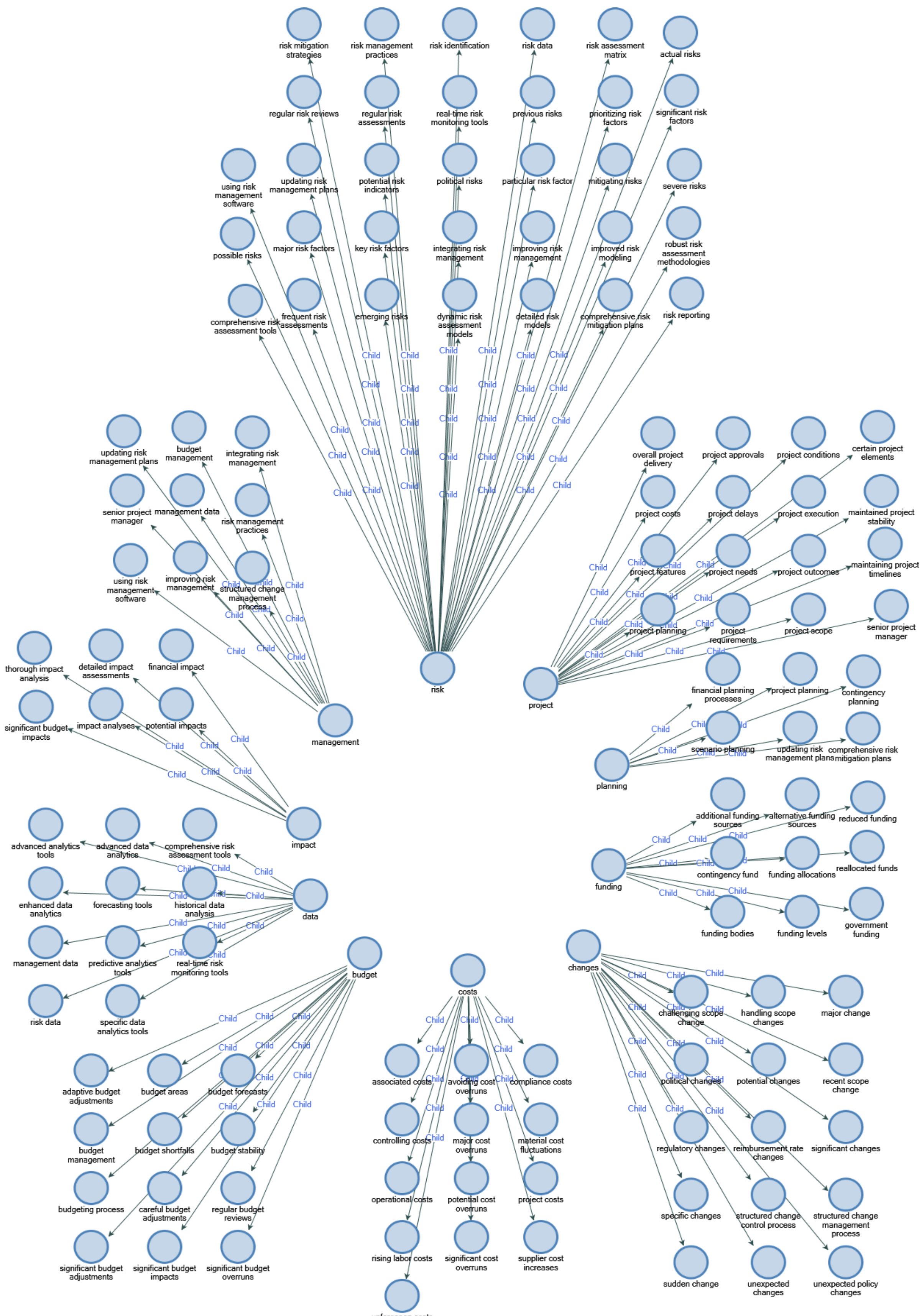


Figure 6: Project Map of Theme Nodes & Codes

4.4 Word Frequency Cloud Analysis

The Word Frequency Cloud map presents several of the most significant themes. The themes are based on such aspects of project risk management as the most critical risks, their influence on the budgeting accuracy.

Key Themes and Codes Identified:

1. **Budget Management:** Some of the keywords such as ‘budget stability’, ‘adaptive budget adjustments’, ‘budget shortfalls’ recur frequently, with budgeting being portrayed as a critical element in managing risks. This is consistent with Hypothesis H1; thus, scope changes and design modifications have a considerable effect on budget performance. The frequency of these terms contributes to the notion that controlling and revising budgets when needed because of changes and risks is necessary for effective financial control.

2. **Scope Changes:** The occurrence of terms like “challenging scope change” “unexpected changes” and “regulatory changes” show high level of influence of scope changes on budget performance. This goes a long way in supporting Hypothesis H1 as this call for the need to have formal change management structures that would help to minimize on the costs resulting from changes in project scope.

3. **Costs**: Such terms as ‘other expenses’, ‘costs of association’ ‘increasing cost of labour’, and ‘material cost volatility’ all point towards the effect of many cost factors on budget precision. This theme supports the H3 where the results of the study indicate that comprehensive risk management practices improve the budget performance due to effective management of cost-related risks.

4. **Risk Data and Advanced Analytics:** The importance of terms like ‘advanced data analytics’, ‘risk data’, and ‘predictive analytics tools’ suggest that there is a trend towards using more advanced analytics to control risks as well as enhance the precision of the budgets. This gives support to the recommendation made in Hypotheses H2 and H3 wherein there is a push for improved data analysis in order for the organisation to have better budget outcomes as well as stress on the importance of having solid data and improved analysis.

5. **Funding and Financial Adjustments:** Such terms as ‘other income sources,’ ‘emergency money,’ and ‘government funding’ are the descriptions of the measures in the management of funding related risks and changes. This theme fits Hypothesis H2 that sound governance structure and accountability are critical in sustaining the budgets when there are changes in funding.

Figure 7: Word Frequency Cloud Analysis

Overall, the Word Frequency Cloud analysis demonstrates that the key themes identified budget management, scope changes, costs, risk data, and funding are closely aligned with the hypotheses proposed. Effective risk management, including advanced analytics and proactive budget adjustments, plays a crucial role in improving the accuracy and stability of project budgets in the Irish healthcare sector.

4.5 Summary

The research contributes to the knowledge of the influence of project risk management data for budgeting in the context of Irish healthcare projects and it supports the proposed hypotheses. As could be deduced from the survey and the interviews conducted, risk management data is perceived as being of paramount importance when it comes to budget management. It also emerged that risk management data was equally considered 'Extremely Important' by 90.9% of participants to the process of accurate and reliable budgeting.

Concerning hypothesis results, the results confirm Hypothesis 1 which postulates that scope changes and regulatory changes strongly affect project budgets. According to the data, 81.8% of respondents are strongly convinced that scope changes result in the increase of cost, which means that scope alterations should be managed efficiently. Examples provided by participants demonstrate how changes in regulation, along with greater emphasis on safety, can lead to vast budget hikes, supporting the supposition that, to retain budget stability, scope change is critical to manage.

The study also supports the Hypothesis 2 which asserts that good governance as well as strategic planning enhance the budget performance. The information that was obtained indicates the high level of opinion on the efficient protection of the company's activities and the presence of clearly defined planning systems. It is consistent with the hypothesis of this study suggesting that governance and accountability are essential in sustaining the accuracy of the budget and managing risks, where participants stressed the need to create a stipulated change control as well as risk management procedures.

The results derived from Hypothesis 3 pointed to the need to improve on advanced analytics and risk management strategies as a way of improving on the budget performance. The survey and interview findings indicate that there is huge reliance on metrics such as the more advanced data analytics tools, predictive analytics, and dynamic risk assessment models. They also agreed with the fact that the use of such tools can enhance more effective results in the field of the risk management and better accuracy of the budget. This is in line with the hypothesis suggesting that good risk management practices, backed by analytics, are a must have for better budget performance.

5 Discussion

This chapter includes the literature review as well as the outcomes of the results analysis relating to the role of the project risk management data in achieving a proper budgeting of Irish healthcare projects.

5.1 Research Objectives

Objective 1: To Identify the Main Risk Factors Faced by Irish Healthcare Projects in the Context of Budget Management

The literature review identifies several key risk factors that affect budget management in Irish healthcare projects. One of the most common risk factors is scope changes. According to Kelly and McGrath (2023), scope changes have a significant impact on cost increases and lead to unpredictable budgets. Bibault (2023) further supports this by stating that scope changes are the leading cause of cost overruns in hospital projects, contributing to 99% of the cost hikes. These scope changes can arise from altered healthcare needs or unforeseen changes in project requirements, resulting in increased expenses and delays.

Another critical risk factor is political influence. Murphy and O’Sullivan (2022) highlight that political factors can introduce inefficiencies and cost increases, as they often take precedence over technical and financial considerations. This influence can manifest in unrealistic budget expectations and shifting project priorities, leading to confusion in financial planning.

Underestimation of initial project costs is another significant risk factor. O’Brien and Gallagher (2023) and Bibault (2023) note that inadequate cost estimates, which fail to account for various risks, are a primary source of cost overruns in large-scale healthcare projects. Inaccurate initial estimates often result in budgetary problems and require costly modifications at later stages of the project.

Objective 2: To Prioritize the Identified Risk Factors Based on Their Significance in Influencing Project Budgets

Prioritizing risk factors is a critical component of effective risk management. The current literature suggests that scope changes should be the top priority due to their substantial impact on budget performance. Kelly and McGrath (2023) emphasize that scope changes are the primary risk drivers, directly linked to increased project costs. This prioritization is supported by Day et al. (2023), who argue that preventing the negative impacts of scope changes on the project budget is possible if addressed early.

While political factors are also important, they are acknowledged to have a lesser direct effect on project budgets compared to scope fluctuations. Murphy and O'Sullivan (2022) note that although political factors can influence project work and associated costs, their immediate relationship to budget increases is not as significant as that of scope changes.

Objective 3: To Propose Strategies for Mitigating the Prioritized Risk Factors and Improving Project Budget Accuracy in Irish Healthcare Projects

Mitigating prioritized risks requires the development of specific strategies to enhance budget estimate accuracy. One key strategy for managing scope changes is increasing stakeholder engagement. Smith et al. (2023) suggest that early and continuous stakeholder involvement helps ensure that project scope remains realistic, allowing potential changes to be anticipated. This early involvement also helps align project goals with stakeholders' expectations, thereby minimizing over expenditures resulting from scope changes.

Another important practice for controlling changes in project scope is the flexible management of projects. Murphy and O’Sullivan (2022) and Day et al. (2023) recommend providing sufficient contingency and regularly reviewing and updating project plans as needed. This approach allows for adjustments in response to changes in project requirements, reducing the impact of scope changes on costs.

Addressing political influences on project budgets requires better governance and accountability. O’Brien and Gallagher (2023) advocate for well-articulated decision-making processes, grounded in business cases, to prevent political factors from negatively impacting project budgets. Ensuring that every financial decision is made with a clear understanding of its implications helps maintain budgetary control and minimizes the intrusion of political factors.

5.2 Synthesis between research and literature

This chapter offers a rich analysis of the ways in which data generated from project risk management affects budgeting in project in the Irish context. The literature review reveals some of the external risk factors that significantly influence the budget and these include Change in scope, political factors and inadequate initial cost estimates. One of the risk factors that affect project costs and which has been identified by both Kelly and McGrath (2023) and Bibault (2023) is scope changes. Political interferences, as Murphy and O’Sullivan (2022) observed, are the cause of poor budgeting and setting of unachievable goals. The author O’Brien and Gallagher (2023) points out that failure to develop accurate first-cost estimates contributes to budgeting problems by requiring costly mid-project revisions.

This research’s surveys and interviews reinforce the fact of risk management data being crucial in budgetary accuracy. 90.9% of the respondents noted Risk Management Data as “Extremely Important” in support of Hypothesis 1 that accurate risk management is important in budget accuracy. Among all the activities 81.8% of the participants opined that scope changes affected the budget performance significantly and therefore strong scope management becomes all the more important. Political factors which were considered highly important by the 45.5% of the participants highlight the need for proper political leadership. Yet, 63.6% rated current risk management practices as “Ineffective” or “Very Ineffective”, – which lends credence to Hypothesis 2 about the need to enhance governance and strategic planning.

Tools became essential for improving the accuracy of the budget, especially in the area of analytics. People also spoke of the advantages of using predictive analytics and risk management software (Theme 4) and this supports Hypothesis 3 claiming that the usage of advanced data analytics contributes to better budget performance. The study also posits that there is need to incorporate advanced analytics, proactive scope management, and governance frameworks in the Irish healthcare projects to mitigate on the challenges of budgeting and thereby improving on the ability of the healthcare projects to make accurate and reliable budget estimates.

5.3 Strengths and Limitations of Research

5.3.1 Strengths

The qualitative approach centered around in-depth interviews is one of the primary strengths of this research, which was able to offer a comprehensive understanding of risk management practices in Irish healthcare projects. The study derived valuable insights from complexities of budgeting providing a refined understanding of significant risks like scope changes and political influences. The application of Nvivo software for thematic analysis ensured a systematic and continuous evaluation of the qualitative data. Thus, will enable the early identification of critical factors impacting budget accuracy in the Irish healthcare.

Furthermore, the practical importance of the study is very much relevant in the current setting of Irish healthcare projects. The study suggests practical recommendations including the adoption of sophisticated risk management strategies and stakeholder engagement methods as a result of concentrating on particular challenges faced by the industry. The recommendation which are backed by a solid analysis carried out with Nvivo will find great value in the proposals as project managers and policy makers will always look for solutions to maximise financial supervision in the healthcare infrastructure development.

5.3.2 Limitations

Even though the study has certain strength it also possesses some limitations, one of the major constrain of the study is its focus on the Irish healthcare projects, which has the potential to limit the generalizing of the findings to other countries as well as in other sectors of the economy.

Since the sample size used in this study is very small, comprising of only 11 participants in the pre survey and respect to that 5 participants were interviewed at the end in the research may not capture the full spectrum of perspectives that can affect the reliability of the findings. Even though using qualitative approach for doing a study will provide deep and thorough insight, the approach could be more effective when the sample size is more with wide range of opinions, that would enhance the study’s robustness.

Moreover, over-reliance on historical data do not exhibit the upcoming risks in healthcare projects. Even though incorporating of qualitative data is beneficial, it is time- consuming and can even cause irregularities, if not handled effectively.

6 Conclusion and Recommendations

6.1 Completion of aims and objectives set

The aim of this research was to identify the contribution of project risk management data to accurate cost estimates in Irish healthcare projects. For this, key risk factors were identified, ranked on the basis of their impact and strategies were recommended for mitigating this. Qualitative research involving 11 participants for the pre survey and later in-depth interview with 5 selected professionals, like project managers, financial analysts, healthcare administrators and others from healthcare industry offers an extensive understanding about the impact of risk management practices on budgeting in healthcare sector. Cooperating with the previous studies, the findings showed that the scope changes, political influences and inappropriate cost estimates are the critical risks affecting accuracy of the budget. Thematic analysis was used to analyse the qualitative data, highlighting the significance of the recognized risks which affect budget accuracy. Regardless of the limited number of participants, valuable insights into the complications of the project were derived from the data. In addition, a significant majority(90.9%) recognized the risk management data critical for attaining accurate and reliable budgeting, supporting the hypothesis that effective risk management is much needed for sound financial healthcare project.

The breakdown of age and the participants' professional experience led to the deduction of a variety of opinions, although most of them were experienced. This diversity helped to provide a good perspective of the issues and approaches to the management of project budgets within the health care domain. The age range and professional backgrounds of the participants provided for a very good meta-synthesis of risk factors and risk management strategies demonstrating a real-life wide range of risk management practical implications of risk management data.

The study supported the initial hypothesis that there are key risk factors affecting the management of budgets, which includes; Scope changes the results also pointed out that political influences are a key risk factor in the management of budgets the final risk factor discovered was that of inadequate initial cost estimates in the management of budgets. The most common causes of changes in scope were reported to be the key risk indicators of cost and time overruns. Other politico-legal factors that emerged were political since changes in policy and governance led to changes in strategic project decisions as well as to budget volatilities. Lack of accurate initial cost estimates to assess the requirements of health care projects, that do not consider the complexity levels of the projects in question, only added to the existing problems related to the budgeting process. This is important in prioritizing the risk factors in order to come up with right risk management techniques.

The study also focused on the emergence of the increased funding in the healthcare sector in Ireland owing to demographic changes, changes in policies and health crises. This upsurge of funding cannot be drifted away from the call for stronger financial management strategies that enable health facilities respond appropriately with the available resources to the ever-changing health care requirements. Holders of current costs have been overspent while holders of capital budgets have underspent; these are indicators of how healthcare finances are even more complicated than what has been elucidated above, hence the need to better manage risks.

6.2 Recommendations

Effective budget management in Irish healthcare project needs comprehensive approach to risk management, especially with respect to identification of risk factors, evaluation of impact and recommending measures for mitigation. This facilitates in addressing scope changes which are important/primary factor of cost overruns. It is critical to establish legible governance structure and accountability measures to manage political and governance related risks through constant audits, ingenuous decision- making processes, and documentation of business cases. Use of sophisticated methods like predictive analysis are recommended to enhance the accuracy of the initial cost estimates, thereby allowing them to dynamically adjust to present project conditions.

Moreover, to reduce interferences and related costs, the level of engagement of stakeholder aligning with project goals is crucial. Stakeholders' engagement can be enhanced through proactive communication, continuous feedback sessions and including stakeholders in the risk management processes.

In addition, adopting flexible budgeting strategies that can adjust to fluctuations in funding levels and requirements in project are essential, given the rising complexity and funding of healthcare projects. A structured review and incorporation of budgeting strategies are advised to ensure they are in line with the objectives of the project and changing demands of the healthcare sector.

6.3 Applications of findings to future management/policy or research

The research study advises that the factors which may affect the budget and the measures that could be taken to manage them need to be looked at in first hand by the Healthcare project managers to control, or avoid the imprecisions related with a project's budget. A project manager can subsume the above-mentioned strategies into their management operations which helps in improving decision making and ensuring effectiveness in utilisation of resources. Thereby, focus on risk management implies more fruitful projects, deliverables and in total, improved management of financials in projects related to healthcare.

The research indicates the need for policymakers to frame present norms that directly addresses the recognized challenges in infrastructure projects in Irish healthcare. Policies should primarily focus on improving risk evaluation frameworks, thereby ensuring that project mangers are made available with tools and support required for the effective implementation of these frameworks. Moreover, to ensure consistency with regard to implementation of the project and management of the budget, policies that promote uniformity among the best practices across the healthcare sector are crucial. Incorporating these findings into policy, the government can bring improvements in the healthcare infrastructure projects, ultimately offering better results to its stakeholder. In addition, these policies could promote current training and development for project managers, encouraging a culture of constant improvement and conditioning them to face the evolving risks.

6.3.1 Future Research

The research not only provides insight into this study, but also puts forward new enquiries that require further research in different disciplines. In order to provide complete validity to the actions and to refine the identified risks, it is essential to conduct studies with a larger and diverse participant sample. Moreover, longitudinal studies would also offer an insight into the forecast of policies by the management in a long-term perspective.

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8 Appendices

8.1 Pre-Survey Questionnaire (Consent form)

The Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects

About the Project:
Introduction:
My name is Nanda Kumar Suresh Kumar, and I am a master's student at Dublin Business School, working on my thesis project under the guidance of Owen O'Reilly. My research focuses on the role of project risk management data in accurately budgeting Irish healthcare projects.

Aims:
The aim of this research is to identify the main risk factors faced by Irish healthcare projects, prioritize these risk factors based on their significance, and propose strategies for mitigating them to improve project budget accuracy.

Request for Participation:
I would like to extend an invitation for you to be part of a short survey aimed at obtaining your ideas and opinions about the risk factors influencing budget management in Irish healthcare projects and effective strategies for mitigating these risks.

What's Required:
If you kindly agree to participate in this study, we would ask you to complete a brief online survey that takes only 5 minutes, followed by a short 15-minute interview .This survey participation involves answering a series of questions about your experiences with healthcare project budgets, the risk factors you have encountered, and your insights into effective risk management practices.

Data Protection:
You are guaranteed that all data provided during the survey will be treated as confidential. Your responses will be anonymized and used solely for academic research purposes.

Risks and Benefits:
There are no risks associated with this study beyond the usual risks encountered in everyday living. Participation will contribute to a better understanding of budget management practices in Irish healthcare projects and may inform future improvements in the field.

If You Are Interested in Taking Part:
If you are interested in participating in this research project, your participation would be greatly appreciated and will provide valuable insights into the research topic.

Thank you for showing your interest in this research project.

Section 2 of 3

Pre-Survey Questions

Description (optional)

On a scale of 1 to 5, how important do you believe project risk management data is in the accuracy of budgeting for Irish healthcare projects?

- ◯ Not Important
- ◯ Slightly Important
- ◯ Moderately Important
- ◯ Very Important
- ◯ Extremely Important

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

To what extent do you agree that scope changes are a significant risk factor affecting budget management in healthcare projects?

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

How critical do you think political influences are in causing budget overruns in Irish healthcare projects?

- Not Critical
- Slightly Critical
- Moderately Critical
- Very Critical
- Extremely Critical

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

Rate the effectiveness of current risk management practices in mitigating budget overruns in healthcare projects.

- Very Ineffective
- Ineffective
- Neutral
- Effective
- Very Effective

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

How well do you think initial cost estimates reflect the actual costs incurred in healthcare projects?

- Very Poorly
- Poorly
- Adequately
- Well
- Very Well

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

How effective are the current strategies used to manage risk factors in improving the accuracy of project budgets?

- Very Ineffective
- Ineffective
- Neutral
- Effective
- Very Effective

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

To what extent do you agree that incorporating advanced risk management tools can improve budget accuracy in healthcare projects?

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

Are you open to a follow-up interview to discuss this topic more?

- Yes
- No

ELABORATE YOUR VIEWS (IF ANY):

Short answer text

Could you please share your availability for the interview over the next weeks, including dates and times?

Short answer text

Section 3 of 3

Demographic Questions

Description (optional)

Gender:

- Male
- Female
- Other

Years of Experience in Healthcare Projects:

- ◯ Less than 1 year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ More than 15 years

Current Role:

- ◯ Project Manager
- ◯ Healthcare Administrator
- ◯ Financial Analyst
- ◯ Consultant
- ◯ Other

8.2 Interview Questions

1. What is your current role in the organization, how long have you been in this position, and how many years have you been working in healthcare project management?
2. Can you describe the most significant risk factors you have encountered in healthcare project budgeting?
3. How do you currently prioritize these risk factors when developing a budget for a healthcare project?
4. What strategies or tools have you found most effective in mitigating risks that affect project budgets?
5. Can you provide an example where risk management data significantly impacted the accuracy of a project budget?
6. How do you handle scope changes or unforeseen costs in your budgeting process?
7. In your opinion What role do political influences play in the budget management of healthcare projects, and how do you address them?
8. From your experience What improvements do you think are needed in current risk management practices to enhance budget accuracy in healthcare projects?

8.3 Information Sheet

INFORMATION SHEET FOR PARTICIPANTS

PROJECT TITLE

The Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects

You are being asked to take part in a research study on...

This study investigates the importance of project risk management data in determining accurate project budgets for healthcare projects in Ireland. My name is Nanda Kumar Suresh Kumar, and I am conducting this research under the supervision of Owen O'Reilly at Dublin Business School (DBS). The project has been approved by the DBS Research Ethics Committee.

WHAT WILL HAPPEN

In this study, you will be asked to provide insights into the risk factors that impact budget management in Irish healthcare projects. This will involve participating in an interview where you will discuss various aspects of project risk management and its effect on budgeting. Your participation will help in identifying key risk factors, prioritizing them, and proposing strategies for improving budget accuracy. If there are any details you are not comfortable with or if you need further information, you will be given a complete debriefing after your participation.

TIME COMMITMENT

The study typically takes around 15-25 minutes. If applicable, there will be only one session required for your participation.

PARTICIPANTS' RIGHTS

You may choose to withdraw from the research study at any time without needing to provide an explanation. You also have the right to request that any data you have provided be removed or destroyed. You can choose to omit or refuse to answer any question asked during the study. Should you have any questions about the study procedures, you are encouraged to ask the researcher before participating. A full debriefing will be provided after the study.

CONFIDENTIALITY/ANONYMITY

The data collected will not contain personal information beyond what is necessary for the study. All information will be used solely for research purposes, including the dissertation and potential presentations or publications. Measures will be taken to ensure that individual participants remain anonymous in any reports or presentations.

FOR FURTHER INFORMATION

I or my supervisor, Owen O'Reilly, will be glad to answer any questions you may have about this.

8.4 Consent Form

Informed Consent Form

PROJECT TITLE: **The Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects.**

PROJECT SUMMARY: This study investigates the importance of project risk management data in determining accurate project budgets for healthcare projects in Ireland. My name is Nanda Kumar, and I am conducting this research under the supervision of Owen O'Reilly at Dublin Business School (DBS). The project has been approved by the DBS Research Ethics Committee.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), and (4) you are taking part in this research study voluntarily (without coercion).

Participants signature

Participants Name (Printed)

Student Name (Printed)

Student Name signature

Date

Dublin Business School

8.5 Details of Participants and Interview Summary

Sl.No	Current Role	Experience	Interview Summary
1	Senior Project Manager	9 years	Participant 1 is a Senior Project Manager with 9 years experience in the field of healthcare project management who stated the critical risks in project budgeting encompassing fluctuations in government funding along with unforeseen lags and increasing expenses on medical equipment. Strong communications with funding authorities, continuous check on budget forecasts and application of risk assessment matrix to rank concerns are the measures adopted by them to control the risks. Enforcing contingency funds, quarterly updating of risk management strategies and application of predictive analytics to boost accuracy of the budget were employed as effective strategies. The participant also highlighted the effect of political decisions on project budgets and the necessity to keep updated about policy changes by involving in industry forums. They also host detailed impact analysis and engage stakeholders to manage scope variations, and usage of machine learning tools were recommended to enhance the accuracy of forecasting in risk management.
2	Project Director	18 years	Participant 2 being a Project Director with 18 years experience in healthcare project management highlighted important risk factors in budgeting, containing regulatory shifts, variations in material costs and unexpected project delays. In a case where the new safety standards raised the budget by 15%, they managed the crisis by reallocation and sourcing of finances. The risks are ranked on their financial impact and its applicability, risk management plans, continuous checks and forecasting tools to mitigate them effectively, according to the Director. He also highlighted the significance of risk management data which helped in avoiding cost overruns in a huge reschedule process. Handling scope changes and the role of political influences on management of budget, improved risk modelling and scenario planning to enhance budget accuracy were also mentioned by him.
3	Project Manager	8 years	The third participant is a Healthcare Project Manager with 8 years working experience in the healthcare project of which she has spent 3 years as Healthcare Project Manager. Several key risks that can be associated with healthcare project budgeting has been identified and highlighted by the interviewee in areas of change policy, labour cost and delay in approvals. Examples of how it led to the furthering of the goal when reallocation of funds took place were given accompanied by an example of an unexpected policy change that involved additional patient privacy. The manager stratifies the risks according to the impact level these risks may have on durations and costs using risk management software, daily meetings and many more risk control techniques. She also paid special attention to such risks as risk management data and used them in order to avoid the

			formation of lags in budgets and time lines. The manager deals with scope changes through a structured change management process and stressed on the need for a prior data analysis with dynamic risk assessment to help in improving the quality of budgeting. They also watch over the politics in the development in order to coordinate their tactics correctly and suggest to utilize intricate statistical analysis for better management of the risks.
4	Program Manager	12 years	Participant 4 is a Program Manager with 12 years of experience in healthcare project management, identify remarkable risks in project budgeting, as well as fluctuations in insurance reimbursement, changes in project scope and supplier cost increases. In her opinion with the help of cost adjustments and additional funding we can rectify budget shortfalls emerging as a result of changes in reimbursement rate. Risk prioritization is based on financial impact and likelihood, using historical data and impact analysis to assess severity. She put forward some effective schemes like contingency planning, regular budget reviews and risk management software. Also underlined the importance of structured change control process to manage scope changes and regular meetings with the stakeholders. By continuously observing developments and interact with policymakers we can manage political influences. She recommended that frequent risk assessments, better risk identification and collaboration with financial planning could improve budget accuracy.
5	Chief Financial Officer	9 years	Participant number 5, a Chief financial officer for health care projects, 9 years of experience. Lack of cost control, increase in operating expenses, changes in health care policies, unpredictable patient load were named by him as the major risks for project costs forecasting. He gave an example of how the unplanned increase in people's attendance of hospitals may cause changes in fiscal plans. He also points out that they used historical data along with expert judgments and statistical models so as to prioritize the risks depending upon their financial impacts. In his view the ways to manage risk are by adopting risk management frameworks, risk forecasting as well as creating risk contingency funds. For example, they have shifted budgets in order to keep the firm financially solvent after changes in the regulation. For dealing with the scope change management impact analysis and stakeholders' involvement is applied while the legislative activity is used for the political impact monitoring. The next recommendations involved the strengthening of data analysis, the updating of the risk assessment techniques which in turn can improve the accuracy of the budget where necessary by integrating Risk Management with financial planning.

8.6 Gantt Chart

Student	**Nanda Kumar Suresh Kumar**												
Thesis Title	**The Role of Project Risk Management Data in Accurately Budgeting Irish Healthcare Projects**												
		Project Timeline											
		June				**July**				**August**			
#		**Wk1**	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**
01	**Milestones Key**												
	First Meeting Form Submission												
	Literature Review Draft												
	Submission												
02	**Research proposal and RM lecturer feedback emailed to supervisor**												
03	**Introduction part**												
04	**Literature review**												
05	**Develop/Source Measures for surveys**												
06	**Develop Recruitment Materials**												
07	**Preparation of surveys/interview schedules**												
08	**Start Recruitment process**												
09	**Methodology: Write Up**												
10	**Pilot Study?**												
11	**Data Collection**												
12	**Analysis**												
13	**Discussion section**												
14	**Conclusion/Recommendation**												
15	**Thesis writing/editing**												
16	**Pretesting the sequence and phrasing**												
17	**Thesis review by supervisors**												
18	**Incorporate feedback**												
19	**Submit Thesis**												
20	**Final Submission and Archiving**												